LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 03-03-2017
EMAX Batch No.: 17B137

Attn: Marlon Cartin

Asset Labs
3151 W. Post Road
Las Vegas NV 89118

Subject: Laboratory Report
Project: PG&E

Enclosed is the Laboratory report for samples received on 02/14/17.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-55-120-Q117	B137-01	02/10/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-903-Q117	B137-02	02/10/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-705-Q117	B137-03	02/10/17	WATER	CHROMIUM HEXAVALENT BY IC

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

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

NELAP Accredited Certificate Number CA002912016-11
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

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

CHAIN-OF-CUSTODY RECORD

17B137

QC Level: Level IV

Subcontractor:
EMAX Laboratories
1835 205th Street
Torrance, CA 90501

TEL: (310) 618-8889
FAX: (310) 618-0818
Acct #:

Field Sampler: Signed

11-Feb-17

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests EPA 218.6	EPA 3010A	EPA 6020
1	N023064-001A / MW-55-120-Q117	Groundwater	2/10/2017 8:45:00 AM	8OZP	1		
	N023064-001B / MW-55-120-Q117	Groundwater	2/10/2017 8:45:00 AM	16OZP		1	1
2	N023064-002A / MW-903-Q117	Groundwater	2/10/2017 8:55:00 AM	8OZP	1		
	N023064-002B / MW-903-Q117	Groundwater	2/10/2017 8:55:00 AM	16OZP		1	1
3	N023064-003A / MW-705-Q117	Groundwater	2/10/2017 9:00:00 AM	8OZP	1		
	~~N023064-004A / FOLDER~~		~~2/24/2017~~				

1 3.1

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

Please use PO#:N23064A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please see attached COC for requested tests.

		Date/Time			Date/Time
Relinquished by:	Hanah Glodoviza HSG	2/13/17 1700	**Received by:**	GSO# 535017403	
Relinquished by:	GSO		**Received by:**	[signature]	2/14/17 1310

CHAIN OF CUSTODY RECORD

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email:	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to:	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: Date: 2/10/17	Sampled By: Jordan Terme		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - AZ GMP	Signature:	Date: 2/10/17	
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
		Regulatory		6. Method of Cooling: ICE		
Global ID:		Specify State:		Sample Temp: 2-12C		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2 x 250 mL poly)	Cr(VI) FF (SM3500B) (NH4)2, SO4, NH4, OH (250 mL poly)	Metals Dissolved (6020AFF) As; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr; HNO3 (500 mL poly)	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 (500 mL poly)	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se, Mn); HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate: H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023064 - 01	MW-55-120-Q117	2/10/2017	0845		X			X				E	3	P	BN	Send to EMAX
2	-02	MW-903-Q117	2/10/2017	0855		X			X				E	3	P	BN	Send to EMAX
3	-03	MW-705-Q117	2/10/2017	0900		X							E	1	P	BNS	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Jordan Terme	2/10/17 1000	Tony Alm	2/10/17 1200
Tony Alm	2/10/17 1732	Brandon Rodriguez	2/10/17 17:32

Turn Around Time (TAT)

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

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

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

Preservatives:

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

Container Type:

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

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

White=Laboratory Copy

Yellow=Customer's Copy

SAMPLE RECEIPT FORM 1

Reference: EMAX-SM02 Rev.8
Form: SM02F1

Type of Delivery	Airbill / Tracking Number	ECN 17B137
☐ Fedex ☐ UPS ☑ GSO ☐ Others	535017403	Recipient Nery Castillo
☐ EMAX Courier ☐ Client Delivery		Date 2/14/17 Time 1310

COC INSPECTION

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

Note:

PACKAGING INSPECTION

Container ☑ Cooler ☐ Box ☐ Other
Condition ☐ Custody Seal ☐ Intact ☐ Damaged
Packaging ☑ Bubble Pack ☐ Styrofoam ☐ Popcorn ☑ Sufficient ☐ _____
Temperatures (Cool, ≤6 °C but not frozen) ☑ Cooler 1 3.1 °C ☐ Cooler 2 ____ °C ☐ Cooler 3 ____ °C ☐ Cooler 4 ____ °C ☐ Cooler 5 ____ °C
☐ Cooler 6 ____ °C ☐ Cooler 7 ____ °C ☐ Cooler 8 ____ °C ☐ Cooler 9 ____ °C ☐ Cooler 10 ____ °C

Thermometer: A - S/N 130538505 B - S/N 150555522 C - S/N 140252067 D - S/N 150555630 FW 11/7/16

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

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
3	7	D10		R1
1,2		D11	- Received (2) 250 for CrVI	R1

2/14/17

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

NOTES/OBSERVATIONS:

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	
D23	
D24	

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	
R9	
R10	
R11	
R12	

REVIEWS:

Sample Labeling [signature] Date 2/14/17 2/14/17

SRF [signature] Date 2/14/17

PM [signature] Date 2/14/17

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

Hanh Bui

From: Fernando Rivera [fernando@assetlaboratories.com]
Sent: Tuesday, February 14, 2017 5:09 PM
To: Andy Mai; 'Hanah Glodoviza'; 'Marlon Cartin'
Cc: Hanh Bui
Subject: Re: FW: N23064A; 17B137; discrepancy

Hi!, Andy

Please proceed with Metals Dissolved (6020) Cr only.

Thanks,

Fern

On 02/14/17 4:49 PM, Andy Mai wrote:

> Hi Fern,
>
> It looks like Marlon is out of the office. Can you please help with this? We will hold the samples until the discrepancy is resolved.
>
> Thanks,
> Andy Mai
> **EMAX Laboratories, Inc.**
> 1835 W. 205th St.
> Torrance, CA 90501
> Tel: 310-618-8889 ext. 117
> Fax: 310-618-0818
> AMai@emaxlabs.com
>
> EMAX is interested in your feedback; please provide your comments to:
> customerservice@emaxlabs.com
>
> ***Note:***
> ***EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.***
>
> ***Presidents' Day: 2/20/17***
>
> ---
>
> **From:** Andy Mai
> **Sent:** Tuesday, February 14, 2017 4:45 PM
> **To:** 'Marlon Cartin'; 'Hanah Glodoviza'
> **Cc:** Hanh Bui
> **Subject:** N23064A; 17B137; discrepancy
>
> Hi Marlon\Hanah,
>
> Can you please confirm the target list for metals? The "X" markings show CR only, but the Special instruction shows an extended list.
>
> Thanks,
> Andy Mai

EMAX Laboratories, Inc.
1835 W. 205th St.
Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to:
customerservice@emaxlabs.com

Note:
EMAX will be closed for the following holidays. Please contact me in advance if you will have short hold samples including BOD.

Presidents' Day: 2/20/17

--
Thanks,
Fern

GSO GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

13.00
3.1°
(A)

Ship From
ADVANCED TECHNOLOGY LABORATORIES, INC.
MARLON CARTIN
3151 W. POST RD.
LAS VEGAS, NV 89118

Tracking #: 535017403

CPS

Ship To
EMAX LABORATORIES
SAMPLE RECEIVING
1835 205TH STREET
TORRANCE, CA 90501

LAX
TORRANCE

F

COD: $0.00
Weight: 0 lb(s)
Reference:

D90501A

Delivery Instructions:

Signature Type: REQUIRED

62768731

Print Date: 2/13/2017 12:03 PM

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

REPORTING CONVENTIONS

DATA QUALIFIERS:

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

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

ACRONYMS AND ABBREVIATIONS:

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

DATES

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

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

SDG#: 17B137

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17B137

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

A total of two (2) water samples were received on 02/14/17 to be analyzed for Dissolved Chromium by ICP-MS in accordance with Method SW6020A and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IMB028WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IMB028WL/IMB028WC were within LCS limits. Refer to LCS summary form for details.

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

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

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E

SDG NO. : 17B137
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMB028WB	1.00	NA	02/25/1715:53	02/16/1712:16	F6B16033	F6B16028	IMB028W	Method Blank
LCS1W	IMB028WL	1.00	NA	02/25/1715:57	02/16/1712:16	F6B16034	F6B16028	IMB028W	Lab Control Sample (LCS)
LCD1W	IMB028WC	1.00	NA	02/25/1716:02	02/16/1712:16	F6B16035	F6B16028	IMB028W	LCS Duplicate
MW-55-120-Q117	B137-01	1.00	NA	02/27/1722:32	02/16/1712:16	F6B17091	F6B17089	IMB028W	Field Sample
MW-903-Q117	B137-02	1.00	NA	02/27/1722:37	02/16/1712:16	F6B17092	F6B17089	IMB028W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	02/10/17 08:45
Project	: PG&E	Date Received:	02/14/17
SDG NO.	: 17B137	Date Extracted:	02/16/17 12:16
Sample ID:	MW-55-120-Q117	Date Analyzed:	02/27/17 22:32
Lab Samp ID:	B137-01	Dilution Factor:	1
Lab File ID:	F6B17091	Matrix:	WATER
Ext Btch ID:	IMB028W	% Moisture:	NA
Calib. Ref.:	F6B17089	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	8.30	1.00	0.200

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

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	02/10/17 08:55
Project	: PG&E	Date Received:	02/14/17
SDG NO.	: 17B137	Date Extracted:	02/16/17 12:16
Sample ID	: MW-903-Q117	Date Analyzed:	02/27/17 22:37
Lab Samp ID	: B137-02	Dilution Factor:	1
Lab File ID	: F6B17092	Matrix:	WATER
Ext Btch ID	: IMB028W	% Moisture:	NA
Calib. Ref.	: F6B17089	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	8.28	1.00	0.200

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

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E	Date Received:	NA
SDG NO.	: 17B137	Date Extracted:	02/16/17 12:16
Sample ID:	MBLK1W	Date Analyzed:	02/25/17 15:53
Lab Samp ID:	IMB028WB	Dilution Factor:	1
Lab File ID:	F6B16033	Matrix:	WATER
Ext Btch ID:	IMB028W	% Moisture:	NA
Calib. Ref.:	F6B16028	Instrument ID:	F6

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

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

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: SPara	Analyzed by:	CCapul

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17B137
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMB028WB	IMB028WL	IMB028WC
LAB FILE ID	: F6B16033	F6B16034	F6B16035
DATE PREPARED	: 02/16/17 12:16	02/16/17 12:16	02/16/17 12:16
DATE ANALYZED	: 02/25/17 15:53	02/25/17 15:57	02/25/17 16:02
PREP BATCH	: IMB028W	IMB028W	IMB028W
CALIBRATION REF	: F6B16028	F6B16028	F6B16028

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	29.7	99	30	29.0	97	2	85-115	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

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

Start Date: 2/25/17 13:37

End Date: 2/25/17 23:02

Comments:

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

Filter Lot #: NA

• CCV7, CCV8, CCV9, CCV10, CCV11 IS failed

Book #:	AF6-018
Instrument No.:	F6
Analytical Batch:	IF6B16
Analytical Sequence:	F1B16
Method File:	EMG020K2
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☐ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

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

STANDARDS ID		STANDARDS ID	
S0	SMG B10 · 36.56	MRL1 (1)	SMG B10 · 37.05
S1	· 36.57	MRL2 (0.5)	· 38.03
S2	· 37.01	MRL3 (0.4)	· 38.54
S3	· 37.52	MRL4	NA
S4	· 37.53	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SMG B10 · 33.07
S7		Post-Spike 1	SMG A · 007 04.06
ICV	SMG B10 · 34.01	Post-Spike 2	04.07
CCV	· 37.04	Post-Spike 3	NA
ICSA	· 43.01	Post-Spike 4	
ICSAB	· 43.02		
6020 TUNE SOLN.	· 28.06		
200.8 TUNE SOLN.	· 28.07		

Analyzed By: [signature]

Date: 2/25/17

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : METHOD SW6020A
Sequence : IF6B16
InstrumentID: F6

Lab Samp ID :	ICV	ICSA	ICSAB
QC Limit :	%R:90-110/RSD:<5	%R:80-120/<LOD	%R:80-120
Lab File ID :	F6B16009	F6B16013	F6B16014
DateAnalyed :	02/25/1714:04	02/25/1714:22	02/25/1714:27

Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		28.54	30	2.82	95	.469	0	>0	19.85	20	99
Beryllium		28.74	30	1.71	96	.01046	0	<0.1	20.08	20	100
Boron		28.77	30	1.23	96	.2197	0	<5.0	19.18	20	96
Sodium		30240	30000	1.23	101	102100	100000	102	102400	100000	102
Magnesium		29690	30000	2.18	99	99890	100000	100	99950	100000	100
Aluminum		29620	30000	2.24	99	97350	100000	97	98730	100000	99
Silicon		3055	3000	0.61	102	7.982	0	<20	211.4	200	106
Phosphorus		295.5	300	0.41	98	102600	100000	103	102700	100000	103
Potassium		29750	30000	0.89	99	101300	100000	101	103000	100000	103
Calcium		29370	30000	0.47	98	100400	100000	100	99000	100000	99
Titanium		290	300	1.27	97	2089	2000	104	2103	2000	105
Vanadium		286.6	300	0.41	96	.02603	0	<0.5	20.19	20	101
Chromium	T	282.3	300	0.30	94	1.285	0	>.2	20.62	20	103
Manganese		1895	2000	1.65	95	.1624	0	<0.2	20.26	20	101
Iron		29620	30000	0.70	99	100700	100000	101	99550	100000	100
Cobalt		279.6	300	1.55	93	.1641	0	<0.2	20.2	20	101
Nickel		277.5	300	0.42	92	.1725	0	<0.2	18.76	20	94
Copper		276.3	300	0.58	92	.6584	0	>0.5	19.08	20	95
Zinc		293.5	300	0.10	98	1.644	0	<10	20.86	20	104
Arsenic		291.6	300	1.21	97	.1585	0	<0.2	21.15	20	106
Selenium		293.1	300	0.66	98	.06209	0	<0.3	21.82	20	109
Strontium		284	300	0.62	95	.645	0	<1.0	20.13	20	101
Zirconium		20.93	30	0.50	70*	.1507	0	<2.0	2.283	20	11*
Molybdenum		297.3	300	0.22	99	2121	2000	106	2149	2000	107
Silver		28.77	30	0.53	96	.01953	0	<0.2	19.19	20	96
Cadmium		289.2	300	0.67	96	.1872	0	<0.2	19.8	20	99
Tin		291.7	300	0.42	97	.04532	0	<0.2	19.93	20	100
Antimony		59.65	60	0.12	99	.04725	0	<0.5	20.41	20	102
Barium		299.7	300	0.23	100	.09688	0	<0.5	20.22	20	101
Tungsten		28.98	30	0.17	97	.1268	0	<1.0	19.28	20	96
Thallium		279.1	300	0.86	93	.01181	0	<0.2	19.57	20	98
Lead		281.9	300	0.63	94	.2242	0	>0.1	20.11	20	101
Uranium		282.8	300	0.82	94	.007016	0	<0.1	20.11	20	101

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

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : METHOD SW6020A
Sequence : IF6B16
Instrument ID: F6

CCV SampleID			CCV1			CCV2			CCV3			CCV8			CCV9
CCV DataFileID			F6B16016			F6B16028			F6B16040			F6B16091			F6B1610
CCV DateTime			02/25/17 14:36			02/25/17 15:30			02/25/17 16:24			02/25/17 20:28			02/25/1
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT
Lithium		25	25.0	100	2.31	25.0	100	1.88	25.2	101	0.97	25.6	103	2.12	25.8
Beryllium		25	24.9	100	1.11	25.1	100	1.79	25.6	102	0.38	23.7	95	1.42	22.6
Boron		50	50.3	101	1.08	50.5	101	3.36	50.7	101	2.65	69.1	138*	0.87	64.6
Sodium		25000	25000	100	0.65	25300	101	1.80	25300	101	0.25	28200	113*	0.98	28400
Magnesium		25000	24900	100	1.06	24400	98	2.78	24800	99	3.00	28600	114*	0.65	29300
Aluminum		25000	25100	100	0.64	24600	98	2.57	24800	99	1.26	28200	113*	0.37	28900
Silicon		2500	2530	101	0.29	2590	103	0.21	2630	105	0.23	3020	121*	0.38	3010
Phosphorus		250	255	102	0.99	247	99	1.46	251	100	1.36	291	117*	0.28	302
Potassium		25000	25400	102	0.78	25600	102	0.64	25900	103	0.47	28400	114*	1.36	28400
Calcium		25000	24800	99	0.11	25100	100	0.83	25400	102	0.12	26400	106	0.57	26400
Titanium		250	249	100	0.99	248	99	1.88	250	100	1.62	250	100	0.28	248
Vanadium		250	251	100	0.97	252	101	0.29	250	100	1.09	235	94	0.32	237
Chromium	T	250	244	98	0.56	247	99	2.18	242	97	1.21	221	88*	0.63	223
Manganese		1500	1500	100	0.99	1510	100	1.51	1540	103	2.39	1430	95	0.14	1430
Iron		25000	25600	102	0.52	25600	103	1.02	25400	102	0.48	24100	96	0.28	24000
Cobalt		250	243	97	0.40	245	98	1.88	251	101	2.82	230	92	0.80	230
Nickel		250	242	97	0.15	242	97	1.27	238	95	1.10	216	86*	0.37	217
Copper		250	238	95	0.34	238	95	0.71	235	94	2.13	214	85*	1.72	215
Zinc		250	253	101	1.00	256	102	1.34	258	103	2.15	245	98	1.25	246
Arsenic		250	254	102	1.14	256	102	0.25	255	102	1.17	255	102	0.63	257
Selenium		250	254	102	0.73	256	102	0.10	254	102	0.27	243	97	0.11	245
Strontium		250	254	102	0.91	253	101	0.41	254	101	0.92	244	98	0.71	248
Zirconium		25	20.1	81*	1.15	20.4	82*	0.91	20.2	81*	1.81	20.0	80*	0.67	20.3
Molybdenum		250	262	105	1.93	264	105	0.70	263	105	1.42	279	112*	0.47	276
Silver		25	25.2	101	1.31	25.0	100	0.70	25.1	100	0.30	25.3	101	1.32	25.1
Cadmium		250	255	102	0.87	252	101	0.33	251	101	0.49	248	99	0.34	247
Tin		250	251	101	0.66	252	101	0.31	251	100	0.63	249	100	1.42	249
Antimony		50	50.2	100	0.63	50.6	101	0.36	50.2	100	1.58	48.9	98	0.91	49.2
Barium		500	511	102	1.22	510	102	1.23	513	103	1.65	511	102	0.75	508
Tungsten		25	24.8	99	0.62	24.7	99	0.59	24.5	98	0.20	23.2	93	0.32	23.0
Thallium		250	245	98	0.15	245	98	0.32	243	97	0.60	229	92	1.05	228
Lead		250	246	99	0.46	246	98	0.36	246	98	0.21	230	92	0.48	228
Uranium		250	244	98	0.62	246	99	0.96	243	97	0.48	219	88*	0.84	218

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

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : SW6020A
Sequence : IF6B16
Instrument ID: F6

CB SampleID		: ICB		CCB1		CCB2		CCB3		CCB8		
CB DataFileID		: F6B16010		F6B16017		F6B16029		F6B16041		F6B16092		
CB DateTime		: 02/25/1714:08		02/25/1714:40		02/25/1715:34		02/25/1716:29		02/25/1720:32		
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	
Lithium	0	0.006	>0	0.1	>0	0.03	>0	0.1	>0	0.4	>0	
Beryllium	0.1	0.001	<0.1	0.00008	<0.1	0.0003	<0.1	0.0009	<0.1	0.004	<0.1	
Boron	5.0	0.2	<5.0	0.3	<5.0	0.2	<5.0	0.3	<5.0	10	>5.0	
Sodium	50	10	<50	10	<50	10	<50	10	<50	400	>50	
Magnesium	10	0.4	<10	0.3	<10	0.08	<10	0.1	<10	10	>10	
Aluminum	20	0.3	<20	0.09	<20	0.1	<20	0.08	<20	0.02	<20	
Silicon	20	0.6	<20	0.6	<20	0.2	<20	0.07	<20	2	<20	
Phosphorus	25	0.5	<25	0.1	<25	0.5	<25	0.3	<25	8	<25	
Potassium	20	2	<20	0.9	<20	1	<20	2	<20	40	>20	
Calcium	25	0.4	<25	0.6	<25	0.02	<25	0.4	<25	6	<25	
Titanium	0.5	0.002	<0.5	0.03	<0.5	0.0001	<0.5	0.006	<0.5	0.004	<0.5	
Vanadium	0.5	0.02	<0.5	0.0008	<0.5	0.006	<0.5	0.01	<0.5	0.3	<0.5	
Chromium T	.2	0.002	<.2	0.01	<.2	0.008	<.2	0.0007	<.2	0.01	<.2	
Manganese	0.2	0.02	<0.2	0.003	<0.2	0.0009	<0.2	0.01	<0.2	0.05	<0.2	
Iron	10	3	<10	3	<10	2	<10	2	<10	3	<10	
Cobalt	0.2	0.005	<0.2	0.001	<0.2	0.001	<0.2	0.005	<0.2	0.005	<0.2	
Nickel	0.2	0.0003	<0.2	0.005	<0.2	0.001	<0.2	0.0004	<0.2	0.01	<0.2	
Copper	0.5	0.02	<0.5	0.0010	<0.5	0.004	<0.5	0.002	<0.5	0.4	<0.5	
Zinc	10	0.009	<10	0.01	<10	0.01	<10	0.02	<10	0.2	<10	
Arsenic	0.2	0.04	<0.2	0.02	<0.2	0.02	<0.2	0.03	<0.2	0.09	<0.2	
Selenium	0.3	0.07	<0.3	0.04	<0.3	0.04	<0.3	0.04	<0.3	0.05	<0.3	
Strontium	1.0	0.004	<1.0	0.002	<1.0	0.003	<1.0	0.004	<1.0	0.03	<1.0	
Zirconium	2.0	0.1	<2.0	0.1	<2.0	0.1	<2.0	0.1	<2.0	0.1	<2.0	
Molybdenum	0.5	0.1	<0.5	0.1	<0.5	0.05	<0.5	0.04	<0.5	0.05	<0.5	
Silver	0.2	0.0004	<0.2	0.0004	<0.2	0.0003	<0.2	0.0003	<0.2	0.003	<0.2	
Cadmium	0.2	0.02	<0.2	0.004	<0.2	0.007	<0.2	0.01	<0.2	0.006	<0.2	
Tin	0.2	0.1	<0.2	0.05	<0.2	0.05	<0.2	0.05	<0.2	0.06	<0.2	
Antimony	0.5	0.02	<0.5	0.007	<0.5	0.005	<0.5	0.02	<0.5	0.02	<0.5	
Barium	0.5	0.01	<0.5	0.004	<0.5	0.007	<0.5	0.01	<0.5	0.01	<0.5	
Tungsten	1.0	0.02	<1.0	0.008	<1.0	0.005	<1.0	0.004	<1.0	0.002	<1.0	
Thallium	0.2	0.05	<0.2	0.02	<0.2	0.02	<0.2	0.02	<0.2	0.03	<0.2	
Lead	0.1	0.009	<0.1	0.005	<0.1	0.004	<0.1	0.004	<0.1	0.01	<0.1	
Uranium	0.1	0.04	<0.1	0.02	<0.1	0.02	<0.1	0.03	<0.1	0.02	<0.1	

CB SampleID		: CCB9	
CB DataFileID		: F6B16101	
CB DateTime		: 02/25/1721:13	
PARAMETER	LOD	RESULT	< LOD >
Lithium	0	0.4	>0
Beryllium	0.1	0.006	<0.1
Boron	5.0	10	>5.0
Sodium	50	300	>50
Magnesium	10	10	>10
Aluminum	20	0.3	<20
Silicon	20	2	<20
Phosphorus	25	10	<25
Potassium	20	40	>20
Calcium	25	6	<25
Titanium	0.5	0.05	<0.5
Vanadium	0.5	0.2	<0.5
Chromium T	.2	0.02	<.2
Manganese	0.2	0.04	<0.2
Iron	10	4	<10
Cobalt	0.2	0.004	<0.2
Nickel	0.2	0.02	<0.2
Copper	0.5	0.6	>0.5
Zinc	10	0.2	<10

Arsenic	0.2	0.08	<0.2
Selenium	0.3	0.06	<0.3
Strontium	1.0	0.06	<1.0
Zirconium	2.0	0.1	<2.0
Molybdenum	0.5	0.2	<0.5
Silver	0.2	0.002	<0.2
Cadmium	0.2	0.009	<0.2
Tin	0.2	0.05	<0.2
Antimony	0.5	0.01	<0.5
Barium	0.5	0.01	<0.5
Tungsten	1.0	0.007	<1.0
Thallium	0.2	0.03	<0.2
Lead	0.1	0.01	<0.1
Uranium	0.1	0.02	<0.1

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

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6B16001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6B16002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6B16003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6B16004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6B16005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6B16006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6B16007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6B16008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6B16009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6B16010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6B16011	MRLB2501	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6B16012	MRLB2502	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6B16013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6B16014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6B16015	MRLB2503	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2101	F6B16018	B087-01K	DISS	200.0				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2102	F6B16019	B087-02K	DISS	200.0				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2103	F6B16020	B087-04K	DISS Nat	200.0				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6B16021	B087-06K	DISS	100.0				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6B16022	B087-04K	DISS	500.0				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6B16023	B087-01K	TOTAL	200.0				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6B16024	B087-02K	TOTAL	200.0				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6B16025	B087-04K	TOTAL	500.0				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6B16026	B087-06M	TOTAL	100.0				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6B16027	B087-06S	TOTAL	100.0				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6B16030	B087-06A	TOTAL	100.0				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6B16031	B087-06K	TOTAL	100.0				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6B16032	B087-06J	TOTAL	500.0				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2202	F6B16033	IMB028WB		1.000				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2203	F6B16034	IMB028WL		1.000				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2204	F6B16035	IMB028WC		1.000				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2205	F6B16036	B103-08	TOTAL	1.000				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2206	F6B16037	B103-01K	TOTAL	200.0				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2207	F6B16038	B103-03K	TOTAL	200.0				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2208	F6B16039	B103-04K	TOTAL	200.0				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2209	F6B16042	B103-05K	TOTAL	200.0				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2210	F6B16043	B103-06K	TOTAL	200.0				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2211	F6B16044	B103-07M	TOTAL	5.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2212	F6B16045	B103-07S	TOTAL	5.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2301	F6B16046	B103-07A	TOTAL	5.000				
52	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2302	F6B16047	B103-07K	TOTAL	5.000				
53	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2303	F6B16048	B103-07J	TOTAL	25.00				
54	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2504	F6B16049	B103-04I	TOTAL	5.000				
55	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2505	F6B16050	B103-06K	TOTAL	50.00				
56	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2506	F6B16051	B126-02 ~ 15		1.000				
57	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16052	CCV4		1.000				
58	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16053	CCB4		1.000				
59	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2304	F6B16054	B103-01K	DISS	200.0				
60	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2305	F6B16055	B103-03K	DISS	200.0				
61	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2306	F6B16056	B103-04I	DISS	5.000				
62	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2307	F6B16057	B103-05K	DISS	200.0				
63	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2308	F6B16058	B103-06K	DISS	50.00				
64	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2309	F6B16059	B103-07M	DISS	5.000				
65	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2310	F6B16060	B103-07S	DISS	5.000				
66	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2311	F6B16061	B103-07A	DISS	5.000				
67	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2312	F6B16062	B103-07I	DISS	5.000				
68	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2401	F6B16063	B103-07J	DISS	25.00				
69	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16064	CCV5		1.000				
70	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16065	CCB5		1.000				
71	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	3101	F6B16066	IMB030WB		1.000				
72	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	3102	F6B16067	IMB030WL		1.000				
73	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	3103	F6B16068	IMB030WC		1.000				
74	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3104	F6B16069	B142-03		1.000				
75	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3105	F6B16070	B150-04		1.000				
76	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2506	F6B16071	B126-02		1.000				
77	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3302	F6B16072	B136-06	DISS	1.000				
78	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16073	CCV6		1.000				
79	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16074	CCB6		1.000				
80	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2402	F6B16075	B087-01	DISS	1.000				
81	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2403	F6B16076	B087-02	DISS	1.000				
82	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2404	F6B16077	B087-04	DISS	1.000				
83	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2405	F6B16078	B087-05	DISS	1.000				
84	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2406	F6B16079	B087-06	DISS	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
85	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2407	F6B16080	B087-01	TOTAL	1.000				
86	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2408	F6B16081	B087-02	TOTAL	1.000				
87	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2409	F6B16082	B087-04	TOTAL	1.000				
88	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2410	F6B16083	B087-05	TOTAL	1.000				
89	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16084	CCV7	IS fails	1.000				
90	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16085	CCB7		1.000				
91	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2411	F6B16086	B087-06M	TOTAL	1.000				
92	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2412	F6B16087	B087-06S	TOTAL	1.000				
93	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2501	F6B16088	B087-06A	TOTAL	1.000				
94	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2502	F6B16089	B087-06	TOTAL	1.000				
95	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2503	F6B16090	B087-06J	TOTAL	5.000				
96	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16091	CCV8	IS fails	1.000				
97	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16092	CCB8		1.000				
98	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2507	F6B16093	B126-03		1.000				
99	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2508	F6B16094	B126-04		1.000				
100	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2509	F6B16095	B126-05		1.000				
101	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2510	F6B16096	B137-01		1.000				
102	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2511	F6B16097	B137-02		1.000				
103	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6B16098	ICSA2		1.000				
104	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6B16099	ICSAB2		1.000				
105	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16100	CCV9	IS fails	1.000				
106	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16101	CCB9		1.000				
107	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3106	F6B16102	B142-04		1.000				
108	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3107	F6B16103	B142-05		1.000				
109	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3108	F6B16104	B150-03		1.000				
110	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3109	F6B16105	B136-01	TOTAL	1.000				
111	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3110	F6B16106	B136-02	TOTAL	1.000				
112	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3111	F6B16107	B136-03	TOTAL	1.000				
113	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3112	F6B16108	B136-04	TOTAL	1.000				
114	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3201	F6B16109	B136-05	TOTAL	1.000				
115	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3202	F6B16110	B136-06	TOTAL	1.000				
116	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3203	F6B16111	B136-08	TOTAL	1.000				
117	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16112	CCV10	IS fails	1.000				
118	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16113	CCB10		1.000				
119	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3204	F6B16114	B136-09	TOTAL	1.000				
120	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3205	F6B16115	B136-11	TOTAL	1.000				
121	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3206	F6B16116	B136-12	TOTAL	1.000				
122	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3207	F6B16117	B136-13M	TOTAL	1.000				
123	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3208	F6B16118	B136-13S	TOTAL	1.000				
124	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3209	F6B16119	B136-13A	TOTAL	1.000				
125	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3210	F6B16120	B136-13	TOTAL	1.000				
126	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3211	F6B16121	B136-13J	TOTAL	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
127	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3212	F6B16122	B136-04	DISS	1.000				
128	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3301	F6B16123	B136-05	DISS	1.000				
129	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B16124	CCV11 IS Spike		1.000				
130	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B16125	CCB11		1.000				
131		Keyword		StandBy							
132		Keyword		SMPLEND	End of SMPL						
133		Keyword		End	End of Sequence						
134		Keyword		BLKBEG	Start of BLANK						
135		Keyword		BLKEND	End of BLANK						
136		Keyword		ERRBEG	Start of ERRTERM						
137		Keyword		ERREND	End of ERRTERM						

Last Calib: Feb 25, 2017 02:02 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

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

	Data File	Sample Name	Date Acquired
1	c:\data\if62017\b\if6b16.b\f6b16004.d\f6b16004.d#	S0	Feb 25 2017 01:42 pm
2	c:\data\if62017\b\if6b16.b\f6b16005.d\f6b16005.d#	S1 0.5	Feb 25 2017 01:47 pm
3	c:\data\if62017\b\if6b16.b\f6b16006.d\f6b16006.d#	S2 50	Feb 25 2017 01:51 pm
4	c:\data\if62017\b\if6b16.b\f6b16007.d\f6b16007.d#	S3 250	Feb 25 2017 01:56 pm
5	c:\data\if62017\b\if6b16.b\f6b16008.d\f6b16008.d#	S4 500	Feb 25 2017 02:00 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62017\B\IF6B16.B\EM6020R2.C

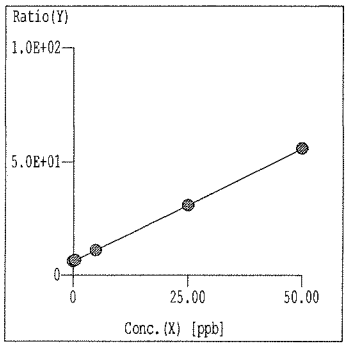
=== ISTD Table ===

Fix ISTD Conc: ON

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

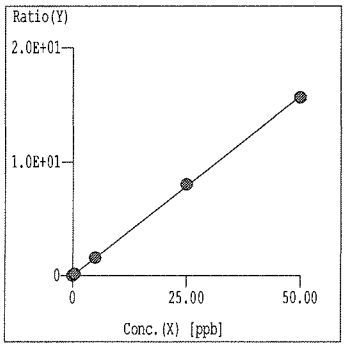
=== Graph Detail ===

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



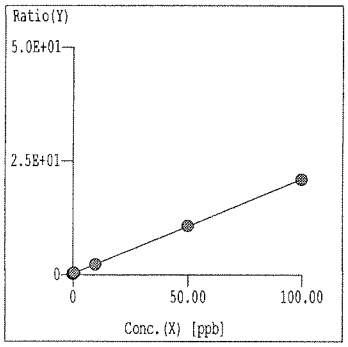
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.930E-001*X +6.066E+000
X = 1.007E+000*Y -6.109E+000
DL = 3.874E-01 ppb
BEC = 6.109 ppb

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



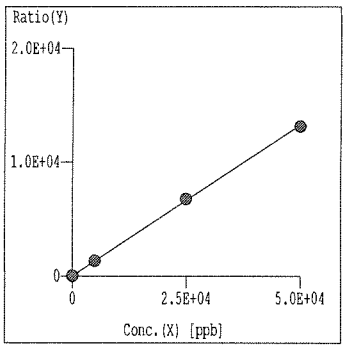
Curve Fit: Y=aX+b
r = 0.9999
Y = 3.153E-001*X +1.033E-003
X = 3.172E+000*Y -3.275E-003
DL = 1.106E-04 ppb
BEC = 3.275E-03 ppb

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



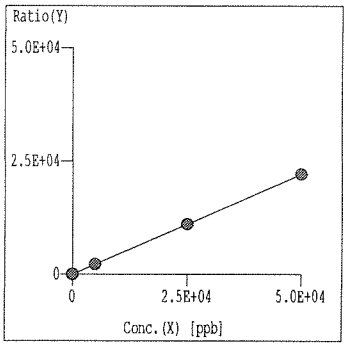
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.071E-001*X +2.923E-001
X = 4.828E+000*Y -1.411E+000
DL = 1.224E-01 ppb
BEC = 1.411 ppb

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



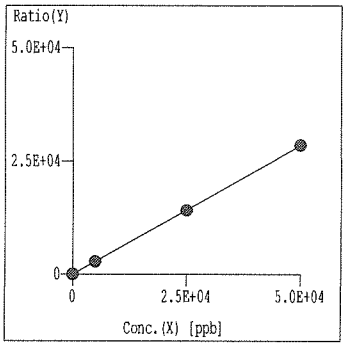
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.649E-001*X +2.113E+001
X = 3.775E+000*Y -7.976E+001
DL = 3.980 ppb
BEC = 79.76 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.423E-001*X +6.977E-001
X = 2.261E+000*Y -1.577E+000
DL = 5.915E-02 ppb
BEC = 1.577 ppb

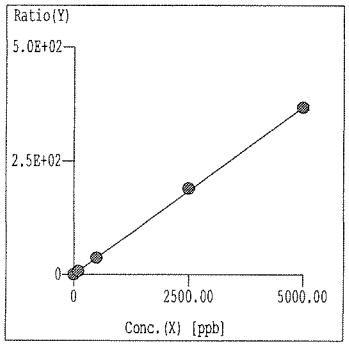
Step	Mass	Element	ISTD	Unit
(3)	27	Al	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.700E-001*X +7.434E-001
X = 1.754E+000*Y -1.304E+000
DL = 1.443E-01 ppb
BEC = 1.304 ppb

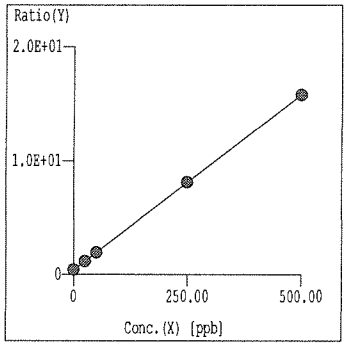
=== Graph Detail ===

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



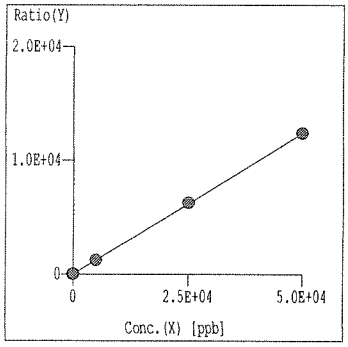
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.358E-002*X +1.403E-001
X = 1.359E+001*Y -1.907E+000
DL = 1.869E-01 ppb
BEC = 1.907 ppb

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



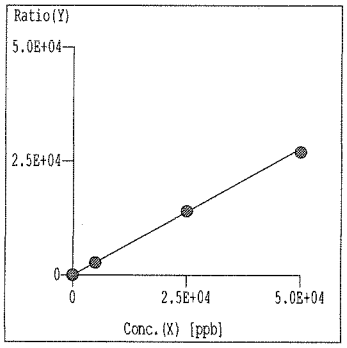
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.075E-002*X +4.111E-001
X = 3.252E+001*Y -1.337E+001
DL = 9.837E-01 ppb
BEC = 13.37 ppb

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



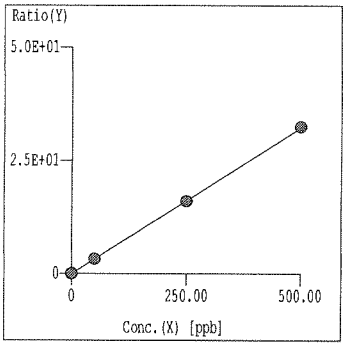
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.468E-001*X +2.297E+001
X = 4.052E+000*Y -9.308E+001
DL = 5.420 ppb
BEC = 93.08 ppb

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



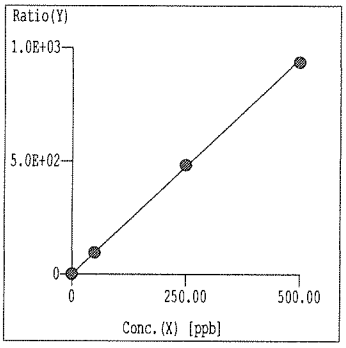
Curve Fit: Y=aX+b
r = 0.9998
Y = 5.557E-001*X +3.435E+000
X = 1.799E+000*Y -6.181E+000
DL = 4.014E-01 ppb
BEC = 6.181 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.454E-002*X +3.831E-003
X = 1.549E+001*Y -5.936E-002
DL = 2.902E-02 ppb
BEC = 5.936E-02 ppb

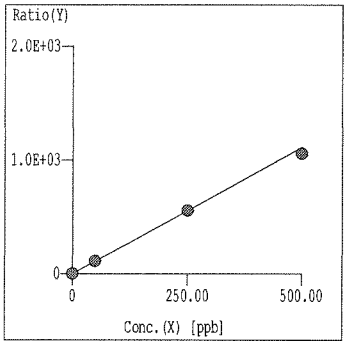
Step Mass Element	ISTD	Unit
(2) 51 V	45	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.903E+000*X +5.637E-001
X = 5.256E-001*Y -2.963E-001
DL = 2.489E-02 ppb
BEC = 2.963E-01 ppb

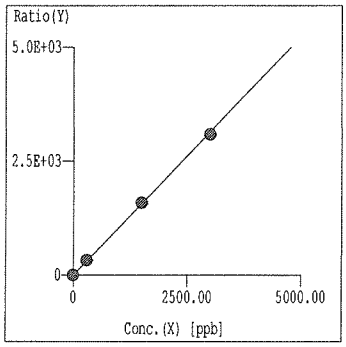
=== Graph Detail ===

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



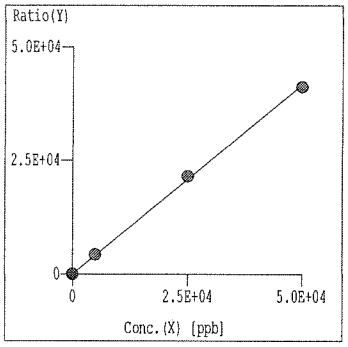
Curve Fit: Y=aX+b
r = 0.9997
Y = 2.223E+000*X +1.525E-001
X = 4.499E-001*Y -6.861E-002
DL = 1.020E-02 ppb
BEC = 6.861E-02 ppb

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



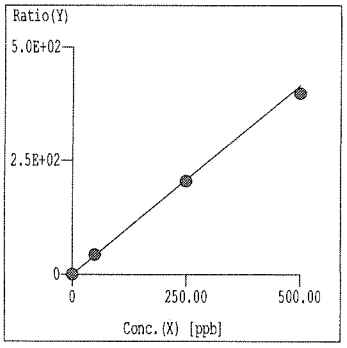
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.047E+000*X +8.937E-002
X = 9.552E-001*Y -8.537E-002
DL = 1.676E-02 ppb
BEC = 8.537E-02 ppb

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



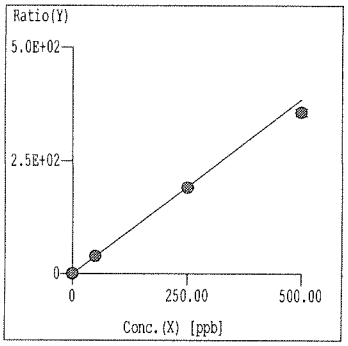
Curve Fit: Y=aX+b
r = 0.9998
Y = 8.336E-001*X +1.449E+000
X = 1.200E+000*Y -1.738E+000
DL = 3.271E-01 ppb
BEC = 1.738 ppb

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



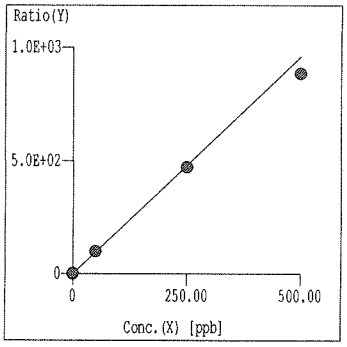
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.307E-001*X +6.162E-003
X = 1.204E+000*Y -7.417E-003
DL = 1.151E-03 ppb
BEC = 7.417E-03 ppb

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



Curve Fit: Y=aX+b
r = 0.9994
Y = 7.711E-001*X +2.239E-002
X = 1.297E+000*Y -2.904E-002
DL = 2.355E-03 ppb
BEC = 2.904E-02 ppb

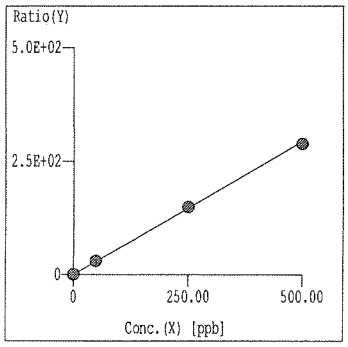
Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9995
Y = 1.918E+000*X +1.390E-001
X = 5.213E-001*Y -7.247E-002
DL = 3.804E-03 ppb
BEC = 7.247E-02 ppb

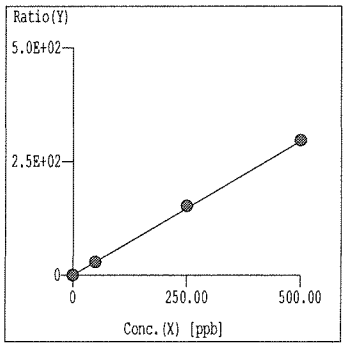
=== Graph Detail ===

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



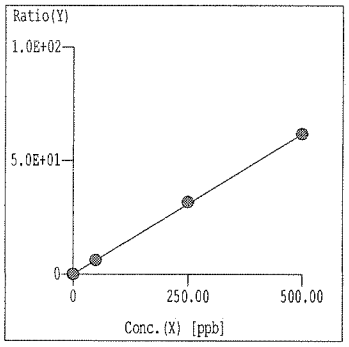
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.867E-001*X +1.981E-001
X = 1.705E+000*Y -3.377E-001
DL = 2.557E-02 ppb
BEC = 3.377E-01 ppb

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



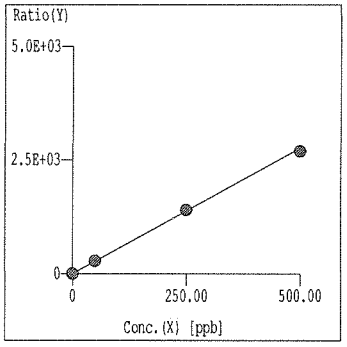
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.895E-001*X +3.156E-002
X = 1.696E+000*Y -5.353E-002
DL = 1.547E-02 ppb
BEC = 5.353E-02 ppb

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



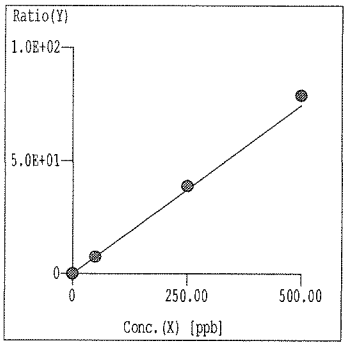
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.232E-001*X +2.748E-003
X = 8.116E+000*Y -2.231E-002
DL = 1.680E-02 ppb
BEC = 2.231E-02 ppb

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



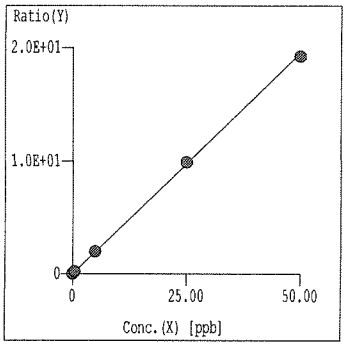
Curve Fit: Y=aX+b
r = 0.9998
Y = 5.519E+000*X +7.148E-002
X = 1.812E-001*Y -1.295E-002
DL = 1.537E-03 ppb
BEC = 1.295E-02 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.492E-001*X +6.199E-003
X = 6.703E+000*Y -4.156E-002
DL = 8.384E-03 ppb
BEC = 4.156E-02 ppb

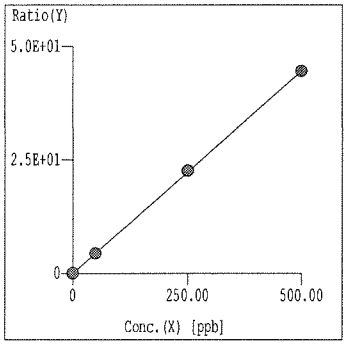
Step Mass Element ISTD Unit
(3) 107 Ag 115 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 3.909E-001*X +6.515E-004
X = 2.558E+000*Y -1.667E-003
DL = 8.779E-04 ppb
BEC = 1.667E-03 ppb

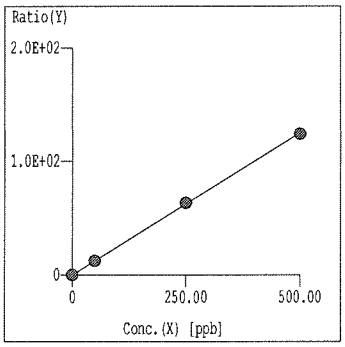
=== Graph Detail ===

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



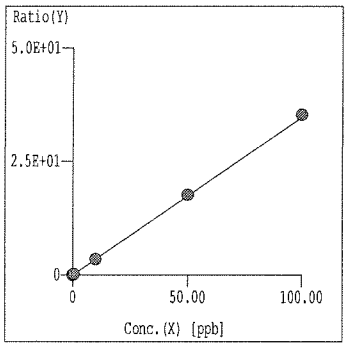
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.906E-002*X +5.033E-004
X = 1.123E+001*Y -5.651E-003
DL = 5.108E-03 ppb
BEC = 5.651E-03 ppb

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



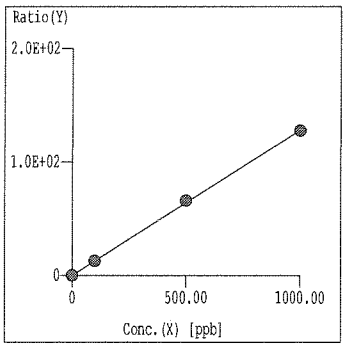
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.496E-001*X +3.210E-003
X = 4.006E+000*Y -1.286E-002
DL = 1.407E-03 ppb
BEC = 1.286E-02 ppb

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



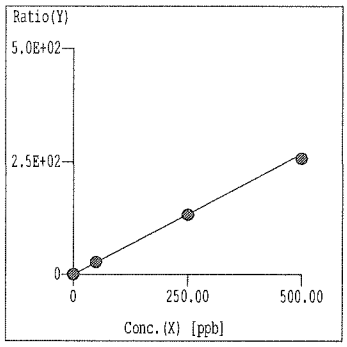
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.470E-001*X +3.631E-003
X = 2.882E+000*Y -1.046E-002
DL = 1.151E-03 ppb
BEC = 1.046E-02 ppb

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



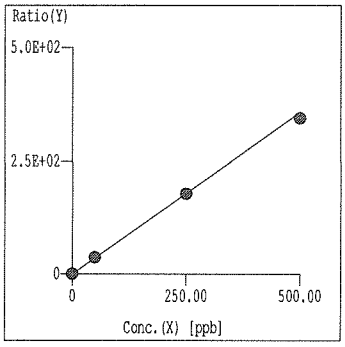
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.280E-001*X +1.408E-003
X = 7.810E+000*Y -1.100E-002
DL = 9.983E-04 ppb
BEC = 1.100E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 5.356E-001*X +3.894E-003
X = 1.867E+000*Y -7.270E-003
DL = 1.041E-03 ppb
BEC = 7.270E-03 ppb

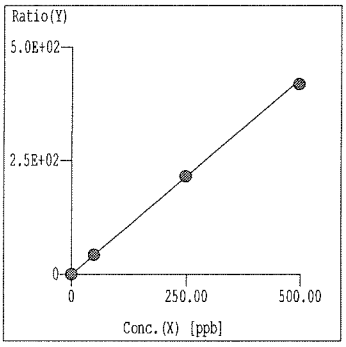
Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 7.166E-001*X +1.059E-002
X = 1.395E+000*Y -1.478E-002
DL = 1.903E-03 ppb
BEC = 1.478E-02 ppb

=== Graph Detail ===

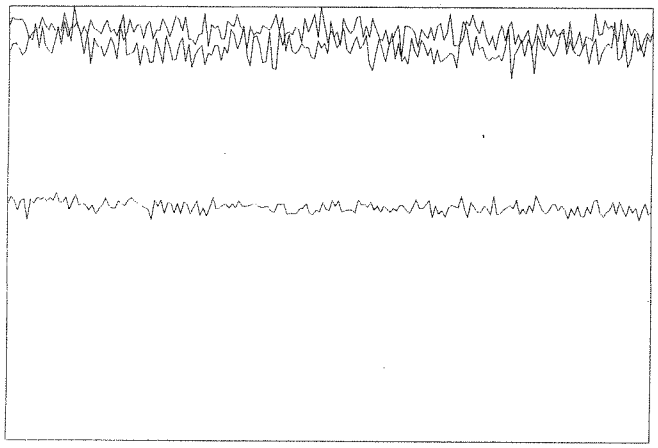
Step	Mass Element	ISTD	Unit
(3)	238 U	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 8.591E-001*X +1.534E-003
X = 1.164E+000*Y -1.786E-003
DL = 1.427E-03 ppb
BEC = 1.786E-03 ppb

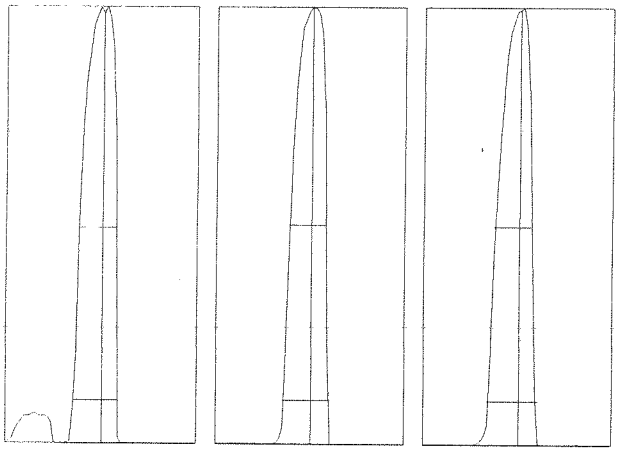
Tune Report

Tune File : NORM.U
Comment : IF6B16



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.288%
Doubly Charged:	70/140	0.794%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	19005.0	18152.2	3.01	2.00
89	100,000	53060.0	53943.6	2.33	2.20
205	50,000	47121.0	47280.8	2.25	5.00
156/140	2	1.352%	1.325%	5.19	
70/140	2	0.751%	0.777%	5.96	



m/z:	7	89	205
Height:	17,759	54,289	47,976
Axis:	7.05	89.05	205.05
W-50%:	0.65	0.60	0.60
W-10%:	0.700	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : Feb 25, 2017 13:10:51
Printed : Feb 25, 2017 13:10:53

Tune Report

Tune File : NORM.U
Comment : IF6B16

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-160 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1 mm	Omega Lens-ce	:	0.2 V	Axis Offset	:	-0.02
Torch-V	:	-0.2 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.15 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2030 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1280 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===

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

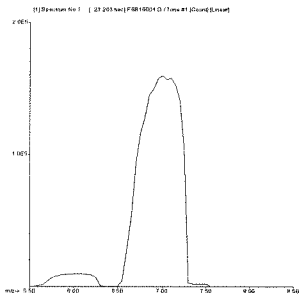
Generated : Feb 25, 2017 13:10:51
Printed : Feb 25, 2017 13:10:55

6020 QC Tune Report

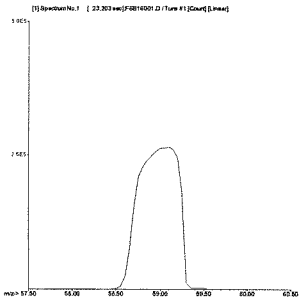
Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16001.D
Date Acquired: Feb 25 2017 01:29 pm
Acq. Method: TN6020_C.M
Operator: CCapul
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

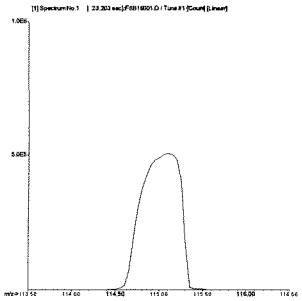
Element	Actual	Required	Flag
7 Li	3.34	5.00	
59 Co	1.64	5.00	
115 In	1.13	5.00	
205 Tl	0.84	5.00	



7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.60
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 115.10

Required: 114.90 - 115.10

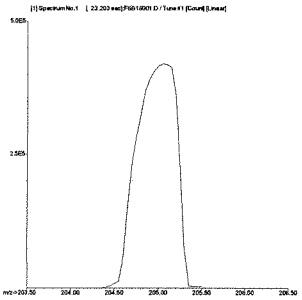
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.05

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.70

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16003
Date Acquired:	Feb 25 2017 01:37 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	Feb 25 2017 01:40 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1735343.00	A	20540.00	1.18
7	Li	107095.80	P	1496.00	1.40
9	Be	33.33	P	5.77	17.32
11	B	6690.59	P	118.40	1.77
23	Na	318337.91	P	1224.00	0.38
24	Mg	27140.71	P	1071.00	3.95
27	Al	25856.47	P	819.90	3.17
28	Si	5161.07	P	66.97	1.30
31	P	13170.96	P	343.90	2.61
39	K	72522.89	P	519.10	0.72
40	Ca	79314.19	P	31.49	0.04
45	Sc	1655857.00	A	10720.00	0.65
45	Sc	341678.31	P	1886.00	0.55
45	Sc	3281411.00	A	30940.00	0.94
47	Ti	166.68	P	23.09	13.85
51	V	1931.47	P	38.86	2.01
52	Cr	513.79	P	23.63	4.60
55	Mn	2893.72	P	117.00	4.04
56	Fe	25850.05	P	160.20	0.62
59	Co	182.23	P	30.97	17.00
60	Ni	71.11	P	1.68	2.36
63	Cu	559.57	P	25.06	4.48
66	Zn	1979.09	P	37.17	1.88
72	Ge	424505.09	P	2676.00	0.63
72	Ge	179221.00	P	655.40	0.37
72	Ge	763329.19	M	12580.00	1.65
75	As	55.56	P	3.42	6.16
78	Se	14.00	P	2.00	14.29
88	Sr	772.27	P	112.40	14.56
90	Zr	1476.79	P	39.31	2.66
95	Mo	393.35	P	11.55	2.94
107	Ag	41.11	P	16.78	40.82
111	Cd	38.11	P	37.32	97.93
115	In	5593051.00	A	31310.00	0.56
118	Sn	240.01	P	20.82	8.67
121	Sb	345.57	P	58.73	17.00
137	Ba	211.12	P	5.09	2.41
159	Tb	8576042.00	A	89580.00	1.04
182	W	376.69	P	49.10	13.04
205	Tl	421.13	P	62.57	14.86
208	Pb	1200.06	P	55.68	4.64
209	Bi	5626546.00	A	71810.00	1.28
235	U	8.89	P	1.93	21.66
238	U	156.67	P	29.06	18.55

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16004
Date Acquired:	Feb 25 2017 01:42 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	Feb 25 2017 01:40 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1614088.00	A	18130.00	1.12
7	Li	99010.66	P	1188.00	1.20
9	Be	16.67	P	0.00	0.00
11	B	3085.98	P	101.70	3.30
23	Na	316011.31	P	2556.00	0.81
24	Mg	20681.47	P	169.20	0.82
27	Al	21997.98	P	766.50	3.48
28	Si	2125.78	P	101.90	4.79
31	P	12566.12	P	280.70	2.23
39	K	71198.98	P	331.30	0.47
40	Ca	51659.17	P	547.70	1.06
45	Sc	1507267.00	A	28300.00	1.88
45	Sc	311671.31	P	4878.00	1.57
45	Sc	2965462.00	A	13550.00	0.46
47	Ti	107.78	P	18.36	17.03
51	V	1725.67	P	30.48	1.77
52	Cr	420.23	P	17.40	4.14
55	Mn	2233.58	P	164.80	7.38
56	Fe	21607.60	P	1168.00	5.41
59	Co	176.67	P	8.82	4.99
60	Ni	69.56	P	2.69	3.87
63	Cu	424.23	P	5.75	1.35
66	Zn	1328.99	P	23.41	1.76
72	Ge	388767.59	P	3667.00	0.94
72	Ge	163622.00	P	1144.00	0.70
72	Ge	686917.50	P	8001.00	1.16
75	As	49.56	P	4.73	9.54
78	Se	10.44	P	2.69	25.79
88	Sr	488.91	P	20.09	4.11
90	Zr	1052.30	P	68.02	6.46
95	Mo	297.79	P	21.69	7.28
107	Ag	33.33	P	5.77	17.32
111	Cd	24.39	P	7.66	31.41
115	In	5137749.00	A	28910.00	0.56
118	Sn	164.45	P	5.09	3.10
121	Sb	186.67	P	5.77	3.09
137	Ba	72.23	P	1.93	2.67
159	Tb	7909563.00	A	59520.00	0.75
182	W	228.90	P	1.92	0.84
205	Tl	305.57	P	12.62	4.13
208	Pb	796.71	P	40.41	5.07
209	Bi	5154280.00	A	55520.00	1.08
235	U	6.67	P	3.33	49.99
238	U	114.45	P	32.38	28.29

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16005.D\F6B16005.D#
Date Acquired:	Feb 25 2017 01:47 pm
Operator:	CCapul
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 25 2017 01:45 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1624592.00	A	2322.00	0.14
7 Li	107170.90	P	2120.00	1.98
9 Be	2606.99	P	95.65	3.67
11 B	7027.42	P	85.32	1.21
23 Na	531483.31	P	1804.00	0.34
24 Mg	712712.19	A	14880.00	2.09
27 Al	887819.31	A	12480.00	1.41
28 Si	113739.50	P	985.20	0.87
31 P	34846.81	P	480.30	1.38
39 K	110650.50	P	71.74	0.06
40 Ca	480731.81	P	3257.00	0.68
45 Sc	1530318.00	A	29150.00	1.90
45 Sc	312557.31	P	3199.00	1.02
45 Sc	2986679.00	A	9797.00	0.33
47 Ti	1151.19	P	64.07	5.57
51 V	4787.02	P	31.75	0.66
52 Cr	4262.63	P	26.56	0.62
55 Mn	20982.08	P	485.70	2.31
56 Fe	738694.19	M	13530.00	1.83
59 Co	14133.87	P	107.10	0.76
60 Ni	1371.18	P	30.74	2.24
63 Cu	5582.86	P	87.36	1.56
66 Zn	5445.62	P	39.08	0.72
72 Ge	394397.50	P	4017.00	1.02
72 Ge	163958.30	P	1175.00	0.72
72 Ge	688200.63	P	2946.00	0.43
75 As	541.35	P	11.37	2.10
78 Se	264.00	P	18.81	7.12
88 Sr	20219.18	P	319.40	1.58
90 Zr	100274.20	P	337.30	0.34
95 Mo	4227.42	P	50.46	1.19
107 Ag	10677.64	P	347.70	3.26
111 Cd	2532.80	P	89.53	3.53
115 In	5154973.00	A	47150.00	0.91
118 Sn	6618.42	P	90.30	1.36
121 Sb	9113.21	P	73.77	0.81
137 Ba	3454.99	P	39.77	1.15
159 Tb	7865982.00	A	86820.00	1.10
182 W	9714.89	P	225.10	2.32
205 Tl	22086.57	P	194.80	0.88
208 Pb	31991.43	P	282.90	0.88
209 Bi	5154075.00	A	25730.00	0.50
235 U	270.01	P	31.80	11.78
238 U	34951.57	P	499.80	1.43

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1624592.40	0.14	1614087.90	100.7	60 - 125	
45 Sc	1530318.00	1.90	1507267.40	101.5	60 - 125	
45 Sc	312557.34	1.02	311671.31	100.3	60 - 125	
45 Sc	2986679.30	0.33	2965461.50	100.7	60 - 125	
72 Ge	394397.47	1.02	388767.63	101.4	60 - 125	
72 Ge	163958.31	0.72	163622.05	100.2	60 - 125	
72 Ge	688200.56	0.43	686917.50	100.2	60 - 125	
115 In	5154973.50	0.91	5137748.50	100.3	60 - 125	
159 Tb	7865982.50	1.10	7909563.00	99.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16006.D\F6B16006.D#
Date Acquired:	Feb 25 2017 01:51 pm
Operator:	CCapul
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 25 2017 01:50 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1594605.00	A	19420.00	1.22
7 Li	175381.30	P	1126.00	0.64
9 Be	25160.27	P	296.40	1.18
11 B	36414.58	P	480.50	1.32
23 Na	20315830.00	A	112900.00	0.56
24 Mg	65142460.00	A	1163000.00	1.79
27 Al	82998200.00	A	899500.00	1.08
28 Si	560328.69	P	7422.00	1.32
31 P	57550.03	P	662.70	1.15
39 K	3916463.00	A	56810.00	1.45
40 Ca	41112380.00	A	460300.00	1.12
45 Sc	1518319.00	A	20870.00	1.37
45 Sc	314378.09	P	1988.00	0.63
45 Sc	2971593.00	A	36020.00	1.21
47 Ti	96224.57	P	836.00	0.87
51 V	299350.09	P	1556.00	0.52
52 Cr	350836.19	P	3274.00	0.93
55 Mn	9675327.00	A	123900.00	1.28
56 Fe	65199672.00	A	453500.00	0.70
59 Co	1277785.00	A	16210.00	1.27
60 Ni	121879.60	P	364.40	0.30
63 Cu	310097.81	P	1490.00	0.48
66 Zn	205164.20	P	877.60	0.43
72 Ge	383504.59	P	2870.00	0.75
72 Ge	164590.20	P	2059.00	1.25
72 Ge	682003.19	P	4125.00	0.60
75 As	47844.84	P	440.30	0.92
78 Se	23848.05	P	196.40	0.82
88 Sr	1905679.00	A	4695.00	0.25
90 Zr	228467.20	P	1582.00	0.69
95 Mo	366952.69	P	2157.00	0.59
107 Ag	97422.11	P	936.00	0.96
111 Cd	217864.30	P	2384.00	1.09
115 In	4933133.00	A	30180.00	0.61
118 Sn	610936.81	P	5885.00	0.96
121 Sb	170385.00	P	409.70	0.24
137 Ba	629297.38	P	3353.00	0.53
159 Tb	7732591.00	A	46360.00	0.60
182 W	96446.15	P	488.70	0.51
205 Tl	2096928.00	A	21570.00	1.03
208 Pb	2838300.00	A	19940.00	0.70
209 Bi	4953124.00	A	27220.00	0.55
235 U	24483.44	P	322.50	1.32
238 U	3299335.00	A	9648.00	0.29

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1594605.50	1.22	1614087.90	98.8	60 - 125	
45 Sc	1518318.90	1.37	1507267.40	100.7	60 - 125	
45 Sc	314378.06	0.63	311671.31	100.9	60 - 125	
45 Sc	2971592.80	1.21	2965461.50	100.2	60 - 125	
72 Ge	383504.66	0.75	388767.63	98.6	60 - 125	
72 Ge	164590.25	1.25	163622.05	100.6	60 - 125	
72 Ge	682003.19	0.60	686917.50	99.3	60 - 125	
115 In	4933133.50	0.61	5137748.50	96.0	60 - 125	
159 Tb	7732590.50	0.60	7909563.00	97.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

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

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16007.D\F6B16007.D#
Date Acquired:	Feb 25 2017 01:56 pm
Operator:	CCapul
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 25 2017 01:54 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1604029.00	A	23920.00	1.49
7 Li	494941.09	P	4070.00	0.82
9 Be	128608.90	P	582.50	0.45
11 B	172325.80	P	1322.00	0.77
23 Na	101773400.00	A	1824000.00	1.79
24 Mg	335803810.00	A	5785000.00	1.72
27 Al	429868190.00	A	3566000.00	0.83
28 Si	2854253.00	A	50550.00	1.77
31 P	246788.91	P	2200.00	0.89
39 K	19471450.00	A	162300.00	0.83
40 Ca	210700100.00	A	2747000.00	1.30
45 Sc	1506535.00	A	20270.00	1.35
45 Sc	310440.31	P	2596.00	0.84
45 Sc	3043675.00	A	33780.00	1.11
47 Ti	487821.00	P	2551.00	0.52
51 V	1496671.00	A	18440.00	1.23
52 Cr	1724327.00	A	15640.00	0.91
55 Mn	48249040.00	A	218000.00	0.45
56 Fe	323064990.00	A	4326000.00	1.34
59 Co	6209945.00	A	64860.00	1.04
60 Ni	591774.88	P	432.20	0.07
63 Cu	1463791.00	A	1695.00	0.12
66 Zn	998656.69	A	8629.00	0.86
72 Ge	371961.31	P	3939.00	1.06
72 Ge	158323.30	P	853.30	0.54
72 Ge	671087.50	P	3501.00	0.52
75 As	241064.30	P	827.30	0.34
78 Se	117758.90	P	1654.00	1.40
88 Sr	9377971.00	A	87830.00	0.94
90 Zr	597775.38	P	4505.00	0.75
95 Mo	1845832.00	A	20310.00	1.10
107 Ag	469865.00	P	3203.00	0.68
111 Cd	1073334.00	A	6673.00	0.62
115 In	4755645.00	A	55410.00	1.17
118 Sn	3005570.00	A	18320.00	0.61
121 Sb	835037.81	A	4233.00	0.51
137 Ba	3126768.00	A	37910.00	1.21
159 Tb	7599036.00	A	80110.00	1.05
182 W	465965.09	P	1689.00	0.36
205 Tl	10044570.00	A	64510.00	0.64
208 Pb	13530130.00	A	96970.00	0.72
209 Bi	4664794.00	A	8172.00	0.18
235 U	121247.10	P	967.00	0.80
238 U	16293630.00	A	36770.00	0.23

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1604029.50	1.49	1614087.90	99.4	60 - 125	
45 Sc	1506535.50	1.35	1507267.40	100.0	60 - 125	
45 Sc	310440.25	0.84	311671.31	99.6	60 - 125	
45 Sc	3043675.00	1.11	2965461.50	102.6	60 - 125	
72 Ge	371961.31	1.06	388767.63	95.7	60 - 125	
72 Ge	158323.30	0.54	163622.05	96.8	60 - 125	
72 Ge	671087.50	0.52	686917.50	97.7	60 - 125	
115 In	4755645.00	1.17	5137748.50	92.6	60 - 125	
159 Tb	7599035.50	1.05	7909563.00	96.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16008.D\F6B16008.D#
Date Acquired:	Feb 25 2017 02:00 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 25 2017 01:58 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1642945.00	A	10630.00	0.65
7 Li	918163.50	A	9317.00	1.01
9 Be	256723.20	P	2209.00	0.86
11 B	342762.41	P	1744.00	0.51
23 Na	203020990.00	A	3632000.00	1.79
24 Mg	677633090.00	A	3340000.00	0.49
27 Al	874437630.00	A	8694000.00	0.99
28 Si	5681818.00	A	89110.00	1.57
31 P	483352.31	P	6364.00	1.32
39 K	38806620.00	A	511700.00	1.32
40 Ca	416838300.00	A	8172000.00	1.96
45 Sc	1548712.00	A	27860.00	1.80
45 Sc	313826.69	P	4468.00	1.42
45 Sc	3067835.00	A	24880.00	0.81
47 Ti	995368.81	A	1775.00	0.18
51 V	2937026.00	A	27170.00	0.93
52 Cr	3312782.00	A	33660.00	1.02
55 Mn	94492032.00	A	162700.00	0.17
56 Fe	637648770.00	A	10520000.00	1.65
59 Co	12194210.00	A	31210.00	0.26
60 Ni	1120361.00	A	10090.00	0.90
63 Cu	2776993.00	A	23150.00	0.83
66 Zn	1941603.00	A	9934.00	0.51
72 Ge	369640.81	P	4249.00	1.15
72 Ge	158412.30	P	2151.00	1.36
72 Ge	675263.19	P	2326.00	0.34
75 As	469640.91	P	2450.00	0.52
78 Se	227646.70	P	2450.00	1.08
88 Sr	18140550.00	A	139000.00	0.77
90 Zr	1237428.00	A	8451.00	0.68
95 Mo	3630970.00	A	22640.00	0.62
107 Ag	884958.00	A	5915.00	0.67
111 Cd	2050100.00	A	25490.00	1.24
115 In	4604393.00	A	57320.00	1.24
118 Sn	5696022.00	A	74340.00	1.31
121 Sb	1623732.00	A	11500.00	0.71
137 Ba	5868893.00	A	66740.00	1.14
159 Tb	7376129.00	A	44440.00	0.60
182 W	926481.31	A	10590.00	1.14
205 Tl	18947900.00	A	176100.00	0.93
208 Pb	25419830.00	A	90400.00	0.36
209 Bi	4430164.00	A	22200.00	0.50
235 U	231393.41	P	2235.00	0.97
238 U	30808050.00	A	229900.00	0.75

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1642944.50	0.65	1614087.90	101.8	60 - 125	
45 Sc	1548712.50	1.80	1507267.40	102.7	60 - 125	
45 Sc	313826.69	1.42	311671.31	100.7	60 - 125	
45 Sc	3067835.30	0.81	2965461.50	103.5	60 - 125	
72 Ge	369640.81	1.15	388767.63	95.1	60 - 125	
72 Ge	158412.30	1.36	163622.05	96.8	60 - 125	
72 Ge	675263.19	0.34	686917.50	98.3	60 - 125	
115 In	4604393.00	1.24	5137748.50	89.6	60 - 125	
159 Tb	7376129.00	0.60	7909563.00	93.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16009.D\F6B16009.D#
Date Acquired:	Feb 25 2017 02:04 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.54	ppb	594442.6	2.82	30.00	90 - 110	
9 Be	28.74	ppb	156546.2	1.71	30.00	90 - 110	
11 B	28.77	ppb	108003.4	1.23	30.00	90 - 110	
23 Na	30240.00	ppb	123508600.0	1.23	30000.00	90 - 110	
24 Mg	29690.00	ppb	415033600.0	2.18	30000.00	90 - 110	
27 Al	29620.00	ppb	533489310.0	2.24	30000.00	90 - 110	
28 Si	3055.00	ppb	3458480.0	0.61	3000.00	90 - 110	
31 P	295.50	ppb	300186.0	0.41	300.00	90 - 110	
39 K	29750.00	ppb	23744320.0	0.89	30000.00	90 - 110	
40 Ca	29370.00	ppb	251036990.0	0.47	30000.00	90 - 110	
47 Ti	290.00	ppb	591690.9	1.27	300.00	90 - 110	
51 V	286.60	ppb	1760466.0	0.41	300.00	90 - 110	
52 Cr	282.30	ppb	2023975.0	0.30	300.00	90 - 110	
55 Mn	1895.00	ppb	62687512.0	1.65	2000.00	90 - 110	
56 Fe	29620.00	ppb	379707300.0	0.70	30000.00	90 - 110	
59 Co	279.60	ppb	7342310.0	1.55	300.00	90 - 110	
60 Ni	277.50	ppb	690113.6	0.42	300.00	90 - 110	
63 Cu	276.30	ppb	1709305.0	0.58	300.00	90 - 110	
66 Zn	293.50	ppb	1191146.0	0.10	300.00	90 - 110	
75 As	291.60	ppb	282846.8	1.21	300.00	90 - 110	
78 Se	293.10	ppb	135782.4	0.66	300.00	90 - 110	
88 Sr	284.00	ppb	10829910.0	0.62	300.00	90 - 110	
90 Zr	20.93	ppb	636506.4	0.50	30.00	90 - 110	Fail
95 Mo	297.30	ppb	2138484.0	0.22	300.00	90 - 110	
107 Ag	28.77	ppb	542200.2	0.53	30.00	90 - 110	
111 Cd	289.20	ppb	1241929.0	0.67	300.00	90 - 110	
118 Sn	291.70	ppb	3511111.0	0.42	300.00	90 - 110	
121 Sb	59.65	ppb	998229.2	0.12	60.00	90 - 110	
137 Ba	299.70	ppb	1850045.0	0.23	300.00	90 - 110	
182 W	28.98	ppb	552505.6	0.17	30.00	90 - 110	
205 Tl	279.10	ppb	11468920.0	0.86	300.00	90 - 110	
208 Pb	281.90	ppb	15499750.0	0.63	300.00	90 - 110	
235 U	1.89	ppb	137471.3	1.22	2.20	90 - 110	Fail
238 U	282.80	ppb	18642670.0	0.82	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1727955.1	2.14	1614087.90	107.1	60 - 125	
45 Sc	1537795.4	1.54	1507267.40	102.0	60 - 125	
45 Sc	322456.8	0.98	311671.31	103.5	60 - 125	
45 Sc	3161030.3	2.19	2965461.50	106.6	60 - 125	
72 Ge	375885.5	0.24	388767.63	96.7	60 - 125	
72 Ge	164503.7	1.19	163622.05	100.5	60 - 125	
72 Ge	690932.6	0.65	686917.50	100.6	60 - 125	
115 In	4821653.5	0.90	5137748.50	93.8	60 - 125	
159 Tb	7671563.0	0.81	7909563.00	97.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16010.D\F6B16010.D#
Date Acquired:	Feb 25 2017 02:08 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0055	ppb	109187.6	1686.40	0.20	
9 Be	0.0010	ppb	24.4	118.75	0.10	
11 B	-0.1993	ppb	4510.8	44.34	5.00	
23 Na	-11.4800	ppb	292036.3	8.09	40.00	
24 Mg	0.4108	ppb	27920.9	24.00	10.00	
27 Al	0.3096	ppb	29203.7	22.97	20.00	
28 Si	0.6476	ppb	3034.9	16.85	20.00	
31 P	0.4956	ppb	13529.0	108.05	10.00	
39 K	-2.1630	ppb	73178.4	6.33	20.00	
40 Ca	0.4386	ppb	59407.6	27.95	25.00	
47 Ti	-0.0018	ppb	117.8	496.85	0.50	
51 V	-0.0232	ppb	1695.0	21.71	0.50	
52 Cr	-0.0022	ppb	481.6	131.97	0.20	
55 Mn	0.0163	ppb	3379.4	23.79	0.20	
56 Fe	3.1680	ppb	66030.4	6.61	10.00	
59 Co	0.0048	ppb	323.3	19.26	0.20	
60 Ni	0.0003	ppb	73.8	382.88	0.20	
63 Cu	0.0198	ppb	577.6	23.05	0.40	
66 Zn	-0.0092	ppb	1361.2	322.02	2.00	
75 As	0.0392	ppb	92.9	25.59	0.20	
78 Se	0.0684	ppb	45.3	18.56	0.20	
90 Zr	-0.1171	ppb	586.7	0.54	2.00	
95 Mo	0.1140	ppb	1223.4	7.56	0.40	
107 Ag	0.0004	ppb	42.2	163.92	0.20	
111 Cd	0.0159	ppb	101.0	24.61	0.20	
118 Sn	0.1130	ppb	1656.8	11.11	0.20	
121 Sb	0.0153	ppb	472.2	0.94	0.40	
137 Ba	0.0109	ppb	147.8	17.68	0.20	
182 W	0.0183	ppb	597.8	31.30	1.00	
205 Tl	0.0460	ppb	2292.5	7.02	0.20	
208 Pb	0.0090	ppb	1370.1	15.23	0.10	
235 U	0.0004	ppb	33.3	33.22	1.00	
238 U	0.0365	ppb	2645.9	4.83	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1798115.6	0.99	1614087.90	111.4	60 - 125	
45 Sc	1615037.6	1.17	1507267.40	107.2	60 - 125	
45 Sc	326188.8	0.64	311671.31	104.7	60 - 125	
45 Sc	3174026.5	0.98	2965461.50	107.0	60 - 125	
72 Ge	405625.4	0.44	388767.63	104.3	60 - 125	
72 Ge	169891.6	0.30	163622.05	103.8	60 - 125	
72 Ge	706247.4	0.34	686917.50	102.8	60 - 125	
115 In	5275113.0	0.87	5137748.50	102.7	60 - 125	
159 Tb	8039250.0	0.39	7909563.00	101.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16011.D\F6B16011.D#
Date Acquired: Feb 25 2017 02:13 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLB2501
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Feb 25 2017 02:02 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	122054.7	0.0000	1.0690	ppb	5.05	50.00	
9 Be	# 3	6	5473.4	0.0000	1.0100	ppb	1.17	50.00	
11 B	# 3	6	40405.8	0.0000	9.9810	ppb	1.12	100.00	
23 Na	# 1	45	749082.5	0.0000	100.0000	ppb	0.77	50000.00	
24 Mg	# 3	45	1508538.0	0.0000	107.6000	ppb	2.04	50000.00	
27 Al	# 3	45	1885970.0	0.0000	104.7000	ppb	0.64	50000.00	
28 Si	# 1	45	3731.7	0.0000	1.3170	ppb	7.05	5000.00	
31 P	# 3	45	64068.6	0.0000	53.3500	ppb	1.52	500.00	
39 K	# 2	45	156818.5	0.0000	104.3000	ppb	1.60	50000.00	
40 Ca	# 1	45	967199.5	0.0000	104.5000	ppb	0.95	50000.00	
47 Ti	# 3	45	2194.7	0.0000	1.0300	ppb	0.67	500.00	
51 V	# 2	45	7951.3	0.0000	1.0020	ppb	1.21	500.00	
52 Cr	# 2	45	7779.6	0.0000	1.0180	ppb	1.61	500.00	
55 Mn	# 3	45	38845.1	0.0000	1.1030	ppb	1.36	3000.00	
56 Fe	# 1	45	1453373.0	0.0000	109.1000	ppb	0.35	50000.00	
59 Co	# 3	45	28733.2	0.0000	1.1000	ppb	2.11	500.00	
60 Ni	# 2	45	2637.1	0.0000	1.0330	ppb	1.98	500.00	
63 Cu	# 2	45	7176.7	0.0000	1.0890	ppb	0.89	500.00	
66 Zn	# 3	72	45720.6	0.0000	10.7200	ppb	2.26	500.00	
75 As	# 2	72	1088.7	0.0000	1.0640	ppb	2.18	500.00	
78 Se	# 1	72	491.1	0.0000	0.9864	ppb	1.04	500.00	
88 Sr	# 3	72	83539.8	0.0000	2.1350	ppb	1.19	500.00	
90 Zr	# 3	72	78662.9	0.0000	2.4160	ppb	1.20	50.00	
95 Mo	# 3	115	8432.7	0.0000	1.0400	ppb	1.98	500.00	
107 Ag	# 3	115	21177.4	0.0000	1.0350	ppb	1.50	50.00	
111 Cd	# 3	115	4818.3	0.0000	1.0300	ppb	0.74	500.00	
118 Sn	# 3	115	13840.5	0.0000	1.0480	ppb	1.54	500.00	
121 Sb	# 3	115	18445.8	0.0000	1.0070	ppb	1.94	500.00	
137 Ba	# 3	115	6803.0	0.0000	1.0060	ppb	1.12	1000.00	
182 W	# 3	159	39148.1	0.0000	1.9710	ppb	2.09	50.00	
205 Tl	# 3	159	44730.9	0.0000	1.0430	ppb	1.10	500.00	
208 Pb	# 3	159	62496.6	0.0000	1.0820	ppb	0.36	500.00	
235 U	# 3	159	523.4	0.0000	0.0068	ppb	6.80	30.00	
238 U	# 3	159	68684.9	0.0000	1.0040	ppb	0.93	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1712487.50	0.95	1614087.90	106.1	60 - 125	
45 Sc # 1	1572795.50	1.33	1507267.40	104.3	60 - 125	
45 Sc # 2	322037.41	0.83	311671.31	103.3	60 - 125	
45 Sc # 3	3122888.30	0.31	2965461.50	105.3	60 - 125	
72 Ge # 1	395126.91	1.11	388767.63	101.6	60 - 125	
72 Ge # 2	165249.59	0.35	163622.05	101.0	60 - 125	
72 Ge # 3	704786.06	1.56	686917.50	102.6	60 - 125	
115 In # 3	5225600.50	0.60	5137748.50	101.7	60 - 125	
159 Tb # 3	7951959.00	1.14	7909563.00	100.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

0 :Element Failures
0 :ISTD Failures

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16012.D\F6B16012.D#
Date Acquired: Feb 25 2017 02:17 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLB2502
Misc Info: 0.5/50/4 ppb
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Feb 25 2017 02:02 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	116850.5	0.0000	0.5180	ppb	32.90	50.00	
9 Be	# 3	6	2614.8	0.0000	0.4640	ppb	5.46	50.00	
11 B	# 3	6	5962.5	0.0000	0.2111	ppb	46.62	100.00	
23 Na	# 1	45	513045.5	0.0000	47.5100	ppb	1.35	50000.00	
24 Mg	# 3	45	774256.9	0.0000	53.8700	ppb	1.34	50000.00	
27 Al	# 3	45	980181.0	0.0000	53.1700	ppb	0.30	50000.00	
28 Si	# 1	45	5537.9	0.0000	3.0380	ppb	1.11	5000.00	
31 P	# 3	45	12889.6	0.0000	-0.0913	ppb	77.01	500.00	
39 K	# 2	45	116556.9	0.0000	51.3400	ppb	2.89	50000.00	
40 Ca	# 1	45	620147.0	0.0000	67.1400	ppb	0.65	50000.00	
47 Ti	# 3	45	1199.0	0.0000	0.5289	ppb	5.15	500.00	
51 V	# 2	45	5060.2	0.0000	0.5171	ppb	3.86	500.00	
52 Cr	# 2	45	4428.9	0.0000	0.5407	ppb	1.94	500.00	
55 Mn	# 3	45	22606.8	0.0000	0.5988	ppb	3.94	3000.00	
56 Fe	# 1	45	750000.5	0.0000	57.3700	ppb	2.69	50000.00	
59 Co	# 3	45	15013.7	0.0000	0.5651	ppb	1.30	500.00	
60 Ni	# 2	45	1420.5	0.0000	0.5341	ppb	1.74	500.00	
63 Cu	# 2	45	3970.1	0.0000	0.5604	ppb	1.00	500.00	
66 Zn	# 3	72	21556.4	0.0000	4.8680	ppb	2.19	500.00	
75 As	# 2	72	565.1	0.0000	0.5131	ppb	3.07	500.00	
78 Se	# 1	72	264.7	0.0000	0.5385	ppb	2.90	500.00	
88 Sr	# 3	72	21667.9	0.0000	0.5432	ppb	0.60	500.00	
90 Zr	# 3	72	2162.5	0.0000	-0.0661	ppb	2.41	50.00	
95 Mo	# 3	115	4425.3	0.0000	0.5114	ppb	3.15	500.00	
107 Ag	# 3	115	6695.1	0.0000	0.3176	ppb	1.41	50.00	
111 Cd	# 3	115	2480.5	0.0000	0.5136	ppb	1.42	500.00	
118 Sn	# 3	115	7202.0	0.0000	0.5250	ppb	1.63	500.00	
121 Sb	# 3	115	9271.1	0.0000	0.4876	ppb	1.51	500.00	
137 Ba	# 3	115	3603.9	0.0000	0.5136	ppb	4.56	1000.00	
182 W	# 3	159	305.6	0.0000	0.0035	ppb	12.08	50.00	
205 Tl	# 3	159	23768.3	0.0000	0.5396	ppb	2.43	500.00	
208 Pb	# 3	159	32593.2	0.0000	0.5457	ppb	1.27	500.00	
235 U	# 3	159	230.0	0.0000	0.0029	ppb	10.30	30.00	
238 U	# 3	159	36492.5	0.0000	0.5215	ppb	1.75	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1776446.00	2.65	1614087.90	110.1	60 - 125	
45 Sc # 1	1521932.90	0.69	1507267.40	101.0	60 - 125	
45 Sc # 2	327094.13	2.03	311671.31	104.9	60 - 125	
45 Sc # 3	3157181.50	1.36	2965461.50	106.5	60 - 125	
72 Ge # 1	383031.00	1.27	388767.63	98.5	60 - 125	
72 Ge # 2	169174.31	0.99	163622.05	103.4	60 - 125	
72 Ge # 3	705893.38	0.68	686917.50	102.8	60 - 125	
115 In # 3	5364216.50	0.95	5137748.50	104.4	60 - 125	
159 Tb # 3	8115831.50	1.83	7909563.00	102.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

0 :Element Failures
0 :ISTD Failures

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

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16013.D\F6B16013.D#
Date Acquired:	Feb 25 2017 02:22 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.47	ppb	100356.2	8.90	---	
9 Be	0.01	ppb	66.7	31.22	---	
11 B	0.22	ppb	5187.7	26.23	---	
23 Na	102100.00	ppb	377485790.0	0.45	120000.00	
24 Mg	99890.00	ppb	1284657000.0	0.83	120000.00	
27 Al	97350.00	ppb	1613257000.0	0.72	120000.00	
28 Si	7.98	ppb	10150.4	0.97	---	
31 P	102600.00	ppb	91740256.0	0.37	---	
39 K	101300.00	ppb	76090760.0	0.73	120000.00	
40 Ca	100400.00	ppb	778736900.0	0.82	120000.00	
47 Ti	2089.00	ppb	3920444.0	0.40	2400.00	
51 V	0.03	ppb	1865.0	6.84	---	
52 Cr	1.29	ppb	9149.3	0.76	---	
55 Mn	0.16	ppb	7542.1	2.81	---	
56 Fe	100700.00	ppb	1171286000.0	0.44	120000.00	
59 Co	0.16	ppb	4142.9	1.76	---	
60 Ni	0.17	ppb	472.7	2.12	---	
63 Cu	0.66	ppb	4264.0	1.14	---	
66 Zn	1.64	ppb	7722.3	1.56	---	
75 As	0.16	ppb	193.6	1.73	---	
78 Se	0.06	ppb	35.1	26.82	---	
88 Sr	0.65	ppb	24122.9	1.00	---	
90 Zr	0.15	ppb	8329.4	9.88	---	
95 Mo	2121.00	ppb	13920030.0	0.33	2400.00	
107 Ag	0.02	ppb	364.5	8.77	---	
111 Cd	0.19	ppb	756.8	16.34	---	
118 Sn	0.05	ppb	638.9	4.63	---	
121 Sb	0.05	ppb	881.2	3.47	---	
137 Ba	0.10	ppb	607.8	3.89	---	
182 W	0.13	ppb	2399.2	2.01	---	
205 Tl	0.01	ppb	713.4	10.42	---	
208 Pb	0.22	ppb	11955.8	1.49	---	
235 U	0.00	ppb	20.0	61.52	---	
238 U	0.01	ppb	527.8	8.82	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1536341.1	1.36	1614087.90	95.2	60 - 125	
45 Sc	1395143.5	2.00	1507267.40	92.6	60 - 125	
45 Sc	304110.9	1.38	311671.31	97.6	60 - 125	
45 Sc	2907548.5	0.90	2965461.50	98.0	60 - 125	
72 Ge	337975.3	1.32	388767.63	86.9	60 - 125	
72 Ge	154836.6	1.18	163622.05	94.6	60 - 125	
72 Ge	664372.9	1.41	686917.50	96.7	60 - 125	
115 In	4399506.0	1.32	5137748.50	85.6	60 - 125	
159 Tb	6979713.5	0.52	7909563.00	88.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16014.D\F6B16014.D#
Date Acquired:	Feb 25 2017 02:27 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	19.85	ppb	388873.8	0.73	20.00	80 - 120	
9 Be	20.08	ppb	95502.8	0.49	20.00	80 - 120	
11 B	19.18	ppb	64332.2	2.33	20.00	80 - 120	
23 Na	102400.00	ppb	398238300.0	0.95	100000.00	80 - 120	
24 Mg	99950.00	ppb	1263652000.0	0.21	100000.00	80 - 120	
27 Al	98730.00	ppb	1608526000.0	0.33	100000.00	80 - 120	
28 Si	211.40	ppb	230302.9	0.35	200.00	80 - 120	
31 P	102700.00	ppb	90286784.0	1.18	100000.00	80 - 120	
39 K	103000.00	ppb	77401720.0	1.61	100000.00	80 - 120	
40 Ca	99000.00	ppb	807368830.0	1.31	100000.00	80 - 120	
47 Ti	2103.00	ppb	3880042.0	0.63	2000.00	80 - 120	
51 V	20.19	ppb	118512.6	0.70	20.00	80 - 120	
52 Cr	20.62	ppb	139837.3	1.12	20.00	80 - 120	
55 Mn	20.26	ppb	608886.8	0.95	20.00	80 - 120	
56 Fe	99550.00	ppb	1217751000.0	1.00	100000.00	80 - 120	
59 Co	20.20	ppb	479813.0	1.29	20.00	80 - 120	
60 Ni	18.76	ppb	44063.3	0.70	20.00	80 - 120	
63 Cu	19.08	ppb	111739.9	1.35	20.00	80 - 120	
66 Zn	20.86	ppb	80593.2	0.28	20.00	80 - 120	
75 As	21.15	ppb	19273.1	0.72	20.00	80 - 120	
78 Se	21.82	ppb	9521.6	0.60	20.00	80 - 120	
88 Sr	20.13	ppb	720680.7	0.44	20.00	80 - 120	
90 Zr	2.28	ppb	68571.7	1.05	20.00	80 - 120	Fail
95 Mo	2149.00	ppb	13852460.0	0.96	2000.00	80 - 120	
107 Ag	19.19	ppb	324110.7	1.63	20.00	80 - 120	
111 Cd	19.80	ppb	76232.8	0.97	20.00	80 - 120	
118 Sn	19.93	ppb	215154.5	1.02	20.00	80 - 120	
121 Sb	20.41	ppb	306234.6	1.05	20.00	80 - 120	
137 Ba	20.22	ppb	111928.0	1.65	20.00	80 - 120	
182 W	19.28	ppb	324863.8	0.30	20.00	80 - 120	
205 Tl	19.57	ppb	711016.1	0.83	20.00	80 - 120	
208 Pb	20.11	ppb	977731.1	0.08	20.00	80 - 120	
235 U	0.13	ppb	8591.9	2.79	0.14	80 - 120	
238 U	20.11	ppb	1171770.0	1.04	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1508435.3	0.55	1614087.90	93.5	60 - 125	
45 Sc	1467431.5	1.14	1507267.40	97.4	60 - 125	
45 Sc	304138.8	1.30	311671.31	97.6	60 - 125	
45 Sc	2858364.3	0.77	2965461.50	96.4	60 - 125	
72 Ge	353705.3	0.45	388767.63	91.0	60 - 125	
72 Ge	154205.9	0.20	163622.05	94.2	60 - 125	
72 Ge	648125.4	0.76	686917.50	94.4	60 - 125	
115 In	4321966.0	1.73	5137748.50	84.1	60 - 125	
159 Tb	6779472.5	0.70	7909563.00	85.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16016.D\F6B16016.D#
Date Acquired: Feb 25 2017 02:36 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 25 2017 02:02 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.04 ppb	2.31	25.00	90 - 110	
9 Be	24.93 ppb	1.11	25.00	90 - 110	
11 B	50.30 ppb	1.08	50.00	90 - 110	
23 Na	25000.00 ppb	0.65	25000.00	90 - 110	
24 Mg	24940.00 ppb	1.06	25000.00	90 - 110	
27 Al	25060.00 ppb	0.64	25000.00	90 - 110	
28 Si	2535.00 ppb	0.29	2500.00	90 - 110	
31 P	255.40 ppb	0.99	250.00	90 - 110	
39 K	25400.00 ppb	0.78	25000.00	90 - 110	
40 Ca	24830.00 ppb	0.11	25000.00	90 - 110	
47 Ti	249.10 ppb	0.99	250.00	90 - 110	
51 V	250.70 ppb	0.97	250.00	90 - 110	
52 Cr	244.00 ppb	0.56	250.00	90 - 110	
55 Mn	1503.00 ppb	0.99	1500.00	90 - 110	
56 Fe	25560.00 ppb	0.52	25000.00	90 - 110	
59 Co	243.50 ppb	0.40	250.00	90 - 110	
60 Ni	242.00 ppb	0.15	250.00	90 - 110	
63 Cu	237.80 ppb	0.34	250.00	90 - 110	
66 Zn	253.30 ppb	1.00	250.00	90 - 110	
75 As	254.00 ppb	1.14	250.00	90 - 110	
78 Se	253.80 ppb	0.73	250.00	90 - 110	
88 Sr	254.20 ppb	0.91	250.00	90 - 110	
90 Zr	20.15 ppb	1.15	25.00	90 - 110	Fail
95 Mo	262.10 ppb	1.93	250.00	90 - 110	
107 Ag	25.18 ppb	1.31	25.00	90 - 110	
111 Cd	254.70 ppb	0.87	250.00	90 - 110	
118 Sn	251.50 ppb	0.66	250.00	90 - 110	
121 Sb	50.17 ppb	0.63	50.00	90 - 110	
137 Ba	511.00 ppb	1.22	500.00	90 - 110	
182 W	24.78 ppb	0.62	25.00	90 - 110	
205 Tl	245.00 ppb	0.15	250.00	90 - 110	
208 Pb	246.50 ppb	0.46	250.00	90 - 110	
235 U	1.66 ppb	0.06	1.80	90 - 110	
238 U	244.30 ppb	0.62	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1634925.80	2.02	1614087.90	101.3	60 - 125	
45 Sc	1579994.50	1.15	1507267.40	104.8	60 - 125	
45 Sc	328411.94	0.29	311671.31	105.4	60 - 125	
45 Sc	3173952.50	0.50	2965461.50	107.0	60 - 125	
72 Ge	387223.50	1.12	388767.63	99.6	60 - 125	
72 Ge	167556.98	1.36	163622.05	102.4	60 - 125	
72 Ge	699826.19	0.36	686917.50	101.9	60 - 125	
115 In	4905493.00	0.94	5137748.50	95.5	60 - 125	
159 Tb	7753855.00	0.72	7909563.00	98.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16017.D\F6B16017.D#
Date Acquired:	Feb 25 2017 02:40 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1499	ppb	104437.4	45.35	0.20	
9 Be	0.0001	ppb	17.8	1884.70	0.10	
11 B	-0.3397	ppb	3728.4	14.75	5.00	
23 Na	-9.7010	ppb	294040.7	11.35	40.00	
24 Mg	0.2758	ppb	26361.5	10.04	10.00	
27 Al	0.0941	ppb	25634.7	51.14	20.00	
28 Si	0.5599	ppb	2874.8	27.84	20.00	
31 P	0.1124	ppb	13330.2	331.49	10.00	
39 K	-0.9213	ppb	74690.3	108.65	20.00	
40 Ca	0.5632	ppb	59383.3	37.27	25.00	
47 Ti	0.0306	ppb	186.7	14.96	0.50	
51 V	-0.0008	ppb	1846.6	1261.10	0.50	
52 Cr	-0.0105	ppb	424.0	35.99	0.20	
55 Mn	-0.0028	ppb	2780.4	97.53	0.20	
56 Fe	3.1070	ppb	63978.3	9.16	10.00	
59 Co	0.0013	ppb	232.2	10.86	0.20	
60 Ni	0.0047	ppb	85.3	33.26	0.20	
63 Cu	-0.0010	ppb	450.5	462.18	0.40	
66 Zn	-0.0111	ppb	1377.9	156.80	2.00	
75 As	0.0159	ppb	70.2	61.70	0.20	
78 Se	0.0429	ppb	31.8	22.45	0.20	
88 Sr	0.0021	ppb	598.9	126.15	0.20	
90 Zr	-0.1263	ppb	308.9	1.39	2.00	
95 Mo	0.1331	ppb	1403.4	2.75	0.40	
107 Ag	-0.0004	ppb	26.7	175.52	0.20	
111 Cd	0.0043	ppb	47.7	159.92	0.20	
118 Sn	0.0539	ppb	896.7	6.17	0.20	
121 Sb	0.0071	ppb	327.8	19.65	0.40	
137 Ba	0.0038	ppb	102.2	81.23	0.20	
182 W	0.0080	ppb	398.9	27.31	1.00	
205 Tl	0.0206	ppb	1216.8	18.50	0.20	
208 Pb	0.0047	ppb	1140.1	12.69	0.10	
235 U	0.0001	ppb	17.8	44.37	1.00	
238 U	0.0235	ppb	1774.6	7.94	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1680401.4	0.46	1614087.90	104.1	60 - 125	
45 Sc	1584802.6	1.47	1507267.40	105.1	60 - 125	
45 Sc	328451.2	0.57	311671.31	105.4	60 - 125	
45 Sc	3216448.3	0.98	2965461.50	108.5	60 - 125	
72 Ge	396073.9	0.88	388767.63	101.9	60 - 125	
72 Ge	171459.7	0.35	163622.05	104.8	60 - 125	
72 Ge	719102.6	0.45	686917.50	104.7	60 - 125	
115 In	5385683.0	0.83	5137748.50	104.8	60 - 125	
159 Tb	8160302.5	0.89	7909563.00	103.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16028.D\F6B16028.D#
Date Acquired: Feb 25 2017 03:30 pm
Operator: CCapul
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 25 2017 02:02 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.96 ppb	1.88	25.00	90 - 110	
9 Be	25.08 ppb	1.79	25.00	90 - 110	
11 B	50.53 ppb	3.36	50.00	90 - 110	
23 Na	25310.00 ppb	1.80	25000.00	90 - 110	
24 Mg	24380.00 ppb	2.78	25000.00	90 - 110	
27 Al	24600.00 ppb	2.57	25000.00	90 - 110	
28 Si	2585.00 ppb	0.21	2500.00	90 - 110	
31 P	247.50 ppb	1.46	250.00	90 - 110	
39 K	25590.00 ppb	0.64	25000.00	90 - 110	
40 Ca	25120.00 ppb	0.83	25000.00	90 - 110	
47 Ti	247.60 ppb	1.88	250.00	90 - 110	
51 V	251.90 ppb	0.29	250.00	90 - 110	
52 Cr	247.40 ppb	2.18	250.00	90 - 110	
55 Mn	1506.00 ppb	1.51	1500.00	90 - 110	
56 Fe	25650.00 ppb	1.02	25000.00	90 - 110	
59 Co	244.80 ppb	1.88	250.00	90 - 110	
60 Ni	242.10 ppb	1.27	250.00	90 - 110	
63 Cu	237.60 ppb	0.71	250.00	90 - 110	
66 Zn	255.80 ppb	1.34	250.00	90 - 110	
75 As	256.10 ppb	0.25	250.00	90 - 110	
78 Se	256.10 ppb	0.10	250.00	90 - 110	
88 Sr	252.90 ppb	0.41	250.00	90 - 110	
90 Zr	20.43 ppb	0.91	25.00	90 - 110	Fail
95 Mo	263.50 ppb	0.70	250.00	90 - 110	
107 Ag	24.97 ppb	0.70	25.00	90 - 110	
111 Cd	252.10 ppb	0.33	250.00	90 - 110	
118 Sn	251.80 ppb	0.31	250.00	90 - 110	
121 Sb	50.62 ppb	0.36	50.00	90 - 110	
137 Ba	510.10 ppb	1.23	500.00	90 - 110	
182 W	24.72 ppb	0.59	25.00	90 - 110	
205 Tl	244.60 ppb	0.32	250.00	90 - 110	
208 Pb	246.10 ppb	0.36	250.00	90 - 110	
235 U	1.65 ppb	1.04	1.80	90 - 110	
238 U	246.50 ppb	0.96	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1563940.00	1.62	1614087.90	96.9	60 - 125	
45 Sc	1559696.50	0.30	1507267.40	103.5	60 - 125	
45 Sc	320174.78	0.85	311671.31	102.7	60 - 125	
45 Sc	3087861.50	1.37	2965461.50	104.1	60 - 125	
72 Ge	382932.81	0.55	388767.63	98.5	60 - 125	
72 Ge	163719.17	0.34	163622.05	100.1	60 - 125	
72 Ge	680273.00	1.32	686917.50	99.0	60 - 125	
115 In	4832597.50	0.34	5137748.50	94.1	60 - 125	
159 Tb	7667250.00	1.11	7909563.00	96.9	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16029.D\F6B16029.D#
Date Acquired:	Feb 25 2017 03:34 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB2
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0271	ppb	99770.4	207.63	0.20	
9 Be	-0.0003	ppb	15.6	587.28	0.10	
11 B	-0.2359	ppb	4020.7	8.98	5.00	
23 Na	-9.9680	ppb	294447.6	10.08	40.00	
24 Mg	-0.0818	ppb	20654.8	74.51	10.00	
27 Al	-0.1011	ppb	21413.8	46.29	20.00	
28 Si	0.2498	ppb	2527.0	34.37	20.00	
31 P	-0.4705	ppb	12384.6	45.12	10.00	
39 K	-1.3030	ppb	74430.1	112.82	20.00	
40 Ca	0.0206	ppb	54901.7	331.93	25.00	
47 Ti	0.0001	ppb	120.0	6905.20	0.50	
51 V	0.0062	ppb	1891.7	114.64	0.50	
52 Cr	-0.0078	ppb	444.0	31.49	0.20	
55 Mn	-0.0009	ppb	2760.4	518.38	0.20	
56 Fe	2.2510	ppb	52995.0	5.88	10.00	
59 Co	0.0013	ppb	225.6	35.58	0.20	
60 Ni	0.0012	ppb	76.7	297.81	0.20	
63 Cu	-0.0040	ppb	431.3	27.70	0.40	
66 Zn	-0.0102	ppb	1356.8	150.20	2.00	
75 As	0.0201	ppb	74.2	30.19	0.20	
78 Se	0.0351	ppb	28.7	1.62	0.20	
88 Sr	0.0028	ppb	615.6	30.86	0.20	
90 Zr	-0.1274	ppb	267.8	1.34	2.00	
95 Mo	0.0474	ppb	701.2	15.42	0.40	
107 Ag	0.0003	ppb	40.0	53.08	0.20	
111 Cd	0.0073	ppb	61.3	34.89	0.20	
118 Sn	0.0498	ppb	826.7	6.43	0.20	
121 Sb	0.0046	ppb	275.6	43.17	0.40	
137 Ba	0.0072	ppb	123.3	5.76	0.20	
182 W	0.0053	ppb	334.5	28.13	1.00	
205 Tl	0.0195	ppb	1139.0	13.24	0.20	
208 Pb	0.0040	ppb	1068.9	7.79	0.10	
235 U	0.0001	ppb	16.7	63.79	1.00	
238 U	0.0243	ppb	1785.7	7.62	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1652070.3	0.97	1614087.90	102.4	60 - 125	
45 Sc	1593060.4	1.55	1507267.40	105.7	60 - 125	
45 Sc	328685.2	0.76	311671.31	105.5	60 - 125	
45 Sc	3123120.0	0.83	2965461.50	105.3	60 - 125	
72 Ge	405381.8	1.37	388767.63	104.3	60 - 125	
72 Ge	170933.3	0.83	163622.05	104.5	60 - 125	
72 Ge	706181.9	0.69	686917.50	102.8	60 - 125	
115 In	5286421.5	0.99	5137748.50	102.9	60 - 125	
159 Tb	7960417.5	0.86	7909563.00	100.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16033.D\F6B16033.D#
Date Acquired:	Feb 25 2017 03:53 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	IMB028WB
Misc Info:	
Vial Number:	2202
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	MBW
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1580	ppb	103027.1	17.53	1.00	
9 Be	-0.0005	ppb	14.4	75.92	0.50	
11 B	-0.3716	ppb	3563.9	14.27	5.00	
23 Na	-3.6490	ppb	314272.8	12.52	50.00	
24 Mg	0.7182	ppb	31706.4	5.52	50.00	
27 Al	0.6392	ppb	34592.9	2.13	50.00	
28 Si	0.5095	ppb	2771.5	18.62	25.00	
31 P	-0.0183	ppb	12819.3	1784.20	25.00	
39 K	-0.3389	ppb	75043.9	154.68	50.00	
40 Ca	14.7500	ppb	181311.5	0.96	50.00	
47 Ti	0.0239	ppb	167.8	23.81	1.00	
51 V	-0.0007	ppb	1844.1	869.66	0.50	
52 Cr	-0.0132	ppb	404.2	10.44	0.50	
55 Mn	0.0269	ppb	3671.7	7.33	0.50	
56 Fe	0.2791	ppb	26218.9	26.72	50.00	
59 Co	-0.0004	ppb	181.1	28.68	0.50	
60 Ni	0.0080	ppb	93.6	36.69	0.50	
63 Cu	0.0388	ppb	699.8	9.39	0.50	
66 Zn	0.6112	ppb	3969.6	4.06	10.00	
75 As	-0.0008	ppb	52.9	375.07	0.50	
78 Se	0.0096	ppb	15.6	54.85	0.50	
88 Sr	0.0247	ppb	1482.4	4.90	1.00	
90 Zr	-0.1242	ppb	372.2	0.67	2.50	
95 Mo	-0.0130	ppb	224.5	13.08	1.00	
107 Ag	-0.0001	ppb	32.2	345.81	0.50	
111 Cd	-0.0017	ppb	18.4	96.19	0.50	
118 Sn	0.0092	ppb	290.0	24.80	0.50	
121 Sb	0.0181	ppb	522.3	6.14	0.50	
137 Ba	0.0484	ppb	400.0	12.24	0.50	
182 W	-0.0033	ppb	166.7	35.80	1.00	
205 Tl	0.0028	ppb	433.4	30.32	0.50	
208 Pb	0.0146	ppb	1689.0	3.47	0.50	
235 U	0.0000	ppb	4.4	192.25	---	
238 U	0.0029	ppb	321.1	10.80	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1655565.8	0.66	1614087.90	102.6	60 - 125	
45 Sc	1558947.0	0.41	1507267.40	103.4	60 - 125	
45 Sc	327924.1	0.32	311671.31	105.2	60 - 125	
45 Sc	3122942.8	0.73	2965461.50	105.3	60 - 125	
72 Ge	395904.4	0.41	388767.63	101.8	60 - 125	
72 Ge	170297.3	0.55	163622.05	104.1	60 - 125	
72 Ge	713127.3	0.39	686917.50	103.8	60 - 125	
115 In	5264896.0	1.14	5137748.50	102.5	60 - 125	
159 Tb	8035327.5	0.90	7909563.00	101.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16034.D\F6B16034.D#
Date Acquired:	Feb 25 2017 03:57 pm
Operator:	CCapul
Sample Name:	IMB028WL
Misc Info:	
Vial Number:	2203
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	593505.81	29.67	ppb	0.78	30.00	80 - 120	
9 Be	157061.50	29.82	ppb	2.11	30.00	80 - 120	
11 B	105812.60	29.17	ppb	2.48	30.00	80 - 120	
23 Na	13356010.00	3071.00	ppb	1.71	3000.00	80 - 120	
24 Mg	42390768.00	3049.00	ppb	0.81	3000.00	80 - 120	
27 Al	54091232.00	3019.00	ppb	0.85	3000.00	80 - 120	
28 Si	5311.29	2.60	ppb	3.60	3000.00	80 - 120	Fail
31 P	14086.30	1.21	ppb	63.93	300.00	80 - 120	Fail
39 K	2682372.00	3142.00	ppb	1.14	3000.00	80 - 120	
40 Ca	26595680.00	2984.00	ppb	0.41	3000.00	80 - 120	
47 Ti	60113.51	29.58	ppb	0.53	30.00	80 - 120	
51 V	190524.09	29.51	ppb	1.04	30.00	80 - 120	
52 Cr	222576.80	29.74	ppb	0.94	30.00	80 - 120	
55 Mn	1040626.00	31.55	ppb	0.74	30.00	80 - 120	
56 Fe	42139780.00	3157.00	ppb	0.58	3000.00	80 - 120	
59 Co	807055.31	30.91	ppb	0.78	30.00	80 - 120	
60 Ni	77398.26	29.85	ppb	0.78	30.00	80 - 120	
63 Cu	203177.91	31.46	ppb	0.18	30.00	80 - 120	
66 Zn	260141.80	62.23	ppb	1.40	60.00	80 - 120	
75 As	30198.20	29.47	ppb	1.43	30.00	80 - 120	
78 Se	14917.65	29.92	ppb	0.38	30.00	80 - 120	
88 Sr	1198162.00	30.62	ppb	0.51	30.00	80 - 120	
90 Zr	1969.66	-0.07	ppb	43.44	20.00	80 - 120	Fail
95 Mo	232719.59	29.86	ppb	0.38	30.00	80 - 120	
107 Ag	600633.69	29.46	ppb	0.77	30.00	80 - 120	
111 Cd	136792.80	29.44	ppb	0.47	30.00	80 - 120	
118 Sn	385330.50	29.58	ppb	0.97	30.00	80 - 120	
121 Sb	522256.91	28.85	ppb	0.93	30.00	80 - 120	
137 Ba	198342.91	29.69	ppb	0.69	30.00	80 - 120	
182 W	481.12	0.01	ppb	120.90	30.00	80 - 120	Fail
205 Tl	1335536.00	31.42	ppb	1.39	30.00	80 - 120	
208 Pb	1749946.00	30.76	ppb	0.38	30.00	80 - 120	
235 U	14558.47	0.19	ppb	0.27	0.21	80 - 120	
238 U	2024376.00	29.70	ppb	0.30	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1670533.00	1.18	1614087.90	103.5	60 - 125	
45 Sc	1600468.30	0.85	1507267.40	106.2	60 - 125	
45 Sc	335963.72	0.92	311671.31	107.8	60 - 125	
45 Sc	3142003.00	0.67	2965461.50	106.0	60 - 125	
72 Ge	404295.06	1.52	388767.63	104.0	60 - 125	
72 Ge	173483.47	1.46	163622.05	106.0	60 - 125	
72 Ge	708729.56	0.94	686917.50	103.2	60 - 125	
115 In	5216234.50	0.34	5137748.50	101.5	60 - 125	
159 Tb	7933670.00	1.04	7909563.00	100.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

4 :Element Failures
0 :ISTD Failures

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

Data Results:

Analytes: Fail
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16035.D\F6B16035.D#
Date Acquired:	Feb 25 2017 04:02 pm
Operator:	CCapul
Sample Name:	IMB028WC
Misc Info:	
Vial Number:	2204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	587025.69	28.65	ppb	0.98	30.00	80 - 120	
9 Be	157759.59	29.41	ppb	0.94	30.00	80 - 120	
11 B	106822.00	28.91	ppb	1.24	30.00	80 - 120	
23 Na	13429730.00	3062.00	ppb	0.36	3000.00	80 - 120	
24 Mg	42685280.00	2997.00	ppb	2.12	3000.00	80 - 120	
27 Al	53717768.00	2926.00	ppb	1.72	3000.00	80 - 120	
28 Si	4885.40	2.21	ppb	7.90	3000.00	80 - 120	Fail
31 P	13792.74	0.57	ppb	19.67	300.00	80 - 120	Fail
39 K	2669146.00	3094.00	ppb	0.49	3000.00	80 - 120	
40 Ca	26228830.00	2918.00	ppb	0.55	3000.00	80 - 120	
47 Ti	60936.66	29.27	ppb	1.46	30.00	80 - 120	
51 V	188762.30	28.94	ppb	0.95	30.00	80 - 120	
52 Cr	219560.59	29.04	ppb	1.17	30.00	80 - 120	
55 Mn	1045537.00	30.94	ppb	2.22	30.00	80 - 120	
56 Fe	41865020.00	3110.00	ppb	0.47	3000.00	80 - 120	
59 Co	799837.31	29.90	ppb	2.49	30.00	80 - 120	
60 Ni	76582.61	29.24	ppb	1.18	30.00	80 - 120	
63 Cu	194798.80	29.85	ppb	1.24	30.00	80 - 120	
66 Zn	258995.80	61.14	ppb	0.45	60.00	80 - 120	
75 As	29802.76	29.07	ppb	0.89	30.00	80 - 120	
78 Se	14800.63	29.47	ppb	0.56	30.00	80 - 120	
88 Sr	1194038.00	30.12	ppb	1.01	30.00	80 - 120	
90 Zr	786.72	-0.11	ppb	2.20	20.00	80 - 120	Fail
95 Mo	228197.20	29.01	ppb	0.86	30.00	80 - 120	
107 Ag	596044.69	28.96	ppb	0.64	30.00	80 - 120	
111 Cd	135914.20	28.98	ppb	0.87	30.00	80 - 120	
118 Sn	379226.09	28.84	ppb	1.22	30.00	80 - 120	
121 Sb	519325.59	28.41	ppb	1.36	30.00	80 - 120	
137 Ba	200395.70	29.71	ppb	1.04	30.00	80 - 120	
182 W	258.90	0.00	ppb	125.33	30.00	80 - 120	Fail
205 Tl	1331306.00	30.49	ppb	0.67	30.00	80 - 120	
208 Pb	1738154.00	29.75	ppb	0.82	30.00	80 - 120	
235 U	14362.74	0.19	ppb	1.19	0.21	80 - 120	
238 U	1991672.00	28.44	ppb	0.37	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1700892.80	0.55	1614087.90	105.4	60 - 125	
45 Sc	1613971.40	0.44	1507267.40	107.1	60 - 125	
45 Sc	339408.72	1.20	311671.31	108.9	60 - 125	
45 Sc	3219203.00	0.86	2965461.50	108.6	60 - 125	
72 Ge	407278.41	1.10	388767.63	104.8	60 - 125	
72 Ge	173593.17	0.42	163622.05	106.1	60 - 125	
72 Ge	718037.38	0.25	686917.50	104.5	60 - 125	
115 In	5265773.50	1.21	5137748.50	102.5	60 - 125	
159 Tb	8149761.50	1.69	7909563.00	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16040.D\F6B16040.D#
Date Acquired: Feb 25 2017 04:24 pm
Operator: CCapul
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 25 2017 02:02 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.17 ppb	0.97	25.00	90 - 110	
9 Be	25.58 ppb	0.38	25.00	90 - 110	
11 B	50.65 ppb	2.65	50.00	90 - 110	
23 Na	25340.00 ppb	0.25	25000.00	90 - 110	
24 Mg	24800.00 ppb	3.00	25000.00	90 - 110	
27 Al	24840.00 ppb	1.26	25000.00	90 - 110	
28 Si	2629.00 ppb	0.23	2500.00	90 - 110	
31 P	251.00 ppb	1.36	250.00	90 - 110	
39 K	25870.00 ppb	0.47	25000.00	90 - 110	
40 Ca	25380.00 ppb	0.12	25000.00	90 - 110	
47 Ti	250.10 ppb	1.62	250.00	90 - 110	
51 V	250.30 ppb	1.09	250.00	90 - 110	
52 Cr	242.00 ppb	1.21	250.00	90 - 110	
55 Mn	1543.00 ppb	2.39	1500.00	90 - 110	
56 Fe	25440.00 ppb	0.48	25000.00	90 - 110	
59 Co	251.30 ppb	2.82	250.00	90 - 110	
60 Ni	238.40 ppb	1.10	250.00	90 - 110	
63 Cu	234.90 ppb	2.13	250.00	90 - 110	
66 Zn	257.90 ppb	2.15	250.00	90 - 110	
75 As	254.60 ppb	1.17	250.00	90 - 110	
78 Se	254.30 ppb	0.27	250.00	90 - 110	
88 Sr	253.60 ppb	0.92	250.00	90 - 110	
90 Zr	20.16 ppb	1.81	25.00	90 - 110	Fail
95 Mo	262.60 ppb	1.42	250.00	90 - 110	
107 Ag	25.12 ppb	0.30	25.00	90 - 110	
111 Cd	251.30 ppb	0.49	250.00	90 - 110	
118 Sn	250.60 ppb	0.63	250.00	90 - 110	
121 Sb	50.19 ppb	1.58	50.00	90 - 110	
137 Ba	513.50 ppb	1.65	500.00	90 - 110	
182 W	24.54 ppb	0.20	25.00	90 - 110	
205 Tl	243.10 ppb	0.60	250.00	90 - 110	
208 Pb	245.60 ppb	0.21	250.00	90 - 110	
235 U	1.64 ppb	1.06	1.80	90 - 110	
238 U	242.90 ppb	0.48	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1566367.60	0.88	1614087.90	97.0	60 - 125	
45 Sc	1590949.00	0.49	1507267.40	105.6	60 - 125	
45 Sc	329460.81	1.04	311671.31	105.7	60 - 125	
45 Sc	3077471.80	1.46	2965461.50	103.8	60 - 125	
72 Ge	391159.63	0.40	388767.63	100.6	60 - 125	
72 Ge	166782.94	0.82	163622.05	101.9	60 - 125	
72 Ge	683603.88	1.11	686917.50	99.5	60 - 125	
115 In	4868531.00	0.29	5137748.50	94.8	60 - 125	
159 Tb	7784326.50	0.61	7909563.00	98.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16041.D\F6B16041.D#
Date Acquired:	Feb 25 2017 04:29 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB3
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.1093	ppb	99148.2	120.13	0.20	
9 Be	0.0009	ppb	21.1	118.12	0.10	
11 B	-0.2775	ppb	3770.6	17.48	5.00	
23 Na	-10.8800	ppb	293397.6	8.24	40.00	
24 Mg	-0.1204	ppb	19981.6	96.26	10.00	
27 Al	-0.0754	ppb	21716.5	141.42	20.00	
28 Si	0.0704	ppb	2339.1	130.25	20.00	
31 P	-0.2937	ppb	12469.5	139.56	10.00	
39 K	1.9060	ppb	77519.0	57.40	20.00	
40 Ca	0.3707	ppb	58551.0	35.85	25.00	
47 Ti	-0.0055	ppb	107.8	101.05	0.50	
51 V	0.0132	ppb	1947.3	8.00	0.50	
52 Cr	-0.0007	ppb	498.9	597.78	0.20	
55 Mn	0.0122	ppb	3168.2	41.57	0.20	
56 Fe	2.4280	ppb	55845.2	8.01	10.00	
59 Co	0.0050	ppb	320.0	60.33	0.20	
60 Ni	0.0004	ppb	75.1	835.12	0.20	
63 Cu	-0.0023	ppb	444.9	106.86	0.40	
66 Zn	-0.0185	ppb	1306.8	71.17	2.00	
75 As	0.0287	ppb	82.2	27.27	0.20	
78 Se	0.0418	ppb	31.6	14.05	0.20	
88 Sr	0.0037	ppb	642.3	16.54	0.20	
90 Zr	-0.1255	ppb	324.5	0.20	2.00	
95 Mo	0.0450	ppb	681.2	14.33	0.40	
107 Ag	0.0003	ppb	40.0	259.76	0.20	
111 Cd	0.0142	ppb	93.0	45.81	0.20	
118 Sn	0.0544	ppb	885.6	20.96	0.20	
121 Sb	0.0183	ppb	525.6	11.57	0.40	
137 Ba	0.0124	ppb	157.8	27.46	0.20	
182 W	0.0037	ppb	306.7	47.13	1.00	
205 Tl	0.0212	ppb	1227.9	12.61	0.20	
208 Pb	0.0040	ppb	1085.6	13.04	0.10	
235 U	0.0002	ppb	18.9	67.83	1.00	
238 U	0.0261	ppb	1925.8	7.91	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1606012.3	1.51	1614087.90	99.5	60 - 125	
45 Sc	1608176.0	0.75	1507267.40	106.7	60 - 125	
45 Sc	330749.3	0.81	311671.31	106.1	60 - 125	
45 Sc	3102160.0	0.87	2965461.50	104.6	60 - 125	
72 Ge	399256.1	0.95	388767.63	102.7	60 - 125	
72 Ge	169637.4	1.84	163622.05	103.7	60 - 125	
72 Ge	697612.8	1.36	686917.50	101.6	60 - 125	
115 In	5278376.5	0.99	5137748.50	102.7	60 - 125	
159 Tb	8046414.0	0.74	7909563.00	101.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16091.D\F6B16091.D#
Date Acquired: Feb 25 2017 08:28 pm
Operator: CCapul
Sample Name: CCV8
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 25 2017 02:02 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.65 ppb	2.12	25.00	90 - 110	
9 Be	23.69 ppb	1.42	25.00	90 - 110	
11 B	69.08 ppb	0.87	50.00	90 - 110	Fail
23 Na	28230.00 ppb	0.98	25000.00	90 - 110	Fail
24 Mg	28580.00 ppb	0.65	25000.00	90 - 110	Fail
27 Al	28250.00 ppb	0.37	25000.00	90 - 110	Fail
28 Si	3018.00 ppb	0.38	2500.00	90 - 110	Fail
31 P	291.40 ppb	0.28	250.00	90 - 110	Fail
39 K	28440.00 ppb	1.36	25000.00	90 - 110	Fail
40 Ca	26420.00 ppb	0.57	25000.00	90 - 110	
47 Ti	249.80 ppb	0.28	250.00	90 - 110	
51 V	235.20 ppb	0.32	250.00	90 - 110	
52 Cr	220.80 ppb	0.63	250.00	90 - 110	Fail
55 Mn	1430.00 ppb	0.14	1500.00	90 - 110	
56 Fe	24120.00 ppb	0.28	25000.00	90 - 110	
59 Co	230.00 ppb	0.80	250.00	90 - 110	
60 Ni	215.90 ppb	0.37	250.00	90 - 110	Fail
63 Cu	213.60 ppb	1.72	250.00	90 - 110	Fail
66 Zn	244.90 ppb	1.25	250.00	90 - 110	
75 As	255.20 ppb	0.63	250.00	90 - 110	
78 Se	243.40 ppb	0.11	250.00	90 - 110	
88 Sr	244.40 ppb	0.71	250.00	90 - 110	
90 Zr	20.00 ppb	0.67	25.00	90 - 110	Fail
95 Mo	279.00 ppb	0.47	250.00	90 - 110	Fail
107 Ag	25.32 ppb	1.32	25.00	90 - 110	
111 Cd	247.90 ppb	0.34	250.00	90 - 110	
118 Sn	248.80 ppb	1.42	250.00	90 - 110	
121 Sb	48.88 ppb	0.91	50.00	90 - 110	
137 Ba	511.20 ppb	0.75	500.00	90 - 110	
182 W	23.23 ppb	0.32	25.00	90 - 110	
205 Tl	228.90 ppb	1.05	250.00	90 - 110	
208 Pb	229.70 ppb	0.48	250.00	90 - 110	
235 U	1.48 ppb	0.10	1.80	90 - 110	Fail
238 U	218.80 ppb	0.84	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2283428.00	0.92	1614087.90	141.5	60 - 125	ISFail
45 Sc	2079751.40	0.99	1507267.40	138.0	60 - 125	ISFail
45 Sc	446461.66	0.35	311671.31	143.2	60 - 125	ISFail
45 Sc	4142453.30	0.48	2965461.50	139.7	60 - 125	ISFail
72 Ge	468506.91	0.74	388767.63	120.5	60 - 125	
72 Ge	202201.59	0.51	163622.05	123.6	60 - 125	
72 Ge	836929.44	0.81	686917.50	121.8	60 - 125	
115 In	5123935.00	1.15	5137748.50	99.7	60 - 125	
159 Tb	7323553.00	0.72	7909563.00	92.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16092.D\F6B16092.D#
Date Acquired:	Feb 25 2017 08:32 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB8
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.3529	ppb	158828.5	40.10	0.20	Fail
9 Be	0.0036	ppb	53.3	112.60	0.10	
11 B	14.6200	ppb	82156.9	3.78	5.00	Fail
23 Na	439.1000	ppb	2834995.0	2.83	40.00	Fail
24 Mg	11.8100	ppb	248549.7	13.18	10.00	Fail
27 Al	-0.0210	ppb	30692.2	920.00	20.00	
28 Si	1.7950	ppb	5619.0	4.90	20.00	
31 P	7.5790	ppb	27036.9	5.23	10.00	
39 K	36.7400	ppb	145696.1	5.19	20.00	Fail
40 Ca	5.8510	ppb	137938.3	1.69	25.00	
47 Ti	0.0038	ppb	171.1	371.38	0.50	
51 V	0.2698	ppb	4899.3	1.43	0.50	
52 Cr	0.0114	ppb	809.1	22.51	0.20	
55 Mn	0.0452	ppb	5736.8	14.85	0.20	
56 Fe	2.7180	ppb	76632.9	6.91	10.00	
59 Co	0.0049	ppb	430.0	35.76	0.20	
60 Ni	0.0108	ppb	139.8	5.54	0.20	
63 Cu	0.4020	ppb	4139.5	1.19	0.40	Fail
66 Zn	0.1959	ppb	2659.2	10.41	2.00	
75 As	0.0902	ppb	174.2	5.81	0.20	
78 Se	0.0541	ppb	45.3	19.16	0.20	
88 Sr	0.0332	ppb	2159.2	26.09	0.20	
90 Zr	-0.1261	ppb	371.1	1.67	2.00	
95 Mo	0.0533	ppb	796.7	23.31	0.40	
107 Ag	0.0027	ppb	96.7	15.80	0.20	
111 Cd	0.0063	ppb	59.7	85.02	0.20	
118 Sn	0.0586	ppb	1004.5	15.85	0.20	
121 Sb	0.0196	ppb	586.7	22.39	0.40	
137 Ba	0.0144	ppb	183.3	11.66	0.20	
182 W	0.0025	ppb	264.5	68.48	1.00	
205 Tl	0.0258	ppb	1337.9	13.25	0.20	
208 Pb	0.0119	ppb	1443.4	17.13	0.10	
235 U	0.0004	ppb	31.1	54.60	1.00	
238 U	0.0238	ppb	1659.1	8.72	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2475990.8	2.12	1614087.90	153.4	60 - 125	ISFail
45 Sc	2062882.9	0.29	1507267.40	136.9	60 - 125	ISFail
45 Sc	454850.3	0.69	311671.31	145.9	60 - 125	ISFail
45 Sc	4197485.0	0.27	2965461.50	141.5	60 - 125	ISFail
72 Ge	481464.3	0.51	388767.63	123.8	60 - 125	
72 Ge	205675.6	0.82	163622.05	125.7	60 - 125	ISFail
72 Ge	849807.2	1.76	686917.50	123.7	60 - 125	
115 In	5631186.5	0.65	5137748.50	109.6	60 - 125	
159 Tb	7553498.0	0.65	7909563.00	95.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16096.D\F6B16096.D#
Date Acquired:	Feb 25 2017 08:50 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	B137-01
Misc Info:	
Vial Number:	2510
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	7813237.0	0.0000	542.3000	ppb	0.94	50.00	>LRS
9 Be	# 3	6	44.4	0.0000	0.0065	ppb	78.14	50.00	
11 B	# 3	6	4886144.0	0.0000	1643.0000	ppb	0.83	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	24503430.0	0.0000	1788.0000	ppb	1.53	50000.00	
27 Al	# 3	45	149761.2	0.0000	7.1600	ppb	36.70	50000.00	
28 Si	# 1	45	16462210.0	0.0000	13940.0000	ppb	0.74	5000.00	>LRS
31 P	# 3	45	24558.4	0.0000	12.4300	ppb	4.03	500.00	
39 K	# 2	45	18911680.0	0.0000	21400.0000	ppb	0.30	50000.00	
40 Ca	# 1	45	684579390.0	0.0000	76770.0000	ppb	1.52	50000.00	>LRS
47 Ti	# 3	45	3818.4	0.0000	1.8520	ppb	2.49	500.00	
51 V	# 2	45	24320.9	0.0000	3.2890	ppb	0.66	500.00	
52 Cr	# 2	45	60231.5	0.0000	7.5300	ppb	0.69	500.00	
55 Mn	# 3	45	132197.6	0.0000	3.9940	ppb	0.92	3000.00	
56 Fe	# 1	45	240141.3	0.0000	16.2200	ppb	2.40	50000.00	
59 Co	# 3	45	5246.7	0.0000	0.1967	ppb	2.91	500.00	
60 Ni	# 2	45	2867.6	0.0000	1.0140	ppb	1.35	500.00	
63 Cu	# 2	45	7031.7	0.0000	0.9556	ppb	3.20	500.00	
66 Zn	# 3	72	6038.1	0.0000	1.4260	ppb	5.41	500.00	
75 As	# 2	72	5967.7	0.0000	6.6250	ppb	2.15	500.00	
78 Se	# 1	72	248.4	0.0000	0.5655	ppb	6.58	500.00	
88 Sr	# 3	72	58250368.0	0.0000	1808.0000	ppb	0.73	500.00	>LRS
90 Zr	# 3	72	2295.8	0.0000	-0.0462	ppb	17.67	50.00	
95 Mo	# 3	115	256428.3	0.0000	49.2600	ppb	0.90	500.00	
107 Ag	# 3	115	148.9	0.0000	0.0092	ppb	18.74	50.00	
111 Cd	# 3	115	-15.9	0.0000	-0.0108	ppb	193.27	500.00	
118 Sn	# 3	115	416.7	0.0000	0.0350	ppb	12.44	500.00	
121 Sb	# 3	115	1057.9	0.0000	0.0770	ppb	3.90	500.00	
137 Ba	# 3	115	202636.8	0.0000	45.3900	ppb	1.58	1000.00	
182 W	# 3	159	24538.3	0.0000	1.9460	ppb	1.63	50.00	
205 Tl	# 3	159	2435.9	0.0000	0.0829	ppb	3.63	500.00	
208 Pb	# 3	159	3854.8	0.0000	0.0918	ppb	1.55	500.00	
235 U	# 3	159	755.6	0.0000	0.0157	ppb	5.27	30.00	
238 U	# 3	159	102656.4	0.0000	2.3660	ppb	0.91	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1434671.00	1.34	1614087.90	88.9	60 - 125	
45 Sc # 1	1604736.00	1.56	1507267.40	106.5	60 - 125	
45 Sc # 2	356580.34	0.49	311671.31	114.4	60 - 125	
45 Sc # 3	3095592.80	1.58	2965461.50	104.4	60 - 125	
72 Ge # 1	342964.66	0.49	388767.63	88.2	60 - 125	
72 Ge # 2	151583.78	0.94	163622.05	92.6	60 - 125	
72 Ge # 3	583704.56	0.37	686917.50	85.0	60 - 125	
115 In # 3	3486747.30	1.29	5137748.50	67.9	60 - 125	
159 Tb # 3	5045853.50	0.36	7909563.00	63.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

6 :Element Failures
0 :ISTD Failures

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

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16097.D\F6B16097.D#
Date Acquired: Feb 25 2017 08:55 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: B137-02
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Feb 25 2017 02:02 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	7769177.0	0.0000	547.3000	ppb	1.41	50.00	>LRS
9 Be	# 3	6	37.8	0.0000	0.0052	ppb	73.79	50.00	
11 B	# 3	6	4937202.0	0.0000	1685.0000	ppb	0.62	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	24854510.0	0.0000	1810.0000	ppb	1.24	50000.00	
27 Al	# 3	45	195891.1	0.0000	9.8400	ppb	57.45	50000.00	
28 Si	# 1	45	16438850.0	0.0000	13900.0000	ppb	0.58	5000.00	>LRS
31 P	# 3	45	27625.3	0.0000	15.5900	ppb	1.82	500.00	
39 K	# 2	45	19202890.0	0.0000	21540.0000	ppb	1.01	50000.00	
40 Ca	# 1	45	683443580.0	0.0000	76530.0000	ppb	1.12	50000.00	>LRS
47 Ti	# 3	45	3908.8	0.0000	1.8920	ppb	4.13	500.00	
51 V	# 2	45	24909.0	0.0000	3.3440	ppb	3.91	500.00	
52 Cr	# 2	45	61390.6	0.0000	7.6100	ppb	1.04	500.00	
55 Mn	# 3	45	127941.6	0.0000	3.8540	ppb	1.26	3000.00	
56 Fe	# 1	45	237897.6	0.0000	16.0200	ppb	0.93	50000.00	
59 Co	# 3	45	5292.2	0.0000	0.1979	ppb	3.64	500.00	
60 Ni	# 2	45	2920.1	0.0000	1.0240	ppb	1.27	500.00	
63 Cu	# 2	45	4240.9	0.0000	0.5422	ppb	2.69	500.00	
66 Zn	# 3	72	5519.0	0.0000	1.2660	ppb	1.51	500.00	
75 As	# 2	72	6046.8	0.0000	6.6640	ppb	0.90	500.00	
78 Se	# 1	72	256.0	0.0000	0.5910	ppb	4.75	500.00	
88 Sr	# 3	72	59172152.0	0.0000	1828.0000	ppb	0.62	500.00	>LRS
90 Zr	# 3	72	1912.8	0.0000	-0.0616	ppb	45.66	50.00	
95 Mo	# 3	115	255273.2	0.0000	48.6100	ppb	1.70	500.00	
107 Ag	# 3	115	147.8	0.0000	0.0091	ppb	18.41	50.00	
111 Cd	# 3	115	-412.0	0.0000	-0.1376	ppb	93.17	500.00	
118 Sn	# 3	115	430.0	0.0000	0.0361	ppb	11.84	500.00	
121 Sb	# 3	115	1086.8	0.0000	0.0786	ppb	13.33	500.00	
137 Ba	# 3	115	203985.6	0.0000	45.2800	ppb	1.43	1000.00	
182 W	# 3	159	24622.8	0.0000	1.9620	ppb	1.18	50.00	
205 Tl	# 3	159	2319.2	0.0000	0.0790	ppb	7.18	500.00	
208 Pb	# 3	159	2230.2	0.0000	0.0472	ppb	3.57	500.00	
235 U	# 3	159	730.0	0.0000	0.0152	ppb	4.92	30.00	
238 U	# 3	159	103691.6	0.0000	2.4020	ppb	0.10	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1413641.60	1.62	1614087.90	87.6	60 - 125	
45 Sc # 1	1606868.60	0.72	1507267.40	106.6	60 - 125	
45 Sc # 2	359683.03	0.59	311671.31	115.4	60 - 125	
45 Sc # 3	3103029.00	1.84	2965461.50	104.6	60 - 125	
72 Ge # 1	338683.88	0.78	388767.63	87.1	60 - 125	
72 Ge # 2	152691.94	0.10	163622.05	93.3	60 - 125	
72 Ge # 3	586646.63	1.10	686917.50	85.4	60 - 125	
115 In # 3	3517925.30	1.71	5137748.50	68.5	60 - 125	
159 Tb # 3	5021684.50	1.07	7909563.00	63.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

6 :Element Failures
0 :ISTD Failures

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

Data Results:
Analytes: Fail
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16098.D\F6B16098.D#
Date Acquired:	Feb 25 2017 08:59 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA2
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	1.33	ppb	154748.9	1.27	---	
9 Be	0.01	ppb	88.9	35.72	---	
11 B	23.57	ppb	108386.3	2.24	---	
23 Na	115500.00	ppb	586655100.0	0.43	120000.00	
24 Mg	114000.00	ppb	1908283000.0	0.80	120000.00	
27 Al	112900.00	ppb	2435177000.0	1.67	120000.00	
28 Si	8.02	ppb	13997.9	2.70	---	
31 P	116000.00	ppb	135013600.0	0.74	---	
39 K	114600.00	ppb	120695100.0	1.11	120000.00	
40 Ca	106900.00	ppb	1138769000.0	0.14	120000.00	
47 Ti	2151.00	ppb	5251927.0	0.69	2400.00	
51 V	0.30	ppb	4803.5	4.53	---	
52 Cr	1.19	ppb	11910.4	3.00	---	
55 Mn	0.18	ppb	10402.8	2.98	---	
56 Fe	95460.00	ppb	1524853000.0	0.76	120000.00	
59 Co	0.21	ppb	6889.6	2.44	---	
60 Ni	0.18	ppb	676.7	3.12	---	
63 Cu	0.89	ppb	7865.7	1.90	---	
66 Zn	2.28	ppb	12037.5	2.43	---	
75 As	0.24	ppb	330.0	3.29	---	
78 Se	0.06	ppb	42.2	30.78	---	
88 Sr	0.69	ppb	30601.9	1.27	---	
90 Zr	-0.10	ppb	1185.6	2.15	---	
95 Mo	2244.00	ppb	15365870.0	0.17	2400.00	
107 Ag	0.02	ppb	447.8	3.58	---	
111 Cd	0.14	ppb	592.4	27.47	---	
118 Sn	0.04	ppb	554.5	9.88	---	
121 Sb	0.06	ppb	1047.9	8.12	---	
137 Ba	0.11	ppb	711.3	21.12	---	
182 W	0.11	ppb	2022.4	4.74	---	
205 Tl	0.00	ppb	311.1	91.12	---	
208 Pb	0.20	ppb	10010.7	3.02	---	
235 U	0.00	ppb	23.3	19.97	---	
238 U	0.00	ppb	276.7	3.72	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2094812.5	0.82	1614087.90	129.8	60 - 125	ISFail
45 Sc	1916216.0	1.18	1507267.40	127.1	60 - 125	ISFail
45 Sc	426454.3	1.52	311671.31	136.8	60 - 125	ISFail
45 Sc	3782961.3	0.50	2965461.50	127.6	60 - 125	ISFail
72 Ge	427323.9	1.26	388767.63	109.9	60 - 125	
72 Ge	190751.0	0.55	163622.05	116.6	60 - 125	
72 Ge	784250.3	0.79	686917.50	114.2	60 - 125	
115 In	4590042.5	0.79	5137748.50	89.3	60 - 125	
159 Tb	6500329.5	1.45	7909563.00	82.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Pass
ISTD: Fail

ICS-AB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16099.D\F6B16099.D#
Date Acquired:	Feb 25 2017 09:04 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB2
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.69	ppb	562463.5	0.83	20.00	80 - 120	
9 Be	18.75	ppb	124966.3	0.93	20.00	80 - 120	
11 B	37.27	ppb	169325.4	2.01	20.00	80 - 120	Fail
23 Na	114700.00	ppb	576734910.0	0.91	100000.00	80 - 120	
24 Mg	113300.00	ppb	1884143000.0	0.78	100000.00	80 - 120	
27 Al	112000.00	ppb	2398201100.0	1.90	100000.00	80 - 120	
28 Si	252.30	ppb	354878.7	0.55	200.00	80 - 120	Fail
31 P	115700.00	ppb	133730900.0	0.99	100000.00	80 - 120	
39 K	113900.00	ppb	114778400.0	0.67	100000.00	80 - 120	
40 Ca	107200.00	ppb	1130389000.0	1.14	100000.00	80 - 120	
47 Ti	2131.00	ppb	5168009.0	1.07	2000.00	80 - 120	
51 V	19.43	ppb	153132.3	0.22	20.00	80 - 120	
52 Cr	18.78	ppb	170972.8	0.17	20.00	80 - 120	
55 Mn	19.13	ppb	755923.3	1.69	20.00	80 - 120	
56 Fe	94780.00	ppb	1498924000.0	0.66	100000.00	80 - 120	
59 Co	18.70	ppb	583976.6	1.43	20.00	80 - 120	
60 Ni	16.21	ppb	51081.3	0.54	20.00	80 - 120	
63 Cu	16.79	ppb	131978.0	0.30	20.00	80 - 120	
66 Zn	20.71	ppb	95313.3	0.15	20.00	80 - 120	
75 As	20.94	ppb	23049.1	0.89	20.00	80 - 120	
78 Se	20.95	ppb	10942.8	1.34	20.00	80 - 120	
88 Sr	19.78	ppb	843037.8	1.93	20.00	80 - 120	
90 Zr	1.90	ppb	68741.1	0.65	20.00	80 - 120	Fail
95 Mo	2242.00	ppb	15267990.0	0.53	2000.00	80 - 120	
107 Ag	19.02	ppb	339469.6	0.54	20.00	80 - 120	
111 Cd	18.99	ppb	77214.7	1.22	20.00	80 - 120	
118 Sn	19.68	ppb	224380.8	0.87	20.00	80 - 120	
121 Sb	19.84	ppb	314372.1	1.60	20.00	80 - 120	
137 Ba	20.23	ppb	118291.1	1.27	20.00	80 - 120	
182 W	17.87	ppb	289817.9	0.66	20.00	80 - 120	
205 Tl	18.10	ppb	632778.8	1.54	20.00	80 - 120	
208 Pb	18.38	ppb	860208.1	1.13	20.00	80 - 120	
235 U	0.11	ppb	7128.8	2.10	0.14	80 - 120	
238 U	17.67	ppb	990737.0	1.35	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2113665.0	1.30	1614087.90	131.0	60 - 125	ISFail
45 Sc	1897152.9	0.59	1507267.40	125.9	60 - 125	ISFail
45 Sc	408058.5	0.25	311671.31	130.9	60 - 125	ISFail
45 Sc	3758410.0	1.04	2965461.50	126.7	60 - 125	ISFail
72 Ge	423383.3	0.68	388767.63	108.9	60 - 125	
72 Ge	186244.8	0.11	163622.05	113.8	60 - 125	
72 Ge	771692.2	0.98	686917.50	112.3	60 - 125	
115 In	4565008.5	1.32	5137748.50	88.9	60 - 125	
159 Tb	6526172.0	1.35	7909563.00	82.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:

Analytes: Fail
ISTD: Fail

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B16.B\F6B16100.D\F6B16100.D#
Date Acquired: Feb 25 2017 09:09 pm
Operator: CCapul
Sample Name: CCV9
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 25 2017 02:02 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.84 ppb	1.83	25.00	90 - 110	
9 Be	22.64 ppb	2.02	25.00	90 - 110	
11 B	64.60 ppb	2.40	50.00	90 - 110	Fail
23 Na	28430.00 ppb	1.36	25000.00	90 - 110	Fail
24 Mg	29350.00 ppb	2.27	25000.00	90 - 110	Fail
27 Al	28850.00 ppb	1.61	25000.00	90 - 110	Fail
28 Si	3012.00 ppb	0.90	2500.00	90 - 110	Fail
31 P	301.50 ppb	1.59	250.00	90 - 110	Fail
39 K	28410.00 ppb	0.68	25000.00	90 - 110	Fail
40 Ca	26400.00 ppb	0.90	25000.00	90 - 110	
47 Ti	248.10 ppb	0.59	250.00	90 - 110	
51 V	237.50 ppb	1.03	250.00	90 - 110	
52 Cr	222.50 ppb	1.09	250.00	90 - 110	Fail
55 Mn	1432.00 ppb	1.07	1500.00	90 - 110	
56 Fe	24050.00 ppb	1.31	25000.00	90 - 110	
59 Co	230.00 ppb	0.30	250.00	90 - 110	
60 Ni	217.00 ppb	0.79	250.00	90 - 110	Fail
63 Cu	215.20 ppb	0.89	250.00	90 - 110	Fail
66 Zn	246.20 ppb	0.38	250.00	90 - 110	
75 As	257.30 ppb	0.17	250.00	90 - 110	
78 Se	245.30 ppb	0.30	250.00	90 - 110	
88 Sr	248.50 ppb	0.73	250.00	90 - 110	
90 Zr	20.27 ppb	0.87	25.00	90 - 110	Fail
95 Mo	275.50 ppb	0.13	250.00	90 - 110	Fail
107 Ag	25.07 ppb	0.63	25.00	90 - 110	
111 Cd	246.90 ppb	0.92	250.00	90 - 110	
118 Sn	248.60 ppb	0.86	250.00	90 - 110	
121 Sb	49.20 ppb	0.95	50.00	90 - 110	
137 Ba	508.20 ppb	1.40	500.00	90 - 110	
182 W	23.01 ppb	0.11	25.00	90 - 110	
205 Tl	228.20 ppb	0.90	250.00	90 - 110	
208 Pb	228.30 ppb	0.63	250.00	90 - 110	
235 U	1.46 ppb	0.17	1.80	90 - 110	Fail
238 U	218.40 ppb	0.35	250.00	90 - 110	Fail

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2364139.50	0.83	1614087.90	146.5	60 - 125	ISFail
45 Sc	2057501.00	1.16	1507267.40	136.5	60 - 125	ISFail
45 Sc	432015.81	0.59	311671.31	138.6	60 - 125	ISFail
45 Sc	4045295.00	0.54	2965461.50	136.4	60 - 125	ISFail
72 Ge	459093.38	0.38	388767.63	118.1	60 - 125	
72 Ge	195159.44	0.43	163622.05	119.3	60 - 125	
72 Ge	806848.69	0.81	686917.50	117.5	60 - 125	
115 In	5096600.00	1.01	5137748.50	99.2	60 - 125	
159 Tb	7244912.50	0.80	7909563.00	91.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B16.B\F6B16101.D\F6B16101.D#
Date Acquired:	Feb 25 2017 09:13 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB9
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 25 2017 02:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.3963	ppb	162096.2	35.88	0.20	Fail
9 Be	0.0063	ppb	75.6	28.13	0.10	
11 B	14.3400	ppb	81858.8	2.75	5.00	Fail
23 Na	300.7000	ppb	1992754.0	1.18	40.00	Fail
24 Mg	11.3200	ppb	230137.2	1.98	10.00	Fail
27 Al	0.3300	ppb	37560.2	50.73	20.00	
28 Si	1.6590	ppb	5188.8	4.43	20.00	
31 P	10.0100	ppb	28995.4	4.61	10.00	Fail
39 K	39.0400	ppb	140241.0	4.08	20.00	Fail
40 Ca	6.4300	ppb	138614.7	1.37	25.00	
47 Ti	0.0486	ppb	281.1	19.45	0.50	
51 V	0.2212	ppb	4234.9	5.01	0.50	
52 Cr	0.0183	ppb	830.2	89.41	0.20	
55 Mn	0.0377	ppb	5194.4	22.29	0.20	
56 Fe	3.9510	ppb	93796.3	5.43	10.00	
59 Co	0.0040	ppb	381.1	30.50	0.20	
60 Ni	0.0170	ppb	152.7	5.64	0.20	
63 Cu	0.5797	ppb	5380.8	2.66	0.40	Fail
66 Zn	0.1524	ppb	2364.7	6.94	2.00	
75 As	0.0788	ppb	154.4	23.69	0.20	
78 Se	0.0566	ppb	44.9	5.15	0.20	
88 Sr	0.0597	ppb	3297.2	1.95	0.20	
90 Zr	-0.1265	ppb	344.5	1.07	2.00	
95 Mo	0.2116	ppb	2093.6	6.19	0.40	
107 Ag	0.0018	ppb	75.6	49.04	0.20	
111 Cd	0.0086	ppb	70.4	74.18	0.20	
118 Sn	0.0539	ppb	923.4	11.95	0.20	
121 Sb	0.0107	ppb	406.7	13.96	0.40	
137 Ba	0.0114	ppb	158.9	35.69	0.20	
182 W	0.0071	ppb	350.0	26.61	1.00	
205 Tl	0.0282	ppb	1424.6	11.17	0.20	
208 Pb	0.0121	ppb	1446.8	4.91	0.10	
235 U	0.0002	ppb	22.2	43.49	1.00	
238 U	0.0232	ppb	1609.1	14.25	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2509716.8	1.31	1614087.90	155.5	60 - 125	ISFail
45 Sc	1977784.1	1.10	1507267.40	131.2	60 - 125	ISFail
45 Sc	430194.0	1.03	311671.31	138.0	60 - 125	ISFail
45 Sc	4033424.5	0.40	2965461.50	136.0	60 - 125	ISFail
72 Ge	461841.0	0.61	388767.63	118.8	60 - 125	
72 Ge	198086.8	1.00	163622.05	121.1	60 - 125	
72 Ge	822456.8	0.67	686917.50	119.7	60 - 125	
115 In	5543887.0	0.17	5137748.50	107.9	60 - 125	
159 Tb	7500994.0	1.16	7909563.00	94.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B16.B\F6B16004.D\F6B16004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

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

Start Date: 2/27/17 13:19

End Date: 2/27/17 22:55

Comments:

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

Filter Lot #: NA

Book #:	AF6-018
Instrument No.:	F6
Analytical Batch:	IF6B17
Analytical Sequence:	F6B17
Method File:	EM6020R2
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☐ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

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

STANDARDS ID		STANDARDS ID	
S0	SMGB10 · 40.01	MRL1 (1)	SMGB10 · 37.05
S1	↓ · 40.02	MRL2 (at)	↓ · 38.03
S2	↓ · 40.03	MRL3 (at)	↓ · 38.04
S3	↓ · 40.04	MRL4	NA
S4	↓ · 40.05	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SMGB10 · 33.07
S7	↓	Post-Spike 1	SMGA · 007 · 04.06
ICV	SMGB10 · 34.01	Post-Spike 2	↓ 04.07
CCV	↓ 40.06	Post-Spike 3	NA
ICSA	SMGB10 · 43.01	Post-Spike 4	↓
ICSAB	↓ 43.02		
6020 TUNE SOLN.	SMGB10 · 28.06		
200.8 TUNE SOLN.	↓ 28.07		

Analyzed By: [signature]

Date: 2/27/16

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : METHOD SW6020A
Sequence : IF6B17
InstrumentID: F6

Lab Samp ID :	ICV	ICSA	ICSAB
QC Limit :	%R:90-110/RSD:<5	%R:80-120/<LOD	%R:80-120
Lab File ID :	F6B17009	F6B17013	F6B17014
DateAnalyed :	02/27/1713:45	02/27/1714:03	02/27/1714:08

Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		28.71	30	1.34	96	.3968	0	>0	20.02	20	100
Beryllium		29.24	30	0.86	97	.01473	0	<0.1	20.39	20	102
Boron		29.41	30	1.03	98	.3006	0	<5.0	19.71	20	99
Sodium		29530	30000	1.14	98	101800	100000	102	101900	100000	102
Magnesium		28460	30000	0.99	95	98540	100000	99	96810	100000	97
Aluminum		28930	30000	1.12	96	100200	100000	100	99350	100000	99
Silicon		2933	3000	0.90	98	5.664	0	<20	206.4	200	103
Phosphorus		295.6	300	0.89	99	105200	100000	105	104100	100000	104
Potassium		29400	30000	0.56	98	101200	100000	101	100000	100000	100
Calcium		29190	30000	1.21	97	100600	100000	101	101400	100000	101
Titanium		294.4	300	0.60	98	2133	2000	107	2126	2000	106
Vanadium		288.6	300	0.24	96	.01003	0	<0.5	20.29	20	101
Chromium	T	284.6	300	0.32	95	1.325	0	>.2	20.9	20	104
Manganese		1832	2000	0.38	92	.1337	0	<0.2	19.44	20	97
Iron		30150	30000	0.44	100	103600	100000	104	102900	100000	103
Cobalt		285.1	300	0.48	95	.2223	0	>0.2	20	20	100
Nickel		279.5	300	0.11	93	.208	0	>0.2	18.82	20	94
Copper		279.1	300	1.07	93	.6686	0	>0.5	19.39	20	97
Zinc		291.5	300	0.86	97	2.271	0	<10	20.97	20	105
Arsenic		290.3	300	0.24	97	.1816	0	<0.2	20.99	20	105
Selenium		290.2	300	0.76	97	.0858	0	<0.3	21.93	20	110
Strontium		285.5	300	0.19	95	.6333	0	<1.0	20.06	20	100
Zirconium		23.92	30	0.79	80*	.2882	0	<2.0	2.267	20	11*
Molybdenum		291.1	300	0.98	97	2087	2000	104	2078	2000	104
Silver		28.02	30	0.44	93	.02095	0	<0.2	18.68	20	93
Cadmium		289	300	0.65	96	.2135	0	>0.2	19.97	20	100
Tin		292.4	300	0.50	97	.04393	0	<0.2	19.97	20	100
Antimony		59.51	60	0.55	99	.05028	0	<0.5	20.47	20	102
Barium		301	300	0.36	100	.1018	0	<0.5	20.57	20	103
Tungsten		28.96	30	0.52	97	.1347	0	<1.0	19.39	20	97
Thallium		279.5	300	0.57	93	.004814	0	<0.2	19.8	20	99
Lead		279.5	300	0.57	93	.2194	0	>0.1	19.66	20	98
Uranium		282	300	0.20	94	.007218	0	<0.1	19.55	20	98

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

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : METHOD SW6020A
Sequence : IF6B17
Instrument ID: F6

CCV SampleID		: CCV1			CCV9			CCV10		
CCV DataFileID		: F6B17016			F6B17089			F6B17095		
CCV DateTime		: 02/27/17 14:17			02/27/17 22:24			02/27/17 22:51		
PARAMETER	CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium	25	24.5	98	0.68	24.3	97	1.02	24.3	97	0.45
Beryllium	25	24.9	100	0.44	24.6	98	1.11	24.7	99	0.57
Boron	50	49.3	99	0.48	50.9	102	0.78	53.0	106	0.85
Sodium	25000	24800	99	1.83	24600	99	0.58	24500	98	0.70
Magnesium	25000	24100	97	1.53	23400	93	1.24	23400	94	0.60
Aluminum	25000	24700	99	1.68	24000	96	1.06	24200	97	0.13
Silicon	2500	2470	99	1.64	2530	101	0.33	2480	99	0.75
Phosphorus	250	253	101	1.20	250	100	1.13	254	102	0.52
Potassium	25000	24900	100	0.59	25000	100	1.50	25200	101	0.48
Calcium	25000	24600	98	0.80	25100	100	0.14	25100	100	0.83
Titanium	250	250	100	0.69	249	100	1.11	250	100	0.17
Vanadium	250	250	100	1.15	252	101	0.78	251	100	0.83
Chromium T	250	245	98	0.43	245	98	0.40	245	98	0.76
Manganese	1500	1440	96	1.80	1440	96	0.98	1450	97	0.08
Iron	25000	25500	102	1.12	26100	104	0.38	25800	103	0.38
Cobalt	250	245	98	1.12	247	99	0.99	246	98	0.07
Nickel	250	246	98	0.43	245	98	0.82	242	97	0.17
Copper	250	243	97	0.91	243	97	1.26	240	96	0.54
Zinc	250	252	101	1.50	247	99	0.27	247	99	0.53
Arsenic	250	255	102	0.11	254	102	0.49	254	101	0.61
Selenium	250	252	101	0.66	255	102	0.34	253	101	0.54
Strontium	250	250	100	0.59	253	101	0.54	252	101	0.55
Zirconium	25	23.2	93	0.35	22.6	90	1.02	22.7	91	0.92
Molybdenum	250	255	102	0.62	253	101	0.74	256	102	0.97
Silver	25	24.5	98	1.25	24.4	98	0.26	24.5	98	1.37
Cadmium	250	253	101	0.70	253	101	1.00	251	100	1.43
Tin	250	251	100	1.04	250	100	0.87	249	100	0.66
Antimony	50	50.2	100	0.72	49.9	100	0.25	49.4	99	1.10
Barium	500	510	102	0.38	513	103	0.27	509	102	1.24
Tungsten	25	24.9	100	0.47	25.1	100	0.62	24.8	99	0.41
Thallium	250	246	99	1.21	251	101	0.75	248	99	0.63
Lead	250	243	97	1.17	248	99	1.48	244	98	0.62
Uranium	250	246	98	0.60	247	99	0.85	242	97	1.61

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

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17B137
Method : SW6020A
Sequence : IF6B17
Instrument ID: F6

CB SampleID	: ICB	CCB1	CCB9	CCB10
CB DataFileID	: F6B17010	F6B17017	F6B17090	F6B17096
CB DateTime	: 02/27/1713:50	02/27/1714:22	02/27/1722:28	02/27/1722:55

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.05	>0	0.04	>0	0.2	>0	0.008	>0
Beryllium		0.1	0.005	<0.1	0.004	<0.1	0.002	<0.1	0.003	<0.1
Boron		5.0	0.07	<5.0	0.2	<5.0	0.7	<5.0	3	<5.0
Sodium		50	20	<50	30	<50	50	>50	20	<50
Magnesium		10	2	<10	1	<10	2	<10	1	<10
Aluminum		20	0.3	<20	0.4	<20	0.6	<20	0.6	<20
Silicon		20	1.0	<20	0.5	<20	8	<20	2	<20
Phosphorus		25	2	<25	1	<25	1	<25	0.6	<25
Potassium		20	1	<20	2	<20	1	<20	0.9	<20
Calcium		25	0.4	<25	0.8	<25	2	<25	2	<25
Titanium		0.5	0.01	<0.5	0.001	<0.5	0.02	<0.5	0.03	<0.5
Vanadium		0.5	0.06	<0.5	0.05	<0.5	0.03	<0.5	0.03	<0.5
Chromium	T	.2	0.008	<.2	0.01	<.2	0.003	<.2	0.01	<.2
Manganese		0.2	0.03	<0.2	0.03	<0.2	0.010	<0.2	0.04	<0.2
Iron		10	4	<10	3	<10	4	<10	5	<10
Cobalt		0.2	0.002	<0.2	0.0002	<0.2	0.006	<0.2	0.0007	<0.2
Nickel		0.2	0.004	<0.2	0.005	<0.2	0.003	<0.2	0.01	<0.2
Copper		0.5	0.07	<0.5	0.07	<0.5	0.1	<0.5	0.10	<0.5
Zinc		10	0.01	<10	0.05	<10	0.03	<10	0.02	<10
Arsenic		0.2	0.02	<0.2	0.003	<0.2	0.03	<0.2	0.02	<0.2
Selenium		0.3	0.07	<0.3	0.05	<0.3	0.05	<0.3	0.04	<0.3
Strontium		1.0	0.02	<1.0	0.02	<1.0	0.09	<1.0	0.02	<1.0
Zirconium		2.0	0.01	<2.0	0.02	<2.0	0.02	<2.0	0.02	<2.0
Molybdenum		0.5	0.1	<0.5	0.2	<0.5	0.10	<0.5	0.2	<0.5
Silver		0.2	0.00009	<0.2	0.0005	<0.2	0.0006	<0.2	0.0004	<0.2
Cadmium		0.2	0.01	<0.2	0.002	<0.2	0.003	<0.2	0.003	<0.2
Tin		0.2	0.1	<0.2	0.05	<0.2	0.06	<0.2	0.05	<0.2
Antimony		0.5	0.01	<0.5	0.01	<0.5	0.02	<0.5	0.01	<0.5
Barium		0.5	0.006	<0.5	0.009	<0.5	0.02	<0.5	0.01	<0.5
Tungsten		1.0	0.02	<1.0	0.01	<1.0	0.008	<1.0	0.008	<1.0
Thallium		0.2	0.04	<0.2	0.01	<0.2	0.02	<0.2	0.02	<0.2
Lead		0.1	0.009	<0.1	0.005	<0.1	0.007	<0.1	0.005	<0.1
Uranium		0.1	0.03	<0.1	0.02	<0.1	0.03	<0.1	0.02	<0.1

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

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
85	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2411	F6B17080	IMB035WB		1.000				
86	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2412	F6B17081	IMB035WL		1.000				
87	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2501	F6B17082	IMB035WC		1.000				
88	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2502	F6B17083	B167-01		1.000				
89	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2503	F6B17084	B546-01		1.000				
90	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2504	F6B17085	B546-02M		1.000				
91	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2505	F6B17086	B546-02S		1.000				
92	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2506	F6B17087	B546-02		1.000				
93	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2507	F6B17088	B775-01		1.000				
94	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17089	CCV9		1.000				
95	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17090	CCB9		1.000				
96	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2508	F6B17091	B137-01		1.000				
97	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2509	F6B17092	B137-02		1.000				
98	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6B17093	ICSA2		1.000				
99	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6B17094	ICSAB2		1.000				
100	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17095	CCV10		1.000				
101	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17096	CCB10		1.000				
102		Keyword		StandBy							
103		Keyword		SMPLEND	End of SMPL						
104		Keyword		End	End of Sequence						
105		Keyword		BLKBEG	Start of BLANK						
106		Keyword		BLKEND	End of BLANK						
107		Keyword		ERRBEG	Start of ERRTERM						
108		Keyword		ERREND	End of ERRTERM						

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6B17001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6B17002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6B17003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6B17004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6B17005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6B17006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6B17007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6B17008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6B17009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6B17010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6B17011	MRLB2701	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6B17012	MRLB2702	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6B17013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6B17014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6B17015	MRLB2703	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2101	F6B17018	TXB007SB		1.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2102	F6B17019	IMB039WB		1.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2103	F6B17020	IMB039WL		1.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6B17021	IMB039WC		1.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6B17022	SPB001SB		1.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6B17023	B115-01		1.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6B17024	B115-02		1.000				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6B17025	B115-03		1.000				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6B17026	B115-04		1.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17027	CCV2		1.000				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17028	CCB2		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6B17029	B115-05M		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6B17030	B115-05S		1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6B17031	B115-05A		1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6B17032	B115-05		1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2202	F6B17033	B115-05J		5.000				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6B17034	B115-06		1.000				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17035	CCV3		1.000				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17036	CCB3		1.000				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2204	F6B17037	B211-01	DISS	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2205	F6B17038	B211-02	DISS	1.000				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2206	F6B17039	B211-03	DISS	1.000				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2207	F6B17040	B211-01	TOTAL	1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2208	F6B17041	B211-02	TOTAL	1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2209	F6B17042	B211-03	TOTAL	1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17043	CCV4		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17044	CCB4		1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2210	F6B17045	B103-01I	TOTAL	5.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2211	F6B17046	B103-03I	TOTAL	5.000				
52	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2212	F6B17047	B103-05I	TOTAL	5.000				
53	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2301	F6B17048	B103-06I	TOTAL	5.000				
54	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2302	F6B17049	B103-01I	DISS	5.000				
55	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2303	F6B17050	B103-03I	DISS	5.000				
56	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2304	F6B17051	B103-05I	DISS	5.000				
57	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2305	F6B17052	B103-06I	DISS	5.000				
58	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17053	CCV5		1.000				
59	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17054	CCB5		1.000				
60	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6B17055	MRLB2704	1/100/10 ppb	1.000				
61	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6B17056	MRLB2705	0.5/50/4 ppb	1.000				
62	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17057	CCV6		1.000				
63	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17058	CCB6		1.000				
64	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2306	F6B17059	B136-01	TOTAL	1.000				
65	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2307	F6B17060	B136-02	TOTAL	1.000				
66	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2308	F6B17061	B136-03	TOTAL	1.000				
67	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2309	F6B17062	B136-04	TOTAL	1.000				
68	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2310	F6B17063	B136-05	TOTAL	1.000				
69	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2311	F6B17064	B136-06	TOTAL	1.000				
70	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2312	F6B17065	B136-08	TOTAL	1.000				
71	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2401	F6B17066	B136-09	TOTAL	1.000				
72	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2402	F6B17067	B136-11	TOTAL	1.000				
73	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2403	F6B17068	B136-12	TOTAL	1.000				
74	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17069	CCV7		1.000				
75	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17070	CCB7		1.000				
76	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2404	F6B17071	B136-13M	TOTAL	1.000				
77	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2405	F6B17072	B136-13S	TOTAL	1.000				
78	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2406	F6B17073	B136-13A	TOTAL	1.000				
79	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2407	F6B17074	B136-13	TOTAL	1.000				
80	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2408	F6B17075	B136-13J	TOTAL	5.000				
81	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2409	F6B17076	B136-04	DISS	1.000				
82	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2410	F6B17077	B136-05	DISS	1.000				
83	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6B17078	CCV8		1.000				
84	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6B17079	CCB8		1.000				

Last Calib: Feb 27, 2017 01:49 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

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

	Data File	Sample Name	Date Acquired
1	c:\data\if62017\b\if6b17.b\f6b17004.d\f6b17004.d#	S0	Feb 27 2017 01:24 pm
2	c:\data\if62017\b\if6b17.b\f6b17005.d\f6b17005.d#	S1 0.5	Feb 27 2017 01:28 pm
3	c:\data\if62017\b\if6b17.b\f6b17006.d\f6b17006.d#	S2 50	Feb 27 2017 01:33 pm
4	c:\data\if62017\b\if6b17.b\f6b17007.d\f6b17007.d#	S3 250	Feb 27 2017 01:37 pm
5	c:\data\if62017\b\if6b17.b\f6b17008.d\f6b17008.d#	S4 500	Feb 27 2017 01:41 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62017\B\IF6B17.B\EM6020R2.C

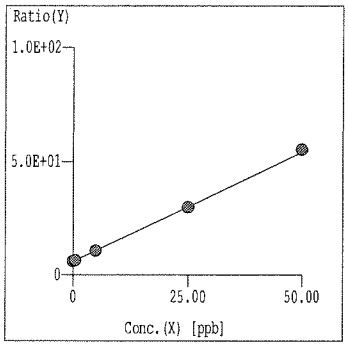
=== ISTD Table ===

Fix ISTD Conc: ON

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

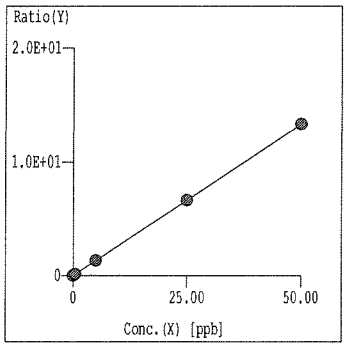
=== Graph Detail ===

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



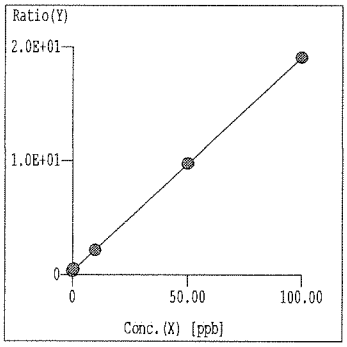
Curve Fit: Y=aX+b
r = 0.9999
Y = 9.620E-001*X +5.972E+000
X = 1.040E+000*Y -6.208E+000
DL = 1.605E-01 ppb
BEC = 6.208 ppb

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



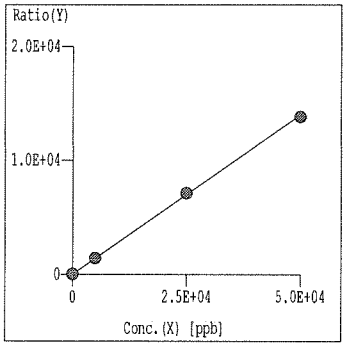
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.661E-001*X +1.844E-003
X = 3.758E+000*Y -6.930E-003
DL = 6.434E-03 ppb
BEC = 6.930E-03 ppb

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



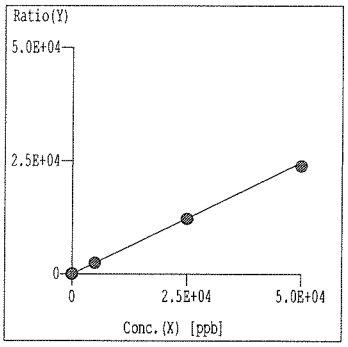
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.874E-001*X +3.364E-001
X = 5.337E+000*Y -1.795E+000
DL = 9.244E-02 ppb
BEC = 1.795 ppb

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



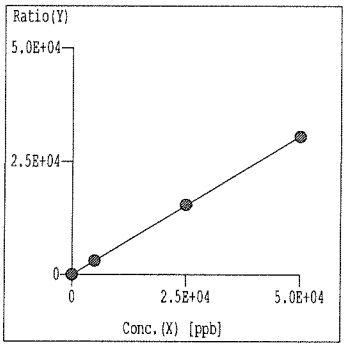
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.793E-001*X +2.679E+001
X = 3.581E+000*Y -9.594E+001
DL = 3.252 ppb
BEC = 95.94 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.935E-001*X +1.907E+000
X = 2.026E+000*Y -3.864E+000
DL = 4.412E-01 ppb
BEC = 3.864 ppb

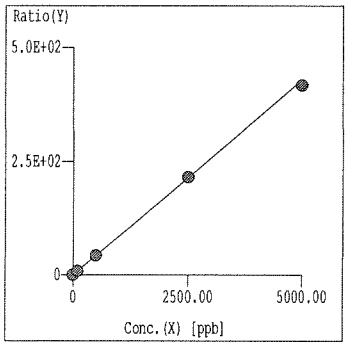
Step Mass Element	ISTD	Unit
(3) 27 Al	45	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.129E-001*X +2.089E-001
X = 1.632E+000*Y -3.408E-001
DL = 4.994E-02 ppb
BEC = 3.408E-01 ppb

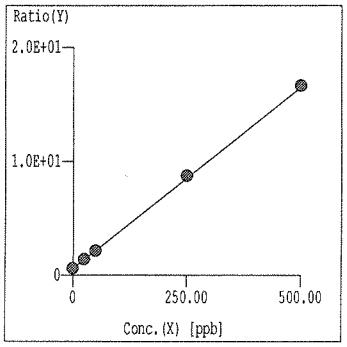
=== Graph Detail ===

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



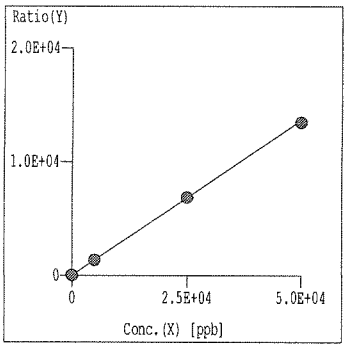
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.577E-002*X +1.433E-001
X = 1.166E+001*Y -1.671E+000
DL = 1.241E-01 ppb
BEC = 1.671 ppb

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



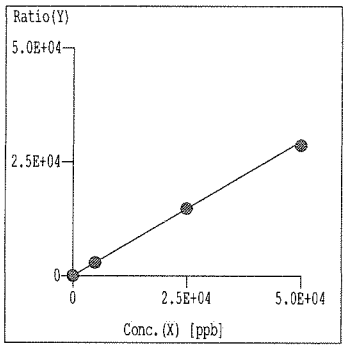
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.181E-002*X +5.780E-001
X = 3.144E+001*Y -1.817E+001
DL = 1.392 ppb
BEC = 18.17 ppb

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



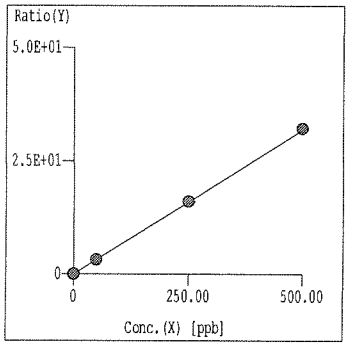
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.724E-001*X +2.343E+001
X = 3.672E+000*Y -8.603E+001
DL = 3.746 ppb
BEC = 86.03 ppb

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



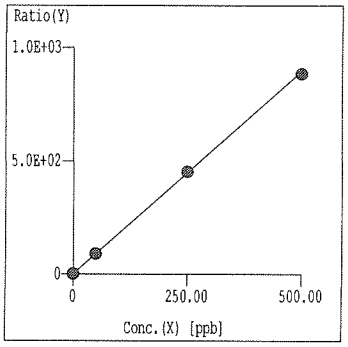
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.894E-001*X +3.117E+000
X = 1.697E+000*Y -5.288E+000
DL = 1.890E-01 ppb
BEC = 5.288 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.366E-002*X +4.853E-003
X = 1.571E+001*Y -7.624E-002
DL = 3.104E-02 ppb
BEC = 7.624E-02 ppb

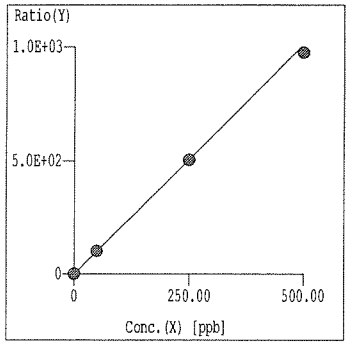
Step Mass Element ISTD Unit
(2) 51 V 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.792E+000*X +9.188E-001
X = 5.582E-001*Y -5.128E-001
DL = 2.246E-02 ppb
BEC = 5.128E-01 ppb

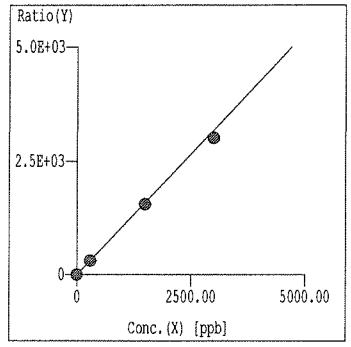
=== Graph Detail ===

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



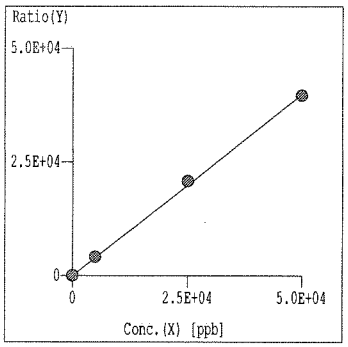
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.023E+000*X +1.634E-001
X = 4.943E-001*Y -8.077E-002
DL = 5.206E-03 ppb
BEC = 8.077E-02 ppb

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



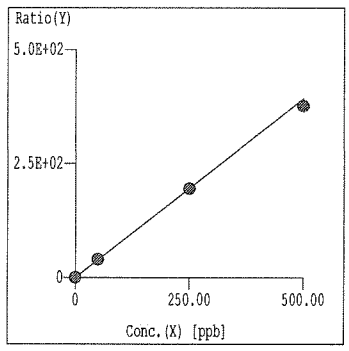
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.063E+000*X +1.363E-001
X = 9.410E-001*Y -1.282E-001
DL = 1.092E-02 ppb
BEC = 1.282E-01 ppb

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



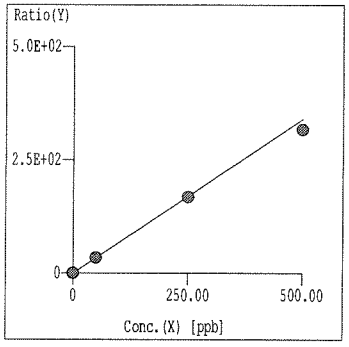
Curve Fit: Y=aX+b
r = 0.9997
Y = 7.955E-001*X +4.324E-001
X = 1.257E+000*Y -5.436E-001
DL = 2.327E-02 ppb
BEC = 5.436E-01 ppb

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



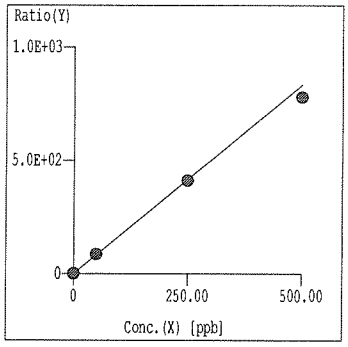
Curve Fit: Y=aX+b
r = 0.9998
Y = 7.826E-001*X +8.338E-003
X = 1.278E+000*Y -1.065E-002
DL = 3.011E-03 ppb
BEC = 1.065E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9995
Y = 6.786E-001*X +2.144E-002
X = 1.474E+000*Y -3.159E-002
DL = 1.324E-02 ppb
BEC = 3.159E-02 ppb

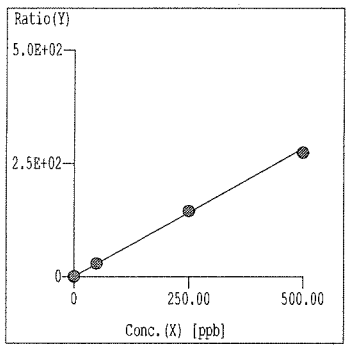
Step Mass Element	ISTD	Unit
(2) 63 Cu	45	ppb



Curve Fit: Y=aX+b
r = 0.9996
Y = 1.665E+000*X +3.584E-001
X = 6.007E-001*Y -2.153E-001
DL = 2.146E-02 ppb
BEC = 2.153E-01 ppb

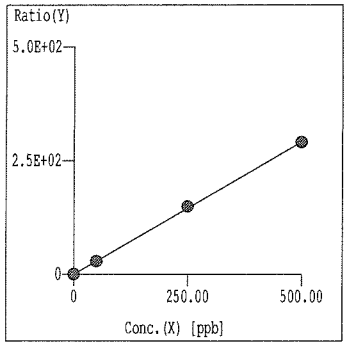
=== Graph Detail ===

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



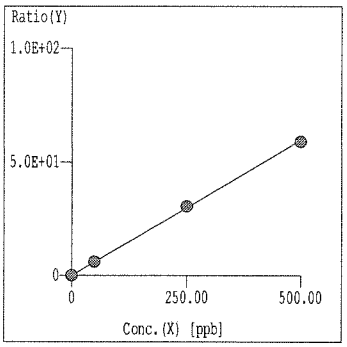
Curve Fit: Y=aX+b
r = 0.9996
Y = 5.667E-001*X +1.631E-001
X = 1.765E+000*Y -2.878E-001
DL = 5.736E-02 ppb
BEC = 2.878E-01 ppb

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



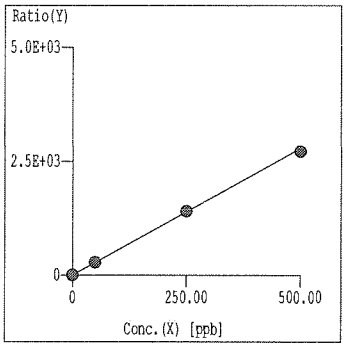
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.817E-001*X +4.938E-002
X = 1.719E+000*Y -8.488E-002
DL = 1.992E-02 ppb
BEC = 8.488E-02 ppb

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



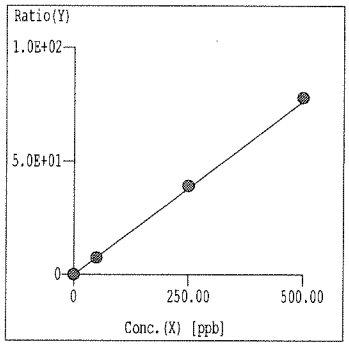
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.194E-001*X +1.591E-003
X = 8.376E+000*Y -1.332E-002
DL = 1.593E-02 ppb
BEC = 1.332E-02 ppb

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



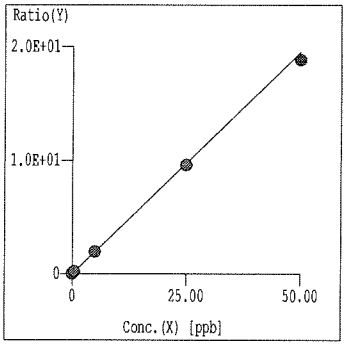
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.575E+000*X +3.147E-001
X = 1.794E-001*Y -5.644E-002
DL = 2.120E-03 ppb
BEC = 5.644E-02 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.526E-001*X +8.002E-004
X = 6.554E+000*Y -5.244E-003
DL = 6.831E-03 ppb
BEC = 5.244E-03 ppb

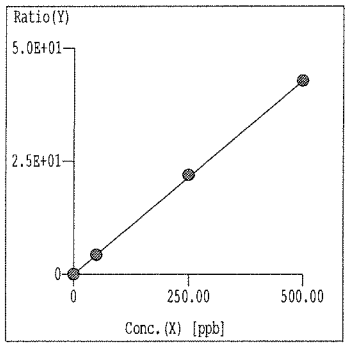
Step Mass Element	ISTD	Unit
(3) 107 Ag	115	ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 3.907E-001*X +1.050E-003
X = 2.560E+000*Y -2.687E-003
DL = 1.742E-03 ppb
BEC = 2.687E-03 ppb

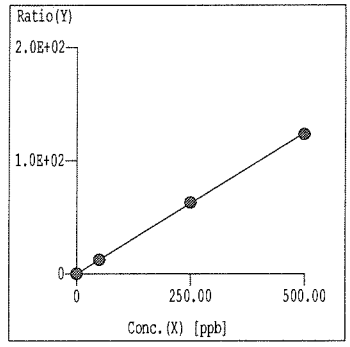
=== Graph Detail ===

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



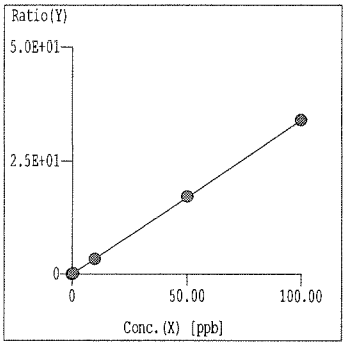
Curve Fit: Y=aX+b
r = 0.9999
Y = 8.558E-002*X +7.019E-004
X = 1.169E+001*Y -8.202E-003
DL = 3.824E-03 ppb
BEC = 8.202E-03 ppb

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



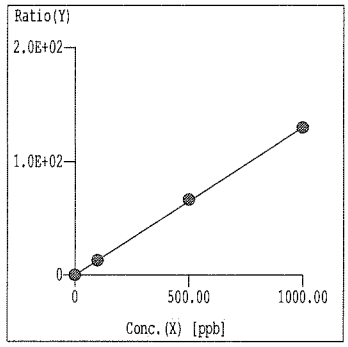
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.488E-001*X +3.142E-003
X = 4.019E+000*Y -1.263E-002
DL = 7.717E-03 ppb
BEC = 1.263E-02 ppb

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



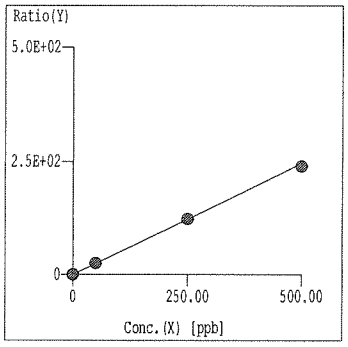
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.397E-001*X +4.214E-003
X = 2.943E+000*Y -1.240E-002
DL = 3.475E-03 ppb
BEC = 1.240E-02 ppb

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



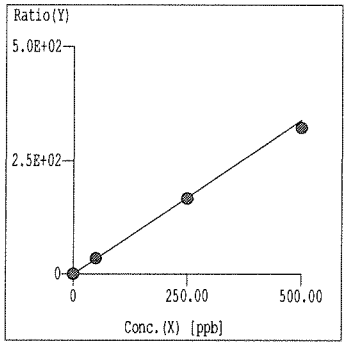
Curve Fit: Y=aX+b
r = 0.9999
Y = 1.302E-001*X +1.402E-003
X = 7.682E+000*Y -1.077E-002
DL = 9.491E-03 ppb
BEC = 1.077E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 4.916E-001*X +6.597E-003
X = 2.034E+000*Y -1.342E-002
DL = 5.317E-03 ppb
BEC = 1.342E-02 ppb

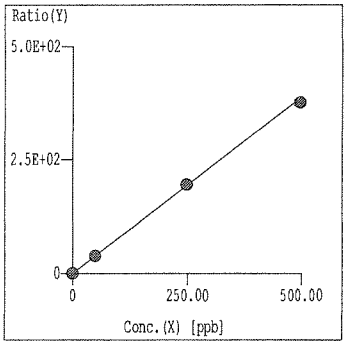
Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 6.774E-001*X +9.178E-003
X = 1.476E+000*Y -1.355E-002
DL = 8.597E-04 ppb
BEC = 1.355E-02 ppb

=== Graph Detail ===

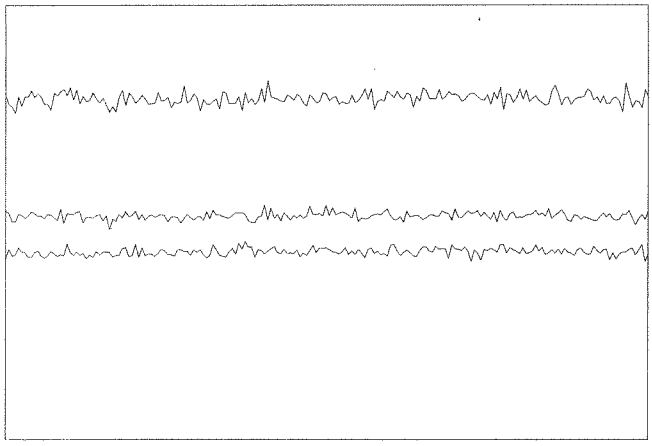
Step	Mass	Element	ISTD	Unit
(3)	238	U	159	ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 7.773E-001*X +2.358E-003
X = 1.287E+000*Y -3.034E-003
DL = 1.766E-03 ppb
BEC = 3.034E-03 ppb

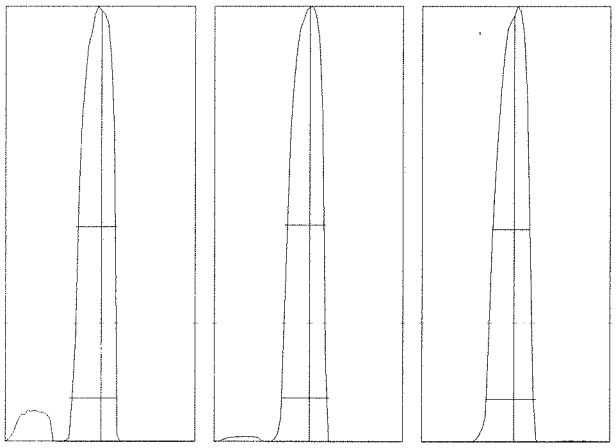
Tune Report

Tune File : NORM.U
Comment : IF6B17



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.589%
Doubly Charged:	70/140	0.864%

m/z	Range	Count	Mean	RSD%	Background
7	50,000	21483.0	21688.4	2.01	2.80
89	100,000	52806.0	51661.8	1.67	3.50
205	50,000	39474.0	39273.7	1.69	8.00
156/140	5	1.592%	1.621%	4.36	
70/140	2	0.848%	0.873%	5.63	



m/z:	7	89	205
Height:	21,830	52,424	39,095
Axis:	7.05	89.05	205.00
W-50%:	0.65	0.65	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : Feb 27, 2017 11:37:11
Printed : Feb 27, 2017 11:37:13

Tune Report

Tune File : NORM.U
Comment : IF6B17

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.74 V	Extract 2	:	-160 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1 mm	Omega Lens-ce	:	0.6 V	Axis Offset	:	-0.02
Torch-V	:	-0.2 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.15 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2030 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1280 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

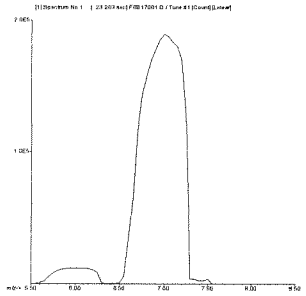
===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

6020 QC Tune Report

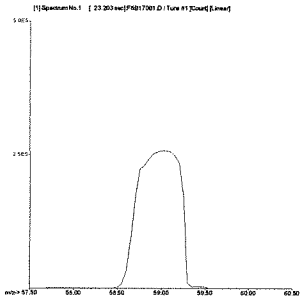
Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17001.D
Date Acquired: Feb 27 2017 01:10 pm
Acq. Method: TN6020_C.M
Operator: CCapul
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

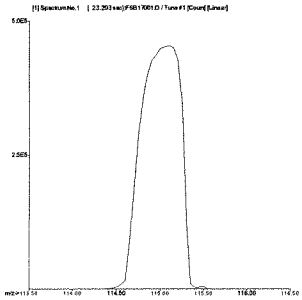
Element	Actual	Required	Flag
7 Li	1.84	5.00	
59 Co	1.20	5.00	
115 In	1.54	5.00	
205 Tl	1.78	5.00	



7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 115.05

Required: 114.90 - 115.10

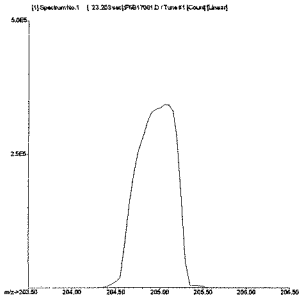
Flag:

Peak Width-10%

Actual: 0.65

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.05

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.70

Limit 0.90

Flag:

Calibration Blank QC Report

Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17003
Date Acquired: Feb 27 2017 01:19 pm
Operator: CCapul
Sample Name: BLNK
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update: Feb 27 2017 01:22 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2192497.00	A	5736.00	0.26
7	Li	132408.30	P	1213.00	0.92
9	Be	90.00	P	35.28	39.20
11	B	10777.43	P	156.60	1.45
23	Na	449916.59	P	5174.00	1.15
24	Mg	76924.44	P	2624.00	3.41
27	Al	16802.03	P	171.20	1.02
28	Si	5881.34	P	110.50	1.88
31	P	20309.93	P	212.40	1.05
39	K	76994.67	P	546.60	0.71
40	Ca	114400.00	P	439.90	0.38
45	Sc	1704570.00	A	19880.00	1.17
45	Sc	357343.50	P	635.70	0.18
45	Sc	3447487.00	A	35290.00	1.02
47	Ti	96.67	P	13.33	13.79
51	V	3349.95	P	69.11	2.06
52	Cr	625.35	P	13.78	2.20
55	Mn	3649.46	P	81.98	2.25
56	Fe	17297.35	P	290.70	1.68
59	Co	348.91	P	26.94	7.72
60	Ni	79.78	P	8.70	10.91
63	Cu	1068.27	P	8.23	0.77
66	Zn	2051.33	P	108.90	5.31
72	Ge	420383.00	P	2665.00	0.63
72	Ge	175173.41	P	967.30	0.55
72	Ge	740018.38	P	7601.00	1.03
75	As	86.45	P	4.44	5.14
78	Se	7.33	P	2.40	32.78
88	Sr	3151.75	P	133.60	4.24
90	Zr	1243.43	P	95.05	7.64
95	Mo	87.78	P	19.25	21.93
107	Ag	50.00	P	5.77	11.55
111	Cd	47.39	P	10.13	21.38
115	In	5212173.00	A	60270.00	1.16
118	Sn	246.68	P	18.56	7.52
121	Sb	305.57	P	16.78	5.49
137	Ba	236.68	P	8.82	3.73
159	Tb	7698422.00	A	58080.00	0.75
182	W	232.23	P	12.62	5.43
205	Tl	447.80	P	43.51	9.72
208	Pb	1134.50	P	70.27	6.19
209	Bi	4725341.00	A	84510.00	1.79
235	U	10.00	P	3.33	33.33
238	U	197.79	P	42.47	21.47

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17004
Date Acquired:	Feb 27 2017 01:24 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	Feb 27 2017 01:22 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2018144.00	A	17680.00	0.88
7	Li	121562.20	P	1225.00	1.01
9	Be	37.78	P	11.71	31.00
11	B	6351.53	P	81.50	1.28
23	Na	410450.31	P	769.30	0.19
24	Mg	54537.86	P	2500.00	4.58
27	Al	6640.57	P	384.10	5.78
28	Si	2183.56	P	64.31	2.95
31	P	19401.34	P	231.80	1.19
39	K	75734.87	P	738.80	0.98
40	Ca	45071.79	P	307.60	0.68
45	Sc	1533625.00	A	16920.00	1.10
45	Sc	324458.00	P	1825.00	0.56
45	Sc	3187477.00	A	53120.00	1.67
47	Ti	70.00	P	20.00	28.57
51	V	2995.65	P	33.73	1.13
52	Cr	512.68	P	9.02	1.76
55	Mn	2662.55	P	163.40	6.14
56	Fe	6561.71	P	28.90	0.44
59	Co	227.79	P	26.94	11.83
60	Ni	63.33	P	9.82	15.51
63	Cu	793.36	P	34.98	4.41
66	Zn	950.06	P	81.86	8.62
72	Ge	383725.19	P	2563.00	0.67
72	Ge	158633.50	P	1692.00	1.07
72	Ge	681705.69	P	6717.00	0.99
75	As	78.00	P	6.93	8.88
78	Se	6.00	P	2.40	40.07
88	Sr	2139.13	P	44.77	2.09
90	Zr	852.28	P	16.78	1.97
95	Mo	65.56	P	16.44	25.08
107	Ag	47.78	P	10.71	22.42
111	Cd	33.18	P	5.24	15.80
115	In	4826117.00	A	28480.00	0.59
118	Sn	153.34	P	31.80	20.74
121	Sb	204.45	P	18.36	8.98
137	Ba	57.78	P	19.53	33.80
159	Tb	7031451.00	A	97230.00	1.38
182	W	163.34	P	10.00	6.12
205	Tl	286.68	P	63.51	22.15
208	Pb	642.25	P	6.94	1.08
209	Bi	4350782.00	A	47390.00	1.09
235	U	7.78	P	1.93	24.75
238	U	128.89	P	32.03	24.85

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17005.D\F6B17005.D#
Date Acquired:	Feb 27 2017 01:28 pm
Operator:	CCapul
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 27 2017 01:26 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2042310.00	A	14870.00	0.73
7 Li	131325.80	P	722.70	0.55
9 Be	2680.31	P	125.50	4.68
11 B	10725.20	P	163.30	1.52
23 Na	633612.38	P	4343.00	0.69
24 Mg	863985.00	A	9229.00	1.07
27 Al	1017902.00	A	23510.00	2.31
28 Si	135767.70	P	1220.00	0.90
31 P	44473.13	P	1054.00	2.37
39 K	121903.40	P	753.40	0.62
40 Ca	528765.63	P	2406.00	0.46
45 Sc	1551983.00	A	11060.00	0.71
45 Sc	328222.09	P	1145.00	0.35
45 Sc	3160648.00	A	25420.00	0.80
47 Ti	1162.30	P	11.71	1.01
51 V	5900.09	P	76.32	1.29
52 Cr	4163.49	P	33.77	0.81
55 Mn	21188.98	P	165.00	0.78
56 Fe	727638.88	P	4134.00	0.57
59 Co	13970.33	P	63.55	0.45
60 Ni	1252.95	P	39.67	3.17
63 Cu	5467.26	P	67.79	1.24
66 Zn	5223.32	P	85.82	1.64
72 Ge	386499.50	P	3717.00	0.96
72 Ge	160024.50	P	898.40	0.56
72 Ge	678942.88	P	2709.00	0.40
75 As	557.13	P	29.97	5.38
78 Se	242.89	P	21.04	8.66
88 Sr	21567.76	P	306.70	1.42
90 Zr	96796.45	P	132.90	0.14
95 Mo	3681.69	P	57.40	1.56
107 Ag	9825.89	P	200.50	2.04
111 Cd	2408.69	P	112.30	4.66
115 In	4831779.00	A	47930.00	0.99
118 Sn	6113.74	P	161.70	2.64
121 Sb	8386.08	P	63.65	0.76
137 Ba	3257.16	P	52.92	1.62
159 Tb	7033586.00	A	67370.00	0.96
182 W	8113.81	P	107.20	1.32
205 Tl	18945.00	P	175.60	0.93
208 Pb	26852.53	P	332.10	1.24
209 Bi	4363308.00	A	33990.00	0.78
235 U	212.23	P	37.47	17.66
238 U	28674.16	P	440.40	1.54

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2042310.40	0.73	2018143.90	101.2	60 - 125	
45 Sc	1551983.30	0.71	1533625.40	101.2	60 - 125	
45 Sc	328222.16	0.35	324458.00	101.2	60 - 125	
45 Sc	3160648.30	0.80	3187477.00	99.2	60 - 125	
72 Ge	386499.53	0.96	383725.19	100.7	60 - 125	
72 Ge	160024.48	0.56	158633.47	100.9	60 - 125	
72 Ge	678942.94	0.40	681705.69	99.6	60 - 125	
115 In	4831779.00	0.99	4826117.50	100.1	60 - 125	
159 Tb	7033585.50	0.96	7031450.50	100.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17006.D\F6B17006.D#
Date Acquired:	Feb 27 2017 01:33 pm
Operator:	CCapul
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 27 2017 01:31 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1934311.00	A	31030.00	1.60
7 Li	206453.50	P	2059.00	1.00
9 Be	25682.05	P	357.10	1.39
11 B	41938.13	P	752.20	1.79
23 Na	21069900.00	A	251200.00	1.19
24 Mg	75589160.00	A	1101000.00	1.46
27 Al	94674816.00	A	629800.00	0.67
28 Si	634550.31	P	6299.00	0.99
31 P	67242.02	P	819.90	1.22
39 K	4244519.00	A	68840.00	1.62
40 Ca	42627168.00	A	363900.00	0.85
45 Sc	1474168.00	A	8832.00	0.60
45 Sc	312363.81	P	723.50	0.23
45 Sc	3121741.00	A	27910.00	0.89
47 Ti	99041.18	P	711.20	0.72
51 V	280751.91	P	1530.00	0.54
52 Cr	316802.91	P	113.00	0.04
55 Mn	9665722.00	A	144700.00	1.50
56 Fe	60971688.00	A	491800.00	0.81
59 Co	1249450.00	A	20890.00	1.67
60 Ni	106398.00	P	141.00	0.13
63 Cu	268059.41	P	574.60	0.21
66 Zn	193735.59	P	1534.00	0.79
72 Ge	359461.91	P	2457.00	0.68
72 Ge	153414.00	P	956.90	0.62
72 Ge	671615.31	P	3151.00	0.47
75 As	44282.35	P	75.21	0.17
78 Se	21627.04	P	270.50	1.25
88 Sr	1881691.00	A	18530.00	0.98
90 Zr	226232.30	P	1698.00	0.75
95 Mo	342869.59	P	5101.00	1.49
107 Ag	90055.11	P	556.50	0.62
111 Cd	197512.59	P	2898.00	1.47
115 In	4607556.00	A	27110.00	0.59
118 Sn	566001.00	P	6000.00	1.06
121 Sb	154228.50	P	1469.00	0.95
137 Ba	595839.13	P	4127.00	0.69
159 Tb	6867913.00	A	43270.00	0.63
182 W	80707.28	P	521.50	0.65
205 Tl	1727510.00	A	19650.00	1.14
208 Pb	2374002.00	A	20260.00	0.85
209 Bi	4136127.00	A	57180.00	1.38
235 U	19371.45	P	475.50	2.45
238 U	2632700.00	A	17940.00	0.68

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1934311.30	1.60	2018143.90	95.8	60 - 125	
45 Sc	1474168.00	0.60	1533625.40	96.1	60 - 125	
45 Sc	312363.84	0.23	324458.00	96.3	60 - 125	
45 Sc	3121740.80	0.89	3187477.00	97.9	60 - 125	
72 Ge	359461.88	0.68	383725.19	93.7	60 - 125	
72 Ge	153413.98	0.62	158633.47	96.7	60 - 125	
72 Ge	671615.31	0.47	681705.69	98.5	60 - 125	
115 In	4607556.00	0.59	4826117.50	95.5	60 - 125	
159 Tb	6867913.00	0.63	7031450.50	97.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17007.D\F6B17007.D#
Date Acquired:	Feb 27 2017 01:37 pm
Operator:	CCapul
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 27 2017 01:36 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1909029.00	A	8130.00	0.43
7 Li	569450.69	P	1948.00	0.34
9 Be	127030.30	P	212.30	0.17
11 B	185715.80	P	1280.00	0.69
23 Na	104854200.00	A	1015000.00	0.97
24 Mg	385475010.00	A	3389000.00	0.88
27 Al	488529090.00	A	4135000.00	0.85
28 Si	3174904.00	A	44600.00	1.40
31 P	276527.41	P	666.20	0.24
39 K	21548280.00	A	140700.00	0.65
40 Ca	217479300.00	A	1450000.00	0.67
45 Sc	1475750.00	A	6628.00	0.45
45 Sc	314796.59	P	1244.00	0.40
45 Sc	3167404.00	A	40350.00	1.27
47 Ti	507842.91	P	3805.00	0.75
51 V	1423450.00	A	10590.00	0.74
52 Cr	1584805.00	A	2938.00	0.19
55 Mn	49157792.00	A	407700.00	0.83
56 Fe	306305310.00	A	1877000.00	0.61
59 Co	6166879.00	A	62320.00	1.01
60 Ni	528518.88	P	1143.00	0.22
63 Cu	1292516.00	A	12680.00	0.98
66 Zn	960910.38	A	4909.00	0.51
72 Ge	353466.19	P	2416.00	0.68
72 Ge	151894.91	P	562.10	0.37
72 Ge	663950.69	P	2822.00	0.43
75 As	226517.91	P	619.30	0.27
78 Se	107560.20	P	1157.00	1.08
88 Sr	9324535.00	A	50920.00	0.55
90 Zr	591529.50	P	331.80	0.06
95 Mo	1757389.00	A	9797.00	0.56
107 Ag	430551.69	P	2818.00	0.65
111 Cd	982651.13	A	3233.00	0.33
115 In	4493064.00	A	32430.00	0.72
118 Sn	2816424.00	A	14350.00	0.51
121 Sb	770578.31	P	3432.00	0.45
137 Ba	2986915.00	A	21850.00	0.73
159 Tb	6796666.00	A	51180.00	0.75
182 W	398059.00	P	2986.00	0.75
205 Tl	8371272.00	A	15590.00	0.19
208 Pb	11344430.00	A	44960.00	0.40
209 Bi	3919935.00	A	16120.00	0.41
235 U	97914.00	P	872.20	0.89
238 U	13232620.00	A	86660.00	0.65

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1909029.10	0.43	2018143.90	94.6	60 - 125	
45 Sc	1475749.80	0.45	1533625.40	96.2	60 - 125	
45 Sc	314796.63	0.40	324458.00	97.0	60 - 125	
45 Sc	3167403.80	1.27	3187477.00	99.4	60 - 125	
72 Ge	353466.16	0.68	383725.19	92.1	60 - 125	
72 Ge	151894.88	0.37	158633.47	95.8	60 - 125	
72 Ge	663950.69	0.43	681705.69	97.4	60 - 125	
115 In	4493064.00	0.72	4826117.50	93.1	60 - 125	
159 Tb	6796666.00	0.75	7031450.50	96.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: **Pass**
ISTD: **Pass**

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17008.D\F6B17008.D#
Date Acquired:	Feb 27 2017 01:41 pm
Operator:	CCapul
Sample Name:	S4 500
Misc Info:	
Vial Number:	1107
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 27 2017 01:40 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1836561.00	A	10510.00	0.57
7 Li	1013336.00	A	13170.00	1.30
9 Be	244438.59	P	2178.00	0.89
11 B	350372.31	P	3087.00	0.88
23 Na	208713500.00	A	826800.00	0.40
24 Mg	752345280.00	A	8579000.00	1.14
27 Al	960758780.00	A	3131000.00	0.33
28 Si	6303444.00	A	40710.00	0.65
31 P	524209.09	P	3394.00	0.65
39 K	42381608.00	A	587300.00	1.39
40 Ca	432022020.00	A	2640000.00	0.61
45 Sc	1513169.00	A	6305.00	0.42
45 Sc	315878.59	P	323.90	0.10
45 Sc	3153192.00	A	32760.00	1.04
47 Ti	1013478.00	A	10820.00	1.07
51 V	2791243.00	A	24510.00	0.88
52 Cr	3077292.00	A	28170.00	0.92
55 Mn	94878528.00	A	801600.00	0.84
56 Fe	597946110.00	A	2558000.00	0.43
59 Co	11843870.00	A	43430.00	0.37
60 Ni	998951.69	A	9371.00	0.94
63 Cu	2457886.00	A	13460.00	0.55
66 Zn	1820998.00	A	20140.00	1.11
72 Ge	352955.31	P	1533.00	0.43
72 Ge	152549.50	P	1430.00	0.94
72 Ge	665784.00	P	4700.00	0.71
75 As	442593.19	P	2500.00	0.56
78 Se	207668.91	P	1640.00	0.79
88 Sr	18065220.00	A	228700.00	1.27
90 Zr	1209543.00	A	14520.00	1.20
95 Mo	3421224.00	A	17980.00	0.53
107 Ag	828094.81	M	4032.00	0.49
111 Cd	1881340.00	A	16100.00	0.86
115 In	4398513.00	A	39230.00	0.89
118 Sn	5415586.00	A	61720.00	1.14
121 Sb	1494600.00	A	13950.00	0.93
137 Ba	5709613.00	A	44310.00	0.78
159 Tb	6695869.00	A	89290.00	1.33
182 W	797194.81	P	6355.00	0.80
205 Tl	16000140.00	A	147800.00	0.92
208 Pb	21515500.00	A	206300.00	0.96
209 Bi	3754608.00	A	46270.00	1.23
235 U	188084.09	P	1772.00	0.94
238 U	25165920.00	A	377700.00	1.50

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1836561.30	0.57	2018143.90	91.0	60 - 125	
45 Sc	1513168.80	0.42	1533625.40	98.7	60 - 125	
45 Sc	315878.63	0.10	324458.00	97.4	60 - 125	
45 Sc	3153191.80	1.04	3187477.00	98.9	60 - 125	
72 Ge	352955.34	0.43	383725.19	92.0	60 - 125	
72 Ge	152549.45	0.94	158633.47	96.2	60 - 125	
72 Ge	665784.00	0.71	681705.69	97.7	60 - 125	
115 In	4398513.50	0.89	4826117.50	91.1	60 - 125	
159 Tb	6695869.00	1.33	7031450.50	95.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: **Pass**
ISTD: **Pass**

ICV QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17009.D\F6B17009.D#
Date Acquired:	Feb 27 2017 01:45 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.71	ppb	638456.0	1.34	30.00	90 - 110	
9 Be	29.24	ppb	147908.6	0.86	30.00	90 - 110	
11 B	29.41	ppb	111136.0	1.03	30.00	90 - 110	
23 Na	29530.00	ppb	119683200.0	1.14	30000.00	90 - 110	
24 Mg	28460.00	ppb	446254020.0	0.99	30000.00	90 - 110	
27 Al	28930.00	ppb	563082820.0	1.12	30000.00	90 - 110	
28 Si	2933.00	ppb	3640191.0	0.90	3000.00	90 - 110	
31 P	295.60	ppb	317014.6	0.89	300.00	90 - 110	
39 K	29400.00	ppb	25645020.0	0.56	30000.00	90 - 110	
40 Ca	29190.00	ppb	248871600.0	1.21	30000.00	90 - 110	
47 Ti	294.40	ppb	595566.0	0.60	300.00	90 - 110	
51 V	288.60	ppb	1654101.0	0.24	300.00	90 - 110	
52 Cr	284.60	ppb	1839414.0	0.32	300.00	90 - 110	
55 Mn	1832.00	ppb	61845072.0	0.38	2000.00	90 - 110	
56 Fe	30150.00	ppb	346921220.0	0.44	30000.00	90 - 110	
59 Co	285.10	ppb	7088195.0	0.48	300.00	90 - 110	
60 Ni	279.50	ppb	605876.0	0.11	300.00	90 - 110	
63 Cu	279.10	ppb	1485224.0	1.07	300.00	90 - 110	
66 Zn	291.50	ppb	1108336.0	0.86	300.00	90 - 110	
75 As	290.30	ppb	261268.8	0.24	300.00	90 - 110	
78 Se	290.20	ppb	119567.6	0.76	300.00	90 - 110	
88 Sr	285.50	ppb	10668240.0	0.19	300.00	90 - 110	
90 Zr	23.92	ppb	608105.7	0.79	30.00	90 - 110	Fail
95 Mo	291.10	ppb	2005809.0	0.98	300.00	90 - 110	
107 Ag	28.02	ppb	494384.2	0.44	30.00	90 - 110	
111 Cd	289.00	ppb	1117133.0	0.65	300.00	90 - 110	
118 Sn	292.40	ppb	3285515.0	0.50	300.00	90 - 110	
121 Sb	59.51	ppb	913295.9	0.55	60.00	90 - 110	
137 Ba	301.00	ppb	1769654.0	0.36	300.00	90 - 110	
182 W	28.96	ppb	468999.7	0.52	30.00	90 - 110	
205 Tl	279.50	ppb	9499294.0	0.57	300.00	90 - 110	
208 Pb	279.50	ppb	13089990.0	0.57	300.00	90 - 110	
235 U	1.97	ppb	113020.9	1.01	2.20	90 - 110	Fail
238 U	282.00	ppb	15148580.0	0.20	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1900929.4	1.74	2018143.90	94.2	60 - 125	
45 Sc	1446584.5	1.67	1533625.40	94.3	60 - 125	
45 Sc	319383.6	0.61	324458.00	98.4	60 - 125	
45 Sc	3176637.8	1.20	3187477.00	99.7	60 - 125	
72 Ge	345041.1	1.28	383725.19	89.9	60 - 125	
72 Ge	154673.4	0.45	158633.47	97.5	60 - 125	
72 Ge	670194.8	0.84	681705.69	98.3	60 - 125	
115 In	4516197.0	0.43	4826117.50	93.6	60 - 125	
159 Tb	6912048.0	0.95	7031450.50	98.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17010.D\F6B17010.D#
Date Acquired:	Feb 27 2017 01:50 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0482	ppb	119030.1	101.64	0.20	
9 Be	0.0053	ppb	65.6	42.66	0.10	
11 B	0.0661	ppb	7002.9	63.48	5.00	
23 Na	-19.2200	ppb	322810.3	3.10	40.00	
24 Mg	-1.8760	ppb	31580.3	5.46	10.00	
27 Al	0.2660	ppb	11974.0	20.46	20.00	
28 Si	0.9562	ppb	3394.9	4.22	20.00	
31 P	-2.1890	ppb	16376.2	13.22	10.00	
39 K	1.2110	ppb	75994.1	126.67	20.00	
40 Ca	-0.3871	ppb	43522.6	22.13	25.00	
47 Ti	-0.0101	ppb	135.6	69.61	0.50	
51 V	-0.0637	ppb	2573.8	8.85	0.50	
52 Cr	-0.0078	ppb	472.0	37.55	0.20	
55 Mn	-0.0299	ppb	3366.0	18.31	0.20	
56 Fe	3.5600	ppb	49184.1	6.25	10.00	
59 Co	0.0022	ppb	323.3	24.39	0.20	
60 Ni	0.0044	ppb	78.2	70.86	0.20	
63 Cu	-0.0725	ppb	760.5	5.53	0.40	
66 Zn	-0.0143	ppb	1085.6	123.97	2.00	
75 As	0.0202	ppb	96.7	27.91	0.20	
78 Se	0.0664	ppb	35.6	33.74	0.20	
90 Zr	-0.0140	ppb	554.5	14.75	2.00	
95 Mo	0.1260	ppb	984.5	11.71	0.40	
107 Ag	-0.0001	ppb	50.0	811.87	0.20	
111 Cd	0.0114	ppb	82.5	27.39	0.20	
118 Sn	0.1111	ppb	1513.5	6.72	0.20	
121 Sb	0.0129	ppb	423.4	9.95	0.40	
137 Ba	0.0062	ppb	108.9	26.52	0.20	
182 W	0.0223	ppb	541.1	7.23	1.00	
205 Tl	0.0405	ppb	1906.9	7.97	0.20	
208 Pb	0.0088	ppb	1087.8	13.90	0.10	
235 U	0.0003	ppb	27.8	49.75	1.00	
238 U	0.0347	ppb	2106.9	8.63	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2008405.1	1.85	2018143.90	99.5	60 - 125	
45 Sc	1506836.8	0.62	1533625.40	98.3	60 - 125	
45 Sc	319861.3	0.58	324458.00	98.6	60 - 125	
45 Sc	3221547.0	1.03	3187477.00	101.1	60 - 125	
72 Ge	373830.4	0.60	383725.19	97.4	60 - 125	
72 Ge	158150.5	0.59	158633.47	99.7	60 - 125	
72 Ge	700526.1	0.98	681705.69	102.8	60 - 125	
115 In	4917547.5	1.80	4826117.50	101.9	60 - 125	
159 Tb	7193673.0	1.63	7031450.50	102.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17011.D\F6B17011.D#
Date Acquired:	Feb 27 2017 01:54 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	MRLB2701
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	134692.1	0.0000	0.9845	ppb	5.55	50.00	
9 Be	# 3	6	5211.0	0.0000	0.9991	ppb	2.65	50.00	
11 B	# 3	6	43514.8	0.0000	10.1400	ppb	2.75	100.00	
23 Na	# 1	45	748093.3	0.0000	87.1900	ppb	3.71	50000.00	
24 Mg	# 3	45	1628842.0	0.0000	101.0000	ppb	0.95	50000.00	
27 Al	# 3	45	1983424.0	0.0000	102.5000	ppb	1.97	50000.00	
28 Si	# 1	45	4234.1	0.0000	1.7030	ppb	5.61	5000.00	
31 P	# 3	45	70880.7	0.0000	52.6200	ppb	2.17	500.00	
39 K	# 2	45	163258.8	0.0000	105.2000	ppb	1.42	50000.00	
40 Ca	# 1	45	959654.0	0.0000	106.0000	ppb	0.53	50000.00	
47 Ti	# 3	45	2203.6	0.0000	1.0230	ppb	2.53	500.00	
51 V	# 2	45	8308.3	0.0000	0.9664	ppb	0.41	500.00	
52 Cr	# 2	45	7115.1	0.0000	1.0410	ppb	1.93	500.00	
55 Mn	# 3	45	38683.3	0.0000	1.0280	ppb	1.54	3000.00	
56 Fe	# 1	45	1307108.0	0.0000	111.8000	ppb	0.70	50000.00	
59 Co	# 3	45	27260.2	0.0000	1.0960	ppb	1.15	500.00	
60 Ni	# 2	45	2375.5	0.0000	1.0850	ppb	0.70	500.00	
63 Cu	# 2	45	6420.3	0.0000	1.0150	ppb	0.13	500.00	
66 Zn	# 3	72	41695.2	0.0000	10.5800	ppb	2.32	500.00	
75 As	# 2	72	970.3	0.0000	0.9917	ppb	1.55	500.00	
78 Se	# 1	72	470.7	0.0000	1.0780	ppb	1.78	500.00	
88 Sr	# 3	72	82413.5	0.0000	2.1270	ppb	0.55	500.00	
90 Zr	# 3	72	72886.5	0.0000	2.8060	ppb	0.88	50.00	
95 Mo	# 3	115	7666.7	0.0000	1.0580	ppb	0.94	500.00	
107 Ag	# 3	115	19249.1	0.0000	1.0400	ppb	2.03	50.00	
111 Cd	# 3	115	4417.6	0.0000	1.0840	ppb	1.81	500.00	
118 Sn	# 3	115	12491.4	0.0000	1.0500	ppb	2.89	500.00	
121 Sb	# 3	115	16005.0	0.0000	0.9845	ppb	0.43	500.00	
137 Ba	# 3	115	6508.4	0.0000	1.0470	ppb	1.90	1000.00	
182 W	# 3	159	32354.6	0.0000	1.9890	ppb	0.98	50.00	
205 Tl	# 3	159	36894.6	0.0000	1.0730	ppb	1.08	500.00	
208 Pb	# 3	159	51252.0	0.0000	1.0810	ppb	1.56	500.00	
235 U	# 3	159	448.9	0.0000	0.0077	ppb	1.95	30.00	
238 U	# 3	159	54861.7	0.0000	1.0190	ppb	1.76	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1946481.90	0.95	2018143.90	96.4	60 - 125	
45 Sc # 1	1463035.00	1.36	1533625.40	95.4	60 - 125	
45 Sc # 2	313488.97	0.48	324458.00	96.6	60 - 125	
45 Sc # 3	3148426.30	1.90	3187477.00	98.8	60 - 125	
72 Ge # 1	361165.06	0.41	383725.19	94.1	60 - 125	
72 Ge # 2	154911.89	0.67	158633.47	97.7	60 - 125	
72 Ge # 3	677143.25	0.74	681705.69	99.3	60 - 125	
115 In # 3	4725831.00	1.10	4826117.50	97.9	60 - 125	
159 Tb # 3	6909946.00	1.53	7031450.50	98.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

0 :Element Failures
0 :ISTD Failures

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

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17012.D\F6B17012.D#
Date Acquired:	Feb 27 2017 01:59 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	MRLB2702
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	131371.1	0.0000	0.4352	ppb	14.75	50.00	
9 Be	# 3	6	2761.4	0.0000	0.4982	ppb	6.47	50.00	
11 B	# 3	6	7767.8	0.0000	0.2214	ppb	17.83	100.00	
23 Na	# 1	45	531025.2	0.0000	30.2600	ppb	0.74	50000.00	
24 Mg	# 3	45	866716.6	0.0000	49.4000	ppb	1.59	50000.00	
27 Al	# 3	45	1059363.0	0.0000	52.0800	ppb	1.68	50000.00	
28 Si	# 1	45	2543.6	0.0000	0.2978	ppb	15.53	5000.00	
31 P	# 3	45	16911.5	0.0000	-2.0460	ppb	15.34	500.00	
39 K	# 2	45	123529.9	0.0000	50.0300	ppb	3.54	50000.00	
40 Ca	# 1	45	517985.1	0.0000	53.0400	ppb	0.35	50000.00	
47 Ti	# 3	45	1142.3	0.0000	0.4677	ppb	11.76	500.00	
51 V	# 2	45	5803.2	0.0000	0.4589	ppb	5.91	500.00	
52 Cr	# 2	45	4044.8	0.0000	0.5189	ppb	0.89	500.00	
55 Mn	# 3	45	21657.5	0.0000	0.4898	ppb	2.54	3000.00	
56 Fe	# 1	45	716832.0	0.0000	59.2600	ppb	0.23	50000.00	
59 Co	# 3	45	14340.7	0.0000	0.5450	ppb	1.51	500.00	
60 Ni	# 2	45	1280.1	0.0000	0.5343	ppb	1.49	500.00	
63 Cu	# 2	45	3801.0	0.0000	0.4696	ppb	3.06	500.00	
66 Zn	# 3	72	18536.6	0.0000	4.3680	ppb	1.45	500.00	
75 As	# 2	72	573.6	0.0000	0.5179	ppb	5.06	500.00	
78 Se	# 1	72	244.0	0.0000	0.5288	ppb	7.68	500.00	
88 Sr	# 3	72	22066.3	0.0000	0.5070	ppb	1.00	500.00	
90 Zr	# 3	72	1601.3	0.0000	0.0253	ppb	8.74	50.00	
95 Mo	# 3	115	4095.2	0.0000	0.5346	ppb	4.44	500.00	
107 Ag	# 3	115	2517.0	0.0000	0.1269	ppb	4.53	50.00	
111 Cd	# 3	115	2228.5	0.0000	0.5156	ppb	1.12	500.00	
118 Sn	# 3	115	6765.2	0.0000	0.5341	ppb	2.93	500.00	
121 Sb	# 3	115	8573.9	0.0000	0.4953	ppb	3.82	500.00	
137 Ba	# 3	115	3346.1	0.0000	0.5063	ppb	5.73	1000.00	
182 W	# 3	159	208.9	0.0000	0.0025	ppb	95.63	50.00	
205 Tl	# 3	159	20249.2	0.0000	0.5553	ppb	1.40	500.00	
208 Pb	# 3	159	27886.7	0.0000	0.5548	ppb	0.24	500.00	
235 U	# 3	159	215.6	0.0000	0.0034	ppb	11.86	30.00	
238 U	# 3	159	29163.1	0.0000	0.5150	ppb	1.81	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	2055414.10	1.04	2018143.90	101.8	60 - 125	
45 Sc # 1	1506722.40	0.92	1533625.40	98.2	60 - 125	
45 Sc # 2	333359.44	0.73	324458.00	102.7	60 - 125	
45 Sc # 3	3297724.30	1.24	3187477.00	103.5	60 - 125	
72 Ge # 1	377157.03	1.17	383725.19	98.3	60 - 125	
72 Ge # 2	163611.48	1.68	158633.47	103.1	60 - 125	
72 Ge # 3	702466.31	0.47	681705.69	103.0	60 - 125	
115 In # 3	4972203.00	1.26	4826117.50	103.0	60 - 125	
159 Tb # 3	7242692.50	0.33	7031450.50	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

0 :Element Failures
0 :ISTD Failures

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17013.D\F6B17013.D#
Date Acquired:	Feb 27 2017 02:03 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.40	ppb	112737.3	5.60	---	
9 Be	0.01	ppb	102.2	24.47	---	
11 B	0.30	ppb	6966.2	15.91	---	
23 Na	101800.00	ppb	422001600.0	0.40	120000.00	
24 Mg	98540.00	ppb	1486642900.0	0.72	120000.00	
27 Al	100200.00	ppb	1878158000.0	1.01	120000.00	
28 Si	5.66	ppb	9329.9	0.75	---	
31 P	105200.00	ppb	102265600.0	0.47	---	
39 K	101200.00	ppb	87001168.0	0.53	120000.00	
40 Ca	100600.00	ppb	879217280.0	1.05	120000.00	
47 Ti	2133.00	ppb	4152224.0	0.46	2400.00	
51 V	0.01	ppb	2954.1	77.49	---	
52 Cr	1.33	ppb	8968.1	0.55	---	
55 Mn	0.13	ppb	8506.0	7.32	---	
56 Fe	103600.00	ppb	1221716000.0	0.36	120000.00	
59 Co	0.22	ppb	5573.5	4.12	---	
60 Ni	0.21	ppb	512.7	3.62	---	
63 Cu	0.67	ppb	4640.1	2.27	---	
66 Zn	2.27	ppb	9692.4	1.02	---	
75 As	0.18	ppb	237.8	5.36	---	
78 Se	0.09	ppb	41.1	24.38	---	
88 Sr	0.63	ppb	25703.3	1.46	---	
90 Zr	0.29	ppb	8178.1	5.46	---	
95 Mo	2087.00	ppb	13595600.0	0.76	2400.00	
107 Ag	0.02	ppb	394.5	9.86	---	
111 Cd	0.21	ppb	808.9	25.01	---	
118 Sn	0.04	ppb	601.1	7.98	---	
121 Sb	0.05	ppb	909.0	5.39	---	
137 Ba	0.10	ppb	625.6	5.53	---	
182 W	0.13	ppb	2200.3	2.66	---	
205 Tl	0.00	ppb	582.3	13.93	---	
208 Pb	0.22	ppb	10249.7	3.46	---	
235 U	0.00	ppb	24.4	63.87	---	
238 U	0.01	ppb	517.8	4.42	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1774176.9	1.02	2018143.90	87.9	60 - 125	
45 Sc	1482988.6	0.82	1533625.40	96.7	60 - 125	
45 Sc	315352.0	0.20	324458.00	97.2	60 - 125	
45 Sc	3057003.5	0.88	3187477.00	95.9	60 - 125	
72 Ge	347843.5	0.89	383725.19	90.6	60 - 125	
72 Ge	153369.2	0.29	158633.47	96.7	60 - 125	
72 Ge	668420.9	0.74	681705.69	98.1	60 - 125	
115 In	4269288.0	1.15	4826117.50	88.5	60 - 125	
159 Tb	6497398.0	1.22	7031450.50	92.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17014.D\F6B17014.D#
Date Acquired:	Feb 27 2017 02:08 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.02	ppb	443271.0	0.46	20.00	80 - 120	
9 Be	20.39	ppb	95367.9	0.34	20.00	80 - 120	
11 B	19.71	ppb	70785.0	0.88	20.00	80 - 120	
23 Na	101900.00	ppb	402933090.0	0.80	100000.00	80 - 120	
24 Mg	96810.00	ppb	1452871000.0	0.57	100000.00	80 - 120	
27 Al	99350.00	ppb	1851542000.0	0.44	100000.00	80 - 120	
28 Si	206.40	ppb	252362.5	0.69	200.00	80 - 120	
31 P	104100.00	ppb	100660900.0	0.59	100000.00	80 - 120	
39 K	100000.00	ppb	83718016.0	0.54	100000.00	80 - 120	
40 Ca	101400.00	ppb	845576320.0	0.20	100000.00	80 - 120	
47 Ti	2126.00	ppb	4115993.0	0.99	2000.00	80 - 120	
51 V	20.29	ppb	114458.3	0.19	20.00	80 - 120	
52 Cr	20.90	ppb	130338.9	0.34	20.00	80 - 120	
55 Mn	19.44	ppb	632353.8	0.53	20.00	80 - 120	
56 Fe	102900.00	ppb	1158166000.0	0.15	100000.00	80 - 120	
59 Co	20.00	ppb	476122.9	0.25	20.00	80 - 120	
60 Ni	18.82	ppb	39276.5	0.64	20.00	80 - 120	
63 Cu	19.39	ppb	100213.9	0.28	20.00	80 - 120	
66 Zn	20.97	ppb	79712.2	0.71	20.00	80 - 120	
75 As	20.99	ppb	18136.7	0.36	20.00	80 - 120	
78 Se	21.93	ppb	8823.6	1.03	20.00	80 - 120	
88 Sr	20.06	ppb	741829.6	0.43	20.00	80 - 120	
90 Zr	2.27	ppb	57683.0	0.42	20.00	80 - 120	Fail
95 Mo	2078.00	ppb	13420690.0	1.47	2000.00	80 - 120	
107 Ag	18.68	ppb	309064.5	0.92	20.00	80 - 120	
111 Cd	19.97	ppb	72367.6	0.95	20.00	80 - 120	
118 Sn	19.97	ppb	210506.2	1.08	20.00	80 - 120	
121 Sb	20.47	ppb	294534.6	0.56	20.00	80 - 120	
137 Ba	20.57	ppb	113392.0	1.60	20.00	80 - 120	
182 W	19.39	ppb	292796.3	0.73	20.00	80 - 120	
205 Tl	19.80	ppb	627669.8	0.70	20.00	80 - 120	
208 Pb	19.66	ppb	858873.8	0.10	20.00	80 - 120	
235 U	0.14	ppb	7317.9	1.36	0.14	80 - 120	
238 U	19.55	ppb	979381.5	0.84	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1756842.6	0.89	2018143.90	87.1	60 - 125	
45 Sc	1414448.9	1.60	1533625.40	92.2	60 - 125	
45 Sc	307037.8	0.37	324458.00	94.6	60 - 125	
45 Sc	3040972.8	0.72	3187477.00	95.4	60 - 125	
72 Ge	336753.8	0.99	383725.19	87.8	60 - 125	
72 Ge	147936.6	0.37	158633.47	93.3	60 - 125	
72 Ge	661530.8	0.43	681705.69	97.0	60 - 125	
115 In	4233682.5	0.52	4826117.50	87.7	60 - 125	
159 Tb	6443543.0	0.52	7031450.50	91.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17016.D\F6B17016.D#
Date Acquired: Feb 27 2017 02:17 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 27 2017 01:44 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.55 ppb	0.68	25.00	90 - 110	
9 Be	24.92 ppb	0.44	25.00	90 - 110	
11 B	49.34 ppb	0.48	50.00	90 - 110	
23 Na	24790.00 ppb	1.83	25000.00	90 - 110	
24 Mg	24130.00 ppb	1.53	25000.00	90 - 110	
27 Al	24700.00 ppb	1.68	25000.00	90 - 110	
28 Si	2472.00 ppb	1.64	2500.00	90 - 110	
31 P	252.90 ppb	1.20	250.00	90 - 110	
39 K	24920.00 ppb	0.59	25000.00	90 - 110	
40 Ca	24590.00 ppb	0.80	25000.00	90 - 110	
47 Ti	249.60 ppb	0.69	250.00	90 - 110	
51 V	249.70 ppb	1.15	250.00	90 - 110	
52 Cr	245.40 ppb	0.43	250.00	90 - 110	
55 Mn	1439.00 ppb	1.80	1500.00	90 - 110	
56 Fe	25530.00 ppb	1.12	25000.00	90 - 110	
59 Co	245.30 ppb	1.12	250.00	90 - 110	
60 Ni	246.00 ppb	0.43	250.00	90 - 110	
63 Cu	242.60 ppb	0.91	250.00	90 - 110	
66 Zn	251.90 ppb	1.50	250.00	90 - 110	
75 As	254.50 ppb	0.11	250.00	90 - 110	
78 Se	252.40 ppb	0.66	250.00	90 - 110	
88 Sr	250.10 ppb	0.59	250.00	90 - 110	
90 Zr	23.23 ppb	0.35	25.00	90 - 110	
95 Mo	254.90 ppb	0.62	250.00	90 - 110	
107 Ag	24.46 ppb	1.25	25.00	90 - 110	
111 Cd	252.90 ppb	0.70	250.00	90 - 110	
118 Sn	251.20 ppb	1.04	250.00	90 - 110	
121 Sb	50.21 ppb	0.72	50.00	90 - 110	
137 Ba	509.80 ppb	0.38	500.00	90 - 110	
182 W	24.92 ppb	0.47	25.00	90 - 110	
205 Tl	246.50 ppb	1.21	250.00	90 - 110	
208 Pb	242.90 ppb	1.17	250.00	90 - 110	
235 U	1.72 ppb	0.65	1.80	90 - 110	
238 U	245.90 ppb	0.60	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1841292.50	0.32	2018143.90	91.2	60 - 125	
45 Sc	1475130.80	1.45	1533625.40	96.2	60 - 125	
45 Sc	314009.91	0.69	324458.00	96.8	60 - 125	
45 Sc	3108478.00	1.45	3187477.00	97.5	60 - 125	
72 Ge	351892.06	0.53	383725.19	91.7	60 - 125	
72 Ge	152807.88	0.26	158633.47	96.3	60 - 125	
72 Ge	654571.94	0.25	681705.69	96.0	60 - 125	
115 In	4427596.00	0.51	4826117.50	91.7	60 - 125	
159 Tb	6740319.00	0.24	7031450.50	95.9	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17017.D\F6B17017.D#
Date Acquired:	Feb 27 2017 02:22 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0431	ppb	114158.2	155.16	0.20	
9 Be	0.0039	ppb	55.6	67.05	0.10	
11 B	-0.2333	ppb	5631.2	35.16	5.00	
23 Na	-34.8100	ppb	257247.3	3.01	40.00	
24 Mg	-1.3360	ppb	38812.6	3.61	10.00	
27 Al	0.4452	ppb	14987.8	10.74	20.00	
28 Si	0.5215	ppb	2833.7	13.47	20.00	
31 P	-1.4480	ppb	16557.4	15.54	10.00	
39 K	1.7480	ppb	76617.2	45.42	20.00	
40 Ca	-0.7809	ppb	40031.9	13.33	25.00	
47 Ti	-0.0011	ppb	148.9	415.38	0.50	
51 V	-0.0541	ppb	2634.0	6.40	0.50	
52 Cr	-0.0139	ppb	433.3	8.11	0.20	
55 Mn	-0.0347	ppb	3092.6	19.34	0.20	
56 Fe	3.4670	ppb	48065.1	5.52	10.00	
59 Co	0.0002	ppb	263.3	494.99	0.20	
60 Ni	-0.0046	ppb	58.7	71.51	0.20	
63 Cu	-0.0679	ppb	786.5	8.27	0.40	
66 Zn	-0.0506	ppb	911.2	8.58	2.00	
75 As	0.0028	ppb	80.0	516.67	0.20	
78 Se	0.0451	ppb	26.2	8.05	0.20	
88 Sr	-0.0242	ppb	1219.0	3.08	0.20	
90 Zr	-0.0244	ppb	267.8	3.73	2.00	
95 Mo	0.1554	ppb	1166.8	5.32	0.40	
107 Ag	-0.0005	ppb	40.0	53.48	0.20	
111 Cd	0.0021	ppb	41.7	266.13	0.20	
118 Sn	0.0485	ppb	724.5	7.07	0.20	
121 Sb	0.0141	ppb	428.9	13.35	0.40	
137 Ba	0.0087	ppb	121.1	58.56	0.20	
182 W	0.0104	ppb	331.1	33.24	1.00	
205 Tl	0.0134	ppb	923.4	5.12	0.20	
208 Pb	0.0052	ppb	885.6	42.26	0.10	
235 U	0.0002	ppb	17.8	21.03	1.00	
238 U	0.0234	ppb	1435.7	10.06	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1924690.0	0.93	2018143.90	95.4	60 - 125	
45 Sc	1507274.9	1.40	1533625.40	98.3	60 - 125	
45 Sc	320495.5	0.39	324458.00	98.8	60 - 125	
45 Sc	3112829.0	1.33	3187477.00	97.7	60 - 125	
72 Ge	375858.3	1.02	383725.19	97.9	60 - 125	
72 Ge	157072.7	0.99	158633.47	99.0	60 - 125	
72 Ge	677873.9	0.47	681705.69	99.4	60 - 125	
115 In	4761600.5	1.21	4826117.50	98.7	60 - 125	
159 Tb	6991216.5	1.03	7031450.50	99.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

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

Data Results:

Analytes: Pass

ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17089.D\F6B17089.D#
Date Acquired:	Feb 27 2017 10:24 pm
Operator:	CCapul
Sample Name:	CCV9
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	Feb 27 2017 01:44 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.31 ppb	1.02	25.00	90 - 110	
9 Be	24.57 ppb	1.11	25.00	90 - 110	
11 B	50.89 ppb	0.78	50.00	90 - 110	
23 Na	24630.00 ppb	0.58	25000.00	90 - 110	
24 Mg	23360.00 ppb	1.24	25000.00	90 - 110	
27 Al	24000.00 ppb	1.06	25000.00	90 - 110	
28 Si	2526.00 ppb	0.33	2500.00	90 - 110	
31 P	250.00 ppb	1.13	250.00	90 - 110	
39 K	24990.00 ppb	1.50	25000.00	90 - 110	
40 Ca	25060.00 ppb	0.14	25000.00	90 - 110	
47 Ti	249.00 ppb	1.11	250.00	90 - 110	
51 V	251.60 ppb	0.78	250.00	90 - 110	
52 Cr	244.90 ppb	0.40	250.00	90 - 110	
55 Mn	1445.00 ppb	0.98	1500.00	90 - 110	
56 Fe	26050.00 ppb	0.38	25000.00	90 - 110	
59 Co	246.80 ppb	0.99	250.00	90 - 110	
60 Ni	245.50 ppb	0.82	250.00	90 - 110	
63 Cu	243.10 ppb	1.26	250.00	90 - 110	
66 Zn	246.60 ppb	0.27	250.00	90 - 110	
75 As	254.00 ppb	0.49	250.00	90 - 110	
78 Se	255.00 ppb	0.34	250.00	90 - 110	
88 Sr	253.00 ppb	0.54	250.00	90 - 110	
90 Zr	22.55 ppb	1.02	25.00	90 - 110	
95 Mo	252.80 ppb	0.74	250.00	90 - 110	
107 Ag	24.40 ppb	0.26	25.00	90 - 110	
111 Cd	252.70 ppb	1.00	250.00	90 - 110	
118 Sn	249.60 ppb	0.87	250.00	90 - 110	
121 Sb	49.86 ppb	0.25	50.00	90 - 110	
137 Ba	513.20 ppb	0.27	500.00	90 - 110	
182 W	25.10 ppb	0.62	25.00	90 - 110	
205 Tl	251.30 ppb	0.75	250.00	90 - 110	
208 Pb	247.80 ppb	1.48	250.00	90 - 110	
235 U	1.73 ppb	1.72	1.80	90 - 110	
238 U	246.80 ppb	0.85	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1545292.80	0.55	2018143.90	76.6	60 - 125	
45 Sc	1203543.40	0.34	1533625.40	78.5	60 - 125	
45 Sc	252051.58	0.57	324458.00	77.7	60 - 125	
45 Sc	2628599.00	1.44	3187477.00	82.5	60 - 125	
72 Ge	292949.63	0.43	383725.19	76.3	60 - 125	
72 Ge	124411.74	0.12	158633.47	78.4	60 - 125	
72 Ge	561747.94	0.49	681705.69	82.4	60 - 125	
115 In	3836102.00	0.73	4826117.50	79.5	60 - 125	
159 Tb	5794954.00	1.37	7031450.50	82.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17090.D\F6B17090.D#
Date Acquired:	Feb 27 2017 10:28 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB9
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1636	ppb	94455.9	5.64	0.20	
9 Be	0.0023	ppb	40.0	30.10	0.10	
11 B	0.7030	ppb	7604.3	8.27	5.00	
23 Na	-52.4900	ppb	149251.6	2.22	40.00	Fail
24 Mg	-1.7030	ppb	28440.6	6.89	10.00	
27 Al	0.6267	ppb	15816.5	16.04	20.00	
28 Si	7.6580	ppb	9842.4	4.60	20.00	
31 P	-1.1070	ppb	14480.7	22.86	10.00	
39 K	1.0410	ppb	62133.8	42.75	20.00	
40 Ca	2.4070	ppb	55791.4	21.04	25.00	
47 Ti	-0.0193	ppb	96.7	37.10	0.50	
51 V	-0.0308	ppb	2262.9	34.31	0.50	
52 Cr	-0.0033	ppb	410.7	57.13	0.20	
55 Mn	-0.0099	ppb	3353.8	48.17	0.20	
56 Fe	4.1110	ppb	45540.6	8.30	10.00	
59 Co	0.0065	ppb	357.8	46.46	0.20	
60 Ni	-0.0027	ppb	51.3	41.16	0.20	
63 Cu	-0.1384	ppb	335.1	1.58	0.40	
66 Zn	0.0316	ppb	1044.5	51.55	2.00	
75 As	0.0314	ppb	88.4	47.28	0.20	
78 Se	0.0467	ppb	22.2	4.81	0.20	
88 Sr	0.0861	ppb	4594.2	205.85	0.20	
90 Zr	-0.0233	ppb	252.2	8.01	2.00	
95 Mo	0.0987	ppb	661.1	4.18	0.40	
107 Ag	-0.0006	ppb	33.3	94.49	0.20	
111 Cd	0.0034	ppb	41.2	178.12	0.20	
118 Sn	0.0648	ppb	803.4	7.13	0.20	
121 Sb	0.0161	ppb	404.5	13.00	0.40	
137 Ba	0.0206	ppb	170.0	31.02	0.20	
182 W	0.0081	ppb	254.5	8.18	1.00	
205 Tl	0.0180	ppb	933.4	14.35	0.20	
208 Pb	0.0067	ppb	831.2	7.81	0.10	
235 U	0.0000	ppb	6.7	25625.00	1.00	
238 U	0.0281	ppb	1461.2	11.91	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1624328.3	0.79	2018143.90	80.5	60 - 125	
45 Sc	1230352.5	0.69	1533625.40	80.2	60 - 125	
45 Sc	262016.7	0.03	324458.00	80.8	60 - 125	
45 Sc	2667942.3	0.42	3187477.00	83.7	60 - 125	
72 Ge	310174.4	1.01	383725.19	80.8	60 - 125	
72 Ge	130827.2	0.68	158633.47	82.5	60 - 125	
72 Ge	576950.0	0.96	681705.69	84.6	60 - 125	
115 In	4171094.0	0.89	4826117.50	86.4	60 - 125	
159 Tb	6054493.5	1.45	7031450.50	86.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17091.D\F6B17091.D#
Date Acquired: Feb 27 2017 10:32 pm
Acq. Method: EM6020R2.M
Operator: CCapu1
Sample Name: B137-01
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Feb 27 2017 01:44 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6845720.0	0.0000	540.4000	ppb	0.37	50.00	>LRS
9 Be	# 3	6	36.7	0.0000	0.0036	ppb	21.37	50.00	
11 B	# 3	6	3930478.0	0.0000	1610.0000	ppb	1.48	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	20178970.0	0.0000	1568.0000	ppb	0.61	50000.00	
27 Al	# 3	45	83527.5	0.0000	4.8980	ppb	0.36	50000.00	
28 Si	# 1	45	11261950.0	0.0000	11170.0000	ppb	0.70	5000.00	>LRS
31 P	# 3	45	19492.3	0.0000	5.3820	ppb	7.63	500.00	
39 K	# 2	45	13525210.0	0.0000	19130.0000	ppb	0.40	50000.00	
40 Ca	# 1	45	489999100.0	0.0000	70710.0000	ppb	0.40	50000.00	>LRS
47 Ti	# 3	45	3369.4	0.0000	1.9580	ppb	2.62	500.00	
51 V	# 2	45	16462.4	0.0000	3.0430	ppb	1.36	500.00	
52 Cr	# 2	45	43804.2	0.0000	8.2970	ppb	0.25	500.00	
55 Mn	# 3	45	112220.6	0.0000	3.9310	ppb	0.69	3000.00	
56 Fe	# 1	45	152151.8	0.0000	15.7300	ppb	0.97	50000.00	
59 Co	# 3	45	4639.8	0.0000	0.2172	ppb	3.13	500.00	
60 Ni	# 2	45	1981.0	0.0000	1.0980	ppb	0.65	500.00	
63 Cu	# 2	45	2588.5	0.0000	0.3864	ppb	2.28	500.00	
66 Zn	# 3	72	3589.4	0.0000	0.9850	ppb	1.25	500.00	
75 As	# 2	72	4508.3	0.0000	6.5900	ppb	0.90	500.00	
78 Se	# 1	72	190.7	0.0000	0.5947	ppb	10.06	500.00	
88 Sr	# 3	72	52491072.0	0.0000	1892.0000	ppb	0.45	500.00	>LRS
90 Zr	# 3	72	1499.0	0.0000	0.0447	ppb	6.62	50.00	
95 Mo	# 3	115	227748.7	0.0000	44.9300	ppb	0.40	500.00	
107 Ag	# 3	115	126.7	0.0000	0.0071	ppb	19.14	50.00	
111 Cd	# 3	115	-167.8	0.0000	-0.0673	ppb	18.95	500.00	
118 Sn	# 3	115	1760.2	0.0000	0.2003	ppb	3.42	500.00	
121 Sb	# 3	115	832.3	0.0000	0.0613	ppb	5.28	500.00	
137 Ba	# 3	115	196796.6	0.0000	45.5100	ppb	0.35	1000.00	
182 W	# 3	159	23525.3	0.0000	2.0460	ppb	0.34	50.00	
205 Tl	# 3	159	2262.5	0.0000	0.0808	ppb	6.01	500.00	
208 Pb	# 3	159	1904.6	0.0000	0.0440	ppb	4.04	500.00	
235 U	# 3	159	756.7	0.0000	0.0185	ppb	12.35	30.00	
238 U	# 3	159	94810.3	0.0000	2.4940	ppb	0.65	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1301816.40	1.85	2018143.90	64.5	60 - 125	
45 Sc # 1	1175756.80	0.96	1533625.40	76.7	60 - 125	
45 Sc # 2	258436.14	1.30	324458.00	79.7	60 - 125	
45 Sc # 3	2601638.50	0.67	3187477.00	81.6	60 - 125	
72 Ge # 1	262584.97	0.38	383725.19	68.4	60 - 125	
72 Ge # 2	116088.34	0.74	158633.47	73.2	60 - 125	
72 Ge # 3	497626.09	0.56	681705.69	73.0	60 - 125	
115 In # 3	3321446.00	0.40	4826117.50	68.8	60 - 125	
159 Tb # 3	4885198.00	1.08	7031450.50	69.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

6 :Element Failures
0 :ISTD Failures

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17092.D\F6B17092.D#
Date Acquired: Feb 27 2017 10:37 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: B137-02
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: Feb 27 2017 01:44 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6712644.0	0.0000	537.8000	ppb	1.17	50.00	>LRS
9 Be	# 3	6	28.9	0.0000	0.0015	ppb	242.44	50.00	
11 B	# 3	6	3893017.0	0.0000	1618.0000	ppb	1.03	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	20182520.0	0.0000	1599.0000	ppb	1.24	50000.00	
27 Al	# 3	45	102632.8	0.0000	6.2250	ppb	2.10	50000.00	
28 Si	# 1	45	11734110.0	0.0000	11410.0000	ppb	0.87	5000.00	>LRS
31 P	# 3	45	21503.8	0.0000	8.3350	ppb	7.17	500.00	
39 K	# 2	45	13677840.0	0.0000	19250.0000	ppb	0.91	50000.00	
40 Ca	# 1	45	509750020.0	0.0000	72110.0000	ppb	1.13	50000.00	>LRS
47 Ti	# 3	45	3313.8	0.0000	1.9650	ppb	4.87	500.00	
51 V	# 2	45	16720.9	0.0000	3.0800	ppb	1.28	500.00	
52 Cr	# 2	45	43939.3	0.0000	8.2810	ppb	0.75	500.00	
55 Mn	# 3	45	108680.2	0.0000	3.8810	ppb	1.84	3000.00	
56 Fe	# 1	45	177770.0	0.0000	18.0900	ppb	2.16	50000.00	
59 Co	# 3	45	4740.9	0.0000	0.2269	ppb	3.05	500.00	
60 Ni	# 2	45	2056.2	0.0000	1.1350	ppb	1.92	500.00	
63 Cu	# 2	45	2512.5	0.0000	0.3658	ppb	2.09	500.00	
66 Zn	# 3	72	5619.0	0.0000	1.7310	ppb	0.43	500.00	
75 As	# 2	72	4384.2	0.0000	6.3930	ppb	1.32	500.00	
78 Se	# 1	72	187.6	0.0000	0.5801	ppb	3.38	500.00	
88 Sr	# 3	72	52250420.0	0.0000	1909.0000	ppb	0.50	500.00	>LRS
90 Zr	# 3	72	1384.6	0.0000	0.0396	ppb	5.60	50.00	
95 Mo	# 3	115	226011.1	0.0000	44.7400	ppb	0.99	500.00	
107 Ag	# 3	115	146.7	0.0000	0.0086	ppb	20.15	50.00	
111 Cd	# 3	115	-482.4	0.0000	-0.1785	ppb	97.31	500.00	
118 Sn	# 3	115	508.9	0.0000	0.0491	ppb	14.13	500.00	
121 Sb	# 3	115	944.5	0.0000	0.0716	ppb	9.14	500.00	
137 Ba	# 3	115	195776.4	0.0000	45.4300	ppb	0.89	1000.00	
182 W	# 3	159	23515.3	0.0000	2.0580	ppb	1.38	50.00	
205 Tl	# 3	159	2172.5	0.0000	0.0777	ppb	3.97	500.00	
208 Pb	# 3	159	3510.3	0.0000	0.0932	ppb	3.80	500.00	
235 U	# 3	159	700.0	0.0000	0.0172	ppb	5.29	30.00	
238 U	# 3	159	94404.3	0.0000	2.4990	ppb	0.91	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1282803.90	0.58	2018143.90	63.6	60 - 125	
45 Sc # 1	1199371.90	1.85	1533625.40	78.2	60 - 125	
45 Sc # 2	259722.75	0.86	324458.00	80.0	60 - 125	
45 Sc # 3	2550940.50	1.37	3187477.00	80.0	60 - 125	
72 Ge # 1	264672.75	0.97	383725.19	69.0	60 - 125	
72 Ge # 2	116336.61	0.11	158633.47	73.3	60 - 125	
72 Ge # 3	491015.81	0.16	681705.69	72.0	60 - 125	
115 In # 3	3310327.30	0.85	4826117.50	68.6	60 - 125	
159 Tb # 3	4853508.00	0.81	7031450.50	69.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

6 :Element Failures
0 :ISTD Failures

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

Data Results:
Analytes: Fail
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17093.D\F6B17093.D#
Date Acquired:	Feb 27 2017 10:41 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA2
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.64	ppb	113008.7	5.37	---	
9 Be	0.01	ppb	90.0	27.20	---	
11 B	7.35	ppb	29398.8	5.18	---	
23 Na	103400.00	ppb	392567100.0	0.37	120000.00	
24 Mg	98440.00	ppb	1420752000.0	1.70	120000.00	
27 Al	100300.00	ppb	1798680100.0	1.73	120000.00	
28 Si	8.52	ppb	11868.4	2.36	---	
31 P	105200.00	ppb	97861512.0	1.68	---	
39 K	102800.00	ppb	82281984.0	0.40	120000.00	
40 Ca	102500.00	ppb	820363010.0	0.61	120000.00	
47 Ti	2132.00	ppb	3969706.0	0.81	2400.00	
51 V	0.05	ppb	2937.6	33.91	---	
52 Cr	1.31	ppb	8234.5	0.37	---	
55 Mn	0.12	ppb	7804.5	4.87	---	
56 Fe	102300.00	ppb	1105516000.0	0.27	120000.00	
59 Co	0.23	ppb	5481.2	4.95	---	
60 Ni	0.19	ppb	441.6	4.11	---	
63 Cu	0.69	ppb	4427.6	1.82	---	
66 Zn	2.45	ppb	9830.3	1.78	---	
75 As	0.17	ppb	209.1	6.97	---	
78 Se	0.05	ppb	23.8	22.73	---	
88 Sr	0.65	ppb	25096.8	1.12	---	
90 Zr	0.02	ppb	1399.0	18.75	---	
95 Mo	2082.00	ppb	12758320.0	0.30	2400.00	
107 Ag	0.02	ppb	325.6	12.02	---	
111 Cd	0.17	ppb	629.5	58.31	---	
118 Sn	0.04	ppb	477.8	15.89	---	
121 Sb	0.05	ppb	875.6	4.82	---	
137 Ba	0.10	ppb	586.7	3.61	---	
182 W	0.12	ppb	1868.0	1.59	---	
205 Tl	0.00	ppb	298.9	32.73	---	
208 Pb	0.22	ppb	9467.2	2.00	---	
235 U	0.00	ppb	26.7	75.11	---	
238 U	0.00	ppb	347.8	9.19	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1715912.5	0.77	2018143.90	85.0	60 - 125	
45 Sc	1358213.5	0.82	1533625.40	88.6	60 - 125	
45 Sc	293500.3	1.09	324458.00	90.5	60 - 125	
45 Sc	2925476.8	2.67	3187477.00	91.8	60 - 125	
72 Ge	317048.8	0.81	383725.19	82.6	60 - 125	
72 Ge	140059.2	0.86	158633.47	88.3	60 - 125	
72 Ge	633157.9	0.98	681705.69	92.9	60 - 125	
115 In	4015477.0	1.14	4826117.50	83.2	60 - 125	
159 Tb	5973407.5	1.06	7031450.50	85.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17094.D\F6B17094.D#
Date Acquired:	Feb 27 2017 10:46 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB2
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	19.82	ppb	419298.6	1.08	20.00	80 - 120	
9 Be	19.86	ppb	88539.0	0.51	20.00	80 - 120	
11 B	23.47	ppb	79288.4	0.74	20.00	80 - 120	
23 Na	102100.00	ppb	391036800.0	0.51	100000.00	80 - 120	
24 Mg	94950.00	ppb	1362058000.0	0.55	100000.00	80 - 120	
27 Al	98010.00	ppb	1745959000.0	0.52	100000.00	80 - 120	
28 Si	209.90	ppb	248770.9	0.32	200.00	80 - 120	
31 P	102800.00	ppb	95104192.0	0.31	100000.00	80 - 120	
39 K	100600.00	ppb	80738976.0	0.80	100000.00	80 - 120	
40 Ca	101800.00	ppb	822510530.0	0.60	100000.00	80 - 120	
47 Ti	2124.00	ppb	3930165.0	0.21	2000.00	80 - 120	
51 V	20.03	ppb	108307.8	0.67	20.00	80 - 120	
52 Cr	20.45	ppb	122227.7	0.58	20.00	80 - 120	
55 Mn	19.32	ppb	600858.1	0.63	20.00	80 - 120	
56 Fe	102700.00	ppb	1120050000.0	0.47	100000.00	80 - 120	
59 Co	19.86	ppb	452051.2	0.23	20.00	80 - 120	
60 Ni	18.33	ppb	36671.4	0.45	20.00	80 - 120	
63 Cu	18.81	ppb	93237.1	0.46	20.00	80 - 120	
66 Zn	21.05	ppb	75213.4	1.13	20.00	80 - 120	
75 As	21.04	ppb	17155.6	0.70	20.00	80 - 120	
78 Se	21.98	ppb	8527.9	0.22	20.00	80 - 120	
88 Sr	20.41	ppb	709783.9	0.40	20.00	80 - 120	
90 Zr	2.05	ppb	49122.6	1.03	20.00	80 - 120	Fail
95 Mo	2082.00	ppb	12638870.0	1.01	2000.00	80 - 120	
107 Ag	18.62	ppb	289417.7	0.72	20.00	80 - 120	
111 Cd	19.62	ppb	66822.8	0.68	20.00	80 - 120	
118 Sn	19.96	ppb	197685.6	0.13	20.00	80 - 120	
121 Sb	20.19	ppb	272954.4	0.08	20.00	80 - 120	
137 Ba	20.63	ppb	106898.3	0.52	20.00	80 - 120	
182 W	19.08	ppb	268537.8	0.75	20.00	80 - 120	
205 Tl	19.60	ppb	579119.8	0.71	20.00	80 - 120	
208 Pb	19.37	ppb	788691.2	0.76	20.00	80 - 120	
235 U	0.13	ppb	6570.7	1.58	0.14	80 - 120	
238 U	19.08	ppb	890618.1	0.38	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1674821.1	0.32	2018143.90	83.0	60 - 125	
45 Sc	1370839.6	0.43	1533625.40	89.4	60 - 125	
45 Sc	294315.7	0.63	324458.00	90.7	60 - 125	
45 Sc	2906764.5	0.81	3187477.00	91.2	60 - 125	
72 Ge	324752.2	0.32	383725.19	84.6	60 - 125	
72 Ge	139621.1	0.68	158633.47	88.0	60 - 125	
72 Ge	622047.3	0.39	681705.69	91.2	60 - 125	
115 In	3977683.8	0.23	4826117.50	82.4	60 - 125	
159 Tb	6005048.0	0.58	7031450.50	85.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\B\IF6B17.B\F6B17095.D\F6B17095.D#
Date Acquired: Feb 27 2017 10:51 pm
Operator: CCapul
Sample Name: CCV10
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: Feb 27 2017 01:44 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	24.28 ppb	0.45	25.00	90 - 110	
9 Be	24.69 ppb	0.57	25.00	90 - 110	
11 B	53.02 ppb	0.85	50.00	90 - 110	
23 Na	24530.00 ppb	0.70	25000.00	90 - 110	
24 Mg	23440.00 ppb	0.60	25000.00	90 - 110	
27 Al	24220.00 ppb	0.13	25000.00	90 - 110	
28 Si	2485.00 ppb	0.75	2500.00	90 - 110	
31 P	254.10 ppb	0.52	250.00	90 - 110	
39 K	25220.00 ppb	0.48	25000.00	90 - 110	
40 Ca	25100.00 ppb	0.83	25000.00	90 - 110	
47 Ti	249.70 ppb	0.17	250.00	90 - 110	
51 V	250.50 ppb	0.83	250.00	90 - 110	
52 Cr	244.70 ppb	0.76	250.00	90 - 110	
55 Mn	1453.00 ppb	0.08	1500.00	90 - 110	
56 Fe	25800.00 ppb	0.38	25000.00	90 - 110	
59 Co	245.70 ppb	0.07	250.00	90 - 110	
60 Ni	242.40 ppb	0.17	250.00	90 - 110	
63 Cu	239.80 ppb	0.54	250.00	90 - 110	
66 Zn	247.00 ppb	0.53	250.00	90 - 110	
75 As	253.60 ppb	0.61	250.00	90 - 110	
78 Se	252.80 ppb	0.54	250.00	90 - 110	
88 Sr	252.50 ppb	0.55	250.00	90 - 110	
90 Zr	22.69 ppb	0.92	25.00	90 - 110	
95 Mo	255.90 ppb	0.97	250.00	90 - 110	
107 Ag	24.47 ppb	1.37	25.00	90 - 110	
111 Cd	250.90 ppb	1.43	250.00	90 - 110	
118 Sn	249.00 ppb	0.66	250.00	90 - 110	
121 Sb	49.41 ppb	1.10	50.00	90 - 110	
137 Ba	508.50 ppb	1.24	500.00	90 - 110	
182 W	24.80 ppb	0.41	25.00	90 - 110	
205 Tl	248.00 ppb	0.63	250.00	90 - 110	
208 Pb	244.30 ppb	0.62	250.00	90 - 110	
235 U	1.68 ppb	1.92	1.80	90 - 110	
238 U	242.50 ppb	1.61	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1629735.60	1.33	2018143.90	80.8	60 - 125	
45 Sc	1359554.00	1.04	1533625.40	88.6	60 - 125	
45 Sc	278761.63	0.19	324458.00	85.9	60 - 125	
45 Sc	2823264.80	0.62	3187477.00	88.6	60 - 125	
72 Ge	325437.66	0.66	383725.19	84.8	60 - 125	
72 Ge	135084.66	0.33	158633.47	85.2	60 - 125	
72 Ge	594857.50	0.83	681705.69	87.3	60 - 125	
115 In	4006754.50	1.03	4826117.50	83.0	60 - 125	
159 Tb	5996491.00	1.13	7031450.50	85.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\B\IF6B17.B\F6B17096.D\F6B17096.D#
Date Acquired:	Feb 27 2017 10:55 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB10
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	Feb 27 2017 01:44 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0084	ppb	98312.4	497.67	0.20	
9 Be	0.0029	ppb	43.3	131.44	0.10	
11 B	2.8230	ppb	14222.6	4.36	5.00	
23 Na	-20.8900	ppb	274361.0	6.81	40.00	
24 Mg	-1.1790	ppb	37161.6	8.78	10.00	
27 Al	0.5925	ppb	16041.1	8.97	20.00	
28 Si	2.1200	ppb	4256.3	1.39	20.00	
31 P	-0.5876	ppb	15689.9	85.53	10.00	
39 K	0.8654	ppb	66876.2	166.63	20.00	
40 Ca	1.9350	ppb	55720.4	16.58	25.00	
47 Ti	0.0339	ppb	196.7	22.06	0.50	
51 V	-0.0338	ppb	2425.1	28.36	0.50	
52 Cr	-0.0113	ppb	397.1	7.80	0.20	
55 Mn	-0.0367	ppb	2729.2	3.66	0.20	
56 Fe	4.6320	ppb	53873.1	8.61	10.00	
59 Co	0.0007	ppb	248.9	196.67	0.20	
60 Ni	-0.0139	ppb	34.0	5.13	0.20	
63 Cu	-0.0985	ppb	549.3	0.84	0.40	
66 Zn	0.0192	ppb	1055.6	14.67	2.00	
75 As	0.0155	ppb	81.3	59.10	0.20	
78 Se	0.0402	ppb	20.9	27.90	0.20	
88 Sr	-0.0200	ppb	1231.2	6.74	0.20	
90 Zr	-0.0226	ppb	281.1	7.18	2.00	
95 Mo	0.2418	ppb	1626.8	3.41	0.40	
107 Ag	0.0004	ppb	52.2	151.05	0.20	
111 Cd	0.0026	ppb	39.9	170.27	0.20	
118 Sn	0.0536	ppb	711.2	14.58	0.20	
121 Sb	0.0128	ppb	368.9	15.33	0.40	
137 Ba	0.0130	ppb	133.3	39.72	0.20	
182 W	0.0078	ppb	257.8	35.82	1.00	
205 Tl	0.0171	ppb	936.7	4.88	0.20	
208 Pb	0.0046	ppb	765.6	17.78	0.10	
235 U	0.0003	ppb	23.3	73.61	1.00	
238 U	0.0233	ppb	1276.8	10.32	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1643977.0	1.44	2018143.90	81.5	60 - 125	
45 Sc	1309246.9	1.25	1533625.40	85.4	60 - 125	
45 Sc	282588.9	0.12	324458.00	87.1	60 - 125	
45 Sc	2805880.0	1.23	3187477.00	88.0	60 - 125	
72 Ge	327116.5	0.24	383725.19	85.2	60 - 125	
72 Ge	139277.3	1.01	158633.47	87.8	60 - 125	
72 Ge	606667.6	0.77	681705.69	89.0	60 - 125	
115 In	4316180.0	1.07	4826117.50	89.4	60 - 125	
159 Tb	6240675.5	0.60	7031450.50	88.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\B\IF6B17.B\F6B17004.D\F6B17004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

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

Comments:

Digestion Vessel Lot # 1501179 - 7A - 5241

all the samples are pH < 2

Book #: EIM-063

Batch: IMB028W

Matrix: Water

Digestor ID: E

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

Start	Temp	End	Temp
	93.6 °C		93.2 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 04 - 06	0.15
LCS-2	↓ - 04 - 01	0.15
MS	same spike soln & vol as	LCS 1 & 2
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 006 - 04 - 04	0.5 + 1
HCl	↓ - 03 - 10	0.25 + 0.25
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC681919	NA

Digestate Location	Metals
Extract Location	NA
☑ Reagent Water ID:	SM5A - 03 - 02 - 17
☑ Thermometer ID:	150590610/E14
☑ Pipette ID:	239360318
☐ Pipette ID:	NA
☐ Pipette ID:	NA
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: Sp

Standard Added By: Sp Witnessed By: [illegible]

Extract Rcvd By: [illegible] Checked By: [illegible]

EMAX LABORATORIES INC

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
17IMB028W01	IMB028WB	50	ml	2/16/17 12:08	50	50	50	1	
17IMB028W02	IMB028WL	50	ml	2/16/17 12:08	50	50	50	1	
17IMB028W03	IMB028WC	50	ml	2/16/17 12:08	50	50	50	1	
17IMB028W04	B103-01	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W05	B103-03	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W06	B103-04	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W07	B103-05	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W08	B103-06	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W09	B103-07	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W10	B103-07M	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W11	B103-07S	50	ml	2/16/17 12:10	50	50	50	1	DISSOLVED
17IMB028W12	B103-01	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W13	B103-03	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W14	B103-04	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W15	B103-05	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W16	B103-06	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W17	B103-07	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W18	B103-07M	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W19	B103-07S	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W20	B103-08	50	ml	2/16/17 12:11	50	50	50	1	TOTAL
17IMB028W21	B126-02	50	ml	2/16/17 12:13	50	50	50	1	TOTAL
17IMB028W22	B126-03	50	ml	2/16/17 12:13	50	50	50	1	TOTAL
17IMB028W23	B126-04	50	ml	2/16/17 12:13	50	50	50	1	TOTAL
17IMB028W24	B126-05	50	ml	2/16/17 12:13	50	50	50	1	TOTAL
17IMB028W25	B137-01	50	ml	2/16/17 12:14	50	50	50	1	DISSOLVED
17IMB028W26	B137-02	50	ml	2/16/17 12:14	50	50	50	1	DISSOLVED

SP 2/16/17

Vd=digestate volume

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

☑ Digestion Started @ 2/16/17 12:16

☑ Digestion Ended @ 2/16/17 16:56

Prepared By: SPara

Checked By: [illegible]

Date 2/16/17

Comments:

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD E218.6
HEXAVALENT CHROMIUM

SDG#: 17B137

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17B137

METHOD E218.6
HEXAVALENT CHROMIUM

A total of three (3) water samples were received on 02/14/17 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Hexavalent Chromium was not detected in HCB011WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. HCB011WL/HCB011WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD, and two (2) sets of MS were analyzed. Hexavalent Chromium was within MS QC limits in B137-01M/B137-01S, B137-02M, and B137-03M. Refer to Matrix QC summary form for details.

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

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

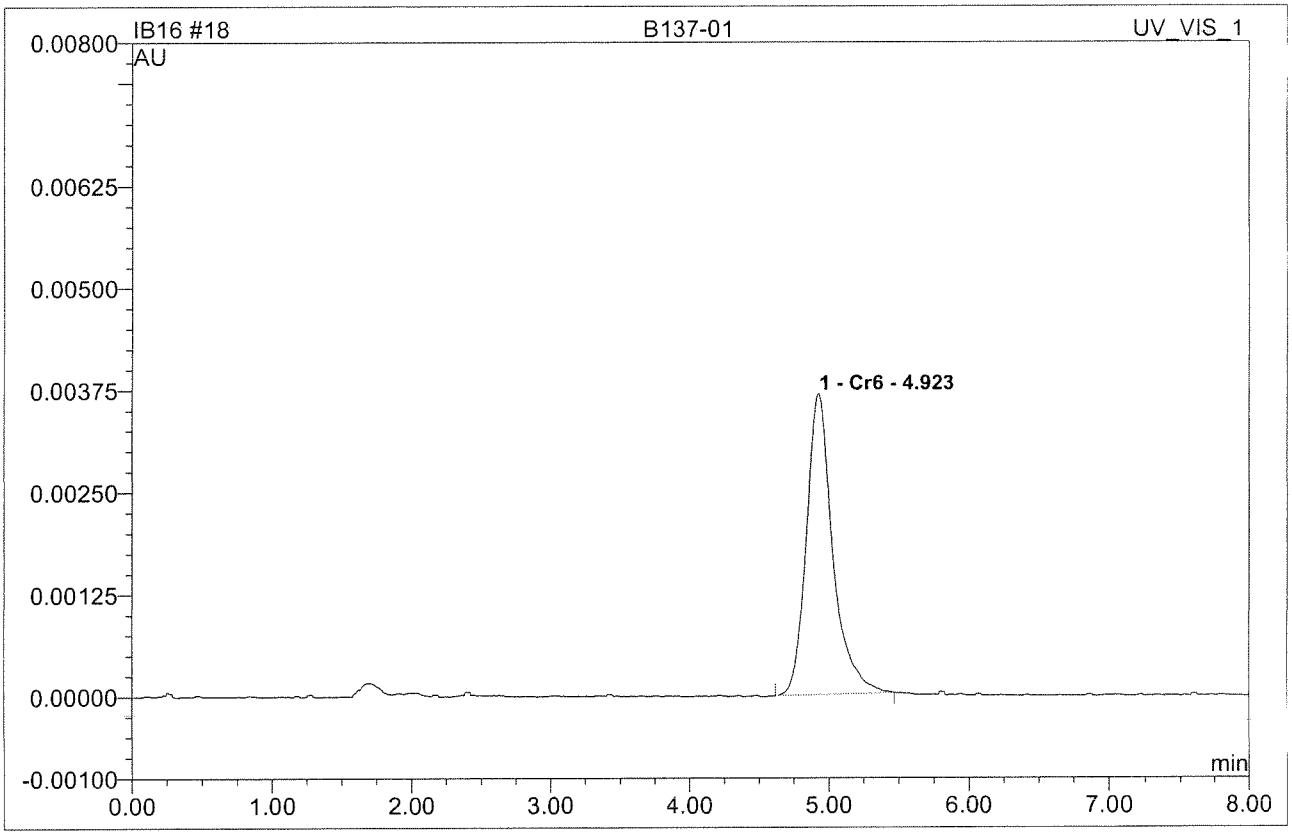
Client : ASSET LABS
Project : PG&E
Batch No. : 17B137

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCB011WB	ND	1	NA	0.2	0.1	02/16/1714:29	NA	IB16015	IB16013	HCB011W	NA	NA
LCS1W	HCB011WL	2.04	1	NA	0.2	0.1	02/16/1714:40	NA	IB16016	IB16013	HCB011W	NA	NA
LCD1W	HCB011WC	2.10	1	NA	0.2	0.1	02/16/1714:50	NA	IB16017	IB16013	HCB011W	NA	NA
MW-55-120-Q117	B137-01	7.50	1	NA	0.2	0.1	02/16/1715:01	NA	IB16018	IB16013	HCB011W	02/10/1708:45	02/14/17
MW-903-Q117	B137-02	7.33	1	NA	0.2	0.1	02/16/1715:11	NA	IB16019	IB16013	HCB011W	02/10/1708:55	02/14/17
MW-705-Q117	B137-03	ND	1	NA	0.2	0.1	02/16/1715:22	NA	IB16020	IB16013	HCB011W	02/10/1709:00	02/14/17
MW-55-120-Q117MS	B137-01M	9.41	1	NA	0.2	0.1	02/16/1715:32	NA	IB16021	IB16013	HCB011W	02/10/1708:45	02/14/17
MW-55-120-Q117MSD	B137-01S	9.37	1	NA	0.2	0.1	02/16/1715:43	NA	IB16022	IB16013	HCB011W	02/10/1708:45	02/14/17
MW-903-Q117MS	B137-02M	9.30	1	NA	0.2	0.1	02/16/1715:53	NA	IB16023	IB16013	HCB011W	02/10/1708:55	02/14/17
MW-705-Q117MS	B137-03M	1.04	1	NA	0.2	0.1	02/16/1716:04	NA	IB16024	IB16013	HCB011W	02/10/1709:00	02/14/17

IB16 018 B137-01

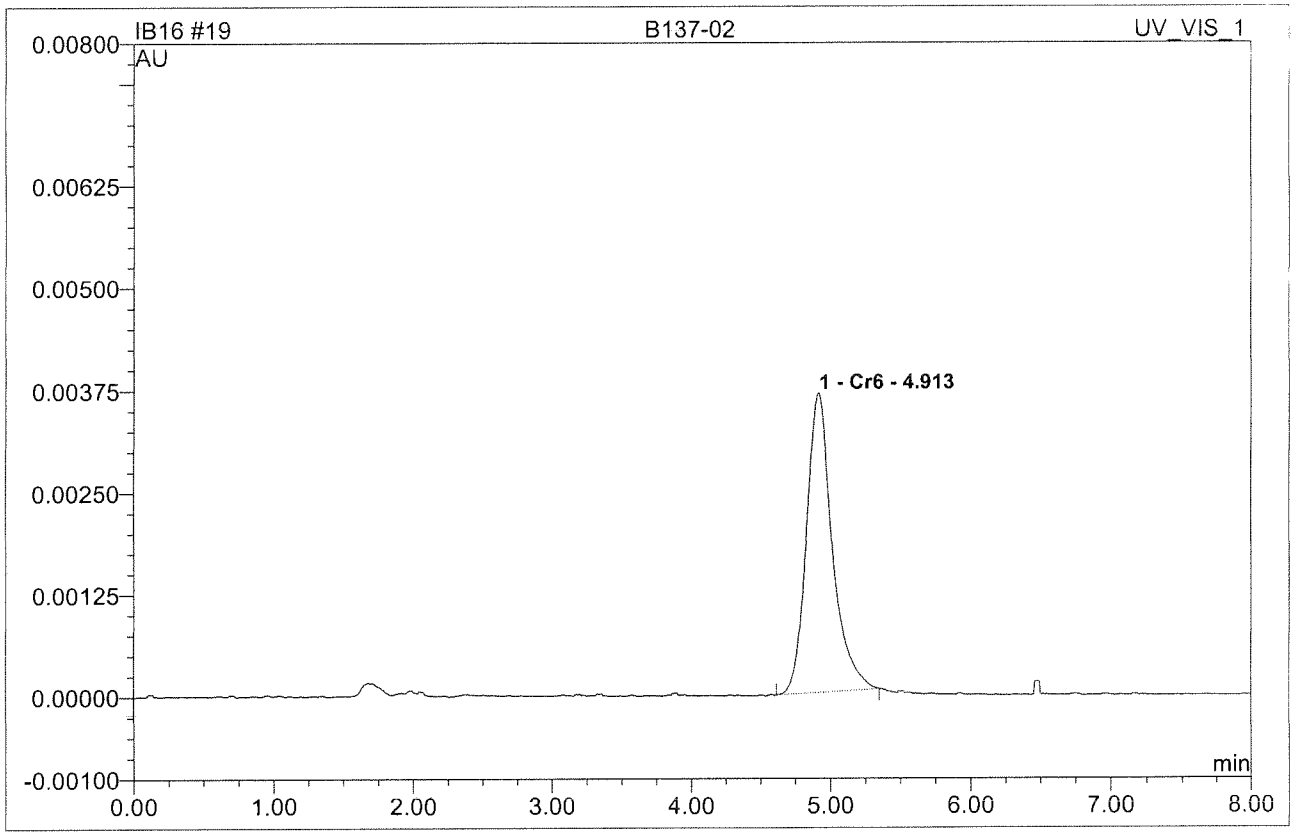
Sample Name:	**B137-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.92	Cr6	0.0036780	0.0008052	100.00	7.499	BMB
Total:			0.004	0.001	100.00	7.499	

IB16 019 B137-02

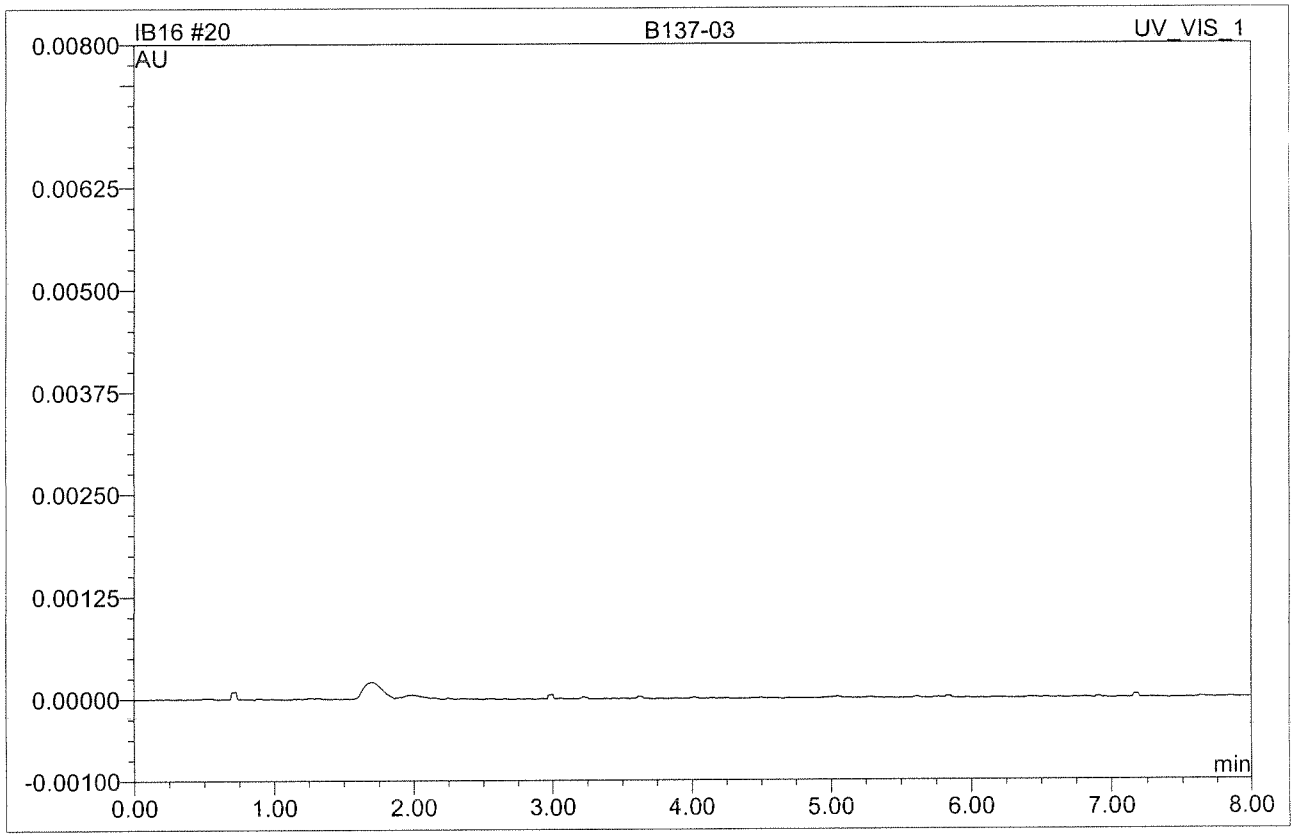
Sample Name:	**B137-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.91	Cr6	0.0036680	0.0007867	100.00	7.327	BMB
Total:			0.004	0.001	100.00	7.327	

IB16 020 B137-03

Sample Name:	**B137-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17B137
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCB011WB	HCB011WL	HCB011WC
LAB FILE ID :	IB16015	IB16016	IB16017
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	02/16/1714:29	02/16/1714:40	02/16/1714:50
PREP BATCH :	HCB011W	HCB011W	HCB011W
CALIBRATION REF:	IB16013	IB16013	IB16013

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	2	2.04	102	2	2.10	105	3	90-110	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17B137
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MW-55-120-Q117	MW-55-120-Q117MS	MW-55-120-Q117MSD
LAB SAMPLE ID :	B137-01	B137-01M	B137-01S
LAB FILE ID :	IB16018	IB16021	IB16022
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	02/16/1715:01	02/16/1715:32	02/16/1715:43
PREP BATCH :	HCB011W	HCB011W	HCB011W
CALIBRATION REF:	IB16013	IB16013	IB16013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	SPIKE AMT (ug/L)	MSD RESULT (ug/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	7.50	2	9.41	95	2	9.37	93	0.4	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17B137
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-903-Q117	MW-903-Q117MS
LAB SAMPLE ID	: B137-02	B137-02M
LAB FILE ID	: IB16019	IB16023
DATE PREPARED	: NA	NA
DATE ANALYZED	: 02/16/1715:11	02/16/1715:53
PREP BATCH	: HCB011W	HCB011W
CALIBRATION REF	: IB16013	IB16013

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	7.33	2	9.30	99	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17B137
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-705-Q117	MW-705-Q117MS
LAB SAMPLE ID	: B137-03	B137-03M
LAB FILE ID	: IB16020	IB16024
DATE PREPARED	: NA	NA
DATE ANALYZED	: 02/16/1715:22	02/16/1716:04
PREP BATCH	: HCB011W	HCB011W
CALIBRATION REF	: IB16013	IB16013

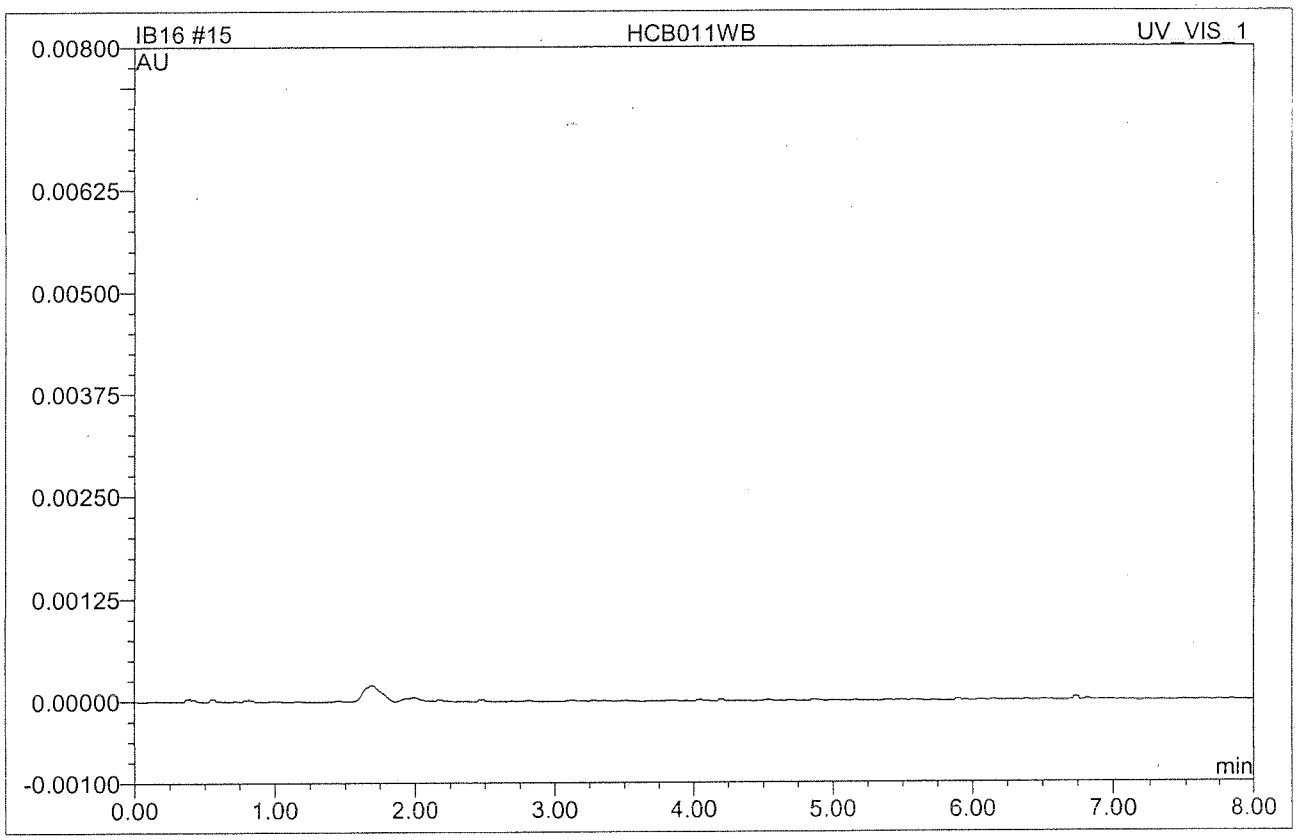
ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1	1.04	104	90-110

QC DATA

IB16 015 HCB011WB

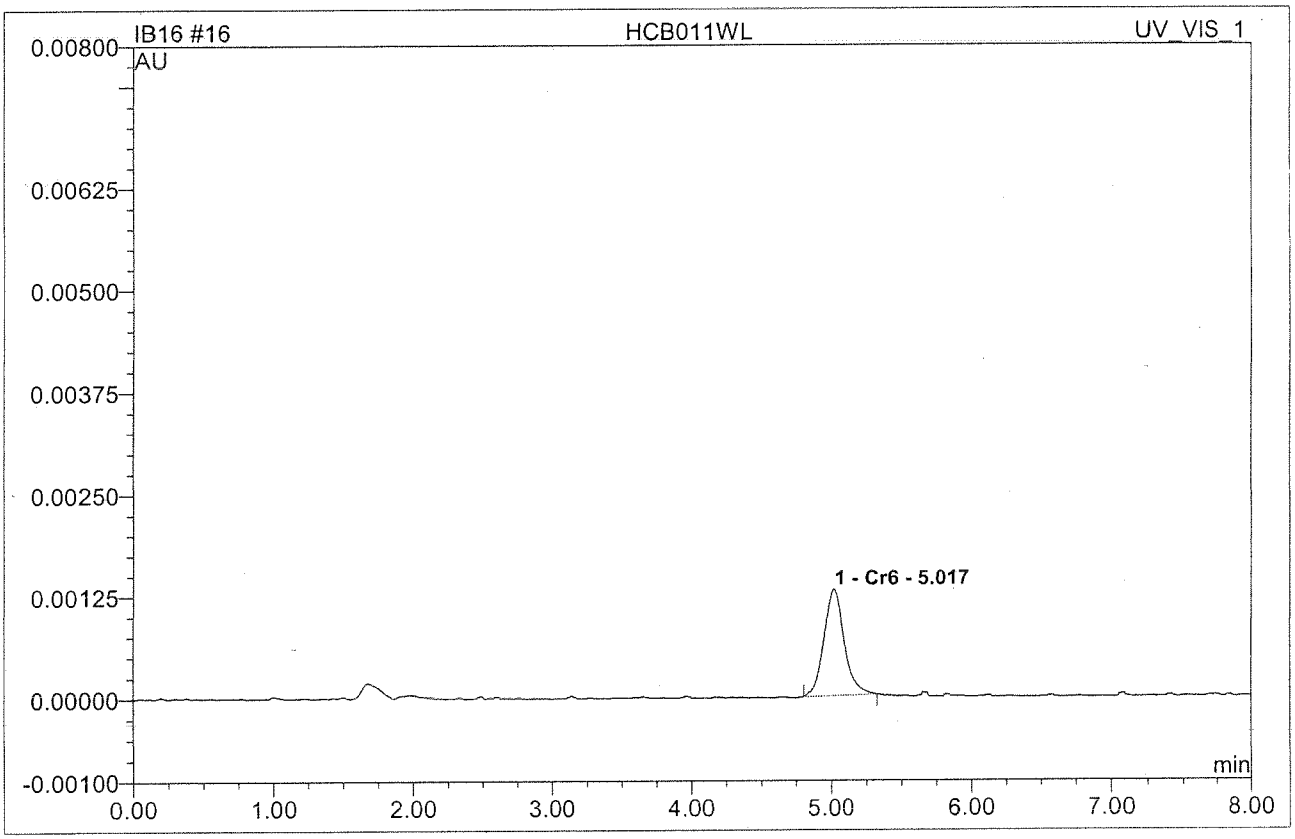
Sample Name:	**HCB011WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IB16 016 HCB011WL

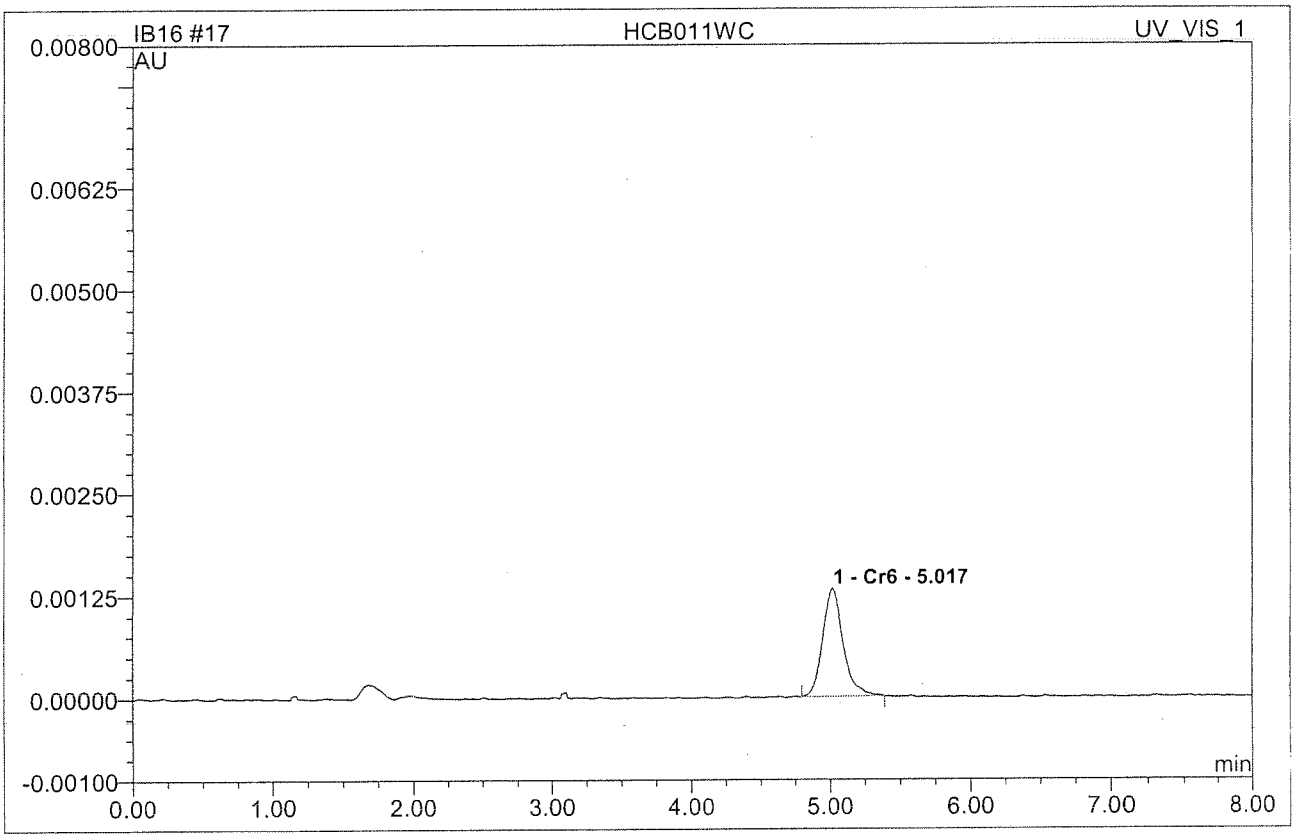
Sample Name:	**HCB011WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0013000	0.0002175	100.00	2.041	BMB
Total:			0.001	0.000	100.00	2.041	

IB16 017 HCB011WC

Sample Name:	**HCB011WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 14:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

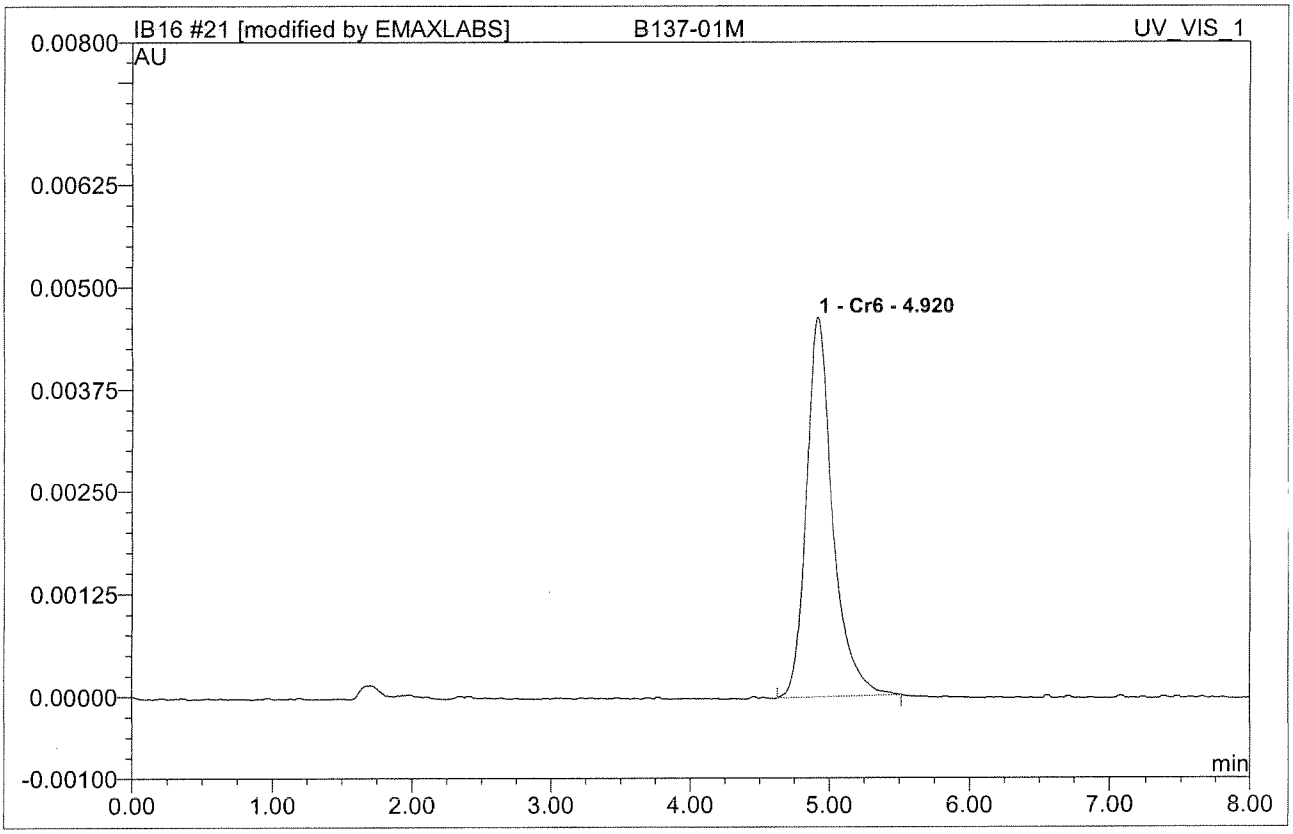


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0013160	0.0002238	100.00	2.100	BMB
Total:			0.001	0.000	100.00	2.100	

IB16 021 B137-01M

MS @ 2PPB

Sample Name:	**B137-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**

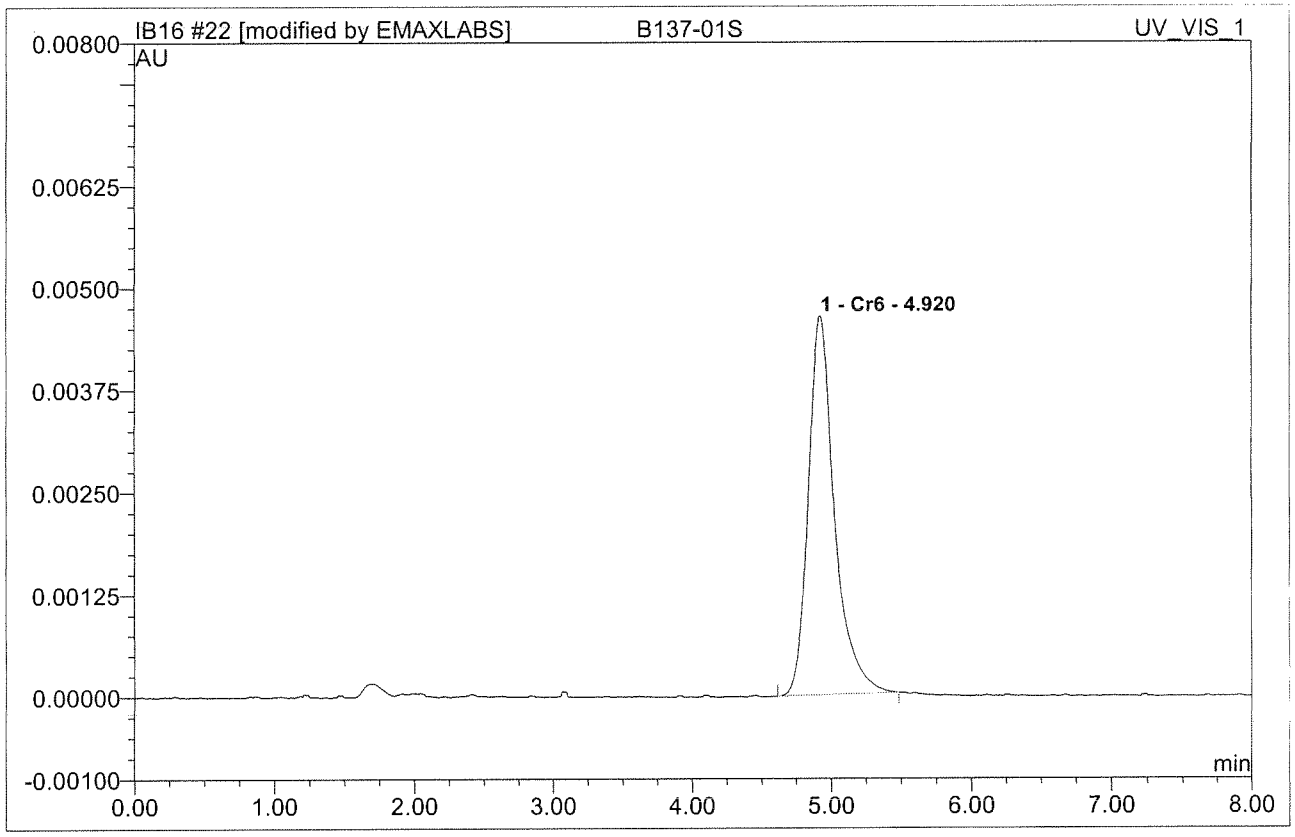


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.92	Cr6	0.0046470	0.0010112	100.00	9.412	BMB*
Total:			0.005	0.001	100.00	9.412	

IB16 022 B137-01S

MS @ 2PPB

Sample Name:	**B137-01S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**

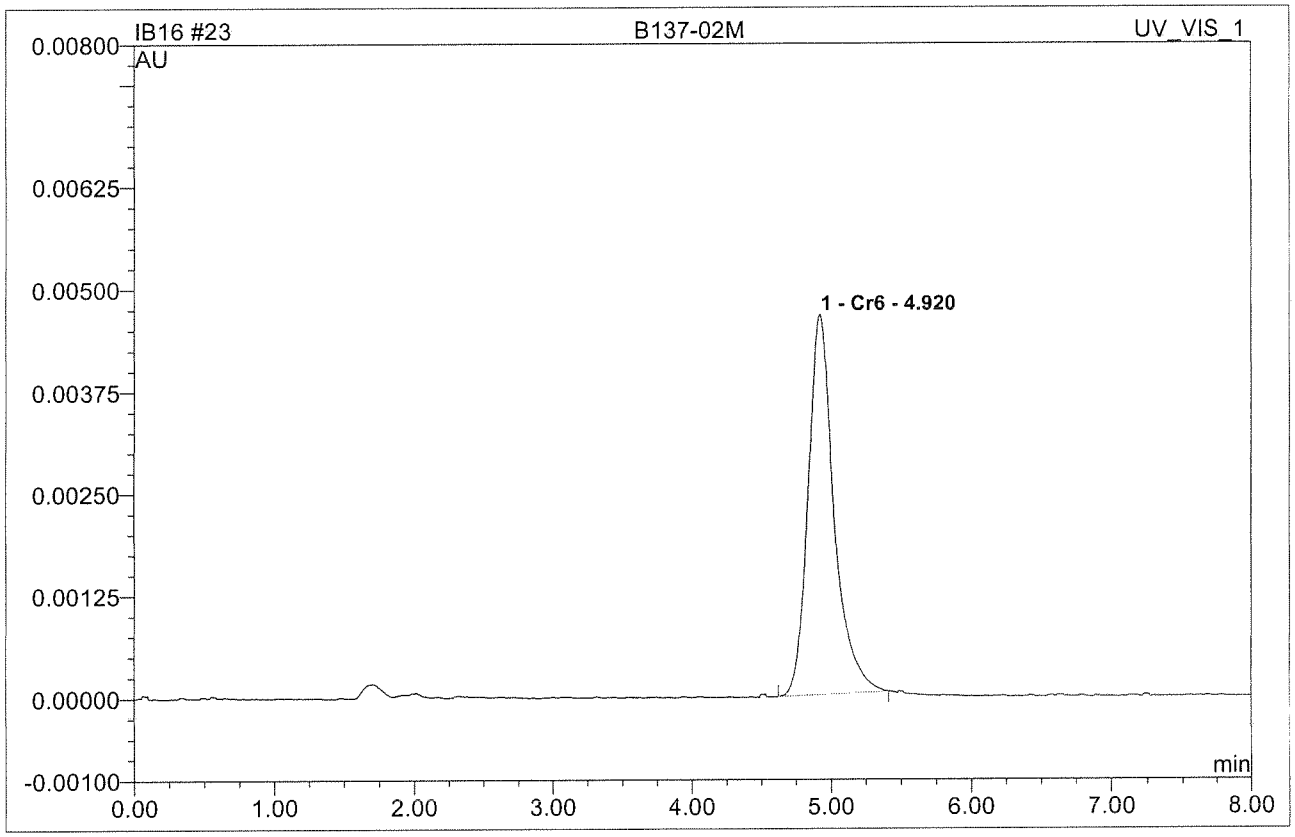


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.92	Cr6	0.0046380	0.0010067	100.00	9.370	BMB*
Total:			0.005	0.001	100.00	9.370	

IB16 023 B137-02M

MS @ 2PPB

Sample Name:	**B137-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 15:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

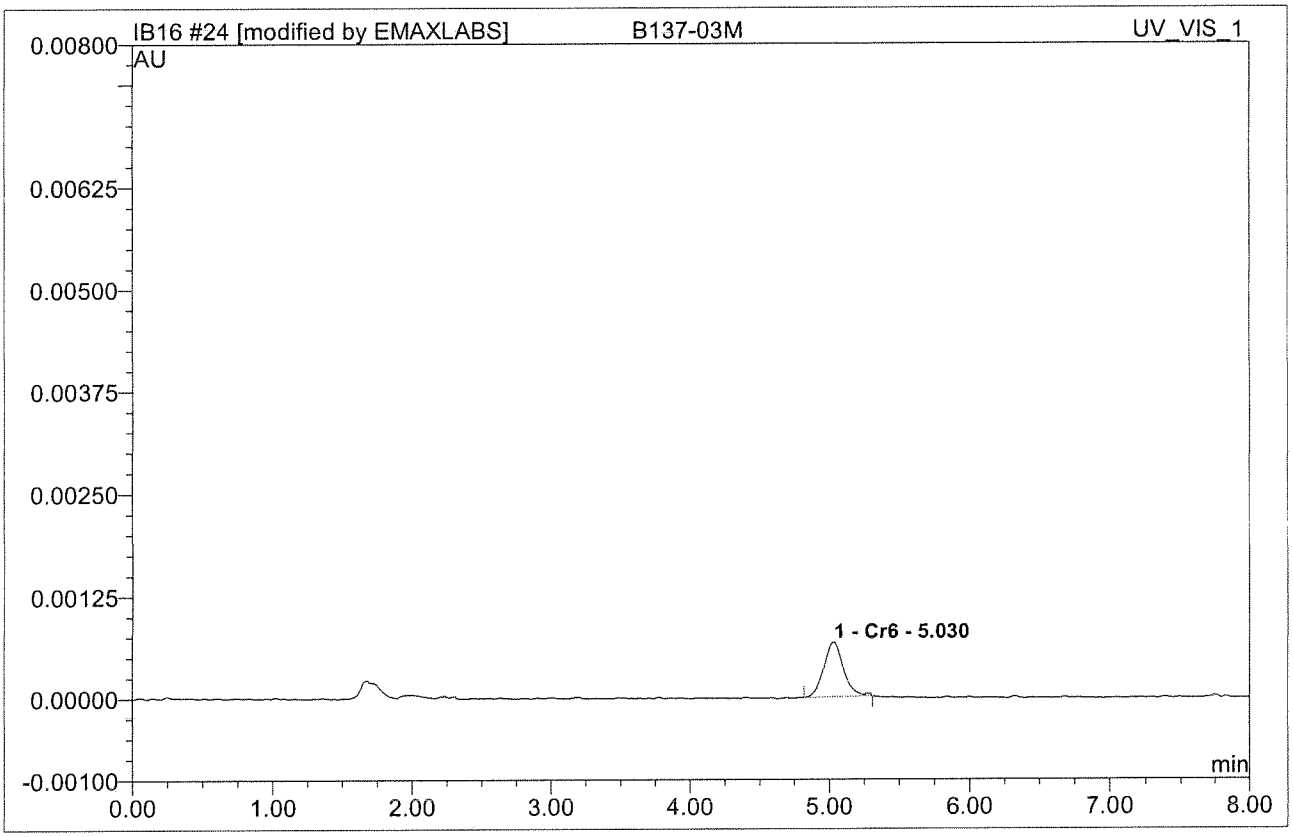


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.92	Cr6	0.0046450	0.0009991	100.00	9.300	BMB
Total:			0.005	0.001	100.00	9.300	

IB16 024 B137-03M

MS @ 1PPB

Sample Name:	**B137-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 16:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.03	Cr6	0.0006670	0.0001095	100.00	1.038	BMB*
Total:			0.001	0.000	100.00	1.038	

INITIAL CALIBRATIONS

IC RESULT FORM CalVersion : CR6.B16/IB16 (2017)

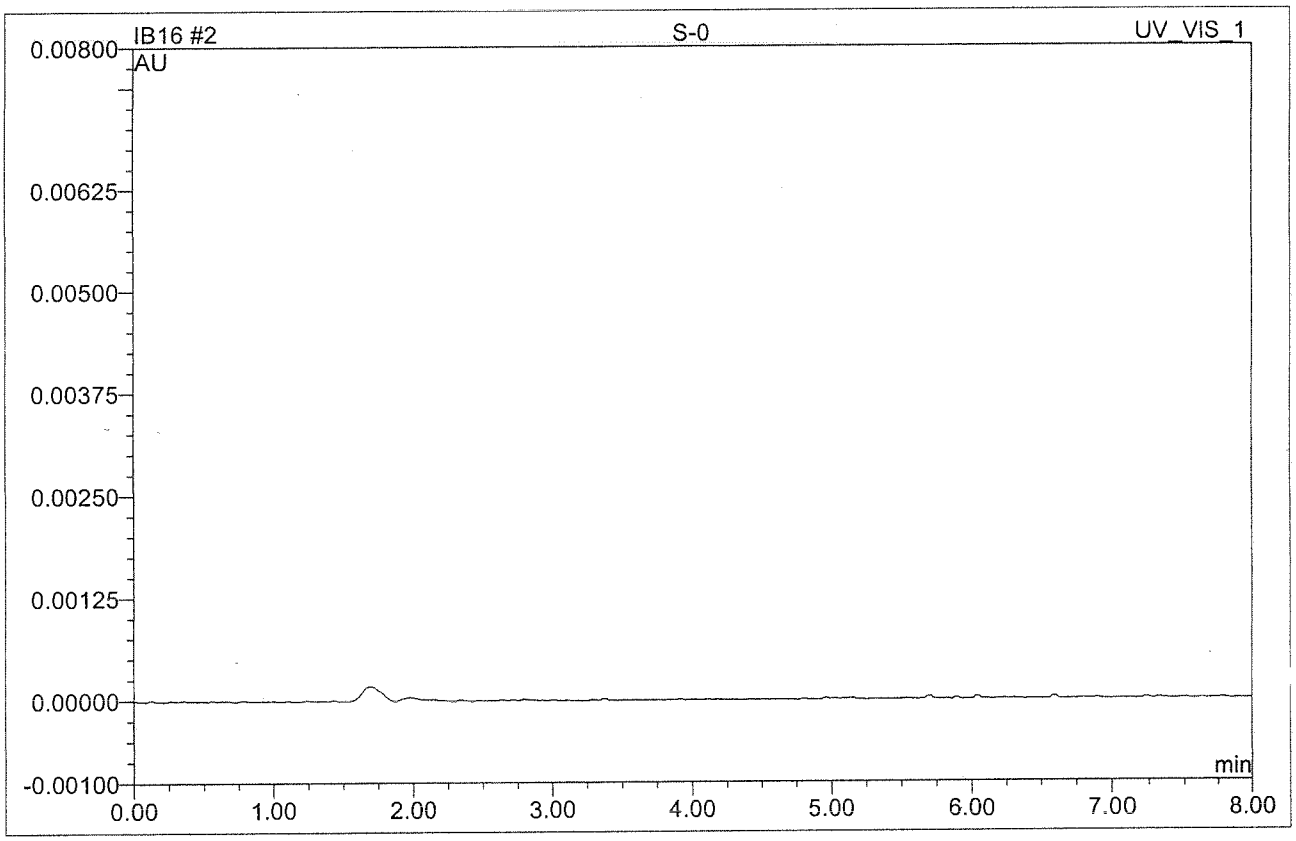
LFID	LSID	SelCmp	Cr6	DateTime	DF
IB16001	IB	C	ND	02/16/1712:04	1
IB16002	S-0	C	ND	02/16/1712:14	1
IB16003	S-1	C	0.200	02/16/1712:25	1
IB16004	S-2	C	0.507	02/16/1712:35	1
IB16005	S-3	C	1.006	02/16/1712:45	1
IB16006	S-4	C	2.012	02/16/1712:56	1
IB16007	S-5	C	4.938	02/16/1713:06	1
IB16008	S-6	C	7.455	02/16/1713:17	1
IB16009	S-7	C	10.062	02/16/1713:27	1
IB16010	ICV	C	102%	02/16/1713:37	1
IB16011	ICB	C	ND	02/16/1713:48	1

METHOD: IC59B16
SOLVENT: BUFFER (SW4-03-31-02)

2-17-17

IB16 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 12:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

1-17-17

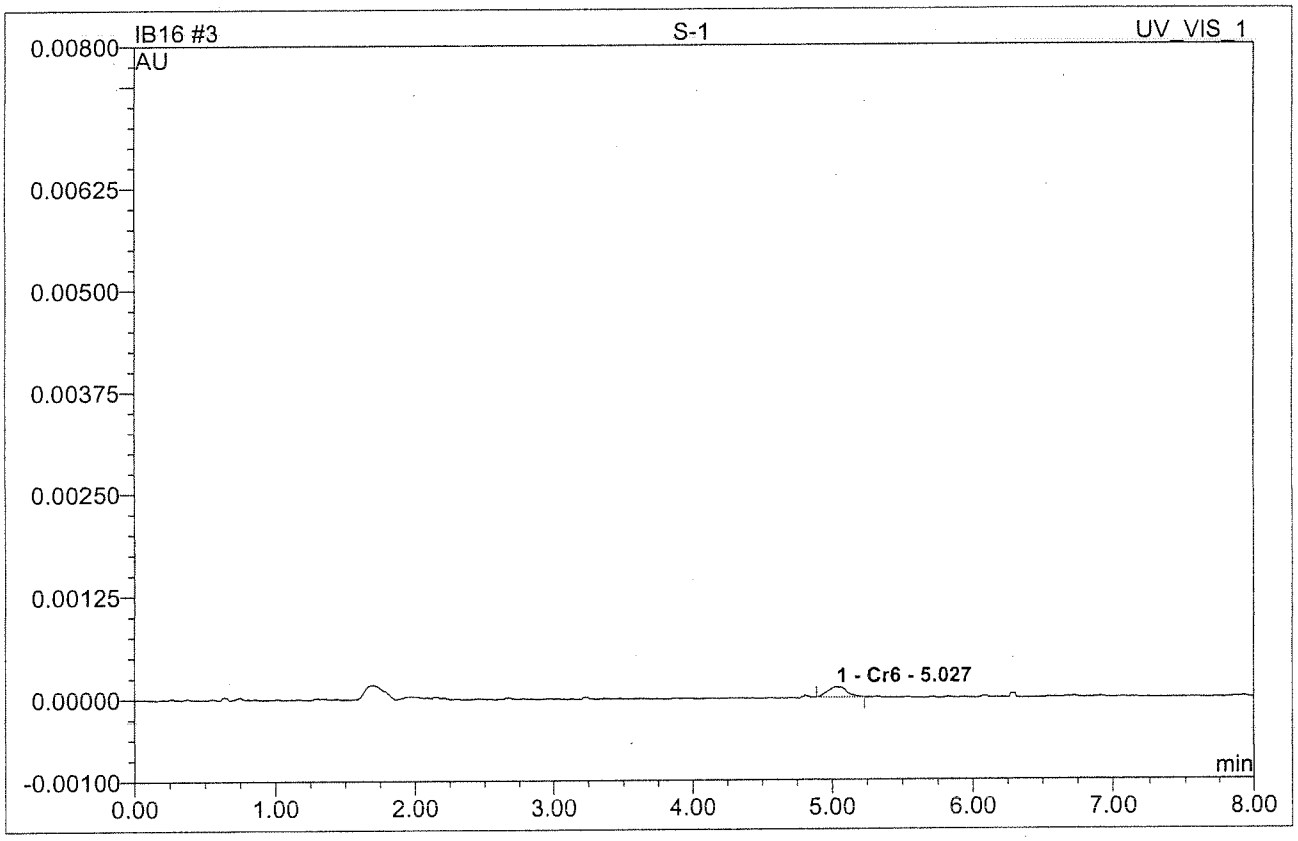
Report/Integration

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

IB16 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 12:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.03	Cr6	0.0001230	0.0000192	100.00	0.200	BMB
Total:			0.000	0.000	100.00	0.200	

2-17-17

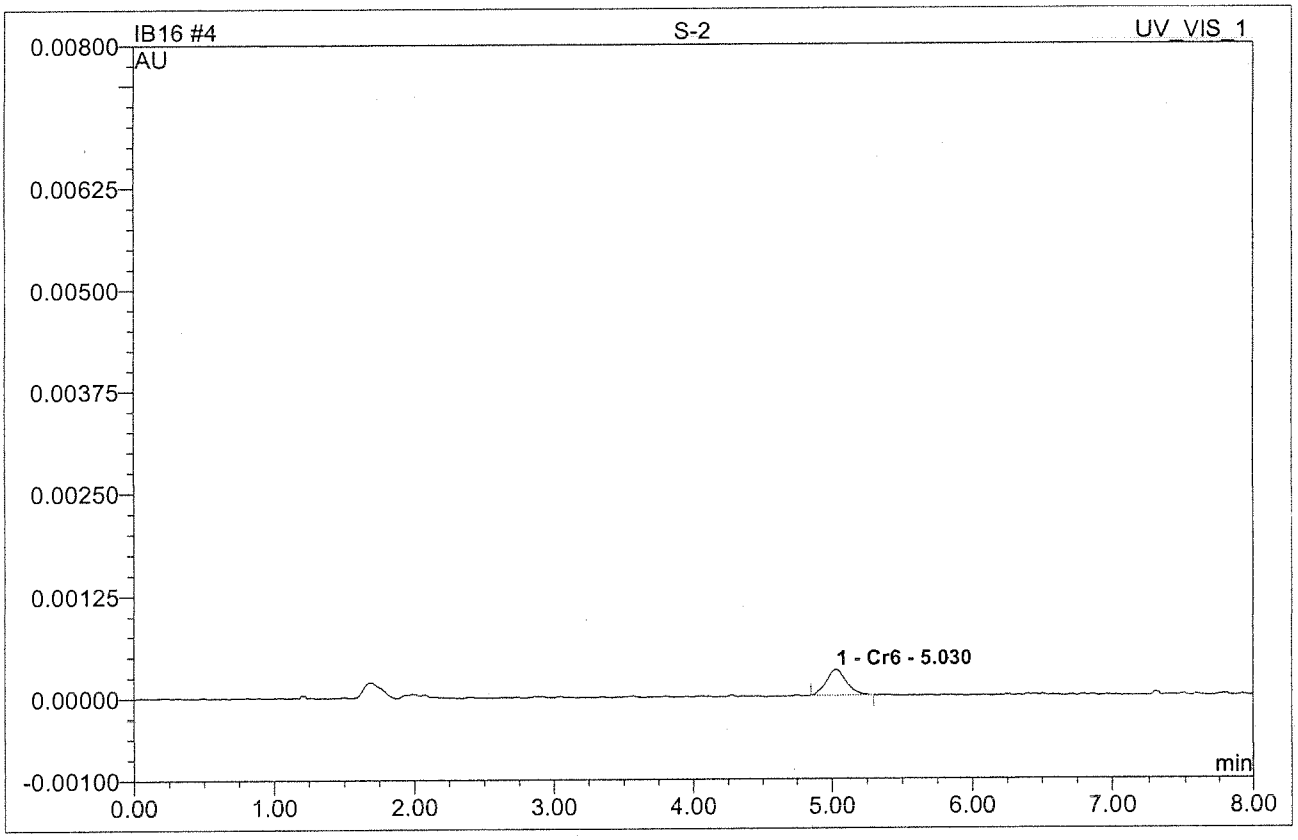
Report/Integration

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

IB16 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 12:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



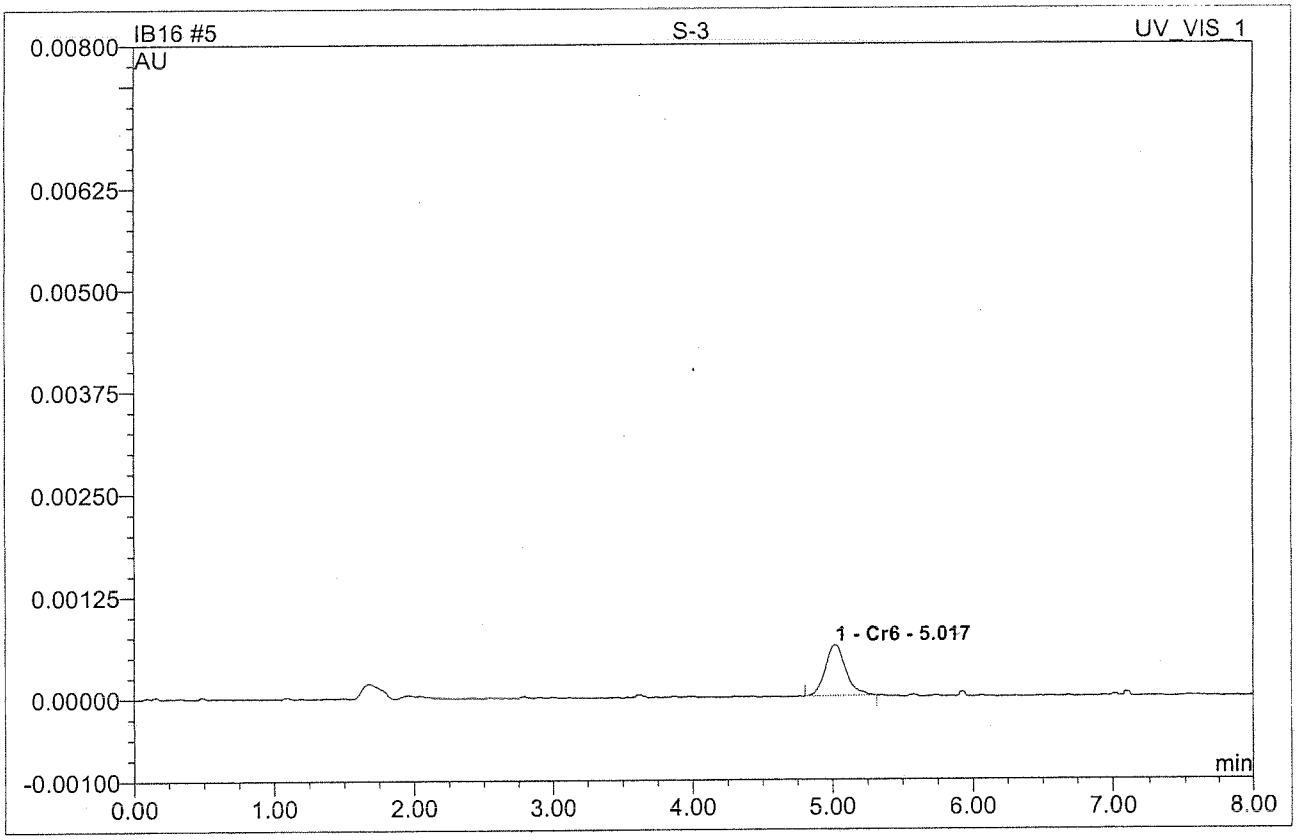
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.03	Cr6	0.0003160	0.0000522	100.00	0.507	BMB
Total:			0.000	0.000	100.00	0.507	

AM 2-17-17

IB16 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 12:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0006240	0.0001061	100.00	1.006	BMB
Total:			0.001	0.000	100.00	1.006	

RM 2-17-17

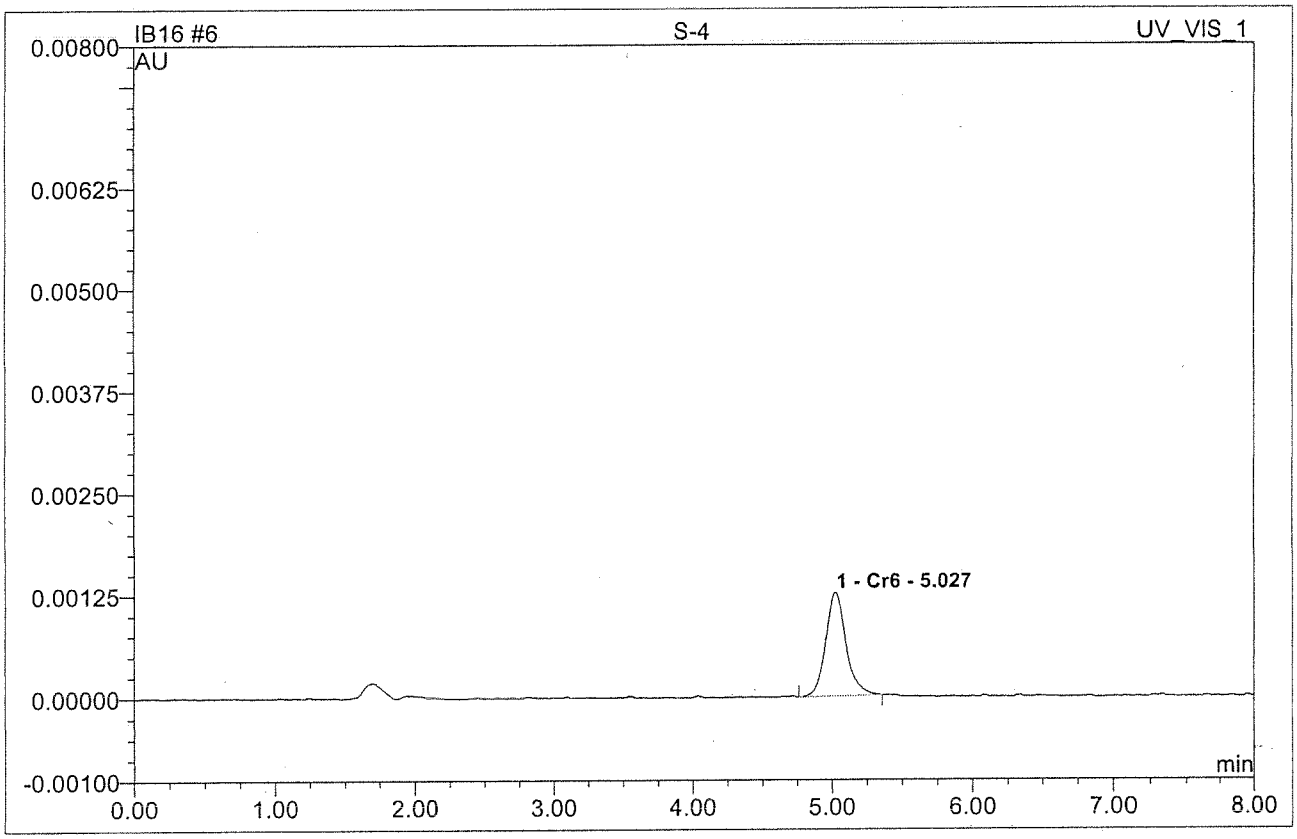
Report/Integration

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

IB16 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 12:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.03	Cr6	0.0012640	0.0002143	100.00	2.012	BMB
Total:			0.001	0.000	100.00	2.012	

2-17-17

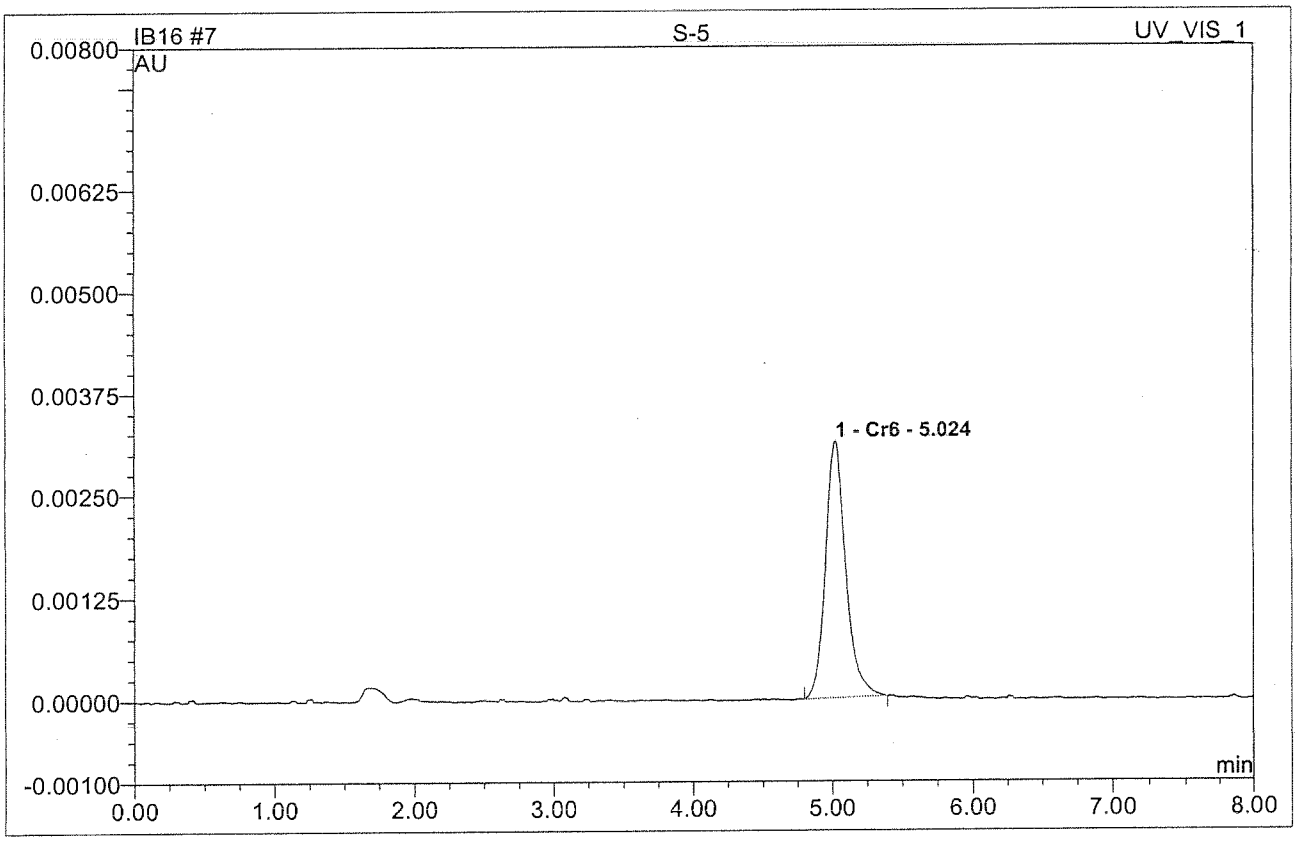
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IB16 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



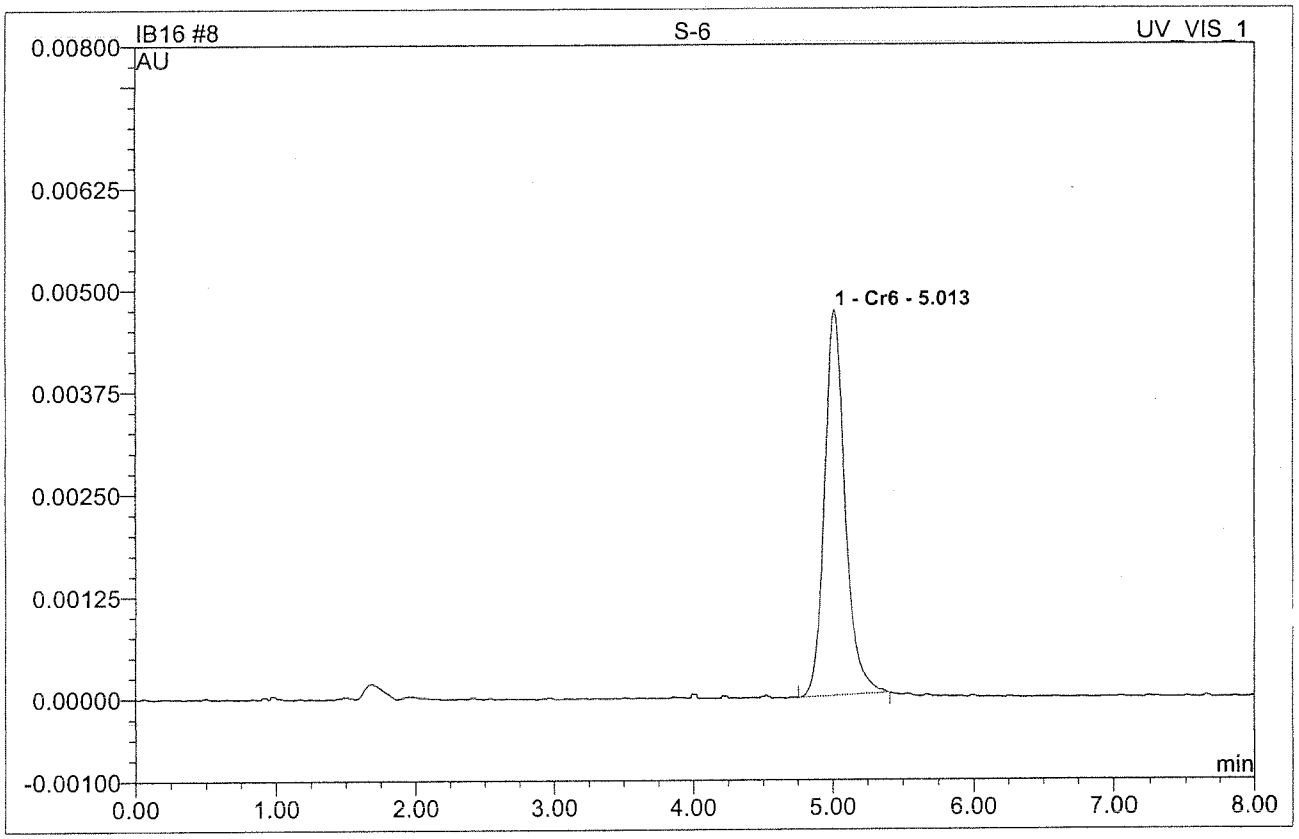
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0031320	0.0005294	100.00	4.938	BMB
Total:			0.003	0.001	100.00	4.938	

AM 2-17-17

IB16 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



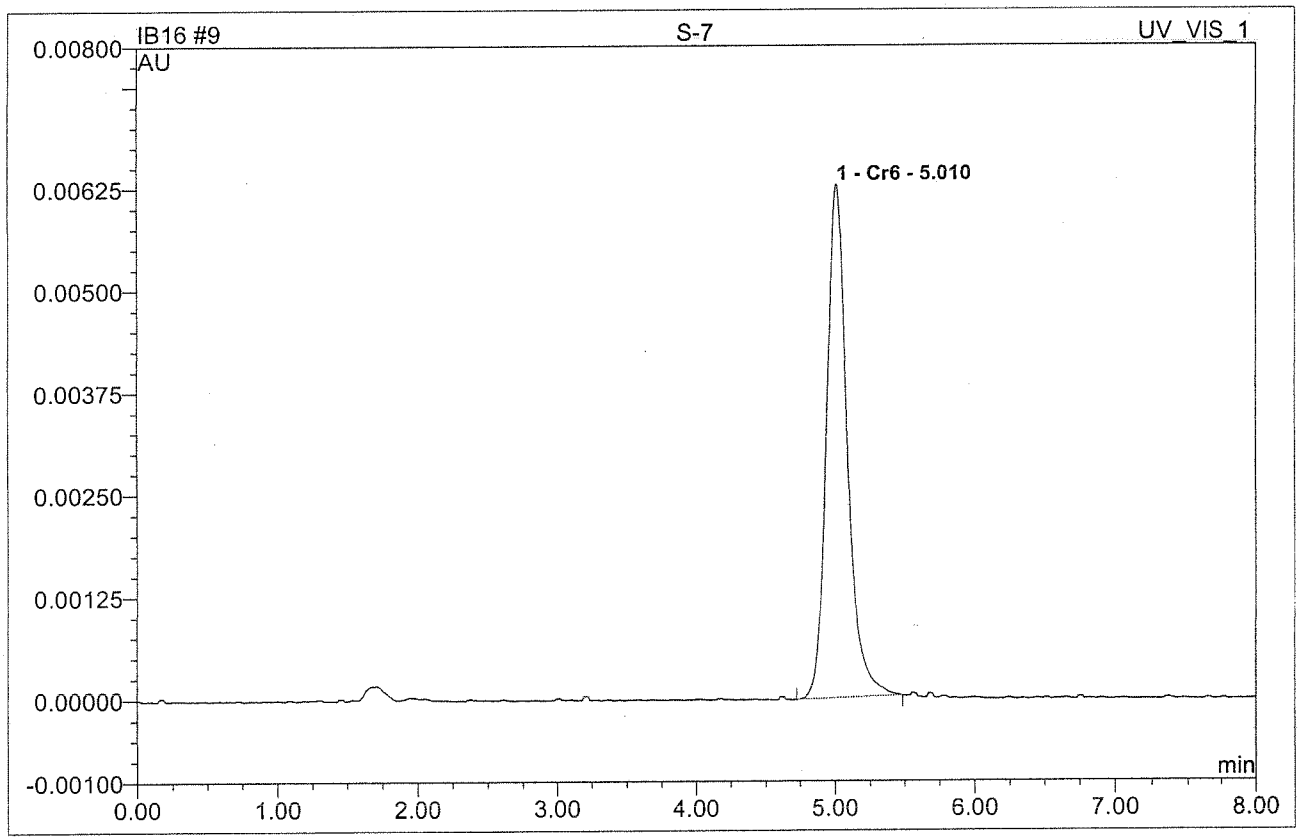
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0047170	0.0008005	100.00	7.455	BMB
Total:			0.005	0.001	100.00	7.455	

AW 2-17-17

IB16 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



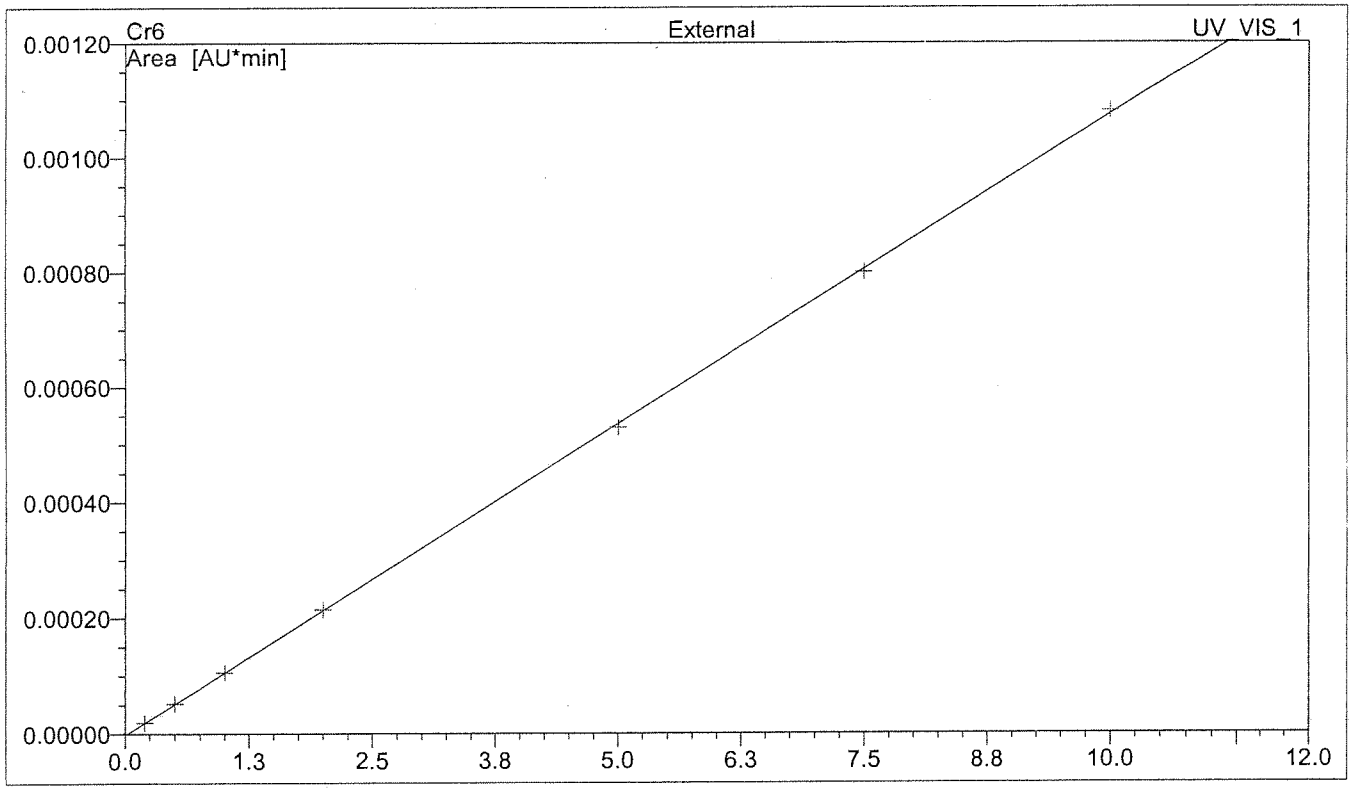
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0062850	0.0010812	100.00	10.062	BMB
Total:			0.006	0.001	100.00	10.062	

AW 2-17-17

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1.0000**
Recording Time:	**2/16/2017 13:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	5.01	Cr6	0LOff	7	0.9999	-0.0000023	0.0001077	0.0000
Average:					0.9999	0.0000	0.0001	0.0000

PM 2-17-17

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.B16/IB16 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IB16001	IB	C	ND	02/16/1712:04	1
IB16002	S-0	C	ND	02/16/1712:14	1
IB16003	S-1	C	0.200	02/16/1712:25	1
IB16004	S-2	C	0.507	02/16/1712:35	1
IB16005	S-3	C	1.006	02/16/1712:45	1
IB16006	S-4	C	2.012	02/16/1712:56	1
IB16007	S-5	C	4.938	02/16/1713:06	1
IB16008	S-6	C	7.455	02/16/1713:17	1
IB16009	S-7	C	10.062	02/16/1713:27	1
IB16010	ICV	C	102%	02/16/1713:37	1
IB16011	ICB	C	ND	02/16/1713:48	1

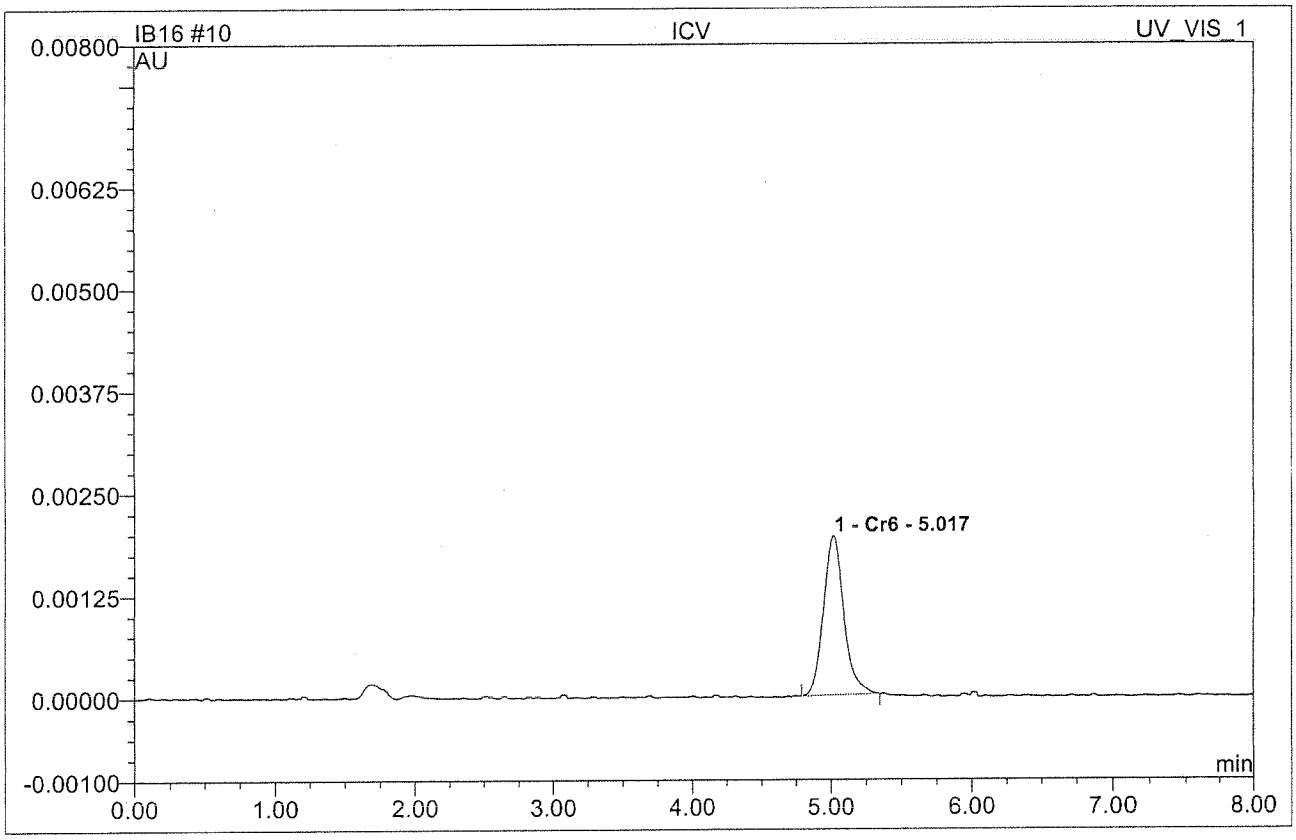
METHOD: IC59B16
SOLVENT: BUFFER (SW4-03-31-02)

2-17-17

IB16 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



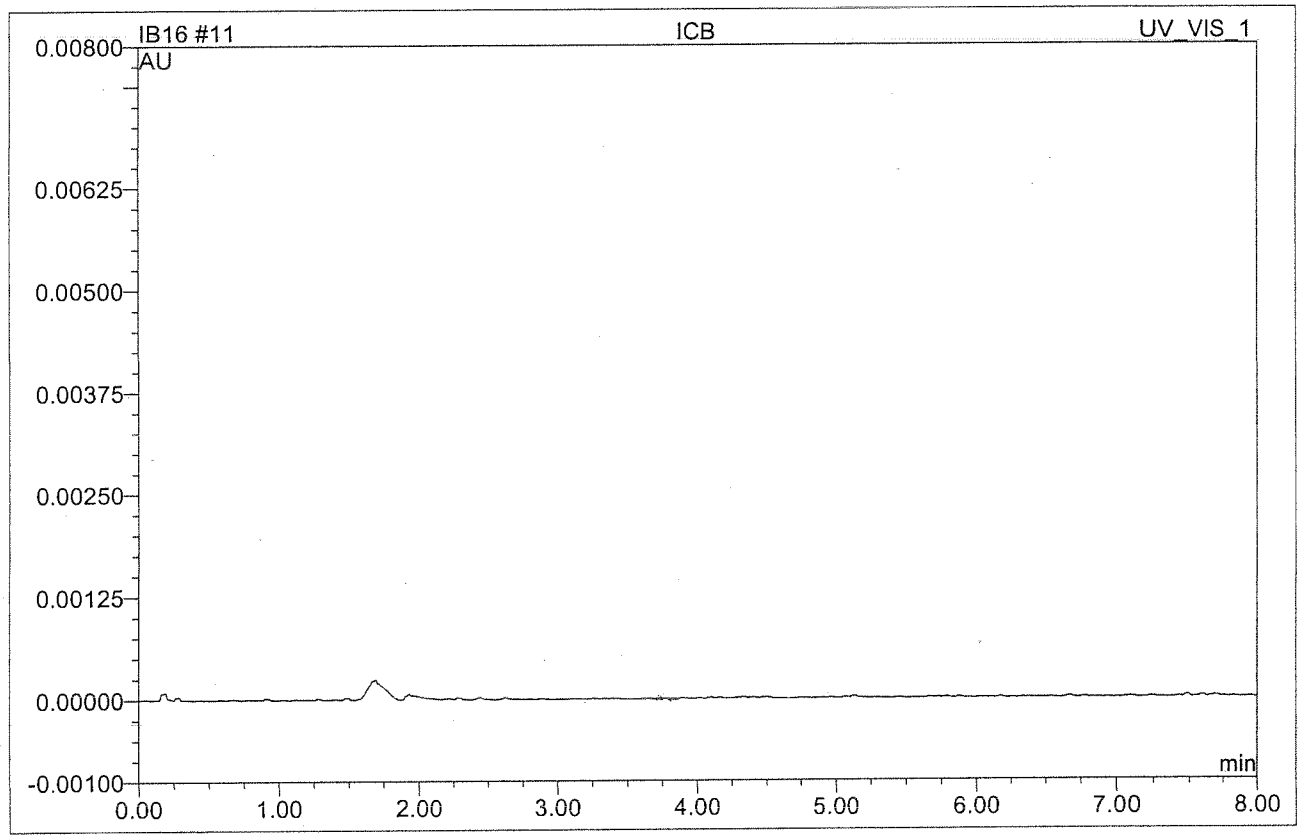
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0019470	0.0003269	100.00	3.058 ✓	BMB
Total:			0.002	0.000	100.00	3.058	

conc = $\frac{\text{area} - \text{offset}}{\text{slope}}$

2-17-17

IB16 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

PW 2-17-17

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ASSET LABS
Project : PG&E
SDG : 17B137
Method : E218.6
QuantMethod : IC59B16
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IB16013	CCV1	1	2	1.99	ug/L	99	02/16/1714:09
IB16025	CCV3	1	2	1.975	ug/L	99	02/16/1716:14

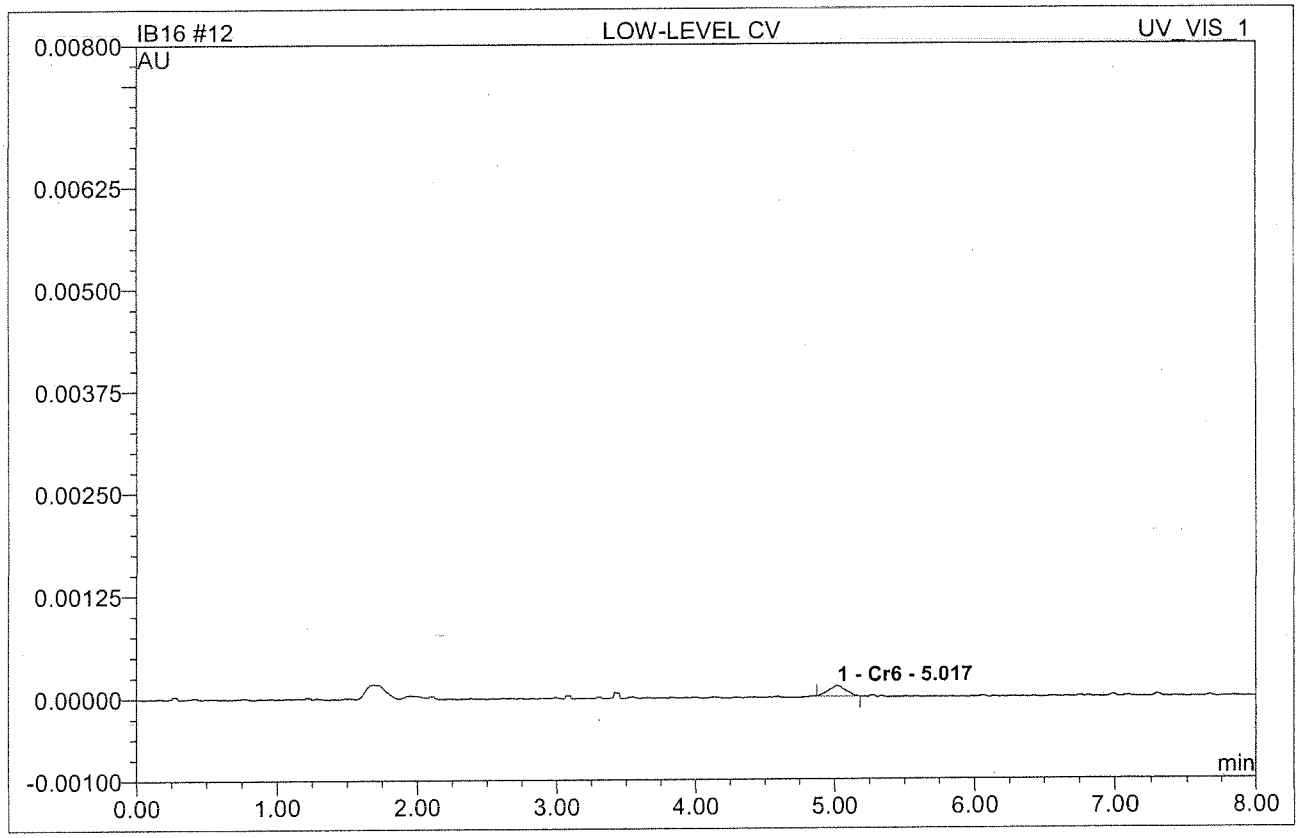
CCV Acceptance Criteria: 90-110%

IC RESULT FORM CalVersion : CR6.B16/IB16 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IB16001	IB	C	ND	02/16/1712:04	1
IB16002	S-0	C	ND	02/16/1712:14	1
IB16003	S-1	C	0.200	02/16/1712:25	1
IB16004	S-2	C	0.507	02/16/1712:35	1
IB16005	S-3	C	1.006	02/16/1712:45	1
IB16006	S-4	C	2.012	02/16/1712:56	1
IB16007	S-5	C	4.938	02/16/1713:06	1
IB16008	S-6	C	7.455	02/16/1713:17	1
IB16009	S-7	C	10.062	02/16/1713:27	1
IB16010	ICV	C	102%	02/16/1713:37	1
IB16011	ICB	C	ND	02/16/1713:48	1
IB16012	LOW-LEVEL	C	0.188	02/16/1713:58	1
IB16013	CCV1	C	99%	02/16/1714:09	1
IB16014	CCB1	C	ND	02/16/1714:19	1
IB16015	HCB011WB	C	ND	02/16/1714:29	1
IB16016	HCB011WL	C	2.041	02/16/1714:40	1
IB16017	HCB011WC	C	2.100	02/16/1714:50	1
IB16018	B137-01	C	7.499	02/16/1715:01	1
IB16019	B137-02	C	7.327	02/16/1715:11	1
IB16020	B137-03	C	ND	02/16/1715:22	1
IB16021	B137-01M	C	9.412	02/16/1715:32	1
IB16022	B137-01S	C	9.370	02/16/1715:43	1
IB16023	B137-02M	C	9.300	02/16/1715:53	1
IB16024	B137-03M	C	1.038	02/16/1716:04	1
IB16025	CCV3	C	99%	02/16/1716:14	1
IB16026	CCB3	C	ND	02/16/1716:24	1
IB16027	BUFFER QC	C	ND	02/16/1716:35	1
IB16028	CCV5	C	100%	02/16/1716:45	1
IB16029	CCB5	C	ND	02/16/1716:56	1

IB16 012 LOW-LEVEL CV

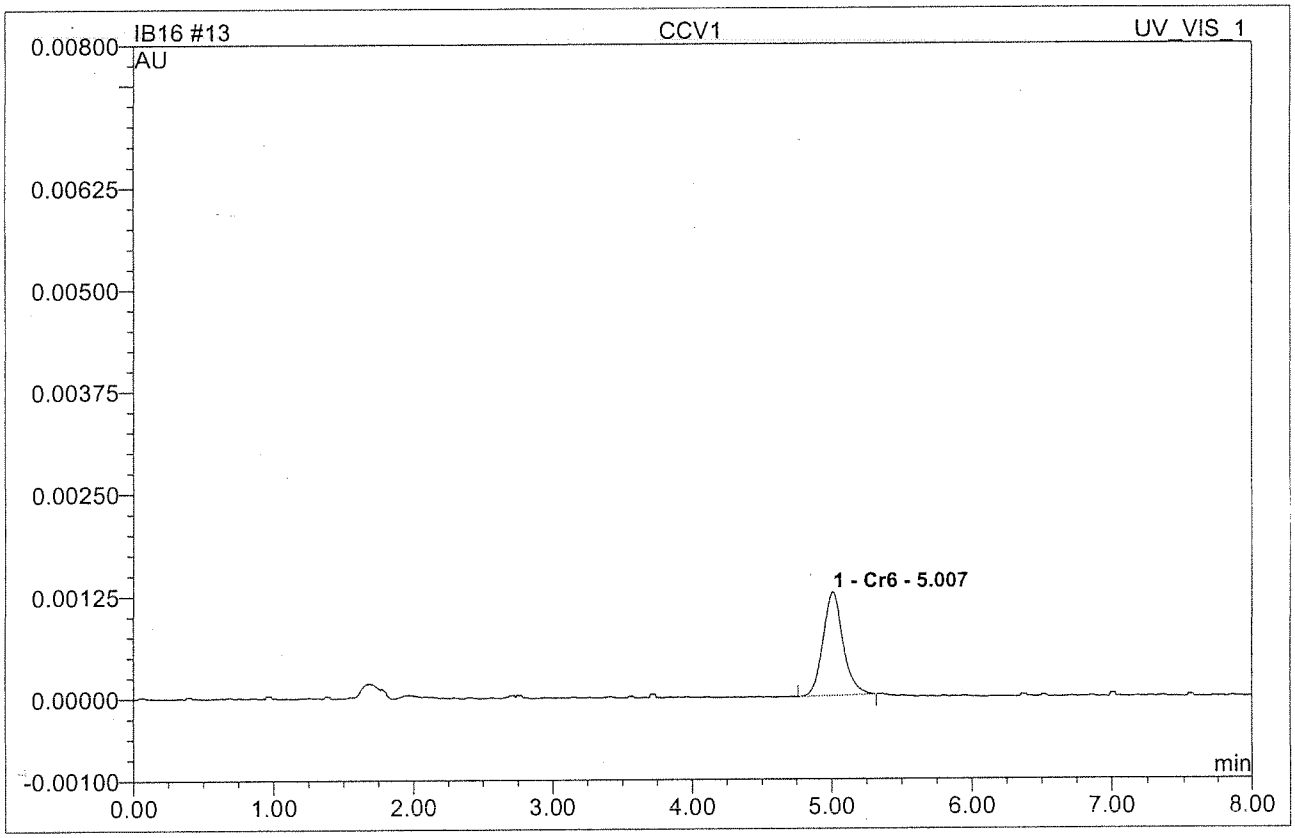
Sample Name:	**LOW-LEVEL CV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 13:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0001270	0.0000180	100.00	0.188	BMB
Total:			0.000	0.000	100.00	0.188	

IB16 013 CCV1

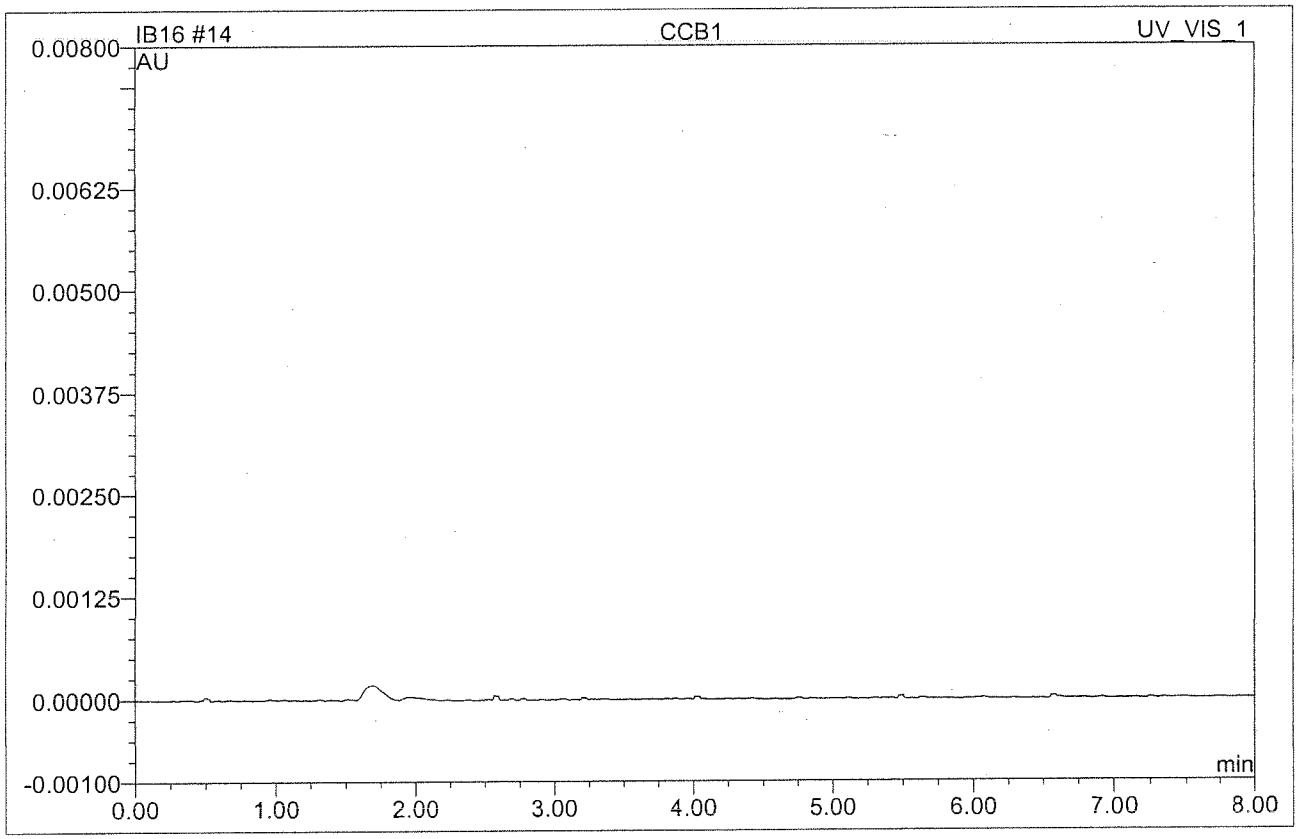
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0012670	0.0002119	100.00	1.990	BMB
Total:			0.001	0.000	100.00	1.990	

IB16 014 CCB1

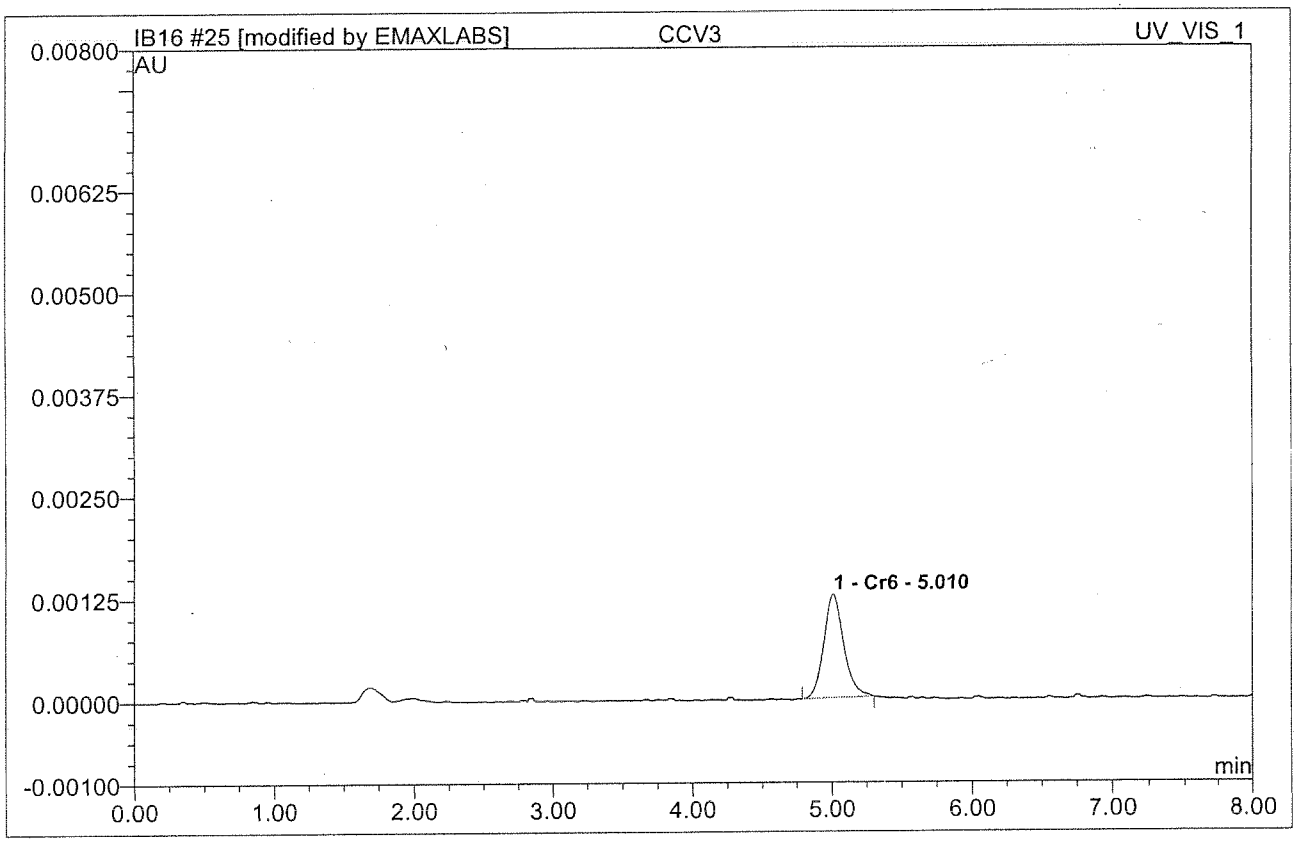
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 14:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IB16 025 CCV3

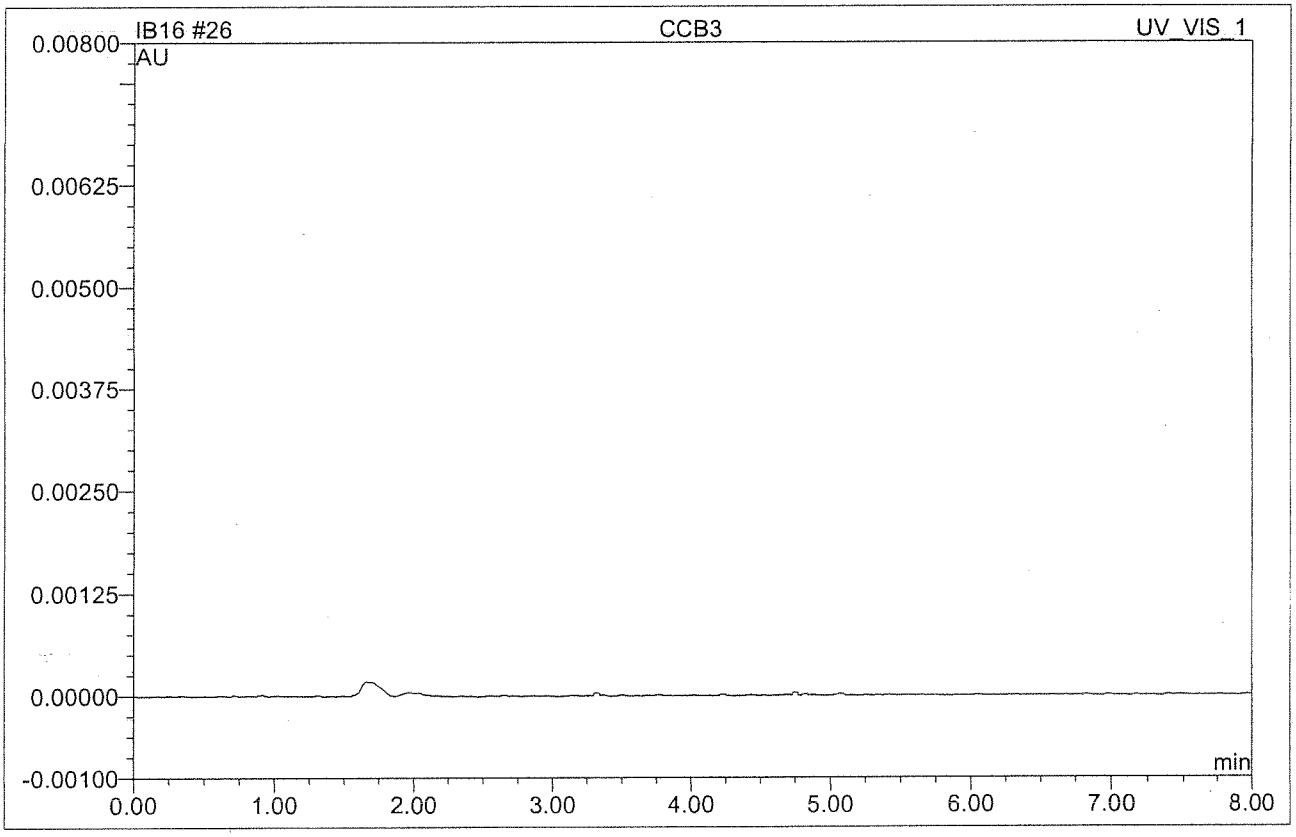
Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0012620	0.0002104	100.00	1.975	BMB*
Total:			0.001	0.000	100.00	1.975	

IB16 026 CCB3

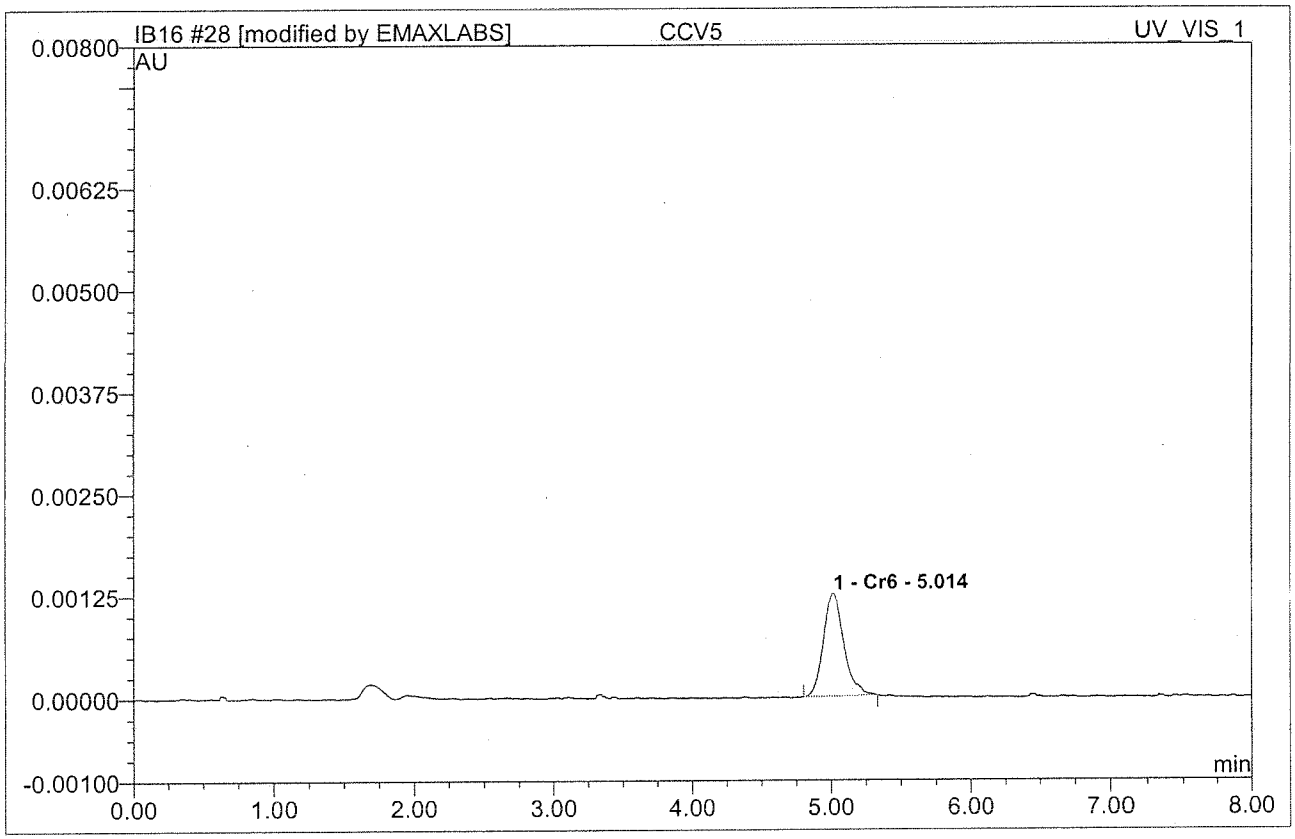
Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 16:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IB16 028 CCV5

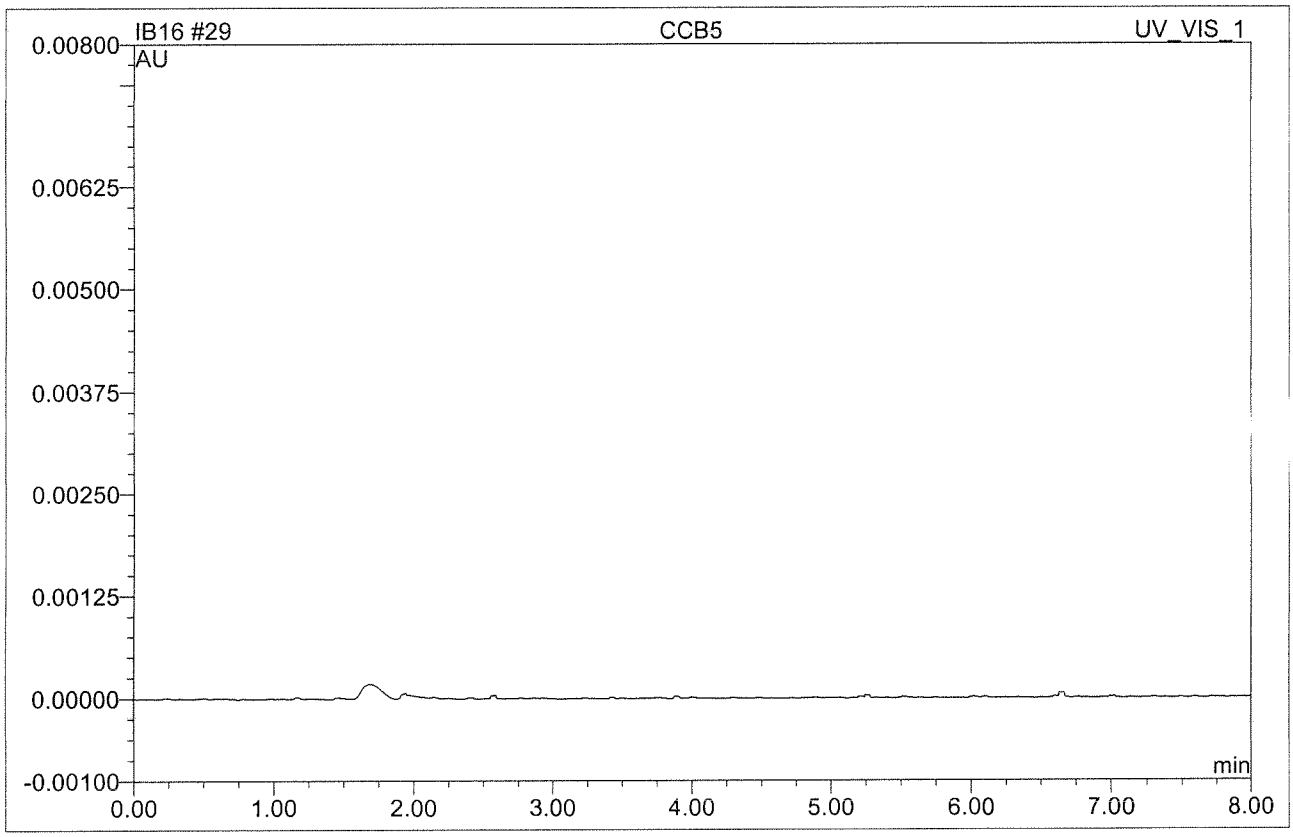
Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 16:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0012570	0.0002131	100.00	2.000	BMB*
Total:			0.001	0.000	100.00	2.000	

IB16 029 CCB5

Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59B16**	*Dilution Factor:*	**1**
Recording Time:	**2/16/2017 16:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

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

Comments:

1,5 Diphenylcarbohydrozide : 0.5 g SW9A-04-042

MeOH : 100 ml SW1A-006-02-16

H_2SO_4 : 28 ml SW1A-006-03-25 ~~SW9A-04-047~~

$(NH_4)_2SO_4$: 66 g SW9A-04-047 ↓ 036 KG 2/16/17

NH_4OH : 13 ml SW9A-04-036

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

☑ Buffer (10 mL → 100 mL) SW4-03-31-02

Reagent Water ID #: RW1-17-001

Linear Range (ppb): S0 - 0
S1 - 0.2
S2 - 0.5
S3 - 1.0
S4 - 2.0
S5 - 5.0
S6 - 7.5
S7 - 10.0
ICV - 3.0

HCB011W: B137

column: Dionex Ionpac AS7 (4x250mm), serial # 015393
guard column: Dionex Ionpac NG1 (4x35mm), serial #16083014 2
wavelength: 530nm
flow rate: 1.0 mL/min
injection vol: 250µL

Book #:	A59-040
Instrument No.:	59
Pipette ID:	SW9A-04-017 ✓
	SW9A-04-025 ✓
	SW9A-04-045 ✓
Balance ID:	10601202
Analytical Sequence:	~~IB15~~ IB16 ICC 2/16/17
Method File:	IC59B~~15~~16
Analytical Batch:	HCB011W

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

STANDARDS ID	
ICAL	SW9B-06-07-17
ICV	-07-18
CCV	-07-19
LCS	-08-01
MS	-07-11

Low Level CV SW9B-06-08-02

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

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

0.45 µm filter lot #: 61485103 4 oz: 17816006

0.2 µm filter lot #: — 1.5 oz: 09416004

Analyzed By: KG

Date: 2/16/17

Sequence: IB16
Operator: EMAXLABS

Printed: 2/16/2017 5:07:26 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 29

Created: 2/16/2017 11:55:53 AM by EMAXLABS
Last Update: 2/16/2017 3:59:32 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IB16	001	IB	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:04:21 PM	1.0000	BUFFER
2	IB16	002	S-0	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:14:45 PM	1.0000	
3	IB16	003	S-1	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:25:09 PM	1.0000	0.2 PPB
4	IB16	004	S-2	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:35:33 PM	1.0000	0.5 PPB
5	IB16	005	S-3	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:45:58 PM	1.0000	1.0 PPB
6	IB16	006	S-4	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 12:56:22 PM	1.0000	2.0 PPB
7	IB16	007	S-5	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:06:46 PM	1.0000	5.0 PPB
8	IB16	008	S-6	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:17:10 PM	1.0000	7.5 PPB
9	IB16	009	S-7	Standard	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:27:35 PM	1.0000	10 PPB
10	IB16	010	ICV	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:37:58 PM	1.0000	3.0 PPB
11	IB16	011	ICB	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:48:22 PM	1.0000	
12	IB16	012	LOW-LEVEL CV	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 1:58:46 PM	1.0000	
13	IB16	013	CCV1	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 2:09:10 PM	1.0000	
14	IB16	014	CCB1	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 2:19:34 PM	1.0000	
15	IB16	015	HCB011WB	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 2:29:58 PM	1.0000	
16	IB16	016	HCB011WL	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 2:40:22 PM	1.0000	
17	IB16	017	HCB011WC	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 2:50:46 PM	1.0000	
18	IB16	018	B137-01	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:01:11 PM	1.0000	
19	IB16	019	B137-02	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:11:35 PM	1.0000	
20	IB16	020	B137-03	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:22:26 PM	1.0000	
21	IB16	021	B137-01M	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:32:50 PM	1.0000	MS @ 2PPB
22	IB16	022	B137-01S	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:43:14 PM	1.0000	MS @ 2PPB
23	IB16	023	B137-02M	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 3:53:38 PM	1.0000	MS @ 2PPB
24	IB16	024	B137-03M	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:04:02 PM	1.0000	MS @ 1PPB
25	IB16	025	CCV3	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:14:26 PM	1.0000	
26	IB16	026	CCB3	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:24:51 PM	1.0000	
27	IB16	027	BUFFER QC	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:35:15 PM	1.0000	SW4-03-33-01

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

FINAL

Sequence: IB16
Operator: EMAXLABS
Printed: 2/16/2017 5:07:26 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 29

Created: 2/16/2017 11:55:53 AM by EMAXLABS
Last Update: 2/16/2017 3:59:32 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IB16	028	CCV5	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:45:39 PM	1.0000	
29	IB16	029	CCB5	Unknown	250.0	Cr6 Program	IC59B16	Finished	2/16/2017 4:56:03 PM	1.0000	

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENTS/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

Book #: PHC-014

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

Matrix: W Start Date: 2/15/17 Time: 11:00 End Date: 2/15/17 Time: 11:15

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	B137-01	9.33	9.33	no adj. needed; Cr
02	B137-02	9.38	9.38	↓
03	B137-03	9.52	9.52	↓
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				KG 2/15/17

Standards	ID	pH
Buffer 7	SW1-01-861	6.99
Buffer 10	SW1-01-815	10.01
Check pH Buffer (8)	SW1-01-817	7.94
pH meter	F7	

Reagent	Standard ID #
NaOH	
$(NH_4)_2SO_4/NH_4OH$	
Reagent Water	

Legend:

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

☑ Samples were received with preservation

Comments:

N

Prepared By: KG

Standard Added By:

Checked By:

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 218.6/7199

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

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**5.02**	4.81	5.23	**0.213**

IC59B16

January 18, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N022475

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Puri Romualdo
Laboratory Director

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

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium on QC samples N022455-001D-MS1 and N022455-001D-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium on QC samples N022455-001D-MS1 and N022455-001D-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N022475-001B-MS2 and N022475-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N022455-001D-MS and N022455-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *18-Jan-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N022475
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022475-001A	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001B	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001C	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001D	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-002A	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002B	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002C	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002D	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170105D**	QC Batch: **R112660**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	1/5/2017 01:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170105D**	QC Batch: **R112660**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	1/5/2017 01:00 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **112660**
Client ID: **ZZZZZZ** Batch ID: **R112660** TestNo: **EPA 120.1** Analysis Date: **1/5/2017** SeqNo: **2524301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7840.000	0.10						7810	0.383	10	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170105E**	QC Batch: **R112661**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	1/5/2017 03:45 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	1/5/2017 03:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170105E**	QC Batch: **R112661**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/5/2017 03:45 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/5/2017 03:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **112661**
Client ID: **ZZZZZZ** Batch ID: **R112661** TestNo: **SM4500-H+B** Analysis Date: **1/5/2017** SeqNo: **2524304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.330	0.10						7.320	0.137	10	H
Temp. at time of pH Analysis	18.400	0.10						18.40	0	10	H

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170105F**	QC Batch: **60801**				PrepDate	**1/5/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	1/5/2017 01:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_170105F** QC Batch: **60801**					PrepDate	**1/5/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	1/5/2017 01:30 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-60801** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **LCSW** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-60801** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **PBW** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **ZZZZZZ** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4510.000	50						4385	2.81	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170110C**	QC Batch: **60809**			PrepDate		**1/6/2017**	Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	1/10/2017 02:29 PM
Iron	ND	1.8	20		µg/L	1	1/10/2017 02:29 PM
Magnesium	27000	4.4	100		µg/L	1	1/10/2017 02:29 PM
Sodium	730000	580	25000		µg/L	50	1/10/2017 11:55 AM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170110C**	QC Batch: **60809**			PrepDate	**1/6/2017**		Analyst: **CEI**
Calcium	180000	28	500		µg/L	1	1/10/2017 02:35 PM
Iron	ND	1.8	20		µg/L	1	1/10/2017 02:35 PM
Magnesium	27000	4.4	100		µg/L	1	1/10/2017 02:35 PM
Sodium	1400000	580	25000		µg/L	50	1/10/2017 12:19 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-60809** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **PBW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	53.750	500									

Sample ID **LCS2-60809** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **LCSW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19429.761	500	20000	0	97.1	85	115				

Sample ID **N022475-001B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	802722.484	25000	20000	734600	340	75	125				S

Sample ID **N022475-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	789863.349	25000	20000	734600	276	75	125	802700	1.61	20	S

Sample ID **MB-60809** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **PBW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	14.283	20									
Magnesium	20.624	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-60809** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **LCSW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9380.497	500	10000	0	93.8	85	115				
Iron	108.909	20	100.0	0	109	85	115				
Magnesium	9590.504	100	10000	0	95.9	85	115				

Sample ID **N022455-001D-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205109.763	500	10000	202600	25.5	75	125				S
Iron	89.913	20	100.0	3.429	86.5	75	125				
Magnesium	36558.629	100	10000	29410	71.5	75	125				S

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205343.214	500	10000	202600	27.9	75	125	205100	0.114	20	S
Iron	95.864	20	100.0	3.429	92.4	75	125	89.91	6.41	20	
Magnesium	36704.030	100	10000	29410	73.0	75	125	36560	0.397	20	S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170115F** QC Batch: **60817** PrepDate **1/8/2017** Analyst: **CEI**							
Manganese	150	0.056	0.50		µg/L	1	1/15/2017 09:10 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170115F** QC Batch: **60817** PrepDate **1/8/2017** Analyst: **CEI**							
Manganese	11	0.056	0.50		µg/L	1	1/15/2017 09:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-60817** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **PBW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533553**

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

Sample ID **LCS-60817** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **LCSW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.473	0.50	100.0	0	94.5	85	115				

Sample ID **N022455-001D-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.215	0.50	100.0	8.917	83.3	75	125				

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.005	0.50	100.0	8.917	83.1	75	125	92.21	0.228	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170105A** QC Batch: **R112642** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/5/2017 12:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170115F** QC Batch: **60817** PrepDate **1/8/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/15/2017 09:10 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170105A** QC Batch: **R112642** PrepDate							Analyst: **RAB**
Hexavalent Chromium	620	6.6	20		µg/L	100	1/5/2017 11:31 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170116B** QC Batch: **60817** PrepDate **1/8/2017**							Analyst: **CEI**
Chromium	620	0.096	5.0		µg/L	5	1/16/2017 02:27 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-60817** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **PBW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533441**

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

Sample ID **LCS-60817** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **LCSW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.366	1.0	10.00	0	93.7	85	115				

Sample ID **N022455-001D-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	658.612	5.0	10.00	680.4	-218	75	125				S

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	650.606	5.0	10.00	680.4	-298	75	125	658.6	1.22	20	S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R112642** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **PBW** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523461**

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

Sample ID **LCS-R112642** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **LCSW** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.017	0.20	5.000	0	100	90	110				

Sample ID **N022474-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.773	0.20						1.738	1.94	20	

Sample ID **N022475-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1121.590	20	500.0	621.0	100	90	110				

Sample ID **N022475-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1129.240	20	500.0	621.0	102	90	110	1122	0.680	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022475-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.286	0.20	1.000	0.1927	109	90	110				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170106B**	QC Batch: **R112668**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	1/6/2017 10:30 AM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170106B**	QC Batch: **R112668**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	1/6/2017 10:30 AM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R112668** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **LCSW** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.604	5.0	100.0	0	104	85	115				

Sample ID **MB-R112668** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **PBW** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N022475-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	225.225	5.0						223.0	1.01	30	

Sample ID **N022475-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	252.252	5.0	100.0	152.0	100	75	125				

Sample ID **N022475-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.757	5.0	100.0	152.0	105	75	125	252.3	1.77	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170112A** QC Batch: **R112786** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	1/12/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170112A** QC Batch: **R112786** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	1/12/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R112786** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **PBW** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528973**

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

Sample ID **LCS-R112786** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **LCSW** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N022475-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.219	0.25						3.358	4.24	20	

Sample ID **N022475-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.090	0.25	2.500	3.358	109	75	125				

Sample ID **N022475-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.596	0.25	2.500	3.358	89.5	75	125	6.090	8.45	20	

Qualifiers:

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

ASSET LABORATORIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11110 Artesia Blvd., Ste B. Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloas	EDD Requirement
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD ☐
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com		Geotracker ☐
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr #330, Roseville, CA 95661	Email to: mbloas@pivox.com PO#	Labspec ☐
Submitted By:		Phone: 949-727-1400 ext 200 Fax:	Others ☑
Title:	Phone: Fax:		Specify:
Signature: Date:	Sampled by:		Global ID:
I hereby authorize ASSET Labs to perform the tests indicated below:	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of		
Project Name: PG&E Topock - PMP	Signature:		
Project Number: RC000753.0801			

QA/QC	
RTNE	☐
RWQCB	☑
CalTrans	☐
Level III	☐
LEVEL IV	☐
Regulatory	☐
Specify State	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present	☑	
5. IR number: 2		
6. Method of Cooling: Ice		
7. Sample Temp: 2.1°C		

Matrix: Ground ☐, Potable ☐, NPDES ☐, Surface ☐, Sediment ☐, Soil ☐, Other Solid ☐

Courier:

Tracking No

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2SO4/NH4OH 250 ml poly	Cr(VI) FF (SM3500-CrB) (NH4)2SO4/NH4OH 250 ml poly	Dissolved Metals (E200.8) FF, HNO3 Cr, Mn 500 ml poly	Dissolved Metals (E200.7) FF, HNO3 Ca, Mg, Na, Fe 500 ml poly	Dissolved metals (SW6010B/SW6020als)FF, HNO3 As, Mn, Fe, Se, Mo, Ba 500 ml poly	Total Metals (SW6010B) HNO3 Fe 500 ml poly	Anions (E300.0) Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4 125 ml poly	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N022475 - 01	PE-01-~~4210~~ 0117	010417	1233		X		X	X				X	X	X	X	X		4	P	B N	
2	- 02	TW-03D-~~4210~~ 0117	010417	1219		X		X	X				X	X	X	X	X		4	P	B N	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
[signature]	1-4-17 1245	[signature]	1/4/17 1245
[signature]	1/4/17 2013	[signature]	1/4/17 2013
Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time

Turn Around Time (TAT)
- ☐ A = 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

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

Special Instruction:

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

Preservatives:			
H = HCl	N = HNO3	S = H2SO4	C = 4°C
Z = Zn(AC)2	O = NaOH	T = Na2S2O3	
Others/Specify:			

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

ASSET Laboratories

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

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

Cooler Received/Opened On:	1/4/2017	Workorder:	N022475
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 1/5/2017

Reviewed By: MBC 1/6/2017

ASSET Laboratories

WORK ORDER Summary

04-Jan-17

WorkOrder: N022475

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022475-001A	PE-01-0117	1/4/2017 12:33:00 PM	1/18/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022475-001B			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022475-001C			1/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
N022475-001D			1/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022475-002A	TW-03D-0117	1/4/2017 12:19:00 PM	1/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022475-002B			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022475-002C			1/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-17

WorkOrder: N022475

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022475-002C	TW-03D-0117	1/4/2017 12:19:00 PM	1/18/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
N022475-002D			1/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022475-003A	FOLDER		1/18/2017		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock – PMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N022475

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022475

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-32
Sample Receiving Items	33-37
List of Analysts	38
Raw Data	
EPA 120.1	39-42
SM 4500-H+B	43-46
SM 2540C	47-57
EPA 200.7_Dissolved	58-100
EPA 200.8_Dissolved	101-152
EPA 218.6	153-266
SM 2320B	267-276
SM 4500-NO3F	277-290

January 18, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N022475

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N022475

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium on QC samples N022455-001D-MS1 and N022455-001D-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium on QC samples N022455-001D-MS1 and N022455-001D-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N022475-001B-MS2 and N022475-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N022455-001D-MS and N022455-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *18-Jan-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N022475
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022475-001A	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001B	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001C	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-001D	PE-01-0117	Groundwater	1/4/2017 12:33:00 PM	1/4/2017	1/18/2017
N022475-002A	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002B	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002C	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017
N022475-002D	TW-03D-0117	Groundwater	1/4/2017 12:19:00 PM	1/4/2017	1/18/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170105D**	QC Batch: **R112660**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	1/5/2017 01:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170105D**	QC Batch: **R112660**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	1/5/2017 01:00 PM

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

ASSET Laboratories

Date: *18-Jan-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **112660**
Client ID: **ZZZZZZ** Batch ID: **R112660** TestNo: **EPA 120.1** Analysis Date: **1/5/2017** SeqNo: **2524301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7840.000	0.10						7810	0.383	10	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170105E**	QC Batch: **R112661**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	1/5/2017 03:45 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	1/5/2017 03:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170105E**	QC Batch: **R112661**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/5/2017 03:45 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/5/2017 03:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **112661**
Client ID: **ZZZZZZ** Batch ID: **R112661** TestNo: **SM4500-H+B** Analysis Date: **1/5/2017** SeqNo: **2524304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.330	0.10						7.320	0.137	10	H
Temp. at time of pH Analysis	18.400	0.10						18.40	0	10	H

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170105F**	QC Batch: **60801**				PrepDate	**1/5/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	1/5/2017 01:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_170105F** QC Batch: **60801** PrepDate **1/5/2017** Analyst: **LR**							
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	1/5/2017 01:30 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-60801** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **LCSW** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-60801** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **PBW** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N022475-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **1/5/2017** RunNo: **112662**
Client ID: **ZZZZZZ** Batch ID: **60801** TestNo: **SM2540C** Analysis Date: **1/5/2017** SeqNo: **2525678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4510.000	50						4385	2.81	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170110C**	QC Batch: **60809**			PrepDate	**1/6/2017**		Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	1/10/2017 02:29 PM
Iron	ND	1.8	20		µg/L	1	1/10/2017 02:29 PM
Magnesium	27000	4.4	100		µg/L	1	1/10/2017 02:29 PM
Sodium	730000	580	25000		µg/L	50	1/10/2017 11:55 AM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170110C**	QC Batch: **60809**			PrepDate	**1/6/2017**		Analyst: **CEI**
Calcium	180000	28	500		µg/L	1	1/10/2017 02:35 PM
Iron	ND	1.8	20		µg/L	1	1/10/2017 02:35 PM
Magnesium	27000	4.4	100		µg/L	1	1/10/2017 02:35 PM
Sodium	1400000	580	25000		µg/L	50	1/10/2017 12:19 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-60809** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **PBW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	53.750	500									

Sample ID **LCS2-60809** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **LCSW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19429.761	500	20000	0	97.1	85	115				

Sample ID **N022475-001B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	802722.484	25000	20000	734600	340	75	125				S

Sample ID **N022475-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112741**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	789863.349	25000	20000	734600	276	75	125	802700	1.61	20	S

Sample ID **MB-60809** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **PBW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	14.283	20									
Magnesium	20.624	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-60809** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **LCSW** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9380.497	500	10000	0	93.8	85	115				
Iron	108.909	20	100.0	0	109	85	115				
Magnesium	9590.504	100	10000	0	95.9	85	115				

Sample ID **N022455-001D-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205109.763	500	10000	202600	25.5	75	125				S
Iron	89.913	20	100.0	3.429	86.5	75	125				
Magnesium	36558.629	100	10000	29410	71.5	75	125				S

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/6/2017** RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205343.214	500	10000	202600	27.9	75	125	205100	0.114	20	S
Iron	95.864	20	100.0	3.429	92.4	75	125	89.91	6.41	20	
Magnesium	36704.030	100	10000	29410	73.0	75	125	36560	0.397	20	S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_170115F**	QC Batch: **60817**				PrepDate	**1/8/2017**	Analyst: **CEI**
Manganese	150	0.056	0.50		µg/L	1	1/15/2017 09:10 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170115F** QC Batch: **60817** PrepDate **1/8/2017** Analyst: **CEI**							
Manganese	11	0.056	0.50		µg/L	1	1/15/2017 09:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-60817** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **PBW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533553**

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

Sample ID **LCS-60817** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **LCSW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.473	0.50	100.0	0	94.5	85	115				

Sample ID **N022455-001D-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.215	0.50	100.0	8.917	83.3	75	125				

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.005	0.50	100.0	8.917	83.1	75	125	92.21	0.228	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170105A** QC Batch: **R112642** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/5/2017 12:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170115F** QC Batch: **60817** PrepDate **1/8/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/15/2017 09:10 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170105A**	QC Batch: **R112642**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	620	6.6	20		µg/L	100	1/5/2017 11:31 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170116B**	QC Batch: **60817**			PrepDate		**1/8/2017**	Analyst: **CEI**
Chromium	620	0.096	5.0		µg/L	5	1/16/2017 02:27 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-60817** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **PBW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533441**

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

Sample ID **LCS-60817** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **LCSW** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.366	1.0	10.00	0	93.7	85	115				

Sample ID **N022455-001D-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	658.612	5.0	10.00	680.4	-218	75	125				S

Sample ID **N022455-001D-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **1/8/2017** RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	650.606	5.0	10.00	680.4	-298	75	125	658.6	1.22	20	S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R112642** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **PBW** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523461**

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

Sample ID **LCS-R112642** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **LCSW** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.017	0.20	5.000	0	100	90	110				

Sample ID **N022474-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.773	0.20						1.738	1.94	20	

Sample ID **N022475-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1121.590	20	500.0	621.0	100	90	110				

Sample ID **N022475-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1129.240	20	500.0	621.0	102	90	110	1122	0.680	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022475-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.286	0.20	1.000	0.1927	109	90	110				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170106B**	QC Batch: **R112668**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	1/6/2017 10:30 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170106B**	QC Batch: **R112668**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	1/6/2017 10:30 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R112668** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **LCSW** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.604	5.0	100.0	0	104	85	115				

Sample ID **MB-R112668** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **PBW** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N022475-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	225.225	5.0						223.0	1.01	30	

Sample ID **N022475-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	252.252	5.0	100.0	152.0	100	75	125				

Sample ID **N022475-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **112668**
Client ID: **ZZZZZZ** Batch ID: **R112668** TestNo: **SM 2320 B** Analysis Date: **1/6/2017** SeqNo: **2524342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.757	5.0	100.0	152.0	105	75	125	252.3	1.77	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:33:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170112A** QC Batch: **R112786** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	1/12/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-Jan-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0117
Lab Order:	N022475	**Collection Date:**	1/4/2017 12:19:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022475-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170112A** QC Batch: **R112786** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	1/12/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R112786** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **PBW** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528973**

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

Sample ID **LCS-R112786** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **LCSW** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N022475-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.219	0.25						3.358	4.24	20	

Sample ID **N022475-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.090	0.25	2.500	3.358	109	75	125				

Sample ID **N022475-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ZZZZZZ** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.596	0.25	2.500	3.358	89.5	75	125	6.090	8.45	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11110 Artesia Blvd., Ste B. Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloas	EDD Requirement
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD ☐
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com		Geotracker ☐
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr #330, Roseville, CA 95661	Email to: mbloas@pivox.com PO#	Labspec ☐
Submitted By:		Phone: 949-727-1400 ext 200 Fax:	Others ☑
Title:	Phone: Fax:		Specify:
Signature: Date:	Sampled by:		Global ID:
I hereby authorize ASSET Labs to perform the tests indicated below:	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of		
Project Name: PG&E Topock - PMP	Signature:		
Project Number: RC000753.0801			

QA/QC	
RTNE	☐
RWQCB	☑
CalTrans	☐
Level III	☐
LEVEL IV	☐
Regulatory	☐
Specify State	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present	☑	
5. IR number: 2		
6. Method of Cooling: Ice		
7. Sample Temp: 2.1°C		

Matrix: Ground ☐, Potable ☐, NPDES ☐, Surface ☐, Sediment ☐, Soil ☐, Other Solid ☐

Courier:

Tracking No

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2SO4/NH4OH 250 ml poly	Cr(VI) FF (SM3500-CrB) (NH4)2SO4/NH4OH 250 ml poly	Dissolved Metals (E200.8) FF, HNO3 Cr, Mn 500 ml poly	Dissolved Metals (E200.7) FF, HNO3 Ca, Mg, Na, Fe 500 ml poly	Dissolved metals (SW6010B/SW6020als)FF, HNO3 As, Mn, Fe, Se, Mo, Ba 500 ml poly	Total Metals (SW6010B) HNO3 Fe 500 ml poly	Anions (E300.0) Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4 125 ml poly	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N022475 - 01	PE-01-~~4210~~ 0117	010417	1233		X		X	X				X	X	X	X	X		4	P	B N	
2	- 02	TW-03D-~~4210~~ 0117	010417	1219		X		X	X				X	X	X	X	X		4	P	B N	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
[signature]	1-4-17 1245	[signature]	1/4/17 1245
[signature]	1/4/17 2013	[signature]	1/4/17 2013

Turn Around Time (TAT)
- ☐ A = 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

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

Special Instruction:

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

Preservatives:			
H = HCl	N = HNO3	S = H2SO4	C = 4°C
Z = Zn(AC)2	O = NaOH	T = Na2S2O3	
Others/Specify:			

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

ASSET Laboratories

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

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

Cooler Received/Opened On:	1/4/2017	Workorder:	N022475
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 1/5/2017

Reviewed By: MBC 1/6/2017

ASSET Laboratories

WORK ORDER Summary

04-Jan-17

WorkOrder: N022475

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022475-001A	PE-01-0117	1/4/2017 12:33:00 PM	1/18/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022475-001B			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022475-001C			1/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
N022475-001D			1/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022475-002A	TW-03D-0117	1/4/2017 12:19:00 PM	1/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022475-002B			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			1/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022475-002C			1/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-17

WorkOrder: N022475

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022475-002C	TW-03D-0117	1/4/2017 12:19:00 PM	1/18/2017	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
N022475-002D			1/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022475-003A	FOLDER		1/18/2017		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022475**

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320B, SM 4500H+B
Ria Abes	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R112660 **Analyst:** LSR

ASSET #: N022475 **Date Analyzed:** 1/5/2017

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 1/6/2017

2nd Level Reviewer 1/12/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 1/4/17 1410
Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 uS/cm	CINV-161025C	10.29 uS/cm @20.6°C	% Rec: (90-110%)
1413	160902A	1415 @20.6°C	
9977	160902B	10010 @20.6°C	
99835	160902C	100000 @20.6°C	

	Sample ID	Matrix	Reading	Comments
1	N022463-001A	H_2O	305 @19.8°C	
2	N022455-001B		7850 @19.6°C	
3	2B		7360 @19.2°C	
4	3B		58300 @18.8°C	
5	3B DUP		58100 @18.8°C	
6				
7				
8				
9	1413 uS/cm	CINV-160929A	1467 uS/cm @20.1°C	
10	10053	-160909C	10490 @20.5°C	
Dup	99899	-161104A	103700 @20.4°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 1/5/17 1300
Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 uS/cm	CINV-161025C	10.47 uS/cm @19.7°C	% Rec: (90-110%)
1413	160902A	1447 @20.1°C	
9977	160902B	10220 @20.2°C	
99835	160902C	101000 @20.2°C	

	Sample ID	Matrix	Reading	Comments
1	N022475-001C	H_2O	4480 @19.9°C	
2	2C		7810 @19.3°C	
3	2C DUP		7840 @19.1°C	
4				
5				
6				
7				Julia Ramit 1/6/2017
8	1413 uS/cm	CINV-160929A	1465 @20.4°C	
9	10053	160909C	10360 @20.9°C	
10	99899	161104A	104100 @20.9°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R112661 **Instrument ID:** pH meter

ASSET #: N022475 **Analyst:** LSR

Date Analyzed: 1/5/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

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

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

2nd Level Reviewer 1/12/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/5/17 1545
Analyst: 18R

Standard	Std ID	pH	Comments
Buffer 4	CINW-161015B	4.01 @ 21.7°C	SLOPE: 98.5%
Buffer 7	161017A	7.03 @ 21.7°C	
Buffer 10	1609021D	10.05 @ 21.6°C	

	Sample ID	Matrix	pH	Comments
1	N022475-001C	H2O	7.56 @19.5°C	
2	2C		7.32 @18.4°C	
3	2C DUP		7.33 @18.4°C	
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINW-161010A	7.01 @21.5°C	Accept: +/-0.1 pH units from expected value

Julia Ramit 1/12/2017

Date: 1/6/17 1535
Analyst: 18R

Standard	Std ID	pH	Comments
Buffer 4	CINW-161015B	4.01 @ 20.2°C	SLOPE: 98.7%
Buffer 7	161017A	7.00 @ 20.3°C	
Buffer 10	1609021D	10.03 @ 20.3°C	

	Sample ID	Matrix	pH	Comments
1	N022508-001A	H2O	4.17 @19.5°C	
2	2A		4.16 @19.7°C	
3	2A DUP		4.15 @19.7°C	
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINW-161010A	6.95 @ 20.7°C	Accept: +/-0.1 pH units from expected value

Logbook #10

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60801 **Analyst:** LSR

ASSET #: N022475 **Date Analyzed:** 1/5/2017

Method: EPA 160.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 1/9/2017

2nd Level Reviewer Nancy 1/12/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

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

FORMULA:

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

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

Where:

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

N022475
For ~~**N0224575**~~**-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(59.9647-59.8875)*1000000}{30}$$
$$= 2573.3333 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2600 mg/L

Julia Ramit 1/9/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2017 1:30:22 P**
Prep End Date: **1/6/2017 12:20:00 P**

Reviewed/ Date: 1/12/2017
Initials/ Date: Lilia Ramit 1/9/2017

Prep Batch **60801** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-60801	Water		100	☐	0	0	100	1.000		
MB-60801	Water		100	☐	0	0	100	1.000		
N022458-001E	Groundwater		100	☐	0	0	100	1.000		
N022458-002E	Groundwater		100	☐	0	0	100	1.000		
N022458-003E	Groundwater		100	☐	0	0	100	1.000		
N022475-001C	Groundwater		30	☐	0	0	100	3.333		
N022475-002C	Groundwater		20	☐	0	0	100	5.000		
N022475-002CDU	Groundwater		20	☐	0	0	100	5.000		
N022483-010D	Groundwater		100	☐	0	0	100	1.000		
N022483-011D	Groundwater		100	☐	0	0	100	1.000		
N022483-012C	Groundwater		60	☐	0	0	100	1.667		
N022485-001E	Groundwater		75	☐	0	0	100	1.333		
N022485-002E	Groundwater		30	☐	0	0	100	3.333		

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

Number	Reagent Name
8759	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST161219A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 1/5/2017 1:30:22 P
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: Lilia Ramit 1/9/2017

Prep Batch 60801 Prep Code: 160.1_W_PRE Technician: Lilia Ramit

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-60801	Water INSTI61219 A		100	☐	0	0	100	1.000		
MB-60801	Water		100	☐	0	0	100	1.000		
N022458-001C	Groundwater	49V	100	☐	0	0	100	1.000		
N022458-002C	Groundwater	487	100	☐	0	0	100	1.000		
N022458-003C	Groundwater	491	100	☐	0	0	100	1.000		
N022475-001C	Groundwater	4480	100 /30	☐	0	0	100	1.000		
N022475-002C	Groundwater	7810	100 /20	☐	0	0	100	1.000		
N022475-002C-DU	Groundwater	1	100 /20	☐	0	0	100	1.000		
N022483-010C	Groundwater	1258	100	☐	0	0	100	1.000		
N022483-011C	Groundwater	1254	100	☐	0	0	100	1.000		
N022483-012B	Groundwater	2280	100 /60	☐	0	0	100	1.000		
N022485-001C	Groundwater	1613	100 /75	☐	0	0	100	1.000		
N022485-002C	Groundwater	4910	100 /30	☐	0	0	100	1.000		

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

8759

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/5/17 1330 1	MB 60801	100	97.2571 97.2568	97.2570 97.2570	
17	LCS	100	77.0498 77.0495	77.1487 77.1448	
2	NO 22458-001E	100	97.6104 97.6101	97.6392 97.6395	
13	2E	100	75.6435 75.6433	75.6739 75.6742	
14	3E	100	76.7441 76.7437	76.7712 76.7713	
4	NO 22475-001C	30	59.8878 59.8875	59.9649 59.9647	
mm	2C	20	60.6570 60.6566	60.7440 60.7443	
(-)	2C DUP	20	62.4345 62.4344	62.5248 62.5246	
4	NO22-483-010D	100	76.6450 76.6446	76.7237 76.7235	
15	11D	100	74.6093 74.6091	74.6873 74.6875	

Lilia Ramit 1/9/2017

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/5/17 1330 F	N022483-012C	60	54.8282 54.8278	54.9220 54.9219	
N1	N022485-001E	75	60.6352 60.6350	60.7077 60.7074	
1F	2E	30	59.1800 59.1798	59.2970 59.2972	
WC	MB 60802	100	107.9608 107.9604	107.9608 107.9607	
4G	LCS 60802	100	76.5702 76.5698	76.6663 76.6661	
B	N022483-013C	100	53.7646 53.7643	53.7985 53.7989	
A	14C	100	55.5657 55.5654	55.6047 55.6049	
2B	15C	100	60.7968 60.7969	60.8530 60.8528	
B	15C DUP	100	63.3241 63.3242	63.3812 63.3812	
E	16C	100	53.8275 53.8272	53.8846 53.8843	

Silia Ramit 1/9/2017

ASSET LABORATORIES
Serving Clients with Passion and Professionalism

TOTAL DISSOLVED SOLIDS, TDS

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

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

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
1/6/2017									
MB-60801	100	97.2568	97.257	2	1	2			MBLK
LCS-60801	100	77.0495	77.1448	953	1	953			LCS
N022458-001E	100	97.6101	97.6395	294	1	294	494	0.595	SAMP
N022458-002E	100	75.6433	75.6742	309	1	309	487	0.634	SAMP
N022458-003E	100	76.7437	76.7713	276	1	276	491	0.562	SAMP
N022475-001C	30	59.8875	59.9647	772	3.33333333	2573.33333	4480	0.574	SAMP
N022475-002C	20	60.6566	60.7443	877	5	4385	7810	0.561	SAMP
N022475-002CDUP	20	62.4344	62.5246	902	5	4510	7810	0.577	DUP
N022483-010D	100	76.6446	76.7235	789	1	789	1258	0.627	SAMP
N022483-011D	100	74.6091	74.6875	784	1	784	1254	0.625	SAMP
N022483-012C	60	54.8278	54.9219	941	1.66666667	1568.33333	2280	0.688	SAMP
N022485-001E	75	60.635	60.7074	724	1.33333333	965.333333	1613	0.598	SAMP
N022485-002E	30	59.1798	59.2972	1174	3.33333333	3913.33333	4910	0.797	SAMP

Julia Ramit 1/9/2017

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60809 **Instrument ID:** ICP-02
ASSET #: N022475 **Analyst:** CEI
Method: **Date Analyzed:** 1/10/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N022475-001B PS/MS/MSD failed. However LCS & DT passed criteria.

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

1st Level Reviewer _____ 1/18/17 Date: _____
2nd Level Reviewer _____ 1/18/2017 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60809 **Instrument ID:** ICP-02
ASSET #: N022475 **Analyst:** CEI
Method: **Date Analyzed:** 1/10/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca & Mg in N022455-001D PS/MS/MSD failed. However LCS passed criteria.
Dilution test failed for Ca & Mg.

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

1st Level Reviewer 1/18/17 Date:
2nd Level Reviewer 1/18/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022475-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 121.584 * 1 * (25/25) * 1000

Calcium , ug/L = 121584

Reporting results in two significant figures,

Calcium , ug/L = 120000

% RSD SUMMARY

RSD SUMMARY: 170110A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	33.028	15	<PQL
Standard1	ICAL	1	Na	0.1	2.041	15	PASS
Standard2	ICAL	1	Na	1	0.032	15	PASS
Standard3	ICAL	1	Na	5	0.22	15	PASS
Standard4	ICAL	1	Na	10	0.25	15	PASS
Standard5	ICAL	1	Na	20	0.25	15	PASS
Standard6	ICAL	1	Na	40	0.18	15	PASS
ICV	ICV	1	Na	9.89	0.24	15	PASS
ICB	ICB	1	Na	-0.00034	1799.26	15	<PQL
ICSA0	ICSA	1	Na	0.0037	53.21	15	<PQL
ICSAB0	ICSAB	1	Na	9.85	0.12	15	PASS
CCV0	CCV	1	Na	9.89	0.3	15	PASS
CCB0	CCB	1	Na	0.11	4.62	15	PASS
CCV0	CCV	1	Na	9.83	0.23	15	PASS
CCB0	CCB	1	Na	0.058	4.097	15	PASS
MB-60809	MBLK	1	Na	0.054	0.3	15	PASS
LCS2-60809	LCS	1	Na	19.43	0.14	15	PASS
N022475-001B	SAMP	5	Na	143.95	0.56	15	PASS
N022475-002B	SAMP	5	Na	280.29	0.17	15	PASS
N022475-001B	SAMP	50	Na	14.69	0.24	15	PASS
N022475-001B	SAMP	250	Na	3.026	0.18	15	PASS
N022475-001B-PS	PS	50	Na	15.99	0.29	15	PASS
N022475-001B-MS2	MS	50	Na	16.054	0.063	15	PASS
CCV0	CCV	1	Na	9.96	0.1	15	PASS
CCB0	CCB	1	Na	0.065	1.098	15	PASS
N022475-001B-MSD2	MSD	50	Na	15.8	0.28	15	PASS
N022475-002B	SAMP	50	Na	28.39	0.37	15	PASS
CCV0	CCV	1	Na	9.93	0.3	15	PASS
CCB0	CCB	1	Na	0.058	7.55	15	PASS
ICSA0	ICSA	1	Na	0.054	7.48	15	PASS
ICSAB0	ICSAB	1	Na	9.86	0.2	15	PASS

RSD SUMMARY: 170110B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	7.93	15	PASS
Standard1	ICAL	1	Ca	0.2	7.24	15	PASS
Standard2	ICAL	1	Ca	1	0.7	15	PASS
Standard3	ICAL	1	Ca	2	1.27	15	PASS
Standard4	ICAL	1	Ca	5	0.15	15	PASS
Standard5	ICAL	1	Ca	7.5	1.3	15	PASS
Standard6	ICAL	1	Ca	10	0.33	15	PASS
Standard7	ICAL	1	Ca	20	0.78	15	PASS
ICV	ICV	1	Ca	9.77	1.47	15	PASS
ICB	ICB	1	Ca	0.0075	251.32	15	<PQL
LLICV	CCV1	1	Ca	0.2	4.71	20	PASS
ICSA1	ICSA	1	Ca	538.64	0.13	15	PASS
ICSAB1	ICSAB	1	Ca	560.38	0.051	15	PASS
MB-60809	MBLK	1	Ca	0.02	60.72	15	<PQL
LCS1-60809	LCS	1	Ca	9.38	0.53	15	PASS
N022455-001D	SAMP	1	Ca	202.56	0.11	15	PASS
N022455-001D	SAMP	5	Ca	45.91	0.49	15	PASS
N022455-001D-PS	PS	1	Ca	196.32	0.22	15	PASS
N022455-001D-MS1	MS	1	Ca	205.11	0.053	15	PASS
N022455-001D-MSD1	MSD	1	Ca	205.34	0.12	15	PASS
N022455-002D	SAMP	1	Ca	137.97	0.45	15	PASS
N022475-001B	SAMP	1	Ca	121.58	0.47	15	PASS
N022475-002B	SAMP	1	Ca	183.63	0.07	15	PASS
CCV1	CCV	1	Ca	9.96	0.47	15	PASS
CCB1	CCB	1	Ca	0.01	65.27	15	<PQL
CCV2	CCV	1	Ca	9.93	0.83	15	PASS
CCB2	CCB	1	Ca	0.0058	240.24	15	<PQL
CCV3	CCV	1	Ca	9.95	0.33	15	PASS
CCB3	CCB	1	Ca	0.018	78.051	15	<PQL
CCV4	CCV	1	Ca	10	0.96	15	PASS
CCB4	CCB	1	Ca	0.016	291.8	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	5.8	20	PASS
ICSA2	ICSA	1	Ca	540.42	0.058	15	PASS
ICSAB2	ICSAB	1	Ca	563.03	0.2	15	PASS
CalBlk	IBLK	1	Fe	0	15.047	15	<PQL
Standard1	ICAL	1	Fe	0.02	6.91	15	PASS
Standard2	ICAL	1	Fe	0.05	0.39	15	PASS
Standard3	ICAL	1	Fe	2	1.087	15	PASS
Standard4	ICAL	1	Fe	5	0.63	15	PASS
Standard5	ICAL	1	Fe	7.5	0.089	15	PASS
Standard6	ICAL	1	Fe	10	0.11	15	PASS
Standard7	ICAL	1	Fe	20	0.16	15	PASS

RSD SUMMARY: 170110B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICV	ICV	1	Fe	9.92	0.12	15	PASS
ICB	ICB	1	Fe	0.0026	113.24	15	<PQL
LLICV	CCV1	1	Fe	0.024	3.0033	20	PASS
ICSA1	ICSA	1	Fe	181.84	0.17	15	PASS
ICSAB1	ICSAB	1	Fe	188.86	0.76	15	PASS
MB-60809	MBLK	1	Fe	0.014	19.74	15	<PQL
LCS1-60809	LCS	1	Fe	0.11	0.56	15	PASS
N022455-001D	SAMP	1	Fe	0.0034	35.62	15	<PQL
N022455-001D	SAMP	5	Fe	0.0013	114.25	15	<PQL
N022455-001D-PS	PS	1	Fe	0.089	1.015	15	PASS
N022455-001D-MS1	MS	1	Fe	0.09	1.57	15	PASS
N022455-001D-MSD1	MSD	1	Fe	0.096	4.64	15	PASS
N022455-002D	SAMP	1	Fe	0.0061	34.3	15	<PQL
N022475-001B	SAMP	1	Fe	0.0043	25.85	15	<PQL
N022475-002B	SAMP	1	Fe	0.0012	113.63	15	<PQL
CCV1	CCV	1	Fe	9.94	0.2	15	PASS
CCB1	CCB	1	Fe	0.0011	71.17	15	<PQL
CCV2	CCV	1	Fe	9.85	0.12	15	PASS
CCB2	CCB	1	Fe	0.0018	13.14	15	PASS
CCV3	CCV	1	Fe	9.88	0.056	15	PASS
CCB3	CCB	1	Fe	0.0013	64.83	15	<PQL
CCV4	CCV	1	Fe	9.92	0.22	15	PASS
CCB4	CCB	1	Fe	0.0013	46.84	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	5.031	20	PASS
ICSA2	ICSA	1	Fe	181.69	0.53	15	PASS
ICSAB2	ICSAB	1	Fe	188.82	0.46	15	PASS
CalBlk	IBLK	1	Mg	0	1779.26	15	<PQL
Standard1	ICAL	1	Mg	0.1	0.38	15	PASS
Standard2	ICAL	1	Mg	1	0.35	15	PASS
Standard3	ICAL	1	Mg	2	1.12	15	PASS
Standard4	ICAL	1	Mg	5	0.66	15	PASS
Standard5	ICAL	1	Mg	7.5	0.052	15	PASS
Standard6	ICAL	1	Mg	10	0.21	15	PASS
Standard7	ICAL	1	Mg	20	0.32	15	PASS
ICV	ICV	1	Mg	9.9	0.17	15	PASS
ICB	ICB	1	Mg	0.00042	114.85	15	<PQL
LLICV	CCV1	1	Mg	0.12	0.71	20	PASS
ICSA1	ICSA	1	Mg	505.09	0.077	15	PASS
ICSAB1	ICSAB	1	Mg	524.12	0.57	15	PASS
MB-60809	MBLK	1	Mg	0.021	4.1	15	PASS
LCS1-60809	LCS	1	Mg	9.59	0.06	15	PASS
N022455-001D	SAMP	1	Mg	29.41	0.11	15	PASS

RSD SUMMARY: 170110B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022455-001D	SAMP	5	Mg	6.89	1.46	15	PASS
N022455-001D-PS	PS	1	Mg	35.39	0.064	15	PASS
N022455-001D-MS1	MS	1	Mg	36.56	0.1	15	PASS
N022455-001D-MSD1	MSD	1	Mg	36.7	0.14	15	PASS
N022455-002D	SAMP	1	Mg	25.79	0.16	15	PASS
N022475-001B	SAMP	1	Mg	27.2	0.23	15	PASS
N022475-002B	SAMP	1	Mg	26.96	0.066	15	PASS
CCV1	CCV	1	Mg	9.9	0.36	15	PASS
CCB1	CCB	1	Mg	0.0024	6.94	15	PASS
CCV2	CCV	1	Mg	9.77	0.12	15	PASS
CCB2	CCB	1	Mg	0.00055	52.52	15	<PQL
CCV3	CCV	1	Mg	9.84	0.14	15	PASS
CCB3	CCB	1	Mg	0.00061	100.0066	15	<PQL
CCV4	CCV	1	Mg	9.88	0.13	15	PASS
CCB4	CCB	1	Mg	0.0006	93.99	15	<PQL
LLCCV1	CCV2	1	Mg	0.12	1.2	20	PASS
ICSA2	ICSA	1	Mg	504.37	0.46	15	PASS
ICSAB2	ICSAB	1	Mg	523.8	0.43	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170110A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161209A,0.025<50mL
Standard2	MWST-161209A,0.25<50mL
Standard3	MWST-161209A,1.25<50mL
Standard4	MWST-161209A,2.5<50mL
Standard5	MWST-161209A,5<50mL
Standard6	MWST-161209A,10<50mL
ICV	MWST-161209B
CCV	MWST-161209A,2.5<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161209C
Int. Std. (Sc):	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/10/2017	08:56:14 AM
26	Standard1	ICAL	1	01/10/2017	08:59:32 AM
27	Standard2	ICAL	1	01/10/2017	09:02:50 AM
28	Standard3	ICAL	1	01/10/2017	09:06:07 AM
29	Standard4	ICAL	1	01/10/2017	09:09:55 AM
30	Standard5	ICAL	1	01/10/2017	09:13:44 AM
31	Standard6	ICAL	1	01/10/2017	09:17:33 AM
32	ICV	ICV	1	01/10/2017	09:22:41 AM
1	ICB	ICB	1	01/10/2017	09:26:31 AM
33	ICSA1	ICSA	1	01/10/2017	09:29:49 AM
34	ICSAB1	ICSAB	1	01/10/2017	09:33:07 AM
38	MB-60772	MBLK	1	01/10/2017	09:36:59 AM
39	LCS2-60772	LCS	1	01/10/2017	09:56:29 AM
40	N022436-001C	SAMP	5	01/10/2017	10:00:20 AM
41	N022410-001A	SAMP	100	01/10/2017	10:04:09 AM
42	N022411-001A	SAMP	100	01/10/2017	10:08:58 AM
43	N022412-001A	SAMP	100	01/10/2017	10:13:48 AM
44	N022413-001A	SAMP	100	01/10/2017	10:18:38 AM
45	N022414-001A	SAMP	100	01/10/2017	10:23:27 AM
45	N022414-001A	SAMP	100	01/10/2017	10:31:16 AM
46	N022415-001A	SAMP	100	01/10/2017	10:36:06 AM
29	CCV1	CCV	1	01/10/2017	10:40:55 AM
1	CCB1	CCB	1	01/10/2017	10:44:45 AM
47	N022419-001A	SAMP	100	01/10/2017	10:48:01 AM
48	N022436-001C	SAMP	25	01/10/2017	10:52:51 AM
49	N022436-001C-PS	PS	5	01/10/2017	10:56:11 AM
50	N022436-001C-MS2	MS	5	01/10/2017	11:00:02 AM
51	N022436-001C-MSD2	MSD	5	01/10/2017	11:03:52 AM
52	N022410-001A	SAMP	1000	01/10/2017	11:07:43 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N022411-001A	SAMP	5000	01/10/2017	11:11:02 AM
54	N022412-001A	SAMP	5000	01/10/2017	11:14:21 AM
55	N022413-001A	SAMP	5000	01/10/2017	11:17:40 AM
56	N022414-001A	SAMP	1000	01/10/2017	11:20:46 AM
29	CCV2	CCV	1	01/10/2017	11:24:33 AM
1	CCB2	CCB	1	01/10/2017	11:28:22 AM
57	N022415-001A	SAMP	5000	01/10/2017	11:31:39 AM
58	N022419-001A	SAMP	1000	01/10/2017	11:34:57 AM
59	MB-60809	MBLK	1	01/10/2017	11:38:17 AM
60	LCS2-60809	LCS	1	01/10/2017	11:41:36 AM
61	N022475-001B	SAMP	5	01/10/2017	11:45:29 AM
62	N022475-002B	SAMP	5	01/10/2017	11:50:27 AM
63	N022475-001B	SAMP	50	01/10/2017	11:55:19 AM
64	N022475-001B	SAMP	250	01/10/2017	11:58:38 AM
65	N022475-001B-PS	PS	50	01/10/2017	12:01:58 PM
66	N022475-001B-MS2	MS	50	01/10/2017	12:05:18 PM
29	CCV3	CCV	1	01/10/2017	12:08:38 PM
1	CCB3	CCB	1	01/10/2017	12:12:27 PM
67	N022475-001B-MSD2	MSD	50	01/10/2017	12:15:45 PM
68	N022475-002B	SAMP	50	01/10/2017	12:19:03 PM
29	CCV4	CCV	1	01/10/2017	12:22:22 PM
1	CCB4	CCB	1	01/10/2017	12:26:12 PM
33	ICSA2	ICSA	1	01/10/2017	12:29:28 PM
34	ICSAB2	ICSAB	1	01/10/2017	12:32:46 PM

INJECTION LOG: 170110B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-161201D
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-160801D;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/10/2017	12:38:07 PM
2	Standard1	ICAL	1	01/10/2017	12:42:26 PM
3	Standard2	ICAL	1	01/10/2017	12:47:14 PM
4	Standard3	ICAL	1	01/10/2017	12:52:03 PM
5	Standard4	ICAL	1	01/10/2017	12:56:55 PM
6	Standard5	ICAL	1	01/10/2017	01:02:48 PM
7	Standard6	ICAL	1	01/10/2017	01:08:11 PM
8	Standard7	ICAL	1	01/10/2017	01:13:36 PM
9	ICV	ICV	1	01/10/2017	01:18:31 PM
1	ICB	ICB	1	01/10/2017	01:23:57 PM
2	LLICV	CCV1	1	01/10/2017	01:28:46 PM
4	ICSA1	ICSA	1	01/10/2017	01:33:35 PM
5	ICSAB1	ICSAB	1	01/10/2017	01:39:40 PM
38	MB-60809	MBLK	1	01/10/2017	01:45:14 PM
39	LCS1-60809	LCS	1	01/10/2017	01:49:33 PM
40	N022455-001D	SAMP	1	01/10/2017	01:55:24 PM
41	N022455-001D	SAMP	5	01/10/2017	02:00:47 PM
42	N022455-001D-PS	PS	1	01/10/2017	02:05:38 PM
43	N022455-001D-MS1	MS	1	01/10/2017	02:11:04 PM
44	N022455-001D-MSD1	MSD	1	01/10/2017	02:16:29 PM
45	N022455-002D	SAMP	1	01/10/2017	02:21:55 PM
46	N022475-001B	SAMP	1	01/10/2017	02:29:42 PM
47	N022475-002B	SAMP	1	01/10/2017	02:35:33 PM
7	CCV1	CCV	1	01/10/2017	02:40:58 PM
1	CCB1	CCB	1	01/10/2017	02:46:22 PM
48	MB-60823	MBLK	1	01/10/2017	02:51:11 PM
49	LCS-60823	LCS	1	01/10/2017	02:56:01 PM
50	N022458-001B	SAMP	1	01/10/2017	03:01:54 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N022458-001B	SAMP	5	01/10/2017	03:06:44 PM
52	N022458-001B-PS	PS	1	01/10/2017	03:11:36 PM
53	N022458-001B-MS	MS	1	01/10/2017	03:17:28 PM
54	N022458-001B-MSD	MSD	1	01/10/2017	03:23:20 PM
55	N022458-002B	SAMP	1	01/10/2017	03:29:13 PM
56	N022458-003B	SAMP	1	01/10/2017	03:34:03 PM
57	N022505-001B	SAMP	1	01/10/2017	03:38:55 PM
7	CCV2	CCV	1	01/10/2017	03:43:46 PM
1	CCB2	CCB	1	01/10/2017	03:49:11 PM
58	N022505-003B	SAMP	1	01/10/2017	03:54:20 PM
59	N022505-004B	SAMP	1	01/10/2017	04:00:12 PM
60	N022505-005B	SAMP	1	01/10/2017	04:05:03 PM
61	N022505-006B	SAMP	1	01/10/2017	04:09:54 PM
62	N022505-007B	SAMP	1	01/10/2017	04:14:46 PM
63	N022505-010B	SAMP	1	01/10/2017	04:19:37 PM
64	N022505-011B	SAMP	1	01/10/2017	04:24:57 PM
65	N022505-012B	SAMP	1	01/10/2017	04:30:49 PM
66	N022505-013B	SAMP	1	01/10/2017	04:36:41 PM
67	N022505-014B	SAMP	1	01/10/2017	04:42:33 PM
7	CCV3	CCV	1	01/10/2017	04:47:25 PM
1	CCB3	CCB	1	01/10/2017	04:52:50 PM
68	N022505-015B	SAMP	1	01/10/2017	04:57:32 PM
69	N022505-016B	SAMP	1	01/10/2017	05:02:25 PM
63	N022505-010B	SAMP	1	01/10/2017	05:08:16 PM
70	MB-60824	MBLK	1	01/10/2017	05:13:07 PM
71	LCS-60824	LCS	1	01/10/2017	05:17:27 PM
72	N022526-005B	SAMP	1	01/10/2017	05:23:19 PM
73	N022526-005B	SAMP	5	01/10/2017	05:29:11 PM
74	N022526-005B-PS	PS	1	01/10/2017	05:34:02 PM
75	N022526-005B-MS	MS	1	01/10/2017	05:39:56 PM
76	N022526-005B-MSD	MSD	1	01/10/2017	05:45:21 PM
7	CCV4	CCV	1	01/10/2017	05:50:47 PM
1	CCB4	CCB	1	01/10/2017	05:56:11 PM
2	LLCCV1	CCV2	1	01/10/2017	06:00:59 PM
4	ICSA2	ICSA	1	01/10/2017	06:05:49 PM
5	ICSAB2	ICSAB	1	01/10/2017	06:11:54 PM
77	N022526-006B	SAMP	1	01/10/2017	06:17:30 PM
78	N022526-007B	SAMP	1	01/10/2017	06:23:23 PM
79	N022526-008B	SAMP	1	01/10/2017	06:29:25 PM
80	N022526-009B	SAMP	1	01/10/2017	06:35:18 PM
81	N022526-010B	SAMP	1	01/10/2017	06:40:10 PM
82	N022526-011B	SAMP	1	01/10/2017	06:45:01 PM
83	N022526-012B	SAMP	1	01/10/2017	06:49:52 PM
84	N022526-013B	SAMP	1	01/10/2017	06:55:44 PM
85	N022527-001B	SAMP	1	01/10/2017	07:00:36 PM
86	N022527-002B	SAMP	1	01/10/2017	07:05:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	01/10/2017	07:10:19 PM
1	CCB5	CCB	1	01/10/2017	07:15:44 PM
87	N022527-003B	SAMP	1	01/10/2017	07:20:33 PM
88	N022527-004B	SAMP	1	01/10/2017	07:25:24 PM
89	N022527-005B	SAMP	1	01/10/2017	07:30:14 PM
90	N022527-006B	SAMP	1	01/10/2017	07:35:05 PM
91	N022527-007B	SAMP	1	01/10/2017	07:39:56 PM
92	N022527-008B	SAMP	1	01/10/2017	07:44:47 PM
93	N022527-009B	SAMP	1	01/10/2017	07:49:39 PM
94	N022528-007B	SAMP	1	01/10/2017	07:54:31 PM
95	N022528-008B	SAMP	1	01/10/2017	07:59:23 PM
7	CCV6	CCV	1	01/10/2017	08:04:15 PM
1	CCB6	CCB	1	01/10/2017	08:09:40 PM
2	LLCCV2	CCV2	1	01/10/2017	08:13:59 PM
4	ICSA3	ICSA	1	01/10/2017	08:18:49 PM
5	ICSAB3	ICSAB	1	01/10/2017	08:24:54 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/6/2017 8:11:58 A**
Prep End Date: **1/6/2017 11:30:00 A**

Reviewed/ Date: 1/18/2017
Initials/ Date: for 1/17/2017

Prep Batch **60809** Prep Code: **200.7_PR** Technician: **Mark Gesmundo**

Prep Factor Units: **mL / mL** Temp. (°C): **94.5** Location: **02-2**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-60809	Aqueous		25	☐	0	0	25	1.000		
LCS2-60809	Aqueous		25	☐	0	0	25	1.000		
MB-60809	Aqueous		25	☐	0	0	25	1.000		
N022455-001D	Water	<2	25	☐	0	0	25	1.000		
N022455-001D-MS	Water	<2	25	☐	0	0	25	1.000		
N022455-001D-MS	Water	<2	25	☐	0	0	25	1.000		
N022455-002D	Water	<2	25	☐	0	0	25	1.000		
N022460-001C	Surface Water	<2	25	☐	0	0	25	1.000		
N022463-001C	Water	<2	25	☐	0	0	25	1.000		
N022475-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022475-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022475-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022475-002B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8647	HYDROCHLORIC ACID
8665	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170110A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	01/10/2017	08:56:14 AM	Na	589.594	-19	0.00	mg/L	
Standard1	01/10/2017	08:59:32 AM	Na	589.594	366	0.1000	mg/L	
Standard2	01/10/2017	09:02:50 AM	Na	589.594	2949	1.000	mg/L	
Standard3	01/10/2017	09:06:07 AM	Na	589.594	14657	5.000	mg/L	
Standard4	01/10/2017	09:09:55 AM	Na	589.594	28923	10.000	mg/L	
Standard5	01/10/2017	09:13:44 AM	Na	589.594	57569	20.000	mg/L	
Standard6	01/10/2017	09:17:33 AM	Na	589.594	115043	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170110B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	01/10/2017	12:38:07 PM	Mg	279.079	0	0.00	mg/L	
Standard1	01/10/2017	12:42:26 PM	Mg	279.079	2141	0.1000	mg/L	
Standard2	01/10/2017	12:47:14 PM	Mg	279.079	18207	1.000	mg/L	
Standard3	01/10/2017	12:52:03 PM	Mg	279.079	36588	2.000	mg/L	
Standard4	01/10/2017	12:56:55 PM	Mg	279.079	93154	5.000	mg/L	
Standard5	01/10/2017	01:02:48 PM	Mg	279.079	136349	7.500	mg/L	
Standard6	01/10/2017	01:08:11 PM	Mg	279.079	182168	10.000	mg/L	
Standard7	01/10/2017	01:13:36 PM	Mg	279.079	367806	20.000	mg/L	1.0000
Calcium								
CalBlk	01/10/2017	12:38:07 PM	Ca	227.546	-158	0.00	mg/L	
Standard1	01/10/2017	12:42:26 PM	Ca	227.546	85	0.2000	mg/L	
Standard2	01/10/2017	12:47:14 PM	Ca	227.546	409	1.000	mg/L	
Standard3	01/10/2017	12:52:03 PM	Ca	227.546	805	2.000	mg/L	
Standard4	01/10/2017	12:56:55 PM	Ca	227.546	2053	5.000	mg/L	
Standard5	01/10/2017	01:02:48 PM	Ca	227.546	3048	7.500	mg/L	
Standard6	01/10/2017	01:08:11 PM	Ca	227.546	4059	10.000	mg/L	
Standard7	01/10/2017	01:13:36 PM	Ca	227.546	8346	20.000	mg/L	0.9999
Iron								
CalBlk	01/10/2017	12:38:07 PM	Fe	273.953	-158	0.00	mg/L	
Standard1	01/10/2017	12:42:26 PM	Fe	273.953	804	0.0200	mg/L	
Standard2	01/10/2017	12:47:14 PM	Fe	273.953	1979	0.050	mg/L	
Standard3	01/10/2017	12:52:03 PM	Fe	273.953	66838	2.000	mg/L	
Standard4	01/10/2017	12:56:55 PM	Fe	273.953	170098	5.000	mg/L	
Standard5	01/10/2017	01:02:48 PM	Fe	273.953	248923	7.500	mg/L	
Standard6	01/10/2017	01:08:11 PM	Fe	273.953	331861	10.000	mg/L	
Standard7	01/10/2017	01:13:36 PM	Fe	273.953	668137	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICV** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9887.575	500	10000	0	98.9	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCV** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9890.152	500	10000	0	98.9	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCV** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9832.936	500	10000	0	98.3	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCV** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9956.205	500	10000	0	99.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCV** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9930.128	500	10000	0	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICV** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9768.246	500	10000	0	97.7	90	110				
Iron	9922.348	20	10000	0	99.2	90	110				
Magnesium	9900.160	100	10000	0	99.0	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	196.227	500	200.0	0	98.1	80	120				
Iron	23.685	20	20.00	0	118	80	120				
Magnesium	116.547	100	100.0	0	117	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCV** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9964.335	500	10000	0	99.6	90	110				
Iron	9939.871	20	10000	0	99.4	90	110				
Magnesium	9895.113	100	10000	0	99.0	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCV** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9933.156	500	10000	0	99.3	90	110				
Iron	9850.761	20	10000	0	98.5	90	110				
Magnesium	9772.986	100	10000	0	97.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCV** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9948.793	500	10000	0	99.5	90	110				
Iron	9877.295	20	10000	0	98.8	90	110				
Magnesium	9836.928	100	10000	0	98.4	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCV** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10000.331	500	10000	0	100	90	110				
Iron	9915.066	20	10000	0	99.2	90	110				
Magnesium	9883.495	100	10000	0	98.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	217.249	500	200.0	0	109	70	130				
Iron	22.917	20	20.00	0	115	70	130				
Magnesium	116.463	100	100.0	0	116	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.338902	500									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	113.493	500									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	58.018	500									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	64.564	500									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **CCB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	58.326	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	7.490	500									
Iron	2.575	20									
Magnesium	0.420	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.081	500									
Iron	1.089	20									
Magnesium	2.416	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.843	500									
Iron	1.786	20									
Magnesium	0.549	100									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **CCB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	17.823	500									
Iron	1.298	20									
Magnesium	0.609	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	CCB4	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	112742
Client ID:	CCB	Batch ID:	R112742	TestNo:	EPA 200.7			Analysis Date:	1/10/2017	SeqNo:	2527208

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.607	500									
Iron	1.295	20									
Magnesium	0.597	100									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICSA** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.658	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICSAB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9847.407	500	10000	0	98.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICSA** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	54.402	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ICSAB** Batch ID: **R112741** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9858.682	500	10000	0	98.6	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICSA** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	536837.138	50	500000	0	107	80	120				
Calcium	538641.653	500	500000	0	108	80	120				
Iron	181835.419	20	200000	0	90.9	80	120				
Magnesium	505085.124	100	500000	0	101	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICSAB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	578444.914	50	500000	0	116	80	120				
Calcium	560382.069	500	500000	0	112	80	120				
Iron	188857.504	20	200000	0	94.4	80	120				
Magnesium	524116.521	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICSA** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	540644.343	50	500000	0	108	80	120				
Calcium	540424.896	500	500000	0	108	80	120				
Iron	181692.655	20	200000	0	90.8	80	120				
Magnesium	504368.268	100	500000	0	101	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ICSAB** Batch ID: **R112742** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	563723.095	50	500000	0	113	80	120				
Calcium	563029.402	500	500000	0	113	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	112742
Client ID:	ICSAB	Batch ID:	R112742	TestNo:	EPA 200.7			Analysis Date:	1/10/2017	SeqNo:	2527211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	188820.703	20	200000	0	94.4	80	120				
Magnesium	523800.066	100	500000	0	105	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170110A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.14	113.84	65-125	PASS
Standard2	ICAL	1	1.13	113.29	65-125	PASS
Standard3	ICAL	1	1.13	113.13	65-125	PASS
Standard4	ICAL	1	1.15	115.33	65-125	PASS
Standard5	ICAL	1	1.13	113.16	65-125	PASS
Standard6	ICAL	1	1.13	112.62	65-125	PASS
ICV	ICV	1	1.0082	100.82	65-125	PASS
ICB	ICB	1	1.015	101.52	65-125	PASS
ICSA1	ICSA	1	1.016	101.61	65-125	PASS
ICSAB1	ICSAB	1	1.048	104.83	65-125	PASS
CCV1	CCV	1	1.071	107.13	65-125	PASS
CCB1	CCB	1	1.064	106.43	65-125	PASS
CCV2	CCV	1	1.08	108.02	65-125	PASS
CCB2	CCB	1	1.069	106.94	65-125	PASS
MB-60809	MBLK	1	1.05	104.95	65-125	PASS
LCS2-60809	LCS	1	1.23	123.37	65-125	PASS
N022475-001B	SAMP	5	1.035	103.52	65-125	PASS
N022475-002B	SAMP	5	1.026	102.63	65-125	PASS
N022475-001B	SAMP	50	1.038	103.8	65-125	PASS
N022475-001B	SAMP	250	1.049	104.94	65-125	PASS
N022475-001B-PS	PS	50	1.044	104.38	65-125	PASS
N022475-001B-MS2	MS	50	1.035	103.51	65-125	PASS
CCV3	CCV	1	1.045	104.51	65-125	PASS
CCB3	CCB	1	1.065	106.53	65-125	PASS
N022475-001B-MSD2	MSD	50	1.053	105.34	65-125	PASS
N022475-002B	SAMP	50	1.046	104.65	65-125	PASS
CCV4	CCV	1	1.06	105.98	65-125	PASS
CCB4	CCB	1	1.057	105.71	65-125	PASS
ICSA2	ICSA	1	1.064	106.37	65-125	PASS
ICSAB2	ICSAB	1	1.091	109.12	65-125	PASS

INTERNAL STANDARD: 170110B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.003	100.3	65-125	PASS
Standard2	ICAL	1	1.14	113.98	65-125	PASS
Standard3	ICAL	1	0.99	98.91	65-125	PASS
Standard4	ICAL	1	0.97	97.16	65-125	PASS
Standard5	ICAL	1	0.96	96.036	65-125	PASS
Standard6	ICAL	1	0.95	95.11	65-125	PASS
Standard7	ICAL	1	0.93	93.19	65-125	PASS
ICV	ICV	1	0.95	95.23	65-125	PASS
ICB	ICB	1	0.99	99.42	65-125	PASS
LLICV	CCV1	1	1.0027	100.27	65-125	PASS
ICSA1	ICSA	1	0.85	84.7	65-125	PASS
ICSAB1	ICSAB	1	0.81	81.19	65-125	PASS
MB-60809	MBLK	1	0.99	99.12	65-125	PASS
LCS1-60809	LCS	1	0.9	89.69	65-125	PASS
N022455-001D	SAMP	1	0.89	88.95	65-125	PASS
N022455-001D	SAMP	5	0.89	89.15	65-125	PASS
N022455-001D-PS	PS	1	0.91	90.55	65-125	PASS
N022455-001D-MS1	MS	1	0.89	88.71	65-125	PASS
N022455-001D-MSD1	MSD	1	0.89	88.78	65-125	PASS
N022455-002D	SAMP	1	0.9	89.76	65-125	PASS
N022475-001B	SAMP	1	0.94	94.33	65-125	PASS
N022475-002B	SAMP	1	0.92	91.75	65-125	PASS
CCV1	CCV	1	0.95	95.23	65-125	PASS
CCB1	CCB	1	1	99.99	65-125	PASS
CCV2	CCV	1	0.97	96.95	65-125	PASS
CCB2	CCB	1	1.0084	100.84	65-125	PASS
CCV3	CCV	1	0.97	97.06	65-125	PASS
CCB3	CCB	1	1.0085	100.85	65-125	PASS
CCV4	CCV	1	0.97	97.24	65-125	PASS
CCB4	CCB	1	1.018	101.85	65-125	PASS
LLCCV1	CCV2	1	1.013	101.28	65-125	PASS
ICSA2	ICSA	1	0.86	86.13	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.76	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022475
Test Method: EPA 200.7
Analysis Date: 1/10/2017

Matrix: Groundwater
Batch No.: 60809

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022475-001B DT 250X	Sodium	ug/L	756520.8	PASS	734647.5	2.98%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022475
Test Method: EPA 200.7
Analysis Date: 1/10/2017

Matrix: Groundwater
Batch No.: 60809

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Ca & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022455-001D DT 5X	Calcium	ug/L	229561.8	FAIL	202556.9	13.33%	10
N022455-001D DT 5X	Iron	ug/L	0	NA	3.428909	100.00%	10
N022455-001D DT 5X	Magnesium	ug/L	34428.38	FAIL	29406.89	17.08%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N022475-001B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112741**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	799655.492	25000	20000	734600	325	80	120				S

Sample ID **N022455-001D-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **112742**
Client ID: **ZZZZZZ** Batch ID: **60809** TestNo: **EPA 200.7** Analysis Date: **1/10/2017** SeqNo: **2527165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	196317.692	500	10000	202600	-62.4	80	120				S
Iron	88.567	20	100.0	3.429	85.1	80	120				
Magnesium	35394.006	100	10000	29410	59.9	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60817 **Instrument ID:** ICPMS-02
ASSET #: N022475 **Analyst:** CEI
Method: **Date Analyzed:** 1/15/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Sc [2] IS in N022475-002B failed. Cr for rerun.
%Rec of Cr in N022455-001D PS/MS/MSD failed. However LCS & DT passed criteria.

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

1st Level Reviewer 1/18/17 Date: —
2nd Level Reviewer 1/18/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 60817 **Instrument ID:** ICPMS-02
ASSET #: N022475 **Analyst:** CEI
Method: **Date Analyzed:** 1/16/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Cr in N022475-002B rerun only.

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

1st Level Reviewer 1/18/17 Date: –

2nd Level Reviewer 1/18/2017 Date: –

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022475-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 124.718 * 5 * (25/25)

Chromium , ug/L = 623.59

Reporting results in two significant figures,

Chromium , ug/L = 620

% RSD SUMMARY

PERCENT RSD SUMMARY: 170115B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	13.87	15	PASS	0.11	1.69	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.76	15	PASS	0.5	1.69	15	PASS
Std3-5/50 ppb	ICAL	1	5.067	0.3	15	PASS	5.15	2.23	15	PASS
Std4-10/100 ppb	ICAL	1	10.35	0.82	15	PASS	10.41	0.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.58	1.46	15	PASS	20.75	1.37	15	PASS
Std6-40/400 ppb	ICAL	1	40.43	0.61	15	PASS	40.96	0.55	15	PASS
Std7-100/1000 ppb	ICAL	1	100.85	1.43	15	PASS	101.45	1.11	15	PASS
Std8-200/2000 ppb	ICAL	1	199.41	1.35	15	PASS	198.98	0.57	15	PASS
ICV	ICV	1	9.57	0.83	15	PASS	94.72	0.23	15	PASS
ICB	ICB	1	0.0028	111.57	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.06	2.84	20	PASS	0.54	9.37	20	PASS
ICSA1	ICSA	1	0.21	7.046	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.53	1.75	15	PASS	17.82	0.27	15	PASS
LLICV	CCV1	1	1.0049	2.54	20	PASS	0.48	1.9	20	PASS
MB-60817	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-60817	LCS	1	9.37	0.95	15	PASS	94.47	0.21	15	PASS
N022455-001D	SAMP	1	630.36	0.23	15	PASS	8.92	0.77	15	PASS
N022455-001D	SAMP	5	136.083	0.095	15	PASS	1.86	1.12	15	PASS
N022455-001D	SAMP	25	28.19	1.11	15	PASS	0.36	4.094	15	PASS
N022455-001D-PS	PS	1	599.39	0.88	15	PASS	94.38	0.73	15	PASS
N022455-001D-PS	PS	5	132.31	0.97	15	PASS	20.47	0.51	15	PASS
N022455-001D-MS	MS	1	613.71	1.36	15	PASS	92.21	1.045	15	PASS
N022455-001D-MS	MS	5	131.72	0.43	15	PASS	19.93	1.3	15	PASS
N022455-001D-MSD	MSD	1	611.33	0.91	15	PASS	92.0048	0.93	15	PASS
CCV1	CCV	1	20.82	0.37	15	PASS	20.33	0.23	15	PASS
CCB1	CCB	1	0.0075	96.01	15	<PQL	0.017	48.64	15	<PQL
N022455-001D-MSD	MSD	1	130.12	0.22	15	PASS	19.72	0.9	15	PASS
N022455-002D	SAMP	1	0.4	117.34	15	<PQL	11.37	1.92	15	PASS
N022455-002D	SAMP	5	0.062	5.52	15	PASS	2.39	2.14	15	PASS
N022455-003C	SAMP	1	1.85	3.6	15	PASS	89.94	1.62	15	PASS
N022455-003C	SAMP	5	0.09	22.43	15	<PQL	23.57	0.11	15	PASS
N022455-003C	SAMP	25	0.036	68.31	15	<PQL	5.022	1.48	15	PASS
N022475-001B	SAMP	1	0.25	3.078	15	PASS	154.32	0.63	15	PASS
N022475-001B	SAMP	5	0.071	3.53	15	PASS	33	1.64	15	PASS
N022475-002B	SAMP	1	580.39	0.87	15	PASS	11.01	1.76	15	PASS
N022475-002B	SAMP	5	121.37	1.38	15	PASS	2.28	1.89	15	PASS
CCV2	CCV	1	20.72	0.42	15	PASS	20.31	0.0099	15	PASS
CCB2	CCB	1	0.0055	35.16	15	<PQL	0.031	17.55	15	<PQL
LLCCV1	CCV2	1	1.064	3.23	20	PASS	0.58	3.099	20	PASS
ICSA2	ICSA	1	0.24	2.32	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 170115B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.066	1.037	15	PASS	18.48	1.12	15	PASS

PERCENT RSD SUMMARY: 170116A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	10.0038	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	1.41	15	PASS
Std3-5/50 ppb	ICAL	1	5.2	1.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.55	3.51	15	PASS
Std5-20/200 ppb	ICAL	1	21.17	0.78	15	PASS
Std6-40/400 ppb	ICAL	1	42.044	0.54	15	PASS
Std7-100/1000 ppb	ICAL	1	103.98	1.036	15	PASS
Std8-200/2000 ppb	ICAL	1	197.45	1.87	15	PASS
ICV	ICV	1	9.56	0.96	15	PASS
ICB	ICB	1	0.0083	70.34	15	<PQL
LLICV	CCV1	1	1.088	1.17	20	PASS
ICSA1	ICSA	1	0.23	4.9	15	PASS
ICSAB1	ICSAB	1	20.91	1.67	15	PASS
LLICV	CCV1	1	1.039	3.59	20	PASS
N022455-001D	SAMP	5	138.48	1.68	15	PASS
N022455-002D	SAMP	1	0.14	18.43	15	<PQL
N022475-002B	SAMP	5	124.72	0.94	15	PASS
CCV1	CCV	1	20.93	2.2	15	PASS
CCB1	CCB	1	0.015	47.73	15	<PQL
CCV2	CCV	1	21.09	0.48	15	PASS
CCB2	CCB	1	0.0019	213.94	15	<PQL
CCV3	CCV	1	20.2	1.023	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.36	0.58	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.41	0.64	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.047	4.6	20	PASS
ICSA2	ICSA	1	0.22	10.4	15	PASS
ICSAB2	ICSAB	1	20.43	0.63	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170115B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0115001.D	RINSE	RINSE	1	01/15/17 5:45 PM
B0115002.D	Cal Blank	IBLK	1	01/15/17 5:50 PM
B0115003.D	Std1-0.1/1 ppb	ICAL	1	01/15/17 5:56 PM
B0115004.D	Std2-0.5/5 ppb	ICAL	1	01/15/17 6:01 PM
B0115005.D	Std3-5/50 ppb	ICAL	1	01/15/17 6:07 PM
B0115006.D	Std4-10/100 ppb	ICAL	1	01/15/17 6:12 PM
B0115007.D	Std5-20/200 ppb	ICAL	1	01/15/17 6:18 PM
B0115008.D	Std6-40/400 ppb	ICAL	1	01/15/17 6:23 PM
B0115009.D	Std7-100/1000 ppb	ICAL	1	01/15/17 6:29 PM
B0115010.D	Std8-200/2000 ppb	ICAL	1	01/15/17 6:34 PM
B0115011.D	ICV	ICV	1	01/15/17 6:54 PM
B0115012.D	ICB	ICB	1	01/15/17 6:59 PM
B0115013.D	LLICV	CCV1	1	01/15/17 7:07 PM
B0115014.D	ICSA1	ICSA	1	01/15/17 7:13 PM
B0115015.D	ICSAB1	ICSAB	1	01/15/17 7:19 PM
B0115016.D	LLICV	CCV1	1	01/15/17 7:24 PM
B0115017.D	MB-60817	MBLK	1	01/15/17 7:30 PM
B0115018.D	LCS-60817	LCS	1	01/15/17 7:35 PM
B0115019.D	N022455-001D	SAMP	1	01/15/17 7:41 PM
B0115020.D	N022455-001D	SAMP	5	01/15/17 7:46 PM
B0115021.D	N022455-001D	SAMP	25	01/15/17 7:52 PM
B0115022.D	N022455-001D-PS	PS	1	01/15/17 7:57 PM
B0115023.D	N022455-001D-PS	PS	5	01/15/17 8:03 PM
B0115024.D	N022455-001D-MS	MS	1	01/15/17 8:08 PM
B0115025.D	N022455-001D-MS	MS	5	01/15/17 8:14 PM
B0115026.D	N022455-001D-MSD	MSD	1	01/15/17 8:20 PM
B0115027.D	CCV1	CCV	1	01/15/17 8:26 PM
B0115028.D	CCB1	CCB	1	01/15/17 8:31 PM
B0115029.D	N022455-001D-MSD	MSD	1	01/15/17 8:36 PM
B0115030.D	N022455-002D	SAMP	1	01/15/17 8:42 PM
B0115031.D	N022455-002D	SAMP	5	01/15/17 8:47 PM
B0115032.D	N022455-003C	SAMP	1	01/15/17 8:53 PM
B0115033.D	N022455-003C	SAMP	5	01/15/17 8:58 PM
B0115034.D	N022455-003C	SAMP	25	01/15/17 9:04 PM
B0115035.D	N022475-001B	SAMP	1	01/15/17 9:10 PM
B0115036.D	N022475-001B	SAMP	5	01/15/17 9:15 PM
B0115037.D	N022475-002B	SAMP	1	01/15/17 9:21 PM
B0115038.D	N022475-002B	SAMP	5	01/15/17 9:26 PM
B0115039.D	CCV2	CCV	1	01/15/17 9:32 PM
B0115040.D	CCB2	CCB	1	01/15/17 9:37 PM
B0115041.D	LLCCV1	CCV2	1	01/15/17 9:44 PM
B0115042.D	ICSA2	ICSA	1	01/15/17 9:48 PM

INJECTION LOG: 170115B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0115043.D	ICSAB2	ICSAB	1	01/15/17 9:54 PM
B0115044.D	MB-60888	MBLK	1	01/15/17 9:59 PM
B0115045.D	LCS-60888	LCS	1	01/15/17 10:05 PM
B0115046.D	N022547-005A	SAMP	1	01/15/17 10:11 PM
B0115047.D	N022547-005A	SAMP	5	01/15/17 10:16 PM
B0115048.D	N022547-005A-PS	PS	1	01/15/17 10:22 PM
B0115049.D	N022547-005A-MS	MS	1	01/15/17 10:27 PM
B0115050.D	N022547-005A-MSD	MSD	1	01/15/17 10:33 PM
B0115051.D	N022591-005A	SAMP	1	01/15/17 10:38 PM
B0115052.D	N022610-005A	SAMP	1	01/15/17 10:44 PM
B0115053.D	MB-60849	MBLK	1	01/15/17 10:49 PM
B0115054.D	CCV3	CCV	1	01/15/17 10:55 PM
B0115055.D	CCB3	CCB	1	01/15/17 11:00 PM
B0115056.D	LCS-60849	LCS	1	01/15/17 11:06 PM
B0115057.D	LCSD-60849	LCSD	1	01/15/17 11:12 PM
B0115058.D	N022511-001A	SAMP	1	01/15/17 11:18 PM
B0115059.D	N022511-001A	SAMP	5	01/15/17 11:24 PM
B0115060.D	N022511-002A	SAMP	1	01/15/17 11:29 PM
B0115061.D	N022511-002A	SAMP	5	01/15/17 11:35 PM
B0115062.D	N022511-003A	SAMP	1	01/15/17 11:40 PM
B0115063.D	N022511-003A	SAMP	5	01/15/17 11:46 PM
B0115064.D	N022511-004A	SAMP	1	01/15/17 11:51 PM
B0115065.D	N022511-004A	SAMP	5	01/15/17 11:57 PM
B0115066.D	CCV4	CCV	1	01/16/17 12:03 AM
B0115067.D	CCB4	CCB	1	01/16/17 12:08 AM
B0115068.D	N022511-005A	SAMP	1	01/16/17 12:14 AM
B0115069.D	N022511-005A	SAMP	5	01/16/17 12:19 AM
B0115070.D	N022511-006A	SAMP	1	01/16/17 12:25 AM
B0115071.D	N022511-006A	SAMP	5	01/16/17 12:30 AM
B0115072.D	N022511-007A	SAMP	1	01/16/17 12:36 AM
B0115073.D	N022511-007A	SAMP	5	01/16/17 12:41 AM
B0115074.D	N022511-008A	SAMP	1	01/16/17 12:47 AM
B0115075.D	N022511-008A	SAMP	5	01/16/17 12:53 AM
B0115076.D	N022511-009A	SAMP	1	01/16/17 12:58 AM
B0115077.D	N022511-009A	SAMP	5	01/16/17 1:04 AM
B0115078.D	CCV5	CCV	1	01/16/17 1:09 AM
B0115079.D	CCB5	CCB	1	01/16/17 1:15 AM
B0115080.D	N022511-010A	SAMP	1	01/16/17 1:20 AM
B0115081.D	N022511-010A	SAMP	5	01/16/17 1:26 AM
B0115082.D	MB-60865	MBLK	1	01/16/17 1:30 AM
B0115083.D	LCS-60865	LCS	1	01/16/17 1:36 AM
B0115084.D	N022554-001B	SAMP	1	01/16/17 1:41 AM

INJECTION LOG: 170115B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0115085.D	N022554-001B	SAMP	5	01/16/17 1:47 AM
B0115086.D	N022554-001B-PS	PS	1	01/16/17 1:52 AM
B0115087.D	N022554-001B-MS	MS	1	01/16/17 1:58 AM
B0115088.D	N022554-001B-MSD	MSD	1	01/16/17 2:03 AM
B0115089.D	N022554-002B	SAMP	1	01/16/17 2:09 AM
B0115090.D	CCV6	CCV	1	01/16/17 2:14 AM
B0115091.D	CCB6	CCB	1	01/16/17 2:20 AM
B0115092.D	LLCCV2	CCV2	1	01/16/17 2:26 AM
B0115093.D	ICSA3	ICSA	1	01/16/17 2:31 AM
B0115094.D	ICSAB3	ICSAB	1	01/16/17 2:37 AM
B0115095.D	N022554-003B	SAMP	1	01/16/17 2:42 AM
B0115096.D	N022554-004B	SAMP	1	01/16/17 2:48 AM
B0115097.D	N022554-005B	SAMP	1	01/16/17 2:53 AM
B0115098.D	N022554-006B	SAMP	1	01/16/17 2:59 AM
B0115099.D	N022554-009B	SAMP	1	01/16/17 3:04 AM
B0115100.D	N022554-010B	SAMP	1	01/16/17 3:10 AM
B0115101.D	N022554-011B	SAMP	1	01/16/17 3:16 AM
B0115102.D	N022555-002B	SAMP	1	01/16/17 3:21 AM
B0115103.D	N022555-003B	SAMP	1	01/16/17 3:27 AM
B0115104.D	N022555-004B	SAMP	1	01/16/17 3:32 AM
B0115105.D	CCV7	CCV	1	01/16/17 3:38 AM
B0115106.D	CCB7	CCB	1	01/16/17 3:43 AM
B0115107.D	N022555-007B	SAMP	1	01/16/17 3:49 AM
B0115108.D	N022555-009B	SAMP	1	01/16/17 3:54 AM
B0115109.D	N022555-010B	SAMP	1	01/16/17 4:00 AM
B0115110.D	N022555-011B	SAMP	1	01/16/17 4:05 AM
B0115111.D	N022555-012B	SAMP	1	01/16/17 4:11 AM
B0115112.D	N022555-013B	SAMP	1	01/16/17 4:17 AM
B0115113.D	N022555-014B	SAMP	1	01/16/17 4:23 AM
B0115114.D	CCV8	CCV	1	01/16/17 4:29 AM
B0115115.D	CCB8	CCB	1	01/16/17 4:34 AM
B0115116.D	LLCCV3	CCV2	1	01/16/17 4:40 AM
B0115117.D	ICSA4	ICSA	1	01/16/17 4:45 AM
B0115118.D	ICSAB4	ICSAB	1	01/16/17 5:52 AM

INJECTION LOG: 170116A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0116001.D	RINSE	RINSE	1	01/16/17 12:46 PM
A0116002.D	Cal Blank	IBLK	1	01/16/17 12:51 PM
A0116003.D	Std1-0.1/1 ppb	ICAL	1	01/16/17 12:57 PM
A0116004.D	Std2-0.5/5 ppb	ICAL	1	01/16/17 1:02 PM
A0116005.D	Std3-5/50 ppb	ICAL	1	01/16/17 1:08 PM
A0116006.D	Std4-10/100 ppb	ICAL	1	01/16/17 1:13 PM
A0116007.D	Std5-20/200 ppb	ICAL	1	01/16/17 1:19 PM
A0116008.D	Std6-40/400 ppb	ICAL	1	01/16/17 1:24 PM
A0116009.D	Std7-100/1000 ppb	ICAL	1	01/16/17 1:30 PM
A0116010.D	Std8-200/2000 ppb	ICAL	1	01/16/17 1:35 PM
A0116011.D	ICV	ICV	1	01/16/17 1:41 PM
A0116012.D	ICB	ICB	1	01/16/17 1:47 PM
A0116013.D	LLICV	CCV1	1	01/16/17 1:52 PM
A0116014.D	ICSA1	ICSA	1	01/16/17 1:58 PM
A0116015.D	ICSAB1	ICSAB	1	01/16/17 2:03 PM
A0116016.D	LLICV	CCV1	1	01/16/17 2:11 PM
A0116017.D	N022455-001D	SAMP	5	01/16/17 2:16 PM
A0116018.D	N022455-002D	SAMP	1	01/16/17 2:22 PM
A0116019.D	N022475-002B	SAMP	5	01/16/17 2:27 PM
A0116020.D	N022554-004B	SAMP	5	01/16/17 2:33 PM
A0116021.D	N022554-010B	SAMP	25	01/16/17 2:38 PM
A0116022.D	N022554-011B	SAMP	25	01/16/17 2:44 PM
A0116023.D	N022555-002B	SAMP	25	01/16/17 2:50 PM
A0116024.D	N022555-003B	SAMP	5	01/16/17 2:55 PM
A0116025.D	N022555-004B	SAMP	5	01/16/17 3:01 PM
A0116026.D	N022555-009B	SAMP	10	01/16/17 3:06 PM
A0116027.D	CCV1	CCV	1	01/16/17 3:12 PM
A0116028.D	CCB1	CCB	1	01/16/17 3:18 PM
A0116029.D	N022555-011B	SAMP	25	01/16/17 3:24 PM
A0116030.D	N022555-012B	SAMP	10	01/16/17 3:29 PM
A0116031.D	N022555-013B	SAMP	50	01/16/17 3:35 PM
A0116032.D	N022483-002B	SAMP	1	01/16/17 3:40 PM
A0116033.D	N022483-002A	SAMP	1	01/16/17 3:46 PM
A0116034.D	N022483-005B	SAMP	1	01/16/17 3:52 PM
A0116035.D	N022483-005A	SAMP	1	01/16/17 3:57 PM
A0116036.D	N022483-008B	SAMP	1	01/16/17 4:03 PM
A0116037.D	N022483-008A	SAMP	1	01/16/17 4:09 PM
A0116038.D	N022483-003B	SAMP	1	01/16/17 4:15 PM
A0116039.D	CCV2	CCV	1	01/16/17 4:20 PM
A0116040.D	CCB2	CCB	1	01/16/17 4:26 PM
A0116041.D	N022483-003A	SAMP	1	01/16/17 4:32 PM
A0116042.D	N022485-004B	SAMP	1	01/16/17 4:37 PM

INJECTION LOG: 170116A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0116043.D	N022485-004A	SAMP	1	01/16/17 4:43 PM
A0116044.D	N022485-006B	SAMP	1	01/16/17 4:48 PM
A0116045.D	N022485-006A	SAMP	1	01/16/17 4:54 PM
A0116046.D	N022485-007B	SAMP	1	01/16/17 4:59 PM
A0116047.D	N022485-007A	SAMP	1	01/16/17 5:05 PM
A0116048.D	N022505-015B	SAMP	5	01/16/17 5:10 PM
A0116049.D	N022505-014B	SAMP	1	01/16/17 5:16 PM
A0116050.D	N022505-014A	SAMP	1	01/16/17 5:22 PM
A0116051.D	CCV3	CCV	1	01/16/17 5:27 PM
A0116052.D	CCB3	CCB	1	01/16/17 5:33 PM
A0116053.D	N022505-015B	SAMP	1	01/16/17 5:39 PM
A0116054.D	N022505-015A	SAMP	1	01/16/17 5:44 PM
A0116055.D	N022506-015B	SAMP	1	01/16/17 5:50 PM
A0116056.D	N022506-015A	SAMP	1	01/16/17 5:55 PM
A0116057.D	N022507-006B	SAMP	1	01/16/17 6:01 PM
A0116058.D	N022507-006A	SAMP	1	01/16/17 6:07 PM
A0116059.D	N022507-009B	SAMP	1	01/16/17 6:12 PM
A0116060.D	N022507-009A	SAMP	1	01/16/17 6:18 PM
A0116061.D	N022528-004B	SAMP	1	01/16/17 6:23 PM
A0116062.D	N022528-004A	SAMP	1	01/16/17 6:29 PM
A0116063.D	CCV4	CCV	1	01/16/17 6:34 PM
A0116064.D	CCB4	CCB	1	01/16/17 6:40 PM
A0116065.D	N022597-001B	SAMP	1	01/16/17 6:45 PM
A0116066.D	N022597-001A	SAMP	1	01/16/17 6:51 PM
A0116067.D	N022597-002B	SAMP	1	01/16/17 6:56 PM
A0116068.D	N022597-002A	SAMP	1	01/16/17 7:02 PM
A0116069.D	CCV5	CCV	1	01/16/17 7:07 PM
A0116070.D	CCB5	CCB	1	01/16/17 7:13 PM
A0116071.D	LLCCV1	CCV2	1	01/16/17 7:19 PM
A0116072.D	ICSA2	ICSA	1	01/16/17 7:24 PM
A0116073.D	ICSAB2	ICSAB	1	01/16/17 7:30 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2017 2:49:23 P**
Prep End Date: **1/8/2017 7:00:00 P**

Reviewed/ Date: 1/18/2017
Initials/ Date: 1/17/2017

Prep Batch **60817** Prep Code: **200.8_PR** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.6**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-60817	Aqueous		25	☐	0	0	25	1.000		
MB-60817	Aqueous		25	☐	0	0	25	1.000		
N022455-001D	Water	<2	25	☐	0	0	25	1.000		
N022455-001D-MS	Water	<2	25	☐	0	0	25	1.000		
N022455-001D-MS	Water	<2	25	☐	0	0	25	1.000		
N022455-002D	Water	<2	25	☐	0	0	25	1.000		
N022455-003C	Water	<2	25	☐	0	0	25	1.000		
N022475-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022475-002B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 Jan 2017 08:44:06 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	182768.00	0.00	
24 Mg	860564.00	0.00	
25 Mg	114855.00	0.00	
26 Mg	133291.00	0.00	
59 Co	1390730.00	0.00	
115 In	2092670.00	0.00	
206 Pb	454289.00	0.00	
207 Pb	392388.00	0.00	
208 Pb	959866.00	0.00	

RSD (%)

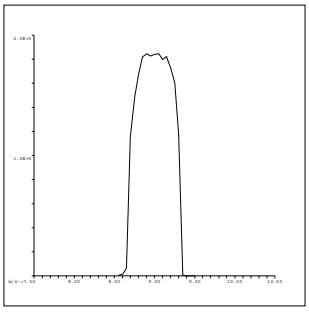
Element	Actual	Required	Flag
9 Be	0.52	5.00	
24 Mg	0.99	5.00	
25 Mg	0.90	5.00	
26 Mg	1.33	5.00	
59 Co	1.56	5.00	
115 In	0.64	5.00	
206 Pb	1.10	5.00	
207 Pb	1.22	5.00	
208 Pb	0.85	5.00	

Ion Ratio

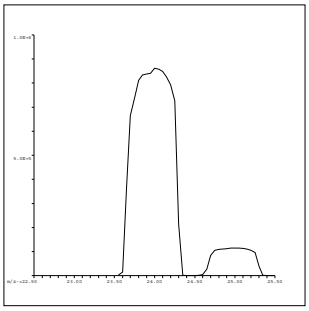
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

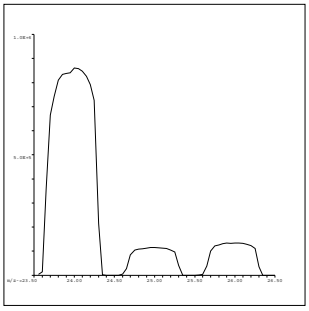
Element	Actual	Required	Flag



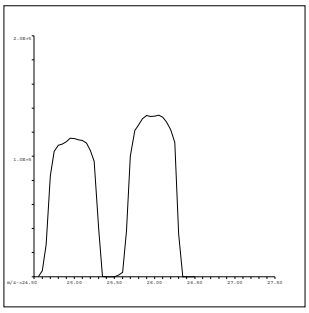
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



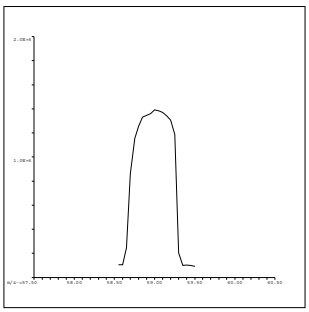
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



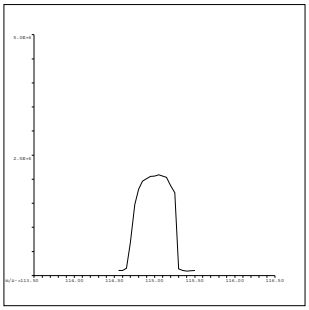
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



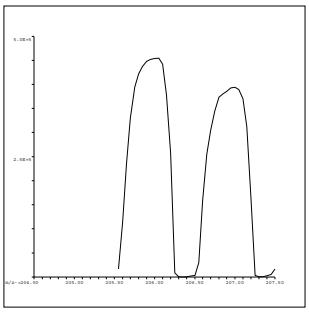
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



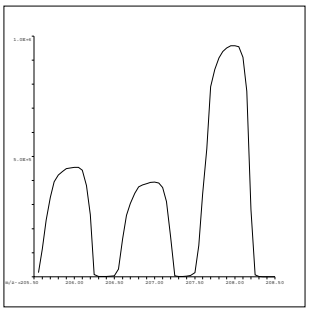
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



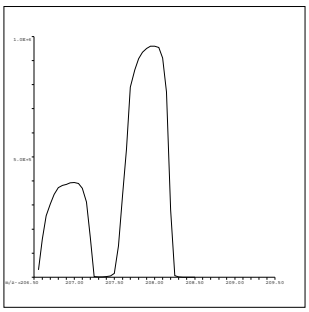
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Jan 2017 11:39:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	96776.40	0.00	
24 Mg	555875.00	0.00	
25 Mg	75476.90	0.00	
26 Mg	87732.00	0.00	
59 Co	1021060.00	0.00	
115 In	1928320.00	0.00	
206 Pb	418656.00	0.00	
207 Pb	362813.00	0.00	
208 Pb	884264.00	0.00	

RSD (%)

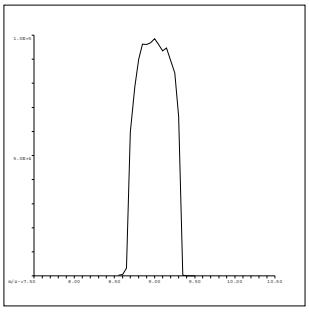
Element	Actual	Required	Flag
9 Be	0.68	5.00	
24 Mg	0.22	5.00	
25 Mg	0.96	5.00	
26 Mg	0.59	5.00	
59 Co	0.30	5.00	
115 In	0.89	5.00	
206 Pb	0.42	5.00	
207 Pb	0.95	5.00	
208 Pb	0.32	5.00	

Ion Ratio

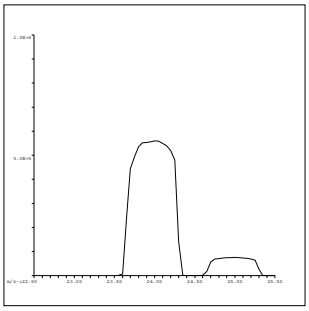
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

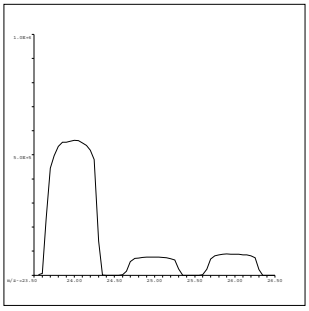
Element	Actual	Required	Flag



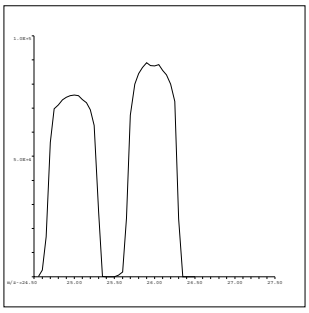
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



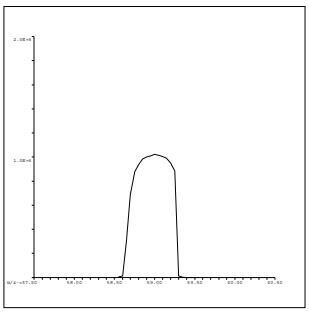
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

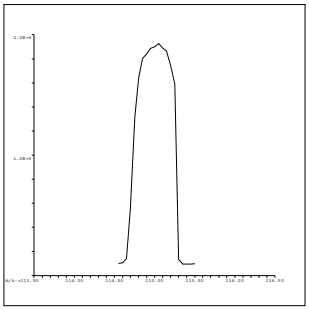


26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

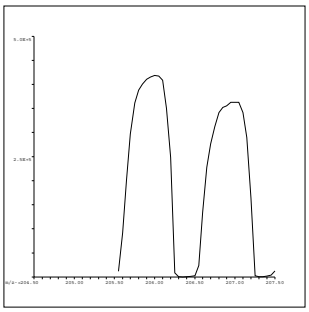


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

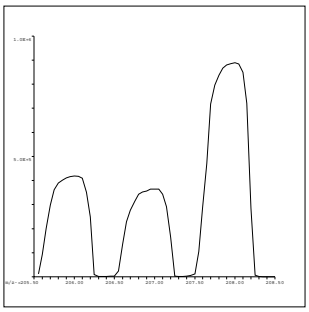
C:\ICPMH\1\7500\qctune.d



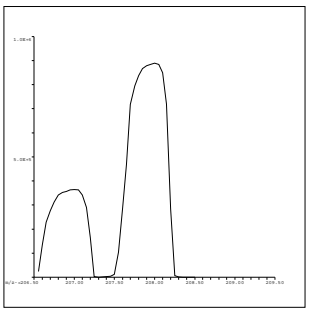
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170115B

Instrument ID: ICPMS-02

Analyte	Data File	B0115002.D	B0115004.D	B0115005.D	B0115006.D	B0115007.D	B0115008.D	B0115009.D	B0115010.D	
	Acq. Date-Time	01/15/2017 05:50 PM	01/15/2017 06:01 PM	01/15/2017 06:07 PM	01/15/2017 06:12 PM	01/15/2017 06:18 PM	01/15/2017 06:23 PM	01/15/2017 06:29 PM	01/15/2017 06:34 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	107027.5	105550.8	106491.9	106194.7	106398.1	105415.2	104405.6	104105.4	
55 Mn [2]	CPS	224.4	2588.7	24635.5	49497.1	98569.9	192579.2	472039.7	923080.9	0.9999
52 Cr [2]	CPS	213.3	4807.5	46400.9	94277.9	187649.8	365039	901301.5	1777104.2	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-161206A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170116A

Instrument ID: ICPMS-02

Analyte	Data File	A0116002.D	A0116004.D	A0116005.D	A0116006.D	A0116007.D	A0116008.D	A0116009.D	A0116010.D	
	Acq. Date-Time	01/16/2017 12:51 PM	01/16/2017 01:02 PM	01/16/2017 01:08 PM	01/16/2017 01:13 PM	01/16/2017 01:19 PM	01/16/2017 01:24 PM	01/16/2017 01:30 PM	01/16/2017 01:35 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	88352.7	87924.1	87572.1	86421.9	83902.2	84547.5	84664	94242.7	
52 Cr [2]	CPS	171.1	4242.9	39019.8	77921.1	151666.1	303400.8	751102.3	1587399.5	0.9997

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-161206A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.722	0.50	100.0	0	94.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.479	0.50	0.5000	0	95.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **CCV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.333	0.50	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **CCV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.309	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.582	0.50	0.5000	0	116	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0	95.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.005	1.0	1.000	0	100	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **CCV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.821	1.0	20.00	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **CCV** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.722	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.064	1.0	1.000	0	106	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICV** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.560	1.0	10.00	0	95.6	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ZZZZZZ** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.039	1.0	1.000	0	104	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCV** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.934	1.0	20.00	0	105	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCV** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.090	1.0	20.00	0	105	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCV** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.198	1.0	20.00	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112875
Client ID:	CCV	Batch ID:	R112875	TestNo:	EPA 200.8			Analysis Date:	1/16/2017	SeqNo:	2534571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.360	1.0	20.00	0	102	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112875
Client ID:	CCV	Batch ID:	R112875	TestNo:	EPA 200.8			Analysis Date:	1/16/2017	SeqNo:	2534577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.406	1.0	20.00	0	102	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112875
Client ID:	ZZZZZZ	Batch ID:	R112875	TestNo:	EPA 200.8			Analysis Date:	1/16/2017	SeqNo:	2534579

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.047	1.0	1.000	0	105	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICB	SampType:	ICB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	ICB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533548

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

Sample ID	CCB1	SampType:	CCB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	CCB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533564

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

Sample ID	CCB2	SampType:	CCB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	CCB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533576

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	ICB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533436

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

Sample ID	CCB1	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	CCB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533452

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

Sample ID	CCB2	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	112862
Client ID:	CCB	Batch ID:	R112862	TestNo:	EPA 200.8			Analysis Date:	1/15/2017	SeqNo:	2533464

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534520**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534536**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534548**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534560**

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

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534572**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **CCB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534578**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSA** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533550**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSAB** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.824	0.50	20.00	0	89.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSA** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533578**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSAB** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.478	0.50	20.00	0	92.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSA** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.208	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSAB** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.528	1.0	20.00	0	97.6	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSA** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.240	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ICSAB** Batch ID: **R112862** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.066	1.0	20.00	0	100	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICSA** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.233	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICSAB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.906	1.0	20.00	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICSA** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.220	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112875**
Client ID: **ICSAB** Batch ID: **R112875** TestNo: **EPA 200.8** Analysis Date: **1/16/2017** SeqNo: **2534581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.431	1.0	20.00	0	102	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170115B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	107027.5	107027.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	107145.9	107027.5	100.11	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	105550.8	107027.5	98.62	PASS	70-125
Std3-5/50 ppb	ICAL	1	106491.9	107027.5	99.5	PASS	70-125
Std4-10/100 ppb	ICAL	1	106194.7	107027.5	99.22	PASS	70-125
Std5-20/200 ppb	ICAL	1	106398.1	107027.5	99.41	PASS	70-125
Std6-40/400 ppb	ICAL	1	105415.2	107027.5	98.49	PASS	70-125
Std7-100/1000 ppb	ICAL	1	104405.6	107027.5	97.55	PASS	70-125
Std8-200/2000 ppb	ICAL	1	104105.4	107027.5	97.27	PASS	70-125
ICV	ICV	1	96633.9	107027.5	90.29	PASS	70-125
ICB	ICB	1	112543.4	107027.5	105.15	PASS	70-125
LLICV	CCV1	1	96133.2	107027.5	89.82	PASS	70-125
ICSA1	ICSA	1	104212.1	107027.5	97.37	PASS	70-125
ICSAB1	ICSAB	1	118816.6	107027.5	111.02	PASS	70-125
LLICV	CCV1	1	110484.5	107027.5	103.23	PASS	70-125
MB-60817	MBLK	1	106987.7	107027.5	99.96	PASS	70-125
LCS-60817	LCS	1	105457.9	107027.5	98.53	PASS	70-125
N022455-001D	SAMP	1	98186	107027.5	91.74	PASS	70-125
N022455-001D	SAMP	5	116814.3	107027.5	109.14	PASS	70-125
N022455-001D	SAMP	25	123612.2	107027.5	115.5	PASS	70-125
N022455-001D-PS	PS	1	107697.3	107027.5	100.63	PASS	70-125
N022455-001D-PS	PS	5	125492.7	107027.5	117.25	PASS	70-125
N022455-001D-MS	MS	1	112639.9	107027.5	105.24	PASS	70-125
N022455-001D-MS	MS	5	130788.2	107027.5	122.2	PASS	70-125
N022455-001D-MSD	MSD	1	116058.5	107027.5	108.44	PASS	70-125
CCV1	CCV	1	103409.6	107027.5	96.62	PASS	70-125
CCB1	CCB	1	93418.9	107027.5	87.28	PASS	70-125
N022455-001D-MSD	MSD	1	124210.4	107027.5	116.06	PASS	70-125
N022455-002D	SAMP	1	118353.8	107027.5	110.58	PASS	70-125
N022455-002D	SAMP	5	136875.5	107027.5	127.89	NR!	70-125
N022455-003C	SAMP	1	40852.1	107027.5	38.17	NR!	70-125
N022455-003C	SAMP	5	96174.4	107027.5	89.86	PASS	70-125
N022455-003C	SAMP	25	130087.8	107027.5	121.55	PASS	70-125
N022475-001B	SAMP	1	132107.3	107027.5	123.43	PASS	70-125
N022475-001B	SAMP	5	142895	107027.5	133.51	NR!	70-125
N022475-002B	SAMP	1	113640.1	107027.5	106.18	PASS	70-125
N022475-002B	SAMP	5	138242.4	107027.5	129.17	NR!	70-125
CCV2	CCV	1	96285.2	107027.5	89.96	PASS	70-125
CCB2	CCB	1	93648.4	107027.5	87.5	PASS	70-125
LLCCV1	CCV2	1	85208.8	107027.5	79.61	PASS	70-125
ICSA2	ICSA	1	121089.6	107027.5	113.14	PASS	70-125

INTERNAL STANDARD: 170115B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	118435.2	107027.5	110.66	PASS	70-125

INTERNAL STANDARD: 170116A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	88352.7	88352.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	89184.2	88352.7	100.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	87924.1	88352.7	99.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	87572.1	88352.7	99.12	PASS	70-125
Std4-10/100 ppb	ICAL	1	86421.9	88352.7	97.81	PASS	70-125
Std5-20/200 ppb	ICAL	1	83902.2	88352.7	94.96	PASS	70-125
Std6-40/400 ppb	ICAL	1	84547.5	88352.7	95.69	PASS	70-125
Std7-100/1000 ppb	ICAL	1	84664	88352.7	95.83	PASS	70-125
Std8-200/2000 ppb	ICAL	1	94242.7	88352.7	106.67	PASS	70-125
ICV	ICV	1	89533.5	88352.7	101.34	PASS	70-125
ICB	ICB	1	93917.3	88352.7	106.3	PASS	70-125
LLICV	CCV1	1	86336.6	88352.7	97.72	PASS	70-125
ICSA1	ICSA	1	86100	88352.7	97.45	PASS	70-125
ICSAB1	ICSAB	1	94859.6	88352.7	107.36	PASS	70-125
LLICV	CCV1	1	81953.2	88352.7	92.76	PASS	70-125
N022455-001D	SAMP	5	77162.3	88352.7	87.33	PASS	70-125
N022455-002D	SAMP	1	81228.4	88352.7	91.94	PASS	70-125
N022475-002B	SAMP	5	96536.3	88352.7	109.26	PASS	70-125
CCV1	CCV	1	94994.5	88352.7	107.52	PASS	70-125
CCB1	CCB	1	87968.7	88352.7	99.57	PASS	70-125
CCV2	CCV	1	96214.9	88352.7	108.9	PASS	70-125
CCB2	CCB	1	88416.8	88352.7	100.07	PASS	70-125
CCV3	CCV	1	95773.6	88352.7	108.4	PASS	70-125
CCB3	CCB	1	84315.5	88352.7	95.43	PASS	70-125
CCV4	CCV	1	97595.6	88352.7	110.46	PASS	70-125
CCB4	CCB	1	82350	88352.7	93.21	PASS	70-125
CCV5	CCV	1	97480.5	88352.7	110.33	PASS	70-125
CCB5	CCB	1	86178.1	88352.7	97.54	PASS	70-125
LLCCV1	CCV2	1	85227.9	88352.7	96.46	PASS	70-125
ICSA2	ICSA	1	77425.2	88352.7	87.63	PASS	70-125
ICSAB2	ICSAB	1	83771.7	88352.7	94.82	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022475
Test Method: EPA 200.8
Analysis Date: 1/15/2017

Matrix: Groundwater
Batch No.: 60817

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022455-001D DT 25X	Chromium	ug/L	704.645	PASS	680.4127	3.56%	10
N022455-001D DT 5X	Manganese	ug/L	9.320328	NA	8.917042	4.52%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N022455-001D-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.381	0.50	100.0	8.917	85.5	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N022455-001D-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **112862**
Client ID: **ZZZZZZ** Batch ID: **60817** TestNo: **EPA 200.8** Analysis Date: **1/15/2017** SeqNo: **2533447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	661.560	5.0	10.00	680.4	-189	80	120				S

Qualifiers:

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

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R112642
ASSET #: N022475

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/5/2016

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer rba Date: 1/8/2017

2nd Level Reviewer Nancy 1/12/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

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

where:

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

For Sample **N022475-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 6.2103 * 100$$

$$Cr^{+6}, \mu g/L = 621.03$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 620}$$

rba 1/8/2017

ANALYSIS RUN LOG

INJECTION LOG: 161213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:01 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:12 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	12/13/16 10:21 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:31 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:40 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:50 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:59 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:09 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:18 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	12/13/16 11:29 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/13/16 11:41 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	12/13/16 11:52 AM	Reported
13	MB-R112253	MBLK	1	Hexavalent Chromium	12/13/16 12:02 PM	Reported
14	LCS-R112253	LCS	1	Hexavalent Chromium	12/13/16 12:13 PM	Reported
15	N022132-014A	SAMP	1	Hexavalent Chromium	12/13/16 12:22 PM	Reported
16	N022132-014AMS	MS	1	Hexavalent Chromium	12/13/16 12:32 PM	Reported
17	N022133-001A	SAMP	5	Hexavalent Chromium	12/13/16 12:41 PM	Reported
18	N022133-001ADUP	DUP	5	Hexavalent Chromium	12/13/16 12:51 PM	Reported
19	N022133-001AMS	MS	5	Hexavalent Chromium	12/13/16 1:00 PM	Reported
20	N022133-002A	SAMP	5	Hexavalent Chromium	12/13/16 1:10 PM	Reported
21	N022133-002AMS	MS	5	Hexavalent Chromium	12/13/16 1:19 PM	Reported
22	N022133-002AMSD	MSD	5	Hexavalent Chromium	12/13/16 1:29 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	12/13/16 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	12/13/16 1:48 PM	Reported
25	N022133-004A	SAMP	20	Hexavalent Chromium	12/13/16 1:57 PM	Reported
26	N022133-004AMS	MS	20	Hexavalent Chromium	12/13/16 2:07 PM	Reported
27	N022133-005A	SAMP	20	Hexavalent Chromium	12/13/16 2:16 PM	Reported
28	N022133-005AMS	MS	20	Hexavalent Chromium	12/13/16 2:25 PM	Reported
29	N022133-006A	SAMP	10	Hexavalent Chromium	12/13/16 2:35 PM	Reported
30	N022133-006AMS	MS	10	Hexavalent Chromium	12/13/16 2:44 PM	Reported
31	N022133-003A	SAMP	1	Hexavalent Chromium	12/13/16 2:54 PM	Reported
32	N022133-003AMS	MS	1	Hexavalent Chromium	12/13/16 3:03 PM	Reported
33	N022133-003A	SAMP	5	Hexavalent Chromium	12/13/16 3:13 PM	Not Reported
34	N022133-003AMS	MS	5	Hexavalent Chromium	12/13/16 3:22 PM	Not Reported
35	CCV-2	CCV	1	Hexavalent Chromium	12/13/16 3:32 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	12/13/16 3:41 PM	Reported
37	N022133-011A	SAMP	1	Hexavalent Chromium	12/13/16 4:07 PM	Reported
38	N022133-011AMS	MS	1	Hexavalent Chromium	12/13/16 4:18 PM	Reported
39	N022133-014A	SAMP	1	Hexavalent Chromium	12/13/16 4:28 PM	Reported
40	N022133-014AMS	MS	1	Hexavalent Chromium	12/13/16 4:37 PM	Reported
41	N022133-007A	SAMP	10	Hexavalent Chromium	12/13/16 4:47 PM	Reported
42	N022133-007AMS	MS	10	Hexavalent Chromium	12/13/16 4:56 PM	Reported

INJECTION LOG: 161213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022133-012A	SAMP	1	Hexavalent Chromium	12/13/16 5:06 PM	Not Reported
44	N022133-012AMS	MS	1	Hexavalent Chromium	12/13/16 5:15 PM	Not Reported
45	N022133-013A	SAMP	1	Hexavalent Chromium	12/13/16 5:24 PM	Not Reported
46	N022133-013AMS	MS	1	Hexavalent Chromium	12/13/16 5:34 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	12/13/16 5:43 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	12/13/16 5:53 PM	Reported
49	N022133-008A	SAMP	1	Hexavalent Chromium	12/13/16 6:02 PM	Not Reported
50	N022133-008AMS	MS	1	Hexavalent Chromium	12/13/16 6:12 PM	Not Reported
51	N022133-009A	SAMP	1	Hexavalent Chromium	12/13/16 6:21 PM	Not Reported
52	N022133-009AMS	MS	1	Hexavalent Chromium	12/13/16 6:31 PM	Not Reported
53	N022133-010A	SAMP	1	Hexavalent Chromium	12/13/16 6:40 PM	Not Reported
54	N022133-010AMS	MS	1	Hexavalent Chromium	12/13/16 6:50 PM	Not Reported
55	N022133-008A	SAMP	5	Hexavalent Chromium	12/13/16 6:59 PM	Reported
56	N022133-008AMS	MS	5	Hexavalent Chromium	12/13/16 7:09 PM	Reported
57	N022133-010A	SAMP	5	Hexavalent Chromium	12/13/16 7:18 PM	Reported
58	N022133-010AMS	MS	5	Hexavalent Chromium	12/13/16 7:27 PM	Reported
59	CCV-4	CCV	1	Hexavalent Chromium	12/13/16 7:37 PM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	12/13/16 7:46 PM	Reported
61	N022134-002A	SAMP	1	Hexavalent Chromium	12/13/16 8:28 PM	Reported
62	N022134-002AMS	MS	1	Hexavalent Chromium	12/13/16 8:39 PM	Reported
63	N022134-001A	SAMP	1	Hexavalent Chromium	12/13/16 8:48 PM	Reported
64	N022134-001AMS	MS	1	Hexavalent Chromium	12/13/16 8:58 PM	Reported
65	N022134-003A	SAMP	500	Hexavalent Chromium	12/13/16 9:07 PM	Reported
66	N022134-003AMS	MS	500	Hexavalent Chromium	12/13/16 9:17 PM	Reported
67	N022134-004A	SAMP	1000	Hexavalent Chromium	12/13/16 9:26 PM	Reported
68	N022134-004AMS	MS	1000	Hexavalent Chromium	12/13/16 9:36 PM	Reported
69	N022134-005A	SAMP	1000	Hexavalent Chromium	12/13/16 9:45 PM	Reported
70	N022134-005AMS	MS	1000	Hexavalent Chromium	12/13/16 9:55 PM	Reported
71	CCV-5	CCV1	1	Hexavalent Chromium	12/13/16 10:04 PM	Reported
72	CCB-5	CCB	1	Hexavalent Chromium	12/13/16 10:13 PM	Reported
73	N022133-009A	SAMP	5	Hexavalent Chromium	12/13/16 10:23 PM	Reported
74	N022133-009AMS	MS	5	Hexavalent Chromium	12/13/16 10:32 PM	Reported
75	N022133-012A	SAMP	5	Hexavalent Chromium	12/13/16 10:42 PM	Reported
76	N022133-012AMS	MS	5	Hexavalent Chromium	12/13/16 10:51 PM	Reported
77	N022133-013A	SAMP	5	Hexavalent Chromium	12/13/16 11:01 PM	Reported
78	N022133-013AMS	MS	5	Hexavalent Chromium	12/13/16 11:10 PM	Reported
79	CCV-6	CCV	1	Hexavalent Chromium	12/13/16 11:20 PM	Reported
80	CCB-6	CCB	1	Hexavalent Chromium	12/13/16 11:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_161213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**14/Dec/16 20:16:18**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		12/13/2016 10:01	Finished	
2	BLANK	2	1000	Unknown		12/13/2016 10:12	Finished	
3	iBLANK	3	1000	Unknown		12/13/2016 10:21	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	12/13/2016 10:31	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	12/13/2016 10:40	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	12/13/2016 10:50	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	12/13/2016 10:59	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	12/13/2016 11:09	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	12/13/2016 11:18	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		12/13/2016 11:29	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		12/13/2016 11:41	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		12/13/2016 11:52	Finished	ICB R161130C
13	MB-H2O,MBLK,1	1	1000	Unknown		12/13/2016 12:02	Finished	MB R161130C
14	LCS-H2O,LCS,1	2	1000	Unknown		12/13/2016 12:13	Finished	LCS, IWST-161114D
15	N022132-014A,SAMP	3	1000	Unknown		12/13/2016 12:22	Finished	SAMP, 10mL
16	N022132-014AMS,MS	4	1000	Unknown		12/13/2016 12:32	Finished	MS (1ppb), IWST-161114D,10
17	N022133-001A,SAMP	5	1000	Unknown		12/13/2016 12:41	Finished	SAMP, 2>10mL
18	N022133-001ADUP,D	6	1000	Unknown		12/13/2016 12:51	Finished	DUP, 2>10mL
19	N022133-001AMS,MS	7	1000	Unknown		12/13/2016 13:00	Finished	MS (5ppb), IWST-161114D,2>1
20	N022133-002A,SAMP	8	1000	Unknown		12/13/2016 13:10	Finished	SAMP, 2>10mL
21	N022133-002AMS,MS	9	1000	Unknown		12/13/2016 13:19	Finished	MS (5ppb), IWST-161114D,2>1
22	N022133-002AMSD,M	10	1000	Unknown		12/13/2016 13:29	Finished	MSD (5ppb), IWST-161114D,2
23	CCV-1,CCV1,1,	11	1000	Unknown		12/13/2016 13:38	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	12	1000	Unknown		12/13/2016 13:48	Finished	CCB R161130C
25	N022133-004A,SAMP	13	1000	Unknown		12/13/2016 13:57	Finished	SAMP, 0.5>10mL
26	N022133-004AMS,MS	14	1000	Unknown		12/13/2016 14:07	Finished	MS (5ppb), IWST-161114D,0.5
27	N022133-005A,SAMP	15	1000	Unknown		12/13/2016 14:16	Finished	SAMP, 0.5>10mL
28	N022133-005AMS,MS	16	1000	Unknown		12/13/2016 14:25	Finished	MS (5ppb), IWST-161114D,0.5
29	N022133-006A,SAMP	17	1000	Unknown		12/13/2016 14:35	Finished	SAMP, 1>10mL
30	N022133-006AMS,MS	18	1000	Unknown		12/13/2016 14:44	Finished	MS (5ppb), IWST-161114D,1>1
31	N022133-003A,SAMP	19	1000	Unknown		12/13/2016 14:54	Finished	SAMP, 10mL
32	N022133-003AMS,MS	20	1000	Unknown		12/13/2016 15:03	Finished	MS (1ppb), IWST-161114D,10
33	N022133-003A,SAMP	21	1000	Unknown		12/13/2016 15:13	Finished	SAMP, 2>10mL
34	N022133-003AMS,MS	22	1000	Unknown		12/13/2016 15:22	Finished	MS (1ppb), IWST-161114D,2>1
35	CCV-2,CCV,1,	23	1000	Unknown		12/13/2016 15:32	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	24	1000	Unknown		12/13/2016 15:41	Finished	CCB R161110A
37	N022133-011A,SAMP	26	1000	Unknown		12/13/2016 16:07	Finished	SAMP, 10mL
38	N022133-011AMS,MS	27	1000	Unknown		12/13/2016 16:18	Finished	MS (1ppb), IWST-161114D,10
39	N022133-014A,SAMP	28	1000	Unknown		12/13/2016 16:28	Finished	SAMP, 10mL
40	N022133-014AMS,MS	29	1000	Unknown		12/13/2016 16:37	Finished	MS (1ppb), IWST-161114D,10
41	N022133-007A,SAMP	30	1000	Unknown		12/13/2016 16:47	Finished	SAMP, 1>10mL
42	N022133-007AMS,MS	31	1000	Unknown		12/13/2016 16:56	Finished	MS (5ppb), IWST-161114D,1>1
43	N022133-012A,SAMP	32	1000	Unknown		12/13/2016 17:06	Finished	SAMP, 10mL
44	N022133-012AMS,MS	33	1000	Unknown		12/13/2016 17:15	Finished	MS (1ppb), IWST-161114D,10
45	N022133-013A,SAMP	34	1000	Unknown		12/13/2016 17:24	Finished	SAMP, 10mL
46	N022133-013AMS,MS	35	1000	Unknown		12/13/2016 17:34	Finished	MS (1ppb), IWST-161114D,10
47	CCV-3,CCV1,1,	36	1000	Unknown		12/13/2016 17:43	Finished	CCV @10ppb, IWST-161114C
48	CCB-3,CCB,1,	37	1000	Unknown		12/13/2016 17:53	Finished	CCB R161130C
49	N022133-008A,SAMP	38	1000	Unknown		12/13/2016 18:02	Finished	SAMP, 10mL
50	N022133-008AMS,MS	39	1000	Unknown		12/13/2016 18:12	Finished	MS (1ppb), IWST-161114D,10
51	N022133-009A,SAMP	40	1000	Unknown		12/13/2016 18:21	Finished	SAMP, 10mL
52	N022133-009AMS,MS	41	1000	Unknown		12/13/2016 18:31	Finished	MS (1ppb), IWST-161114D,10
53	N022133-010A,SAMP	42	1000	Unknown		12/13/2016 18:40	Finished	SAMP, 10mL
54	N022133-010AMS,MS	43	1000	Unknown		12/13/2016 18:50	Finished	MS (1ppb), IWST-161114D,10
55	N022133-008A,SAMP	44	1000	Unknown		12/13/2016 18:59	Finished	SAMP, 2>10mL
56	N022133-008AMS,MS	45	1000	Unknown		12/13/2016 19:09	Finished	MS (1ppb), IWST-161114D,2>1
57	N022133-010A,SAMP	46	1000	Unknown		12/13/2016 19:18	Finished	SAMP, 2>10mL
58	N022133-010AMS,MS	47	1000	Unknown		12/13/2016 19:27	Finished	MS (1ppb), IWST-161114D,2>1
59	CCV-4,CCV,1,	48	1000	Unknown		12/13/2016 19:37	Finished	CCV @5ppb, IWST-161114C
60	CCB-4,CCB,1,	49	1000	Unknown		12/13/2016 19:46	Finished	CCB R161130C

61	N022134-002A,SAMP	1	1000	Unknown		12/13/2016 20:28	Finished	SAMP, 10mL
62	N022134-002AMS,MS	2	1000	Unknown		12/13/2016 20:39	Finished	MS (1ppb), IWST-161114D,10
63	N022134-001A,SAMP	3	1000	Unknown		12/13/2016 20:48	Finished	SAMP, 10mL
64	N022134-001AMS,MS	4	1000	Unknown		12/13/2016 20:58	Finished	MS (5ppb), IWST-161114D,10
65	N022134-003A,SAMP	5	1000	Unknown		12/13/2016 21:07	Finished	SAMP, 0.02>10mL
66	N022134-003AMS,MS	6	1000	Unknown		12/13/2016 21:17	Finished	MS (5ppb), IWST-161114D,0.0
67	N022134-004A,SAMP	7	1000	Unknown		12/13/2016 21:26	Finished	SAMP, 0.01>10mL
68	N022134-004AMS,MS	8	1000	Unknown		12/13/2016 21:36	Finished	MS (5ppb), IWST-161114D,0.0
69	N022134-005A,SAMP	9	1000	Unknown		12/13/2016 21:45	Finished	SAMP, 0.01>10mL
70	N022134-005AMS,MS	10	1000	Unknown		12/13/2016 21:55	Finished	MS (5ppb), IWST-161114D,0.0
71	CCV-5,CCV1,1,	11	1000	Unknown		12/13/2016 22:04	Finished	CCV @10ppb, IWST-161114C
72	CCB-5,CCB,1,	12	1000	Unknown		12/13/2016 22:13	Finished	CCB R161130C
73	N02213-009A,SAMP.	13	1000	Unknown		12/13/2016 22:23	Finished	SAMP, 2>10mL
74	N022133-09AMS,MS.	14	1000	Unknown		12/13/2016 22:32	Finished	MS (1ppb), IWST-161114D,2>
75	N022133-012A,SAMP	15	1000	Unknown		12/13/2016 22:42	Finished	SAMP, 2>10mL
76	N022133-012AMS,MS	16	1000	Unknown		12/13/2016 22:51	Finished	MS (5ppb), IWST-161114D,2>
77	N022133-013A,SAMP	17	1000	Unknown		12/13/2016 23:01	Finished	SAMP, 2>10mL
78	N022133-013AMS,MS	18	1000	Unknown		12/13/2016 23:10	Finished	MS (5ppb), IWST-161114D,2>
79	CCV-6,CCV,1,	19	1000	Unknown		12/13/2016 23:20	Finished	CCV @5ppb, IWST-161114C
80	CCB-6,CCB,1,	20	1000	Unknown		12/13/2016 23:29	Finished	CCB R161130C
81	SHUTDOWN	21	1000	Unknown		12/13/2016 23:39	Finished	
82	Eluent: R161212A	22	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R161213B	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:01 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:12 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	12/13/16 10:21 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:31 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:40 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:50 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:59 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:09 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:18 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/17 9:52 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/17 10:03 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/17 10:12 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/17 10:22 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/17 10:31 AM	Reported
15	MB-R112642	MBLK	1	Hexavalent Chromium	01/05/17 10:41 AM	Reported
16	LCS-R112642	LCS	1	Hexavalent Chromium	01/05/17 10:50 AM	Reported
17	N022474-001A	SAMP	1	Hexavalent Chromium	01/05/17 11:01 AM	Reported
18	N022474-002A	SAMP	1	Hexavalent Chromium	01/05/17 11:12 AM	Reported
19	N022474-001ADUP	DUP	1	Hexavalent Chromium	01/05/17 11:21 AM	Reported
20	N022475-002A	SAMP	100	Hexavalent Chromium	01/05/17 11:31 AM	Reported
21	N022475-002AMS	MS	100	Hexavalent Chromium	01/05/17 11:40 AM	Reported
22	N022475-002AMSD	MSD	100	Hexavalent Chromium	01/05/17 11:50 AM	Reported
23	N022483-001A	SAMP	1	Hexavalent Chromium	01/05/17 11:59 AM	Reported
24	N022483-002A	SAMP	1	Hexavalent Chromium	01/05/17 12:09 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/17 12:18 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/17 12:28 PM	Reported
27	N022475-001A	SAMP	1	Hexavalent Chromium	01/05/17 12:37 PM	Reported
28	N022475-001AMS	MS	1	Hexavalent Chromium	01/05/17 12:47 PM	Reported
29	N022483-003A	SAMP	1	Hexavalent Chromium	01/05/17 12:56 PM	Reported
30	N022483-004A	SAMP	1	Hexavalent Chromium	01/05/17 1:06 PM	Reported
31	N022483-005A	SAMP	1	Hexavalent Chromium	01/05/17 1:15 PM	Reported
32	N022483-006A	SAMP	1	Hexavalent Chromium	01/05/17 1:24 PM	Reported
33	N022483-007A	SAMP	1	Hexavalent Chromium	01/05/17 1:34 PM	Reported
34	N022483-008A	SAMP	1	Hexavalent Chromium	01/05/17 1:43 PM	Reported
35	N022483-009A	SAMP	1	Hexavalent Chromium	01/05/17 1:53 PM	Reported
36	N022483-010A	SAMP	1	Hexavalent Chromium	01/05/17 2:02 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/17 2:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/05/17 2:21 PM	Reported
39	N022483-011A	SAMP	1	Hexavalent Chromium	01/05/17 2:31 PM	Reported
40	N022484-001A	SAMP	1	Hexavalent Chromium	01/05/17 2:40 PM	Reported
41	N022484-002A	SAMP	1	Hexavalent Chromium	01/05/17 2:50 PM	Reported
42	N022484-003A	SAMP	1	Hexavalent Chromium	01/05/17 2:59 PM	Reported

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022484-004A	SAMP	1	Hexavalent Chromium	01/05/17 3:09 PM	Reported
44	N022484-005A	SAMP	1	Hexavalent Chromium	01/05/17 3:18 PM	Reported
45	LCS-R112674	LCS	1	Hexavalent Chromium	01/05/17 3:31 PM	Not Reported
46	MB-R112674	MBLK	1	Hexavalent Chromium	01/05/17 3:42 PM	Not Reported
47	N022484-006A	SAMP	1	Hexavalent Chromium	01/05/17 3:52 PM	Not Reported
48	N022484-007A	SAMP	1	Hexavalent Chromium	01/05/17 4:01 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/17 4:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/17 4:20 PM	Reported
51	LCS-R112674	LCS	1	Hexavalent Chromium	01/05/17 4:35 PM	Reported
52	MB-R112674	MBLK	1	Hexavalent Chromium	01/05/17 4:45 PM	Reported
53	N022484-006A	SAMP	1	Hexavalent Chromium	01/05/17 4:55 PM	Reported
54	N022484-007A	SAMP	1	Hexavalent Chromium	01/05/17 5:04 PM	Reported
55	N022484-007AMS	MS	1	Hexavalent Chromium	01/05/17 5:14 PM	Reported
56	N022484-007AMSD	MSD	1	Hexavalent Chromium	01/05/17 5:23 PM	Not Reported
57	N022484-008A	SAMP	1	Hexavalent Chromium	01/05/17 5:33 PM	Reported
58	N022484-008ADUP	DUP	1	Hexavalent Chromium	01/05/17 5:42 PM	Reported
59	N022485-010A	SAMP	1	Hexavalent Chromium	01/05/17 5:52 PM	Reported
60	N022485-010AMS	MS	1	Hexavalent Chromium	01/05/17 6:01 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/17 6:11 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/17 6:20 PM	Reported
63	N022484-007AMSD	MSD	1	Hexavalent Chromium	01/05/17 6:29 PM	Reported
64	N022484-013A	SAMP	1	Hexavalent Chromium	01/05/17 6:39 PM	Reported
65	N022484-014A	SAMP	1	Hexavalent Chromium	01/05/17 6:48 PM	Reported
66	N022484-015A	SAMP	1	Hexavalent Chromium	01/05/17 6:58 PM	Not Reported
67	N022485-001A	SAMP	1	Hexavalent Chromium	01/05/17 7:07 PM	Reported
68	N022485-002A	SAMP	1	Hexavalent Chromium	01/05/17 7:17 PM	Reported
69	N022485-003A	SAMP	1	Hexavalent Chromium	01/05/17 7:26 PM	Not Reported
70	N022485-004A	SAMP	1	Hexavalent Chromium	01/05/17 7:36 PM	Not Reported
71	N022485-005A	SAMP	1	Hexavalent Chromium	01/05/17 7:45 PM	Not Reported
72	N022485-006A	SAMP	1	Hexavalent Chromium	01/05/17 7:55 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/05/17 8:04 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/05/17 8:14 PM	Reported
75	N022485-007A	SAMP	1	Hexavalent Chromium	01/05/17 8:23 PM	Not Reported
76	N022485-008A	SAMP	1	Hexavalent Chromium	01/05/17 8:32 PM	Reported
77	N022485-009A	SAMP	1	Hexavalent Chromium	01/05/17 8:42 PM	Reported
78	N022485-011A	SAMP	1	Hexavalent Chromium	01/05/17 8:51 PM	Reported
79	N022485-012A	SAMP	1	Hexavalent Chromium	01/05/17 9:01 PM	Reported
80	N022485-013A	SAMP	1	Hexavalent Chromium	01/05/17 9:10 PM	Reported
81	N022484-012A	SAMP	1	Hexavalent Chromium	01/05/17 9:20 PM	Reported
82	N022484-015A	SAMP	1	Hexavalent Chromium	01/05/17 9:29 PM	Reported
83	N022485-003A	SAMP	1	Hexavalent Chromium	01/05/17 9:39 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	01/05/17 9:48 PM	Reported

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	01/05/17 9:58 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Jan/17 13:26:52**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		12/13/2016 10:01	Finished	
2	BLANK	2	1000	Unknown		12/13/2016 10:12	Finished	
3	iBLANK	3	1000	Unknown		12/13/2016 10:21	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	12/13/2016 10:31	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	12/13/2016 10:40	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	12/13/2016 10:50	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	12/13/2016 10:59	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	12/13/2016 11:09	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	12/13/2016 11:18	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/05/2017 09:52	Finished	
11	BLANK	2	1000	Unknown		01/05/2017 10:03	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2017 10:12	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2017 10:22	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2017 10:31	Finished	CCB R161221B
15	MB-H2O,MBLK,1	6	1000	Unknown		01/05/2017 10:41	Finished	MB R161221B
16	LCS-H2O,LCS,1	7	1000	Unknown		01/05/2017 10:50	Finished	LCS, IWST-161114D
17	N022474-001A,SAMF	9	1000	Unknown		01/05/2017 11:01	Finished	SAMP, 10mL
18	N022474-002A,SAMF	10	1000	Unknown		01/05/2017 11:12	Finished	SAMP, 10mL
19	N022474-001ADUP,D	11	1000	Unknown		01/05/2017 11:21	Finished	DUP, 10mL
20	N022475-002A,SAMF	12	1000	Unknown		01/05/2017 11:31	Finished	SAMP, 0.1>10mL
21	N022475-002AMS,MS	13	1000	Unknown		01/05/2017 11:40	Finished	MS (5ppb), IWST-161114D,0.1
22	N022475-002AMSD,M	14	1000	Unknown		01/05/2017 11:50	Finished	MSD (5ppb), IWST-161114D,0.
23	N022483-001A,SAMF	15	1000	Unknown		01/05/2017 11:59	Finished	SAMP, 10mL
24	N022483-002A,SAMF	16	1000	Unknown		01/05/2017 12:09	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		01/05/2017 12:18	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/05/2017 12:28	Finished	CCB R161221B
27	N022475-001A,SAMF	19	1000	Unknown		01/05/2017 12:37	Finished	SAMP, 10mL
28	N022475-001AMS,MS	20	1000	Unknown		01/05/2017 12:47	Finished	SAMP, 10mL
29	N022483-003A,SAMF	21	1000	Unknown		01/05/2017 12:56	Finished	SAMP, 10mL
30	N022483-004A,SAMF	22	1000	Unknown		01/05/2017 13:06	Finished	SAMP, 10mL
31	N022483-005A,SAMF	23	1000	Unknown		01/05/2017 13:15	Finished	SAMP, 10mL
32	N022483-006A,SAMF	24	1000	Unknown		01/05/2017 13:24	Finished	SAMP, 10mL
33	N022483-007A,SAMF	25	1000	Unknown		01/05/2017 13:34	Finished	SAMP, 10mL
34	N022483-008A,SAMF	26	1000	Unknown		01/05/2017 13:43	Finished	SAMP, 10mL
35	N022483-009A,SAMF	27	1000	Unknown		01/05/2017 13:53	Finished	SAMP, 10mL
36	N022483-010A,SAMF	28	1000	Unknown		01/05/2017 14:02	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	29	1000	Unknown		01/05/2017 14:12	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/05/2017 14:21	Finished	CCB R161221B
39	N022483-011A,SAMF	31	1000	Unknown		01/05/2017 14:31	Finished	SAMP, 10mL
40	N022484-001A,SAMF	32	1000	Unknown		01/05/2017 14:40	Finished	SAMP, 10mL
41	N022484-002A,SAMF	33	1000	Unknown		01/05/2017 14:50	Finished	SAMP, 10mL
42	N022484-003A,SAMF	34	1000	Unknown		01/05/2017 14:59	Finished	SAMP, 10mL
43	N022484-004A,SAMF	35	1000	Unknown		01/05/2017 15:09	Finished	SAMP, 10mL
44	N022484-005A,SAMF	36	1000	Unknown		01/05/2017 15:18	Finished	SAMP, 10mL
45	LCS-2,LCS,1	38	1000	Unknown		01/05/2017 15:31	Finished	LCS, IWST-161114D
46	MB-2,MBLK,1	39	1000	Unknown		01/05/2017 15:42	Finished	MB R161221B
47	N022484-006A,SAMF	40	1000	Unknown		01/05/2017 15:52	Finished	SAMP, 10mL
48	N022484-007A,SAMF	41	1000	Unknown		01/05/2017 16:01	Finished	SAMP, 10mL
49	CCV-4,CCV1,1,	42	1000	Unknown		01/05/2017 16:11	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	43	1000	Unknown		01/05/2017 16:20	Finished	CCB R161221B
51	LCS-2,LCS,1	1	1000	Unknown		01/05/2017 16:35	Finished	LCS, IWST-161114D
52	MB-2,MBLK,1	2	1000	Unknown		01/05/2017 16:45	Finished	MB R161221B
53	N022484-006A,SAMF	3	1000	Unknown		01/05/2017 16:55	Finished	SAMP, 10mL
54	N022484-007A,SAMF	4	1000	Unknown		01/05/2017 17:04	Finished	SAMP, 10mL
55	N022484-007AMS,MS	5	1000	Unknown		01/05/2017 17:14	Finished	MS (5ppb), IWST-161114D,10
56	N022484-007AMSD,M	6	1000	Unknown		01/05/2017 17:23	Finished	MSD (5ppb), IWST-161114D,1
57	N022484-008A,SAMF	7	1000	Unknown		01/05/2017 17:33	Finished	SAMP, 10mL
58	N022484-008ADUP,D	8	1000	Unknown		01/05/2017 17:42	Finished	DUP, 10mL
59	N022485-010A,SAMF	9	1000	Unknown		01/05/2017 17:52	Finished	SAMP, 10mL
60	N022485-010AMS,MS	10	1000	Unknown		01/05/2017 18:01	Finished	MS (5ppb), IWST-161114D,10

61	CCV-5,CCV,1,	11	1000	Unknown		01/05/2017 18:11	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	12	1000	Unknown		01/05/2017 18:20	Finished	CCB R161221B
63	N022484-007AMSD,M	13	1000	Unknown		01/05/2017 18:29	Finished	MSD (5ppb), IWST-161114D,10
64	N022484-013A,SAMP	14	1000	Unknown		01/05/2017 18:39	Finished	SAMP, 10mL
65	N022484-014A,SAMP	15	1000	Unknown		01/05/2017 18:48	Finished	SAMP, 10mL
66	N022484-015A,SAMP	16	1000	Unknown		01/05/2017 18:58	Finished	SAMP, 10mL
67	N022485-001A,SAMP	17	1000	Unknown		01/05/2017 19:07	Finished	SAMP, 10mL
68	N022485-002A,SAMP	18	1000	Unknown		01/05/2017 19:17	Finished	SAMP, 10mL
69	N022485-003A,SAMP	19	1000	Unknown		01/05/2017 19:26	Finished	SAMP, 10mL
70	N022485-004A,SAMP	20	1000	Unknown		01/05/2017 19:36	Finished	SAMP, 10mL
71	N022485-005A,SAMP	21	1000	Unknown		01/05/2017 19:45	Finished	SAMP, 10mL
72	N022485-006A,SAMP	22	1000	Unknown		01/05/2017 19:55	Finished	SAMP, 10mL
73	CCV-6,CCV1,1,	23	1000	Unknown		01/05/2017 20:04	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	24	1000	Unknown		01/05/2017 20:14	Finished	CCB R161221B
75	N022485-007A,SAMP	25	1000	Unknown		01/05/2017 20:23	Finished	SAMP, 10mL
76	N022485-008A,SAMP	26	1000	Unknown		01/05/2017 20:32	Finished	SAMP, 10mL
77	N022485-009A,SAMP	27	1000	Unknown		01/05/2017 20:42	Finished	SAMP, 10mL
78	N022485-011A,SAMP	28	1000	Unknown		01/05/2017 20:51	Finished	SAMP, 10mL
79	N022485-012A,SAMP	29	1000	Unknown		01/05/2017 21:01	Finished	SAMP, 10mL
80	N022485-013A,SAMP	30	1000	Unknown		01/05/2017 21:10	Finished	SAMP, 10mL
81	N022484-012A,SAMP	31	1000	Unknown		01/05/2017 21:20	Finished	SAMP, 10mL
82	N022484-015A,SAMP	32	1000	Unknown		01/05/2017 21:29	Finished	SAMP, 10mL
83	N022485-003A,SAMP	33	1000	Unknown		01/05/2017 21:39	Finished	SAMP, 10mL
84	CCV-7,CCV,1,	34	1000	Unknown		01/05/2017 21:48	Finished	CCV @5ppb, IWST-161114C
85	CCB-7,CCB,1,	35	1000	Unknown		01/05/2017 21:58	Finished	CCB R161221B
86	SHUTDOWN	36	1000	Unknown		01/05/2017 22:07	Finished	
87	Eluent: R170105A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R170105B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

ample Preparation

te Prepared: 1/4/17
ne Prepared: 1001
epared By: RBA

Reagent ID:
Sulfuric Acid: #8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R161230A
NH4OH + NH4SO4 buffer: R170103B

Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
N022455-001A	9.54	-	~250 mL ~	~250 mL~		R170103B
2A	9.67	-				
3A	9.37	-				

Sample Preparation

Date Prepared: 1/5/17
Time Prepared: 10:26 AM
Prepared By: RBA

Slope: 98.5%
pH 4: 4.01 @ 21.7°C
7: 7.03 @ 21.7°C
10: 10.05 @ 21.6°C
LCS: 7.01 @ 21.5°C

Reagent ID:
Sulfuric Acid: #8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170105A
NH4OH + NH4SO4 buffer: R161221B

Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
N022474-001A	9.36	-	~250 ml ~	~250 ml~		R161221B
2A	9.44	-				
N022475-001A	9.45	-				
2A	9.52	-				
N022483-001A	9.61	-				
2A	9.55	-				
3A	9.63	-				
4A	9.61	-				
5A	9.59	-				
6A	9.65	-				
7A	9.57	-				
8A	9.52	-				
9A	9.70	-				
10A	9.54	-				
11A	9.52	-				
N022484-001A	9.58	-				

Logbook No. 11

rba 1/8/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 12/13/2016

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0458	0.2409	1.2472	2.4551	3.7584	4.8644	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ICV** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **12/13/2016** SeqNo: **2523455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.912	0.20	5.000	0	98.2	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **12/13/2016** SeqNo: **2523456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.204	0.20	0.2000	0	102	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **CCV** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.185	0.20	0.2000	0	92.4	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ZZZZZZ** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.028	0.20	10.00	0	100	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCV-3	SampType:	CCV	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	112642
Client ID:	CCV	Batch ID:	R112642	TestNo:	EPA 218.6			Analysis Date:	1/5/2017	SeqNo:	2523676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	95	105				

Sample ID	CCV-4	SampType:	CCV1	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	112642
Client ID:	ZZZZZZ	Batch ID:	R112642	TestNo:	EPA 218.6			Analysis Date:	1/5/2017	SeqNo:	2523684

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.163	0.20	10.00	0	102	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **ICB** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **12/13/2016** SeqNo: **2523457**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **CCB** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523460**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **CCB** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523472**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **CCB** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523677**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **112642**
Client ID: **CCB** Batch ID: **R112642** TestNo: **EPA 218.6** Analysis Date: **1/5/2017** SeqNo: **2523685**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.290	
CCV-2	4.290	
CCV-3	4.290	
CCV-4	4.290	
CCV-5	4.290	
CCV-6	4.282	
CCV-7	4.290	
Average	4.289	
Actual RT Window	4.209 - 4.369	
Applied RT Window	4.089 - 4.489	
MB-R112642	N.A.	N.A.
LCS-R112642	4.290	PASS
N022474-001A	4.273	PASS
N022474-002A	4.265	PASS
N022474-001ADUP	4.265	PASS
N022475-002A	4.290	PASS
N022475-002AMS	4.290	PASS
N022475-002AMSD	4.290	PASS
N022483-001A	4.265	PASS
N022483-002A	4.257	PASS
N022475-001A	4.248	PASS
N022475-001AMS	4.232	PASS
N022483-003A	4.290	PASS
N022483-004A	4.282	PASS
N022483-005A	4.290	PASS
N022483-006A	4.290	PASS
N022483-007A	4.282	PASS
N022483-008A	4.282	PASS
N022483-009A	N.A.	N.A.
N022483-010A	4.273	PASS
N022483-011A	4.282	PASS
N022484-001A	4.282	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.290	
CCV-2	4.290	
CCV-3	4.290	
CCV-4	4.290	
CCV-5	4.290	
CCV-6	4.282	
CCV-7	4.290	
Average	4.289	
Actual RT Window	4.209 - 4.369	
Applied RT Window	4.089 - 4.489	
N022484-002A	N.A.	N.A.
N022484-003A	N.A.	N.A.
N022484-004A	4.282	PASS
N022484-005A	N.A.	N.A.
LCS-R112674	4.290	PASS
MB-R112674	N.A.	N.A.
N022484-006A	N.A.	N.A.
N022484-007A	4.282	PASS
LCS-R112674	4.290	PASS
MB-R112674	N.A.	N.A.
N022484-006A	N.A.	N.A.
N022484-007A	4.282	PASS
N022484-007AMS	4.282	PASS
N022484-007AMSD	4.282	PASS
N022484-008A	4.282	PASS
N022484-008ADUP	4.282	PASS
N022485-010A	4.265	PASS
N022485-010AMS	4.265	PASS
N022484-007AMSD	4.282	PASS
N022484-013A	4.265	PASS
N022484-014A	4.232	PASS
N022484-015A	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.290	
CCV-2	4.290	
CCV-3	4.290	
CCV-4	4.290	
CCV-5	4.290	
CCV-6	4.282	
CCV-7	4.290	
Average	4.289	
Actual RT Window	4.209 - 4.369	
Applied RT Window	4.089 - 4.489	
N022485-001A	4.265	PASS
N022485-002A	4.215	PASS
N022485-003A	4.315	PASS
N022485-004A	4.148	PASS
N022485-005A	4.148	PASS
N022485-006A	4.282	PASS
N022485-007A	4.182	PASS
N022485-008A	N.A.	N.A.
N022485-009A	4.282	PASS
N022485-011A	N.A.	N.A.
N022485-012A	4.223	PASS
N022485-013A	4.215	PASS
N022484-012A	N.A.	N.A.
N022484-015A	4.240	PASS
N022485-003A	4.240	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

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

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

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/18

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

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

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC**
Matrix: **WATER**
Method Number: EPA Method 218.6/7199
Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 161213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:01 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:12 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	12/13/16 10:21 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:31 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:40 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:50 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:59 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:09 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:18 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	12/13/16 11:29 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	12/13/16 11:41 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	12/13/16 11:52 AM	Reported
13	MB-R112253	MBLK	1	Hexavalent Chromium	12/13/16 12:02 PM	Reported
14	LCS-R112253	LCS	1	Hexavalent Chromium	12/13/16 12:13 PM	Reported
15	N022132-014A	SAMP	1	Hexavalent Chromium	12/13/16 12:22 PM	Reported
16	N022132-014AMS	MS	1	Hexavalent Chromium	12/13/16 12:32 PM	Reported
17	N022133-001A	SAMP	5	Hexavalent Chromium	12/13/16 12:41 PM	Reported
18	N022133-001ADUP	DUP	5	Hexavalent Chromium	12/13/16 12:51 PM	Reported
19	N022133-001AMS	MS	5	Hexavalent Chromium	12/13/16 1:00 PM	Reported
20	N022133-002A	SAMP	5	Hexavalent Chromium	12/13/16 1:10 PM	Reported
21	N022133-002AMS	MS	5	Hexavalent Chromium	12/13/16 1:19 PM	Reported
22	N022133-002AMSD	MSD	5	Hexavalent Chromium	12/13/16 1:29 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	12/13/16 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	12/13/16 1:48 PM	Reported
25	N022133-004A	SAMP	20	Hexavalent Chromium	12/13/16 1:57 PM	Reported
26	N022133-004AMS	MS	20	Hexavalent Chromium	12/13/16 2:07 PM	Reported
27	N022133-005A	SAMP	20	Hexavalent Chromium	12/13/16 2:16 PM	Reported
28	N022133-005AMS	MS	20	Hexavalent Chromium	12/13/16 2:25 PM	Reported
29	N022133-006A	SAMP	10	Hexavalent Chromium	12/13/16 2:35 PM	Reported
30	N022133-006AMS	MS	10	Hexavalent Chromium	12/13/16 2:44 PM	Reported
31	N022133-003A	SAMP	1	Hexavalent Chromium	12/13/16 2:54 PM	Reported
32	N022133-003AMS	MS	1	Hexavalent Chromium	12/13/16 3:03 PM	Reported
33	N022133-003A	SAMP	5	Hexavalent Chromium	12/13/16 3:13 PM	Not Reported
34	N022133-003AMS	MS	5	Hexavalent Chromium	12/13/16 3:22 PM	Not Reported
35	CCV-2	CCV	1	Hexavalent Chromium	12/13/16 3:32 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	12/13/16 3:41 PM	Reported
37	N022133-011A	SAMP	1	Hexavalent Chromium	12/13/16 4:07 PM	Reported
38	N022133-011AMS	MS	1	Hexavalent Chromium	12/13/16 4:18 PM	Reported
39	N022133-014A	SAMP	1	Hexavalent Chromium	12/13/16 4:28 PM	Reported
40	N022133-014AMS	MS	1	Hexavalent Chromium	12/13/16 4:37 PM	Reported
41	N022133-007A	SAMP	10	Hexavalent Chromium	12/13/16 4:47 PM	Reported
42	N022133-007AMS	MS	10	Hexavalent Chromium	12/13/16 4:56 PM	Reported

rba 12/18/2016

IC7 RBA 12/15/2016 1:40 PM

12/22/2016

INJECTION LOG: 161213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022133-012A	SAMP	1	Hexavalent Chromium	12/13/16 5:06 PM	Not Reported
44	N022133-012AMS	MS	1	Hexavalent Chromium	12/13/16 5:15 PM	Not Reported
45	N022133-013A	SAMP	1	Hexavalent Chromium	12/13/16 5:24 PM	Not Reported
46	N022133-013AMS	MS	1	Hexavalent Chromium	12/13/16 5:34 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	12/13/16 5:43 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	12/13/16 5:53 PM	Reported
49	N022133-008A	SAMP	1	Hexavalent Chromium	12/13/16 6:02 PM	Not Reported
50	N022133-008AMS	MS	1	Hexavalent Chromium	12/13/16 6:12 PM	Not Reported
51	N022133-009A	SAMP	1	Hexavalent Chromium	12/13/16 6:21 PM	Not Reported
52	N022133-009AMS	MS	1	Hexavalent Chromium	12/13/16 6:31 PM	Not Reported
53	N022133-010A	SAMP	1	Hexavalent Chromium	12/13/16 6:40 PM	Not Reported
54	N022133-010AMS	MS	1	Hexavalent Chromium	12/13/16 6:50 PM	Not Reported
55	N022133-008A	SAMP	5	Hexavalent Chromium	12/13/16 6:59 PM	Reported
56	N022133-008AMS	MS	5	Hexavalent Chromium	12/13/16 7:09 PM	Reported
57	N022133-010A	SAMP	5	Hexavalent Chromium	12/13/16 7:18 PM	Reported
58	N022133-010AMS	MS	5	Hexavalent Chromium	12/13/16 7:27 PM	Reported
59	CCV-4	CCV	1	Hexavalent Chromium	12/13/16 7:37 PM	Reported
60	CCB-4	CCB	1	Hexavalent Chromium	12/13/16 7:46 PM	Reported
61	N022134-002A	SAMP	1	Hexavalent Chromium	12/13/16 8:28 PM	Reported
62	N022134-002AMS	MS	1	Hexavalent Chromium	12/13/16 8:39 PM	Reported
63	N022134-001A	SAMP	1	Hexavalent Chromium	12/13/16 8:48 PM	Reported
64	N022134-001AMS	MS	1	Hexavalent Chromium	12/13/16 8:58 PM	Reported
65	N022134-003A	SAMP	500	Hexavalent Chromium	12/13/16 9:07 PM	Reported
66	N022134-003AMS	MS	500	Hexavalent Chromium	12/13/16 9:17 PM	Reported
67	N022134-004A	SAMP	1000	Hexavalent Chromium	12/13/16 9:26 PM	Reported
68	N022134-004AMS	MS	1000	Hexavalent Chromium	12/13/16 9:36 PM	Reported
69	N022134-005A	SAMP	1000	Hexavalent Chromium	12/13/16 9:45 PM	Reported
70	N022134-005AMS	MS	1000	Hexavalent Chromium	12/13/16 9:55 PM	Reported
71	CCV-5	CCV1	1	Hexavalent Chromium	12/13/16 10:04 PM	Reported
72	CCB-5	CCB	1	Hexavalent Chromium	12/13/16 10:13 PM	Reported
73	N022133-009A	SAMP	5	Hexavalent Chromium	12/13/16 10:23 PM	Reported
74	N022133-009AMS	MS	5	Hexavalent Chromium	12/13/16 10:32 PM	Reported
75	N022133-012A	SAMP	5	Hexavalent Chromium	12/13/16 10:42 PM	Reported
76	N022133-012AMS	MS	5	Hexavalent Chromium	12/13/16 10:51 PM	Reported
77	N022133-013A	SAMP	5	Hexavalent Chromium	12/13/16 11:01 PM	Reported
78	N022133-013AMS	MS	5	Hexavalent Chromium	12/13/16 11:10 PM	Reported
79	CCV-6	CCV	1	Hexavalent Chromium	12/13/16 11:20 PM	Reported
80	CCB-6	CCB	1	Hexavalent Chromium	12/13/16 11:29 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_161213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**14/Dec/16 20:16:18**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		12/13/2016 10:01	Finished	
2	BLANK	2	1000	Unknown		12/13/2016 10:12	Finished	
3	iBLANK	3	1000	Unknown		12/13/2016 10:21	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	12/13/2016 10:31	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	12/13/2016 10:40	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	12/13/2016 10:50	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	12/13/2016 10:59	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	12/13/2016 11:09	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	12/13/2016 11:18	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		12/13/2016 11:29	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		12/13/2016 11:41	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		12/13/2016 11:52	Finished	ICB R161130C
13	MB-H2O,MBLK,1	1	1000	Unknown		12/13/2016 12:02	Finished	MB R161130C
14	LCS-H2O,LCS,1	2	1000	Unknown		12/13/2016 12:13	Finished	LCS, IWST-161114D
15	N022132-014A,SAMF	3	1000	Unknown		12/13/2016 12:22	Finished	SAMP, 10mL
16	N022132-014AMS,MS	4	1000	Unknown		12/13/2016 12:32	Finished	MS (1ppb), IWST-161114D,10
17	N022133-001A,SAMF	5	1000	Unknown		12/13/2016 12:41	Finished	SAMP, 2>10mL
18	N022133-001ADUP,D	6	1000	Unknown		12/13/2016 12:51	Finished	DUP, 2>10mL
19	N022133-001AMS,MS	7	1000	Unknown		12/13/2016 13:00	Finished	MS (5ppb), IWST-161114D,2>1
20	N022133-002A,SAMF	8	1000	Unknown		12/13/2016 13:10	Finished	SAMP, 2>10mL
21	N022133-002AMS,MS	9	1000	Unknown		12/13/2016 13:19	Finished	MS (5ppb), IWST-161114D,2>1
22	N022133-002AMSD,M	10	1000	Unknown		12/13/2016 13:29	Finished	MSD (5ppb), IWST-161114D,2
23	CCV-1,CCV1,1,	11	1000	Unknown		12/13/2016 13:38	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	12	1000	Unknown		12/13/2016 13:48	Finished	CCB R161130C
25	N022133-004A,SAMF	13	1000	Unknown		12/13/2016 13:57	Finished	SAMP, 0.5>10mL
26	N022133-004AMS,MS	14	1000	Unknown		12/13/2016 14:07	Finished	MS (5ppb), IWST-161114D,0.5
27	N022133-005A,SAMF	15	1000	Unknown		12/13/2016 14:16	Finished	SAMP, 0.5>10mL
28	N022133-005AMS,MS	16	1000	Unknown		12/13/2016 14:25	Finished	MS (5ppb), IWST-161114D,0.5
29	N022133-006A,SAMF	17	1000	Unknown		12/13/2016 14:35	Finished	SAMP, 1>10mL
30	N022133-006AMS,MS	18	1000	Unknown		12/13/2016 14:44	Finished	MS (5ppb), IWST-161114D,1>1
31	N022133-003A,SAMF	19	1000	Unknown		12/13/2016 14:54	Finished	SAMP, 10mL
32	N022133-003AMS,MS	20	1000	Unknown		12/13/2016 15:03	Finished	MS (1ppb), IWST-161114D,10
33	N022133-003A,SAMF	21	1000	Unknown		12/13/2016 15:13	Finished	SAMP, 2>10mL
34	N022133-003AMS,MS	22	1000	Unknown		12/13/2016 15:22	Finished	MS (1ppb), IWST-161114D,2>1
35	CCV-2,CCV,1,	23	1000	Unknown		12/13/2016 15:32	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	24	1000	Unknown		12/13/2016 15:41	Finished	CCB R161110A
37	N022133-011A,SAMF	26	1000	Unknown		12/13/2016 16:07	Finished	SAMP, 10mL
38	N022133-011AMS,MS	27	1000	Unknown		12/13/2016 16:18	Finished	MS (1ppb), IWST-161114D,10
39	N022133-014A,SAMF	28	1000	Unknown		12/13/2016 16:28	Finished	SAMP, 10mL
40	N022133-014AMS,MS	29	1000	Unknown		12/13/2016 16:37	Finished	MS (1ppb), IWST-161114D,10
41	N022133-007A,SAMF	30	1000	Unknown		12/13/2016 16:47	Finished	SAMP, 1>10mL
42	N022133-007AMS,MS	31	1000	Unknown		12/13/2016 16:56	Finished	MS (5ppb), IWST-161114D,1>1
43	N022133-012A,SAMF	32	1000	Unknown		12/13/2016 17:06	Finished	SAMP, 10mL
44	N022133-012AMS,MS	33	1000	Unknown		12/13/2016 17:15	Finished	MS (1ppb), IWST-161114D,10
45	N022133-013A,SAMF	34	1000	Unknown		12/13/2016 17:24	Finished	SAMP, 10mL
46	N022133-013AMS,MS	35	1000	Unknown		12/13/2016 17:34	Finished	MS (1ppb), IWST-161114D,10
47	CCV-3,CCV1,1,	36	1000	Unknown		12/13/2016 17:43	Finished	CCV @10ppb, IWST-161114C
48	CCB-3,CCB,1,	37	1000	Unknown		12/13/2016 17:53	Finished	CCB R161130C
49	N022133-008A,SAMF	38	1000	Unknown		12/13/2016 18:02	Finished	SAMP, 10mL
50	N022133-008AMS,MS	39	1000	Unknown		12/13/2016 18:12	Finished	MS (1ppb), IWST-161114D,10
51	N022133-009A,SAMF	40	1000	Unknown		12/13/2016 18:21	Finished	SAMP, 10mL
52	N022133-009AMS,MS	41	1000	Unknown		12/13/2016 18:31	Finished	MS (1ppb), IWST-161114D,10
53	N022133-010A,SAMF	42	1000	Unknown		12/13/2016 18:40	Finished	SAMP, 10mL
54	N022133-010AMS,MS	43	1000	Unknown		12/13/2016 18:50	Finished	MS (1ppb), IWST-161114D,10
55	N022133-008A,SAMF	44	1000	Unknown		12/13/2016 18:59	Finished	SAMP, 2>10mL
56	N022133-008AMS,MS	45	1000	Unknown		12/13/2016 19:09	Finished	MS (1ppb), IWST-161114D,2>1
57	N022133-010A,SAMF	46	1000	Unknown		12/13/2016 19:18	Finished	SAMP, 2>10mL
58	N022133-010AMS,MS	47	1000	Unknown		12/13/2016 19:27	Finished	MS (1ppb), IWST-161114D,2>1
59	CCV-4,CCV,1,	48	1000	Unknown		12/13/2016 19:37	Finished	CCV @5ppb, IWST-161114C
60	CCB-4,CCB,1,	49	1000	Unknown		12/13/2016 19:46	Finished	CCB R161130C

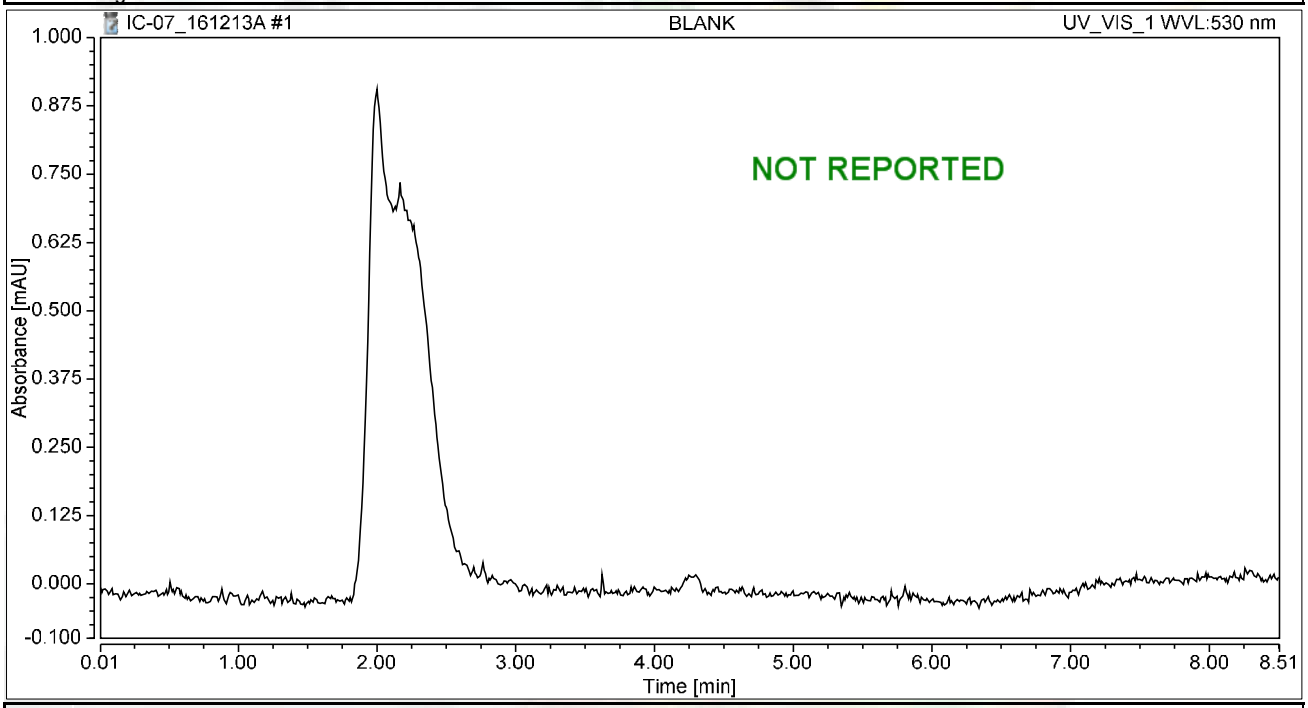
61	N022134-002A,SAMP	1	1000	Unknown		12/13/2016 20:28	Finished	SAMP, 10mL
62	N022134-002AMS,MS	2	1000	Unknown		12/13/2016 20:39	Finished	MS (1ppb), IWST-161114D,10
63	N022134-001A,SAMP	3	1000	Unknown		12/13/2016 20:48	Finished	SAMP, 10mL
64	N022134-001AMS,MS	4	1000	Unknown		12/13/2016 20:58	Finished	MS (5ppb), IWST-161114D,10
65	N022134-003A,SAMP	5	1000	Unknown		12/13/2016 21:07	Finished	SAMP, 0.02>10mL
66	N022134-003AMS,MS	6	1000	Unknown		12/13/2016 21:17	Finished	MS (5ppb), IWST-161114D,0.0
67	N022134-004A,SAMP	7	1000	Unknown		12/13/2016 21:26	Finished	SAMP, 0.01>10mL
68	N022134-004AMS,MS	8	1000	Unknown		12/13/2016 21:36	Finished	MS (5ppb), IWST-161114D,0.0
69	N022134-005A,SAMP	9	1000	Unknown		12/13/2016 21:45	Finished	SAMP, 0.01>10mL
70	N022134-005AMS,MS	10	1000	Unknown		12/13/2016 21:55	Finished	MS (5ppb), IWST-161114D,0.0
71	CCV-5,CCV1,1,	11	1000	Unknown		12/13/2016 22:04	Finished	CCV @10ppb, IWST-161114C
72	CCB-5,CCB,1,	12	1000	Unknown		12/13/2016 22:13	Finished	CCB R161130C
73	N02213-009A,SAMP.	13	1000	Unknown		12/13/2016 22:23	Finished	SAMP, 2>10mL
74	N022133-09AMS,MS.	14	1000	Unknown		12/13/2016 22:32	Finished	MS (1ppb), IWST-161114D,2>1
75	N022133-012A,SAMP	15	1000	Unknown		12/13/2016 22:42	Finished	SAMP, 2>10mL
76	N022133-012AMS,MS	16	1000	Unknown		12/13/2016 22:51	Finished	MS (5ppb), IWST-161114D,2>1
77	N022133-013A,SAMP	17	1000	Unknown		12/13/2016 23:01	Finished	SAMP, 2>10mL
78	N022133-013AMS,MS	18	1000	Unknown		12/13/2016 23:10	Finished	MS (5ppb), IWST-161114D,2>1
79	CCV-6,CCV,1,	19	1000	Unknown		12/13/2016 23:20	Finished	CCV @5ppb, IWST-161114C
80	CCB-6,CCB,1,	20	1000	Unknown		12/13/2016 23:29	Finished	CCB R161130C
81	SHUTDOWN	21	1000	Unknown		12/13/2016 23:39	Finished	
82	Eluent: R161212A	22	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R161213B	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

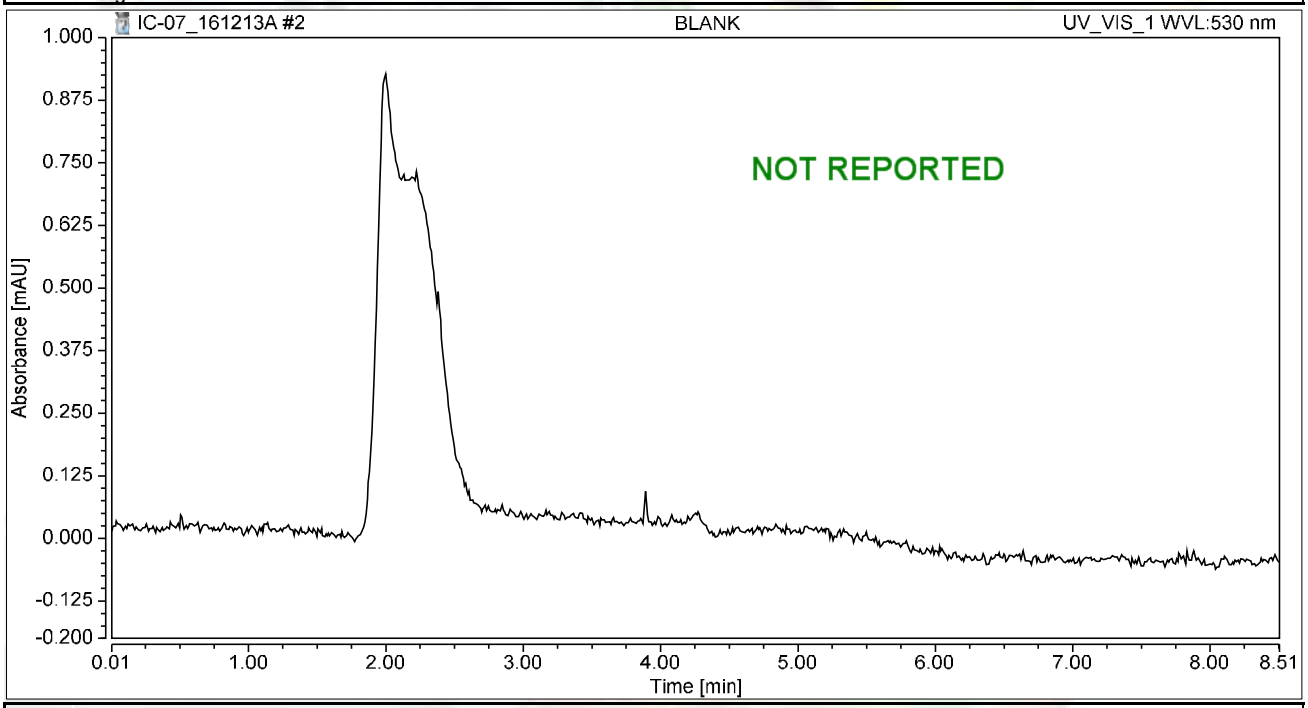
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

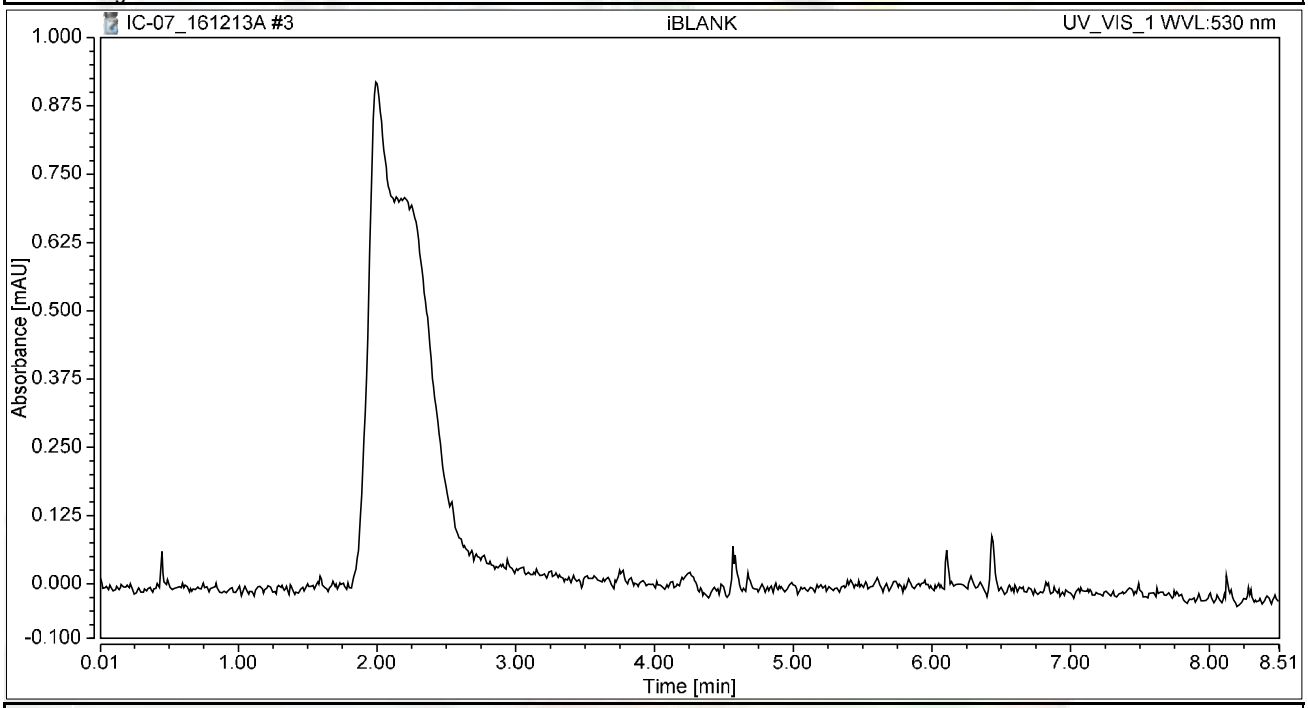
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

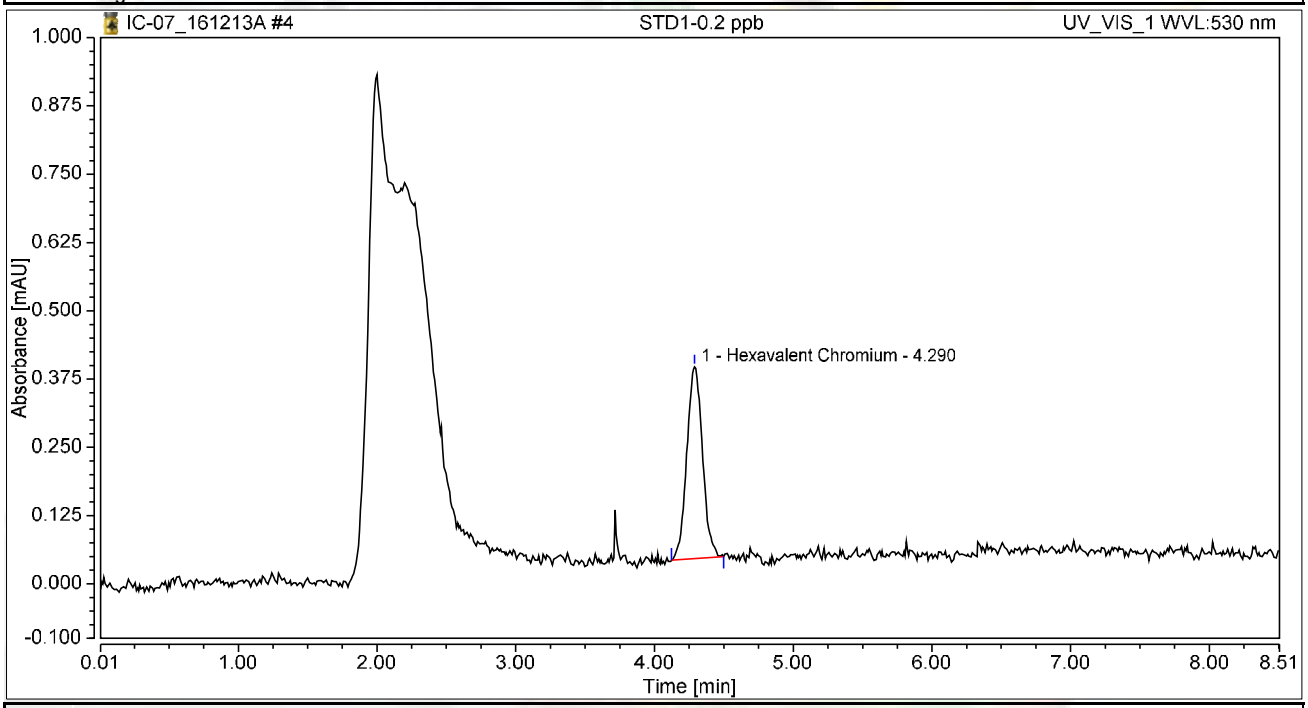
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

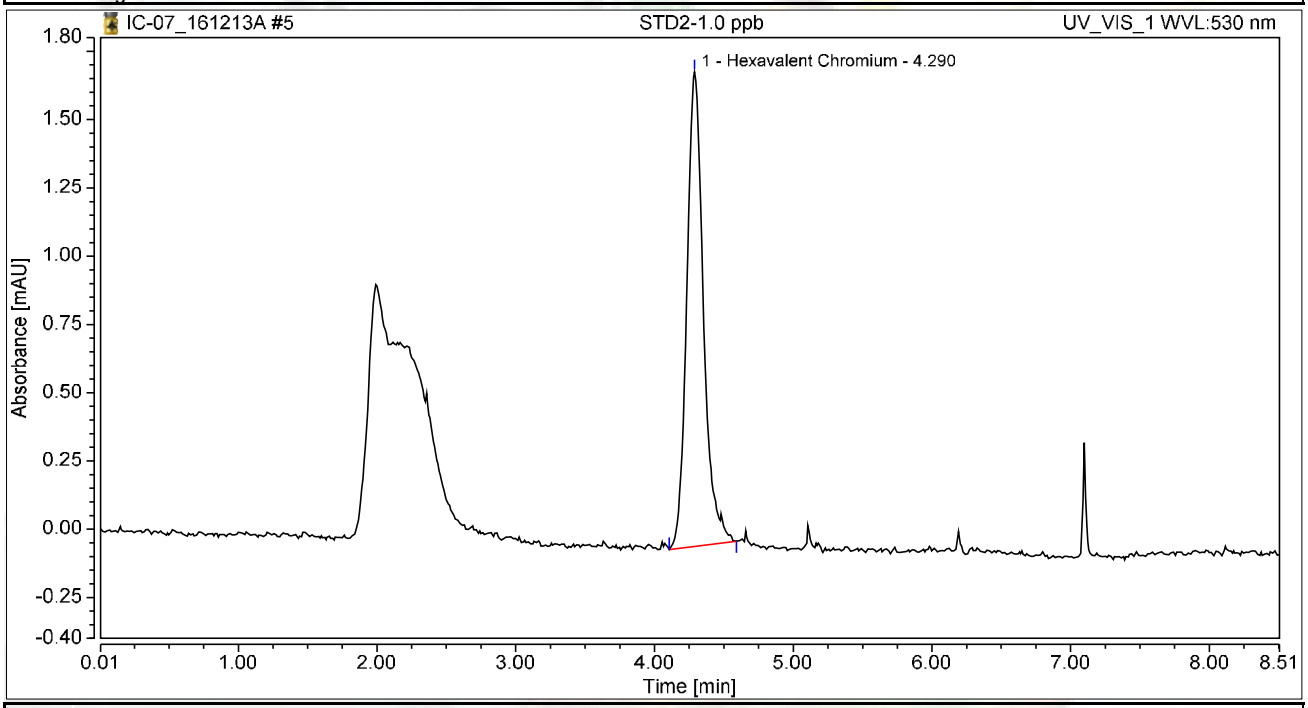
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.046	0.351	100.00	100.00	0.1861
Total:			**0.046**	**0.351**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

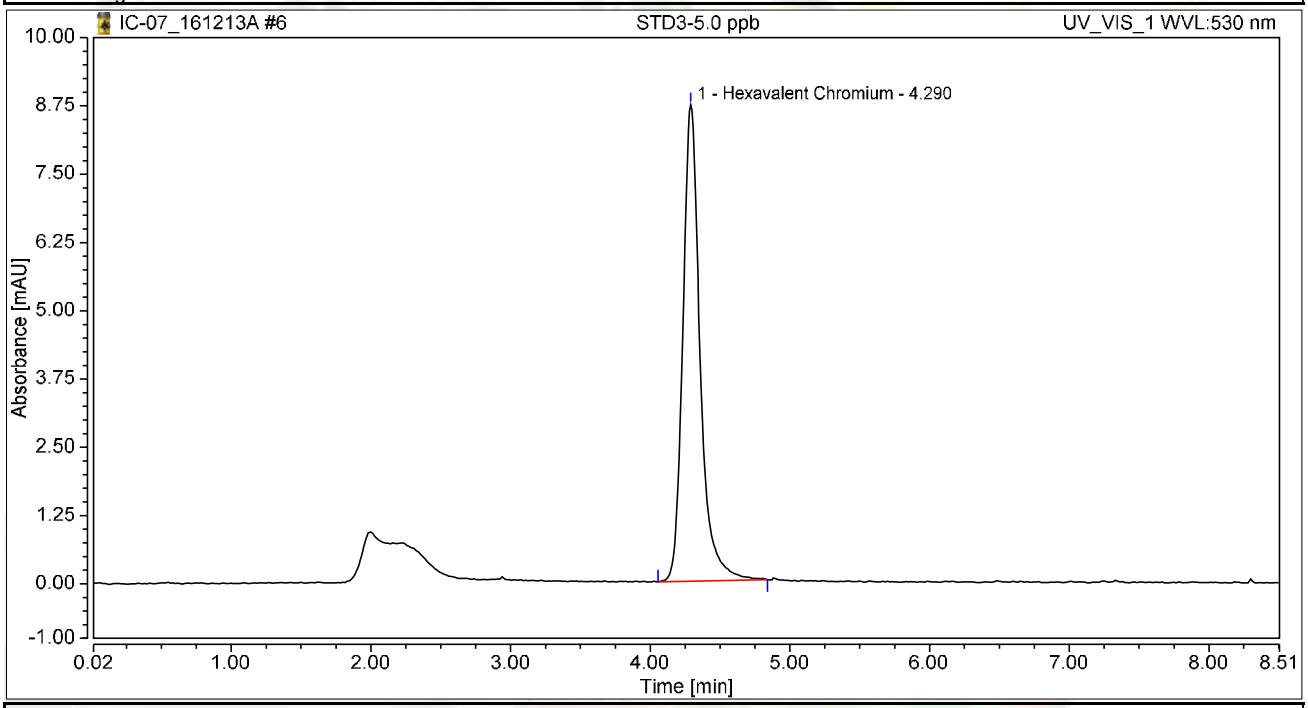
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.241	1.737	100.00	100.00	0.9795
Total:			**0.241**	**1.737**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

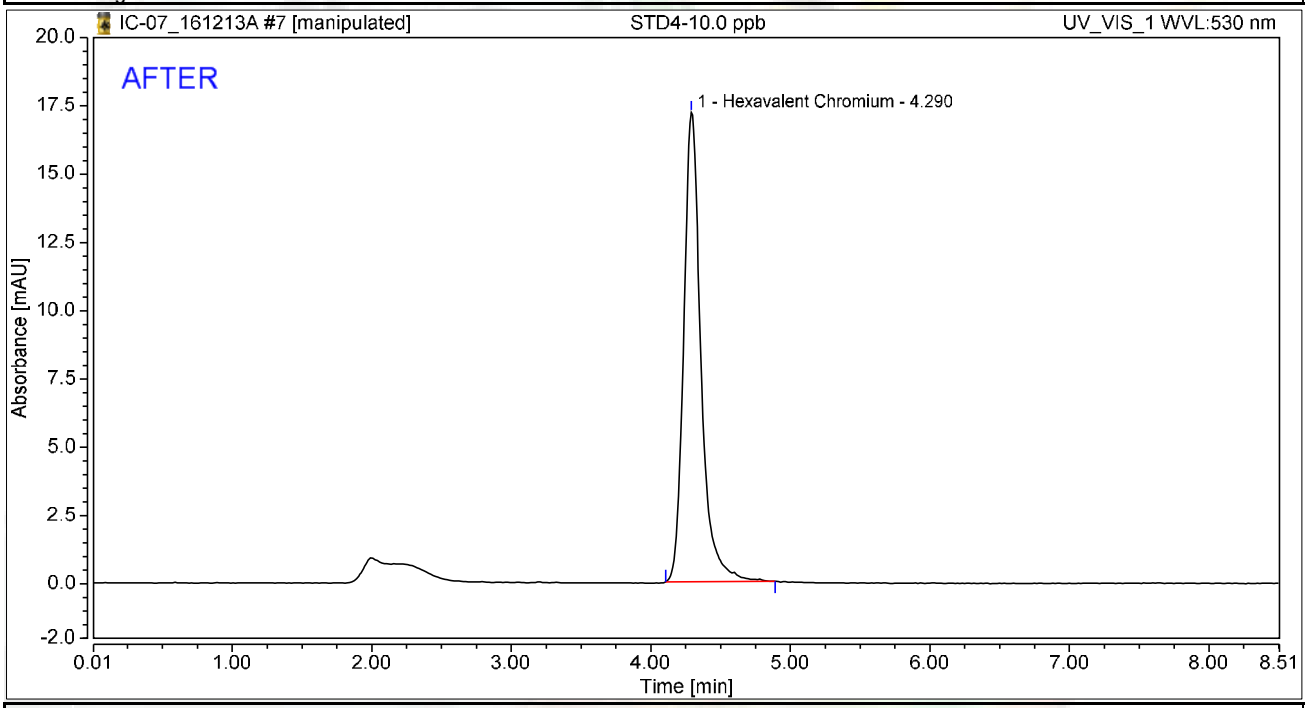
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.247	8.722	100.00	100.00	5.0714
Total:			**1.247**	**8.722**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.455	17.179	100.00	100.00	9.9829
Total:			**2.455**	**17.179**	**100.00**	**100.00**	

rba 12/18/2016

Reviewed by: Nancy 12/22/2016

My first report/Integration

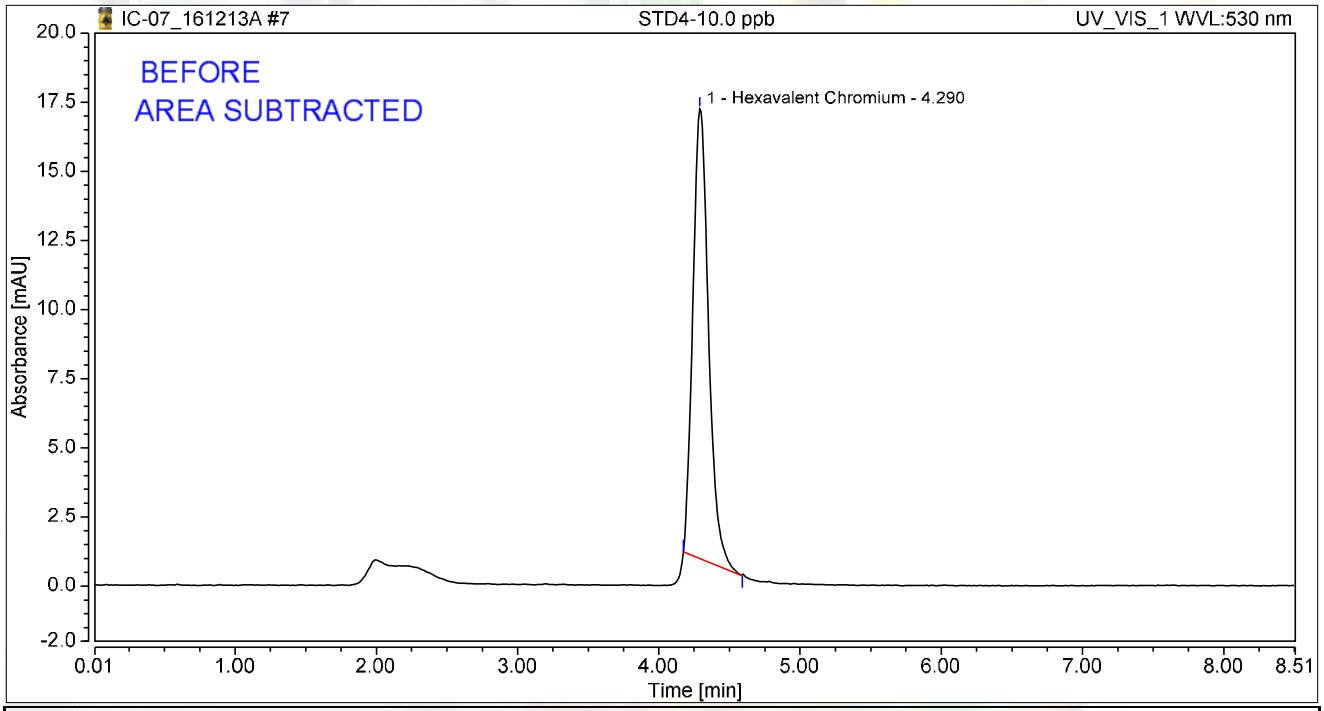
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.100	16.260	100.00	100.00	8.7076
Total:			**2.100**	**16.260**	**100.00**	**100.00**	

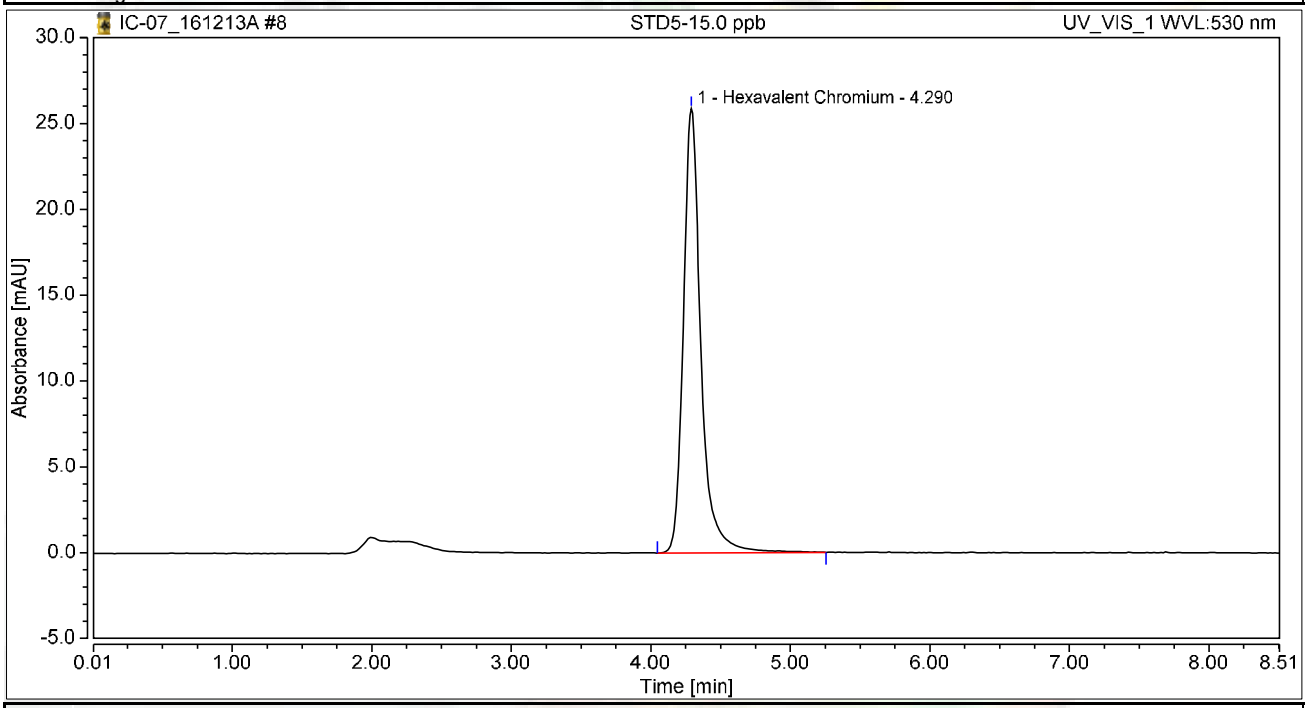
rba 12/18/2016

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

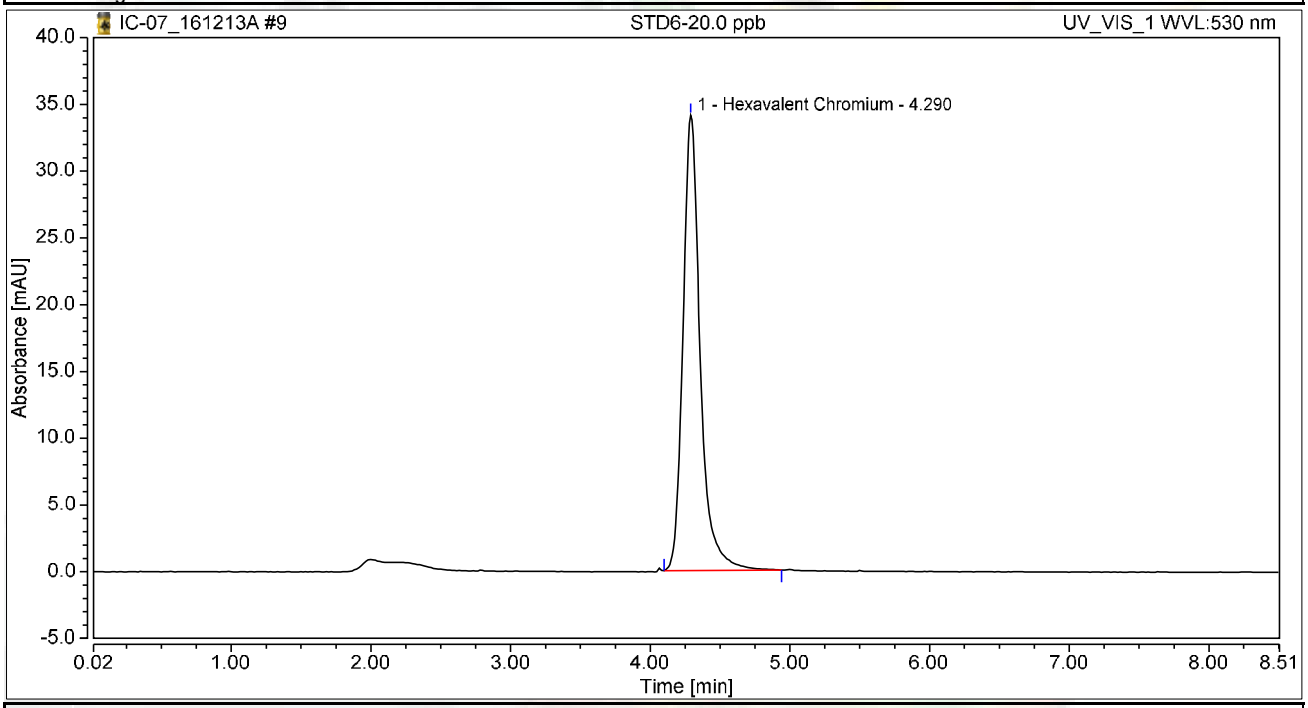
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	3.758	25.890	100.00	100.00	15.2825
Total:			**3.758**	**25.890**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



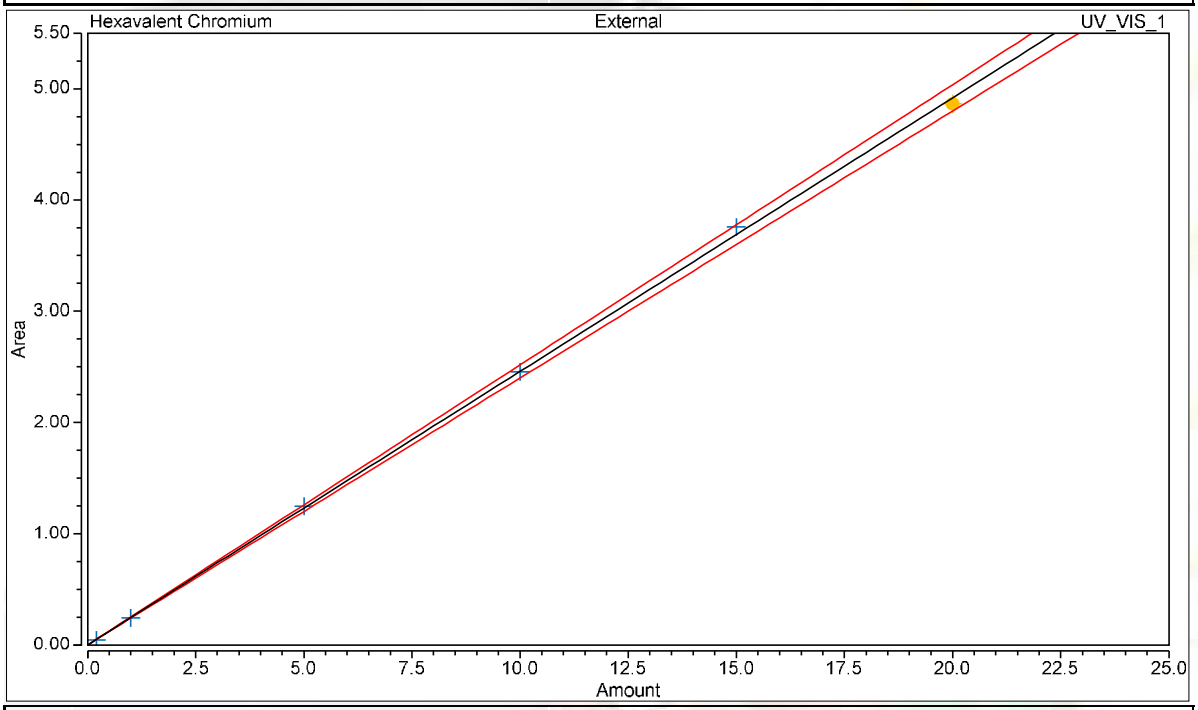
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	4.864	34.086	100.00	100.00	19.7800
Total:			**4.864**	**34.086**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2459
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99957

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

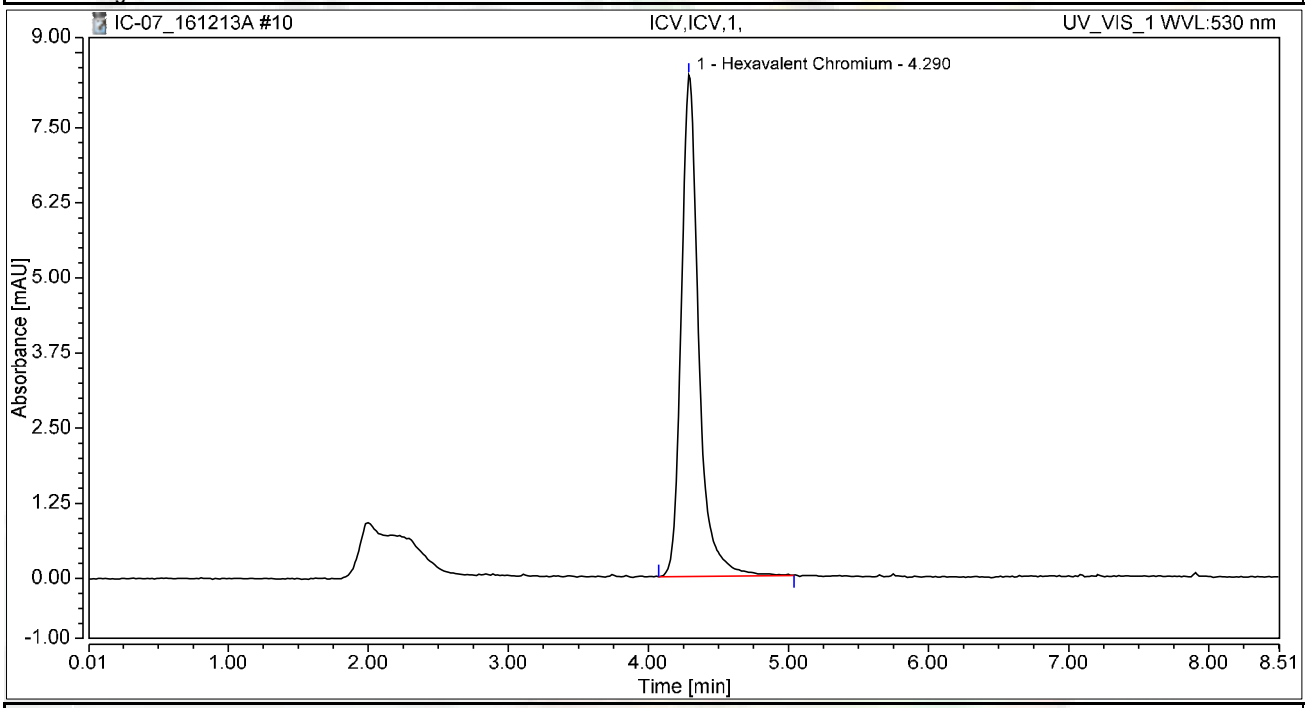
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0458	0.046	0.351
5	STD2-1.0 ppb	02	1.0000	0.2409	0.241	1.737
6	STD3-5.0 ppb	03	5.0000	1.2472	1.247	8.722
7	STD4-10.0 ppb	04	10.0000	2.4551	2.455	17.179
8	STD5-15.0 ppb	05	15.0000	3.7584	3.758	25.890
9	STD6-20.0 ppb	06	20.0000	4.8644	4.864	34.086

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

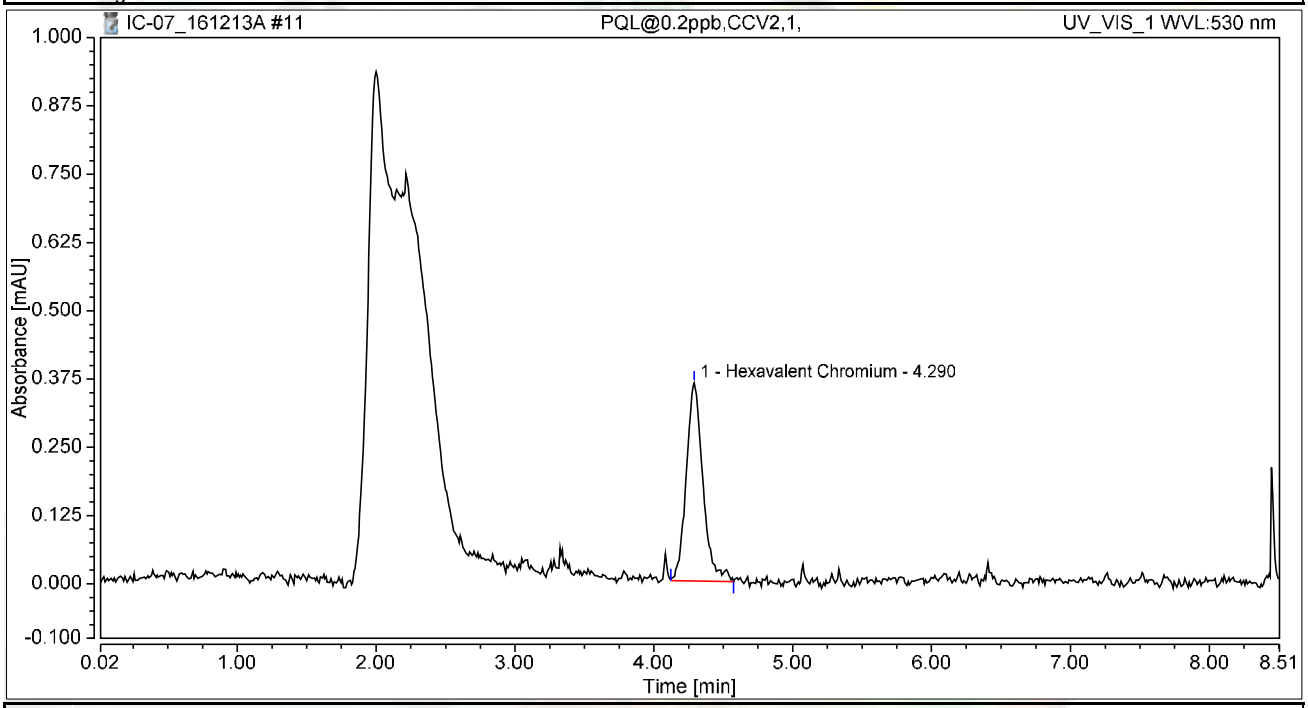
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.208	8.341	100.00	100.00	4.9121
Total:			**1.208**	**8.341**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

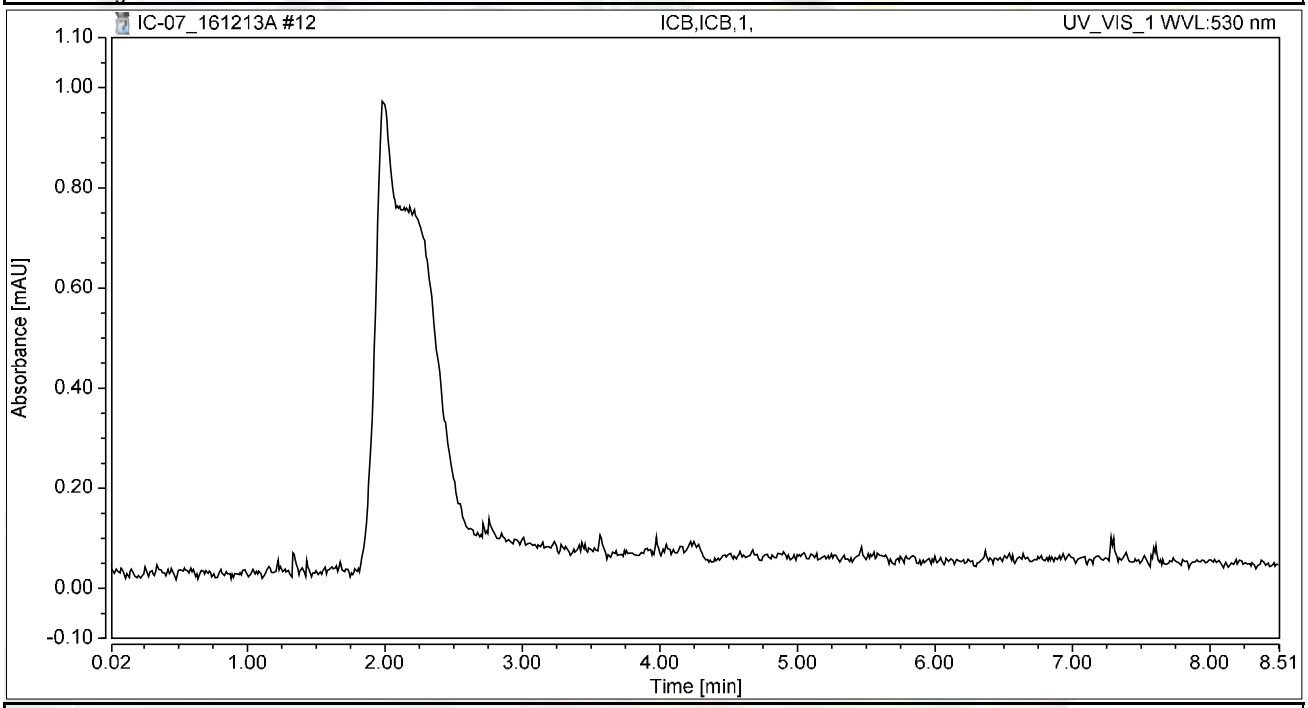
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.050	0.363	100.00	100.00	0.2044
Total:			**0.050**	**0.363**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Dec/16 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:01 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	12/13/16 10:12 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	12/13/16 10:21 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:31 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:40 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:50 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 10:59 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:09 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	12/13/16 11:18 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/17 9:52 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/17 10:03 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/17 10:12 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/17 10:22 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/17 10:31 AM	Reported
15	MB-R112642	MBLK	1	Hexavalent Chromium	01/05/17 10:41 AM	Reported
16	LCS-R112642	LCS	1	Hexavalent Chromium	01/05/17 10:50 AM	Reported
17	N022474-001A	SAMP	1	Hexavalent Chromium	01/05/17 11:01 AM	Reported
18	N022474-002A	SAMP	1	Hexavalent Chromium	01/05/17 11:12 AM	Reported
19	N022474-001ADUP	DUP	1	Hexavalent Chromium	01/05/17 11:21 AM	Reported
20	N022475-002A	SAMP	100	Hexavalent Chromium	01/05/17 11:31 AM	Reported
21	N022475-002AMS	MS	100	Hexavalent Chromium	01/05/17 11:40 AM	Reported
22	N022475-002AMSD	MSD	100	Hexavalent Chromium	01/05/17 11:50 AM	Reported
23	N022483-001A	SAMP	1	Hexavalent Chromium	01/05/17 11:59 AM	Reported
24	N022483-002A	SAMP	1	Hexavalent Chromium	01/05/17 12:09 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/17 12:18 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/17 12:28 PM	Reported
27	N022475-001A	SAMP	1	Hexavalent Chromium	01/05/17 12:37 PM	Reported
28	N022475-001AMS	MS	1	Hexavalent Chromium	01/05/17 12:47 PM	Reported
29	N022483-003A	SAMP	1	Hexavalent Chromium	01/05/17 12:56 PM	Reported
30	N022483-004A	SAMP	1	Hexavalent Chromium	01/05/17 1:06 PM	Reported
31	N022483-005A	SAMP	1	Hexavalent Chromium	01/05/17 1:15 PM	Reported
32	N022483-006A	SAMP	1	Hexavalent Chromium	01/05/17 1:24 PM	Reported
33	N022483-007A	SAMP	1	Hexavalent Chromium	01/05/17 1:34 PM	Reported
34	N022483-008A	SAMP	1	Hexavalent Chromium	01/05/17 1:43 PM	Reported
35	N022483-009A	SAMP	1	Hexavalent Chromium	01/05/17 1:53 PM	Reported
36	N022483-010A	SAMP	1	Hexavalent Chromium	01/05/17 2:02 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/17 2:12 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/05/17 2:21 PM	Reported
39	N022483-011A	SAMP	1	Hexavalent Chromium	01/05/17 2:31 PM	Reported
40	N022484-001A	SAMP	1	Hexavalent Chromium	01/05/17 2:40 PM	Reported
41	N022484-002A	SAMP	1	Hexavalent Chromium	01/05/17 2:50 PM	Reported
42	N022484-003A	SAMP	1	Hexavalent Chromium	01/05/17 2:59 PM	Reported

rba 1/9/2017

IC7 RBA 1/9/2017 8:54 AM

Nancy 1/11/2017

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022484-004A	SAMP	1	Hexavalent Chromium	01/05/17 3:09 PM	Reported
44	N022484-005A	SAMP	1	Hexavalent Chromium	01/05/17 3:18 PM	Reported
45	LCS-R112674	LCS	1	Hexavalent Chromium	01/05/17 3:31 PM	Not Reported
46	MB-R112674	MBLK	1	Hexavalent Chromium	01/05/17 3:42 PM	Not Reported
47	N022484-006A	SAMP	1	Hexavalent Chromium	01/05/17 3:52 PM	Not Reported
48	N022484-007A	SAMP	1	Hexavalent Chromium	01/05/17 4:01 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/17 4:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/17 4:20 PM	Reported
51	LCS-R112674	LCS	1	Hexavalent Chromium	01/05/17 4:35 PM	Reported
52	MB-R112674	MBLK	1	Hexavalent Chromium	01/05/17 4:45 PM	Reported
53	N022484-006A	SAMP	1	Hexavalent Chromium	01/05/17 4:55 PM	Reported
54	N022484-007A	SAMP	1	Hexavalent Chromium	01/05/17 5:04 PM	Reported
55	N022484-007AMS	MS	1	Hexavalent Chromium	01/05/17 5:14 PM	Reported
56	N022484-007AMSD	MSD	1	Hexavalent Chromium	01/05/17 5:23 PM	Not Reported
57	N022484-008A	SAMP	1	Hexavalent Chromium	01/05/17 5:33 PM	Reported
58	N022484-008ADUP	DUP	1	Hexavalent Chromium	01/05/17 5:42 PM	Reported
59	N022485-010A	SAMP	1	Hexavalent Chromium	01/05/17 5:52 PM	Reported
60	N022485-010AMS	MS	1	Hexavalent Chromium	01/05/17 6:01 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/17 6:11 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/17 6:20 PM	Reported
63	N022484-007AMSD	MSD	1	Hexavalent Chromium	01/05/17 6:29 PM	Reported
64	N022484-013A	SAMP	1	Hexavalent Chromium	01/05/17 6:39 PM	Reported
65	N022484-014A	SAMP	1	Hexavalent Chromium	01/05/17 6:48 PM	Reported
66	N022484-015A	SAMP	1	Hexavalent Chromium	01/05/17 6:58 PM	Not Reported
67	N022485-001A	SAMP	1	Hexavalent Chromium	01/05/17 7:07 PM	Reported
68	N022485-002A	SAMP	1	Hexavalent Chromium	01/05/17 7:17 PM	Reported
69	N022485-003A	SAMP	1	Hexavalent Chromium	01/05/17 7:26 PM	Not Reported
70	N022485-004A	SAMP	1	Hexavalent Chromium	01/05/17 7:36 PM	Not Reported
71	N022485-005A	SAMP	1	Hexavalent Chromium	01/05/17 7:45 PM	Not Reported
72	N022485-006A	SAMP	1	Hexavalent Chromium	01/05/17 7:55 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/05/17 8:04 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/05/17 8:14 PM	Reported
75	N022485-007A	SAMP	1	Hexavalent Chromium	01/05/17 8:23 PM	Not Reported
76	N022485-008A	SAMP	1	Hexavalent Chromium	01/05/17 8:32 PM	Reported
77	N022485-009A	SAMP	1	Hexavalent Chromium	01/05/17 8:42 PM	Reported
78	N022485-011A	SAMP	1	Hexavalent Chromium	01/05/17 8:51 PM	Reported
79	N022485-012A	SAMP	1	Hexavalent Chromium	01/05/17 9:01 PM	Reported
80	N022485-013A	SAMP	1	Hexavalent Chromium	01/05/17 9:10 PM	Reported
81	N022484-012A	SAMP	1	Hexavalent Chromium	01/05/17 9:20 PM	Reported
82	N022484-015A	SAMP	1	Hexavalent Chromium	01/05/17 9:29 PM	Reported
83	N022485-003A	SAMP	1	Hexavalent Chromium	01/05/17 9:39 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	01/05/17 9:48 PM	Reported

INJECTION LOG: 170105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	01/05/17 9:58 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Jan/17 13:26:52**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		12/13/2016 10:01	Finished	
2	BLANK	2	1000	Unknown		12/13/2016 10:12	Finished	
3	iBLANK	3	1000	Unknown		12/13/2016 10:21	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	12/13/2016 10:31	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	12/13/2016 10:40	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	12/13/2016 10:50	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	12/13/2016 10:59	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	12/13/2016 11:09	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	12/13/2016 11:18	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/05/2017 09:52	Finished	
11	BLANK	2	1000	Unknown		01/05/2017 10:03	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2017 10:12	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2017 10:22	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2017 10:31	Finished	CCB R161221B
15	MB-H2O,MBLK,1	6	1000	Unknown		01/05/2017 10:41	Finished	MB R161221B
16	LCS-H2O,LCS,1	7	1000	Unknown		01/05/2017 10:50	Finished	LCS, IWST-161114D
17	N022474-001A,SAMF	9	1000	Unknown		01/05/2017 11:01	Finished	SAMP, 10mL
18	N022474-002A,SAMF	10	1000	Unknown		01/05/2017 11:12	Finished	SAMP, 10mL
19	N022474-001ADUP,D	11	1000	Unknown		01/05/2017 11:21	Finished	DUP, 10mL
20	N022475-002A,SAMF	12	1000	Unknown		01/05/2017 11:31	Finished	SAMP, 0.1>10mL
21	N022475-002AMS,MS	13	1000	Unknown		01/05/2017 11:40	Finished	MS (5ppb), IWST-161114D,0.1
22	N022475-002AMSD,M	14	1000	Unknown		01/05/2017 11:50	Finished	MSD (5ppb), IWST-161114D,0.
23	N022483-001A,SAMF	15	1000	Unknown		01/05/2017 11:59	Finished	SAMP, 10mL
24	N022483-002A,SAMF	16	1000	Unknown		01/05/2017 12:09	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		01/05/2017 12:18	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/05/2017 12:28	Finished	CCB R161221B
27	N022475-001A,SAMF	19	1000	Unknown		01/05/2017 12:37	Finished	SAMP, 10mL
28	N022475-001AMS,MS	20	1000	Unknown		01/05/2017 12:47	Finished	SAMP, 10mL
29	N022483-003A,SAMF	21	1000	Unknown		01/05/2017 12:56	Finished	SAMP, 10mL
30	N022483-004A,SAMF	22	1000	Unknown		01/05/2017 13:06	Finished	SAMP, 10mL
31	N022483-005A,SAMF	23	1000	Unknown		01/05/2017 13:15	Finished	SAMP, 10mL
32	N022483-006A,SAMF	24	1000	Unknown		01/05/2017 13:24	Finished	SAMP, 10mL
33	N022483-007A,SAMF	25	1000	Unknown		01/05/2017 13:34	Finished	SAMP, 10mL
34	N022483-008A,SAMF	26	1000	Unknown		01/05/2017 13:43	Finished	SAMP, 10mL
35	N022483-009A,SAMF	27	1000	Unknown		01/05/2017 13:53	Finished	SAMP, 10mL
36	N022483-010A,SAMF	28	1000	Unknown		01/05/2017 14:02	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	29	1000	Unknown		01/05/2017 14:12	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/05/2017 14:21	Finished	CCB R161221B
39	N022483-011A,SAMF	31	1000	Unknown		01/05/2017 14:31	Finished	SAMP, 10mL
40	N022484-001A,SAMF	32	1000	Unknown		01/05/2017 14:40	Finished	SAMP, 10mL
41	N022484-002A,SAMF	33	1000	Unknown		01/05/2017 14:50	Finished	SAMP, 10mL
42	N022484-003A,SAMF	34	1000	Unknown		01/05/2017 14:59	Finished	SAMP, 10mL
43	N022484-004A,SAMF	35	1000	Unknown		01/05/2017 15:09	Finished	SAMP, 10mL
44	N022484-005A,SAMF	36	1000	Unknown		01/05/2017 15:18	Finished	SAMP, 10mL
45	LCS-2,LCS,1	38	1000	Unknown		01/05/2017 15:31	Finished	LCS, IWST-161114D
46	MB-2,MBLK,1	39	1000	Unknown		01/05/2017 15:42	Finished	MB R161221B
47	N022484-006A,SAMF	40	1000	Unknown		01/05/2017 15:52	Finished	SAMP, 10mL
48	N022484-007A,SAMF	41	1000	Unknown		01/05/2017 16:01	Finished	SAMP, 10mL
49	CCV-4,CCV1,1,	42	1000	Unknown		01/05/2017 16:11	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	43	1000	Unknown		01/05/2017 16:20	Finished	CCB R161221B
51	LCS-2,LCS,1	1	1000	Unknown		01/05/2017 16:35	Finished	LCS, IWST-161114D
52	MB-2,MBLK,1	2	1000	Unknown		01/05/2017 16:45	Finished	MB R161221B
53	N022484-006A,SAMF	3	1000	Unknown		01/05/2017 16:55	Finished	SAMP, 10mL
54	N022484-007A,SAMF	4	1000	Unknown		01/05/2017 17:04	Finished	SAMP, 10mL
55	N022484-007AMS,MS	5	1000	Unknown		01/05/2017 17:14	Finished	MS (5ppb), IWST-161114D,10
56	N022484-007AMSD,M	6	1000	Unknown		01/05/2017 17:23	Finished	MSD (5ppb), IWST-161114D,1
57	N022484-008A,SAMF	7	1000	Unknown		01/05/2017 17:33	Finished	SAMP, 10mL
58	N022484-008ADUP,D	8	1000	Unknown		01/05/2017 17:42	Finished	DUP, 10mL
59	N022485-010A,SAMF	9	1000	Unknown		01/05/2017 17:52	Finished	SAMP, 10mL
60	N022485-010AMS,MS	10	1000	Unknown		01/05/2017 18:01	Finished	MS (5ppb), IWST-161114D,10

rba 1/8/2017

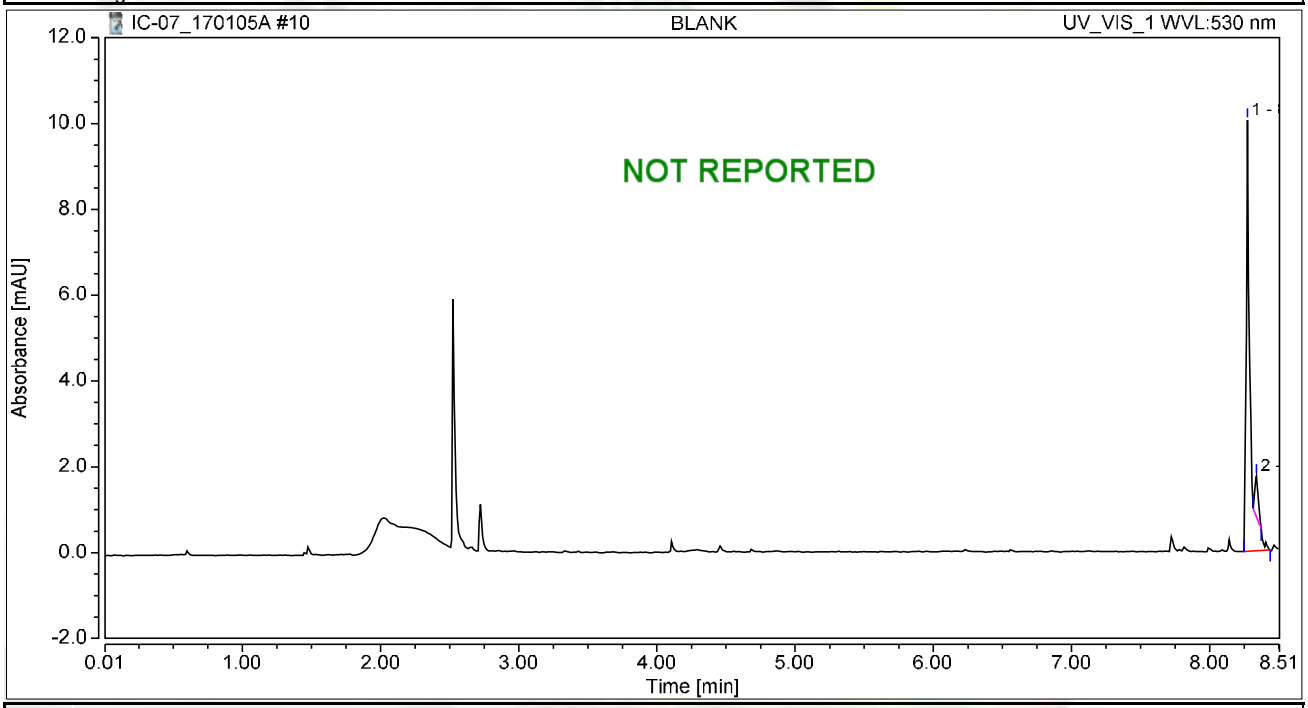
61	CCV-5,CCV,1,	11	1000	Unknown		01/05/2017 18:11	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	12	1000	Unknown		01/05/2017 18:20	Finished	CCB R161221B
63	N022484-007AMSD,M	13	1000	Unknown		01/05/2017 18:29	Finished	MSD (5ppb), IWST-161114D,10
64	N022484-013A,SAMP	14	1000	Unknown		01/05/2017 18:39	Finished	SAMP, 10mL
65	N022484-014A,SAMP	15	1000	Unknown		01/05/2017 18:48	Finished	SAMP, 10mL
66	N022484-015A,SAMP	16	1000	Unknown		01/05/2017 18:58	Finished	SAMP, 10mL
67	N022485-001A,SAMP	17	1000	Unknown		01/05/2017 19:07	Finished	SAMP, 10mL
68	N022485-002A,SAMP	18	1000	Unknown		01/05/2017 19:17	Finished	SAMP, 10mL
69	N022485-003A,SAMP	19	1000	Unknown		01/05/2017 19:26	Finished	SAMP, 10mL
70	N022485-004A,SAMP	20	1000	Unknown		01/05/2017 19:36	Finished	SAMP, 10mL
71	N022485-005A,SAMP	21	1000	Unknown		01/05/2017 19:45	Finished	SAMP, 10mL
72	N022485-006A,SAMP	22	1000	Unknown		01/05/2017 19:55	Finished	SAMP, 10mL
73	CCV-6,CCV1,1,	23	1000	Unknown		01/05/2017 20:04	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	24	1000	Unknown		01/05/2017 20:14	Finished	CCB R161221B
75	N022485-007A,SAMP	25	1000	Unknown		01/05/2017 20:23	Finished	SAMP, 10mL
76	N022485-008A,SAMP	26	1000	Unknown		01/05/2017 20:32	Finished	SAMP, 10mL
77	N022485-009A,SAMP	27	1000	Unknown		01/05/2017 20:42	Finished	SAMP, 10mL
78	N022485-011A,SAMP	28	1000	Unknown		01/05/2017 20:51	Finished	SAMP, 10mL
79	N022485-012A,SAMP	29	1000	Unknown		01/05/2017 21:01	Finished	SAMP, 10mL
80	N022485-013A,SAMP	30	1000	Unknown		01/05/2017 21:10	Finished	SAMP, 10mL
81	N022484-012A,SAMP	31	1000	Unknown		01/05/2017 21:20	Finished	SAMP, 10mL
82	N022484-015A,SAMP	32	1000	Unknown		01/05/2017 21:29	Finished	SAMP, 10mL
83	N022485-003A,SAMP	33	1000	Unknown		01/05/2017 21:39	Finished	SAMP, 10mL
84	CCV-7,CCV,1,	34	1000	Unknown		01/05/2017 21:48	Finished	CCV @5ppb, IWST-161114C
85	CCB-7,CCB,1,	35	1000	Unknown		01/05/2017 21:58	Finished	CCB R161221B
86	SHUTDOWN	36	1000	Unknown		01/05/2017 22:07	Finished	
87	Eluent: R170105A	37	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R170105B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

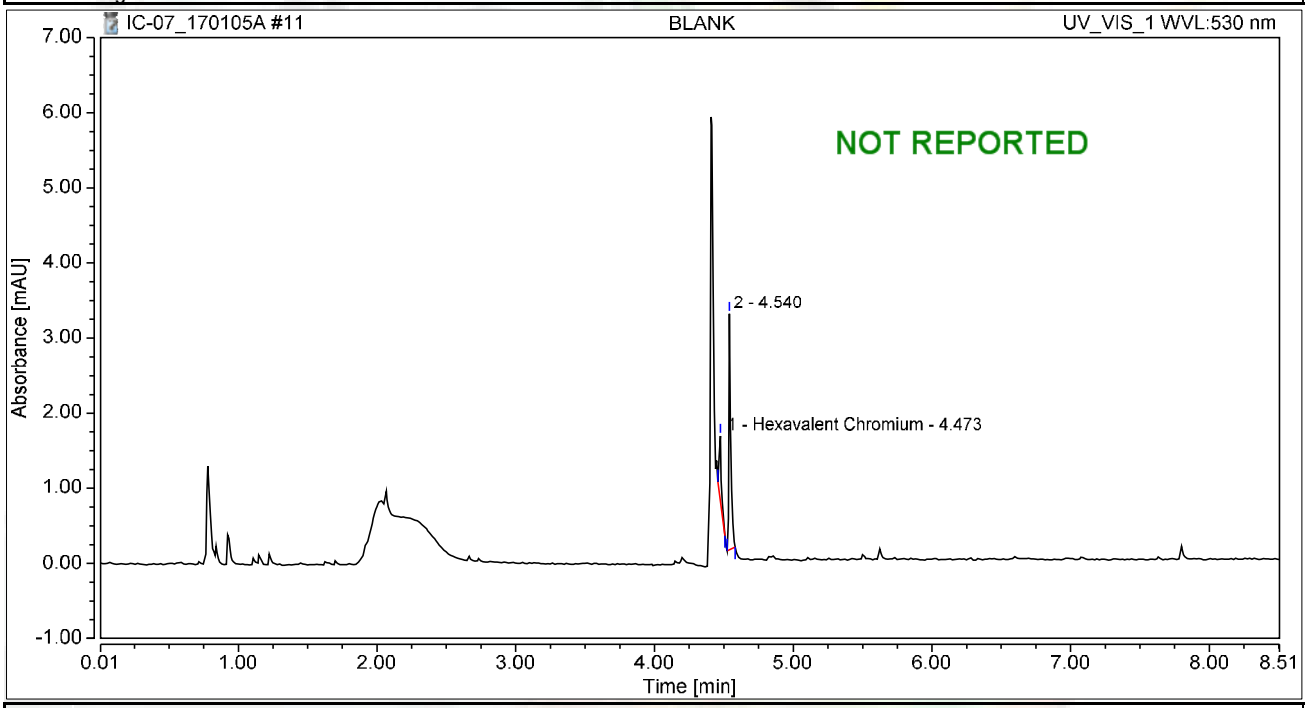
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.273	0.310	10.046	92.81	91.33	n.a.
2		8.340	0.024	0.954	7.19	8.67	n.a.
Total:			**0.334**	**11.000**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

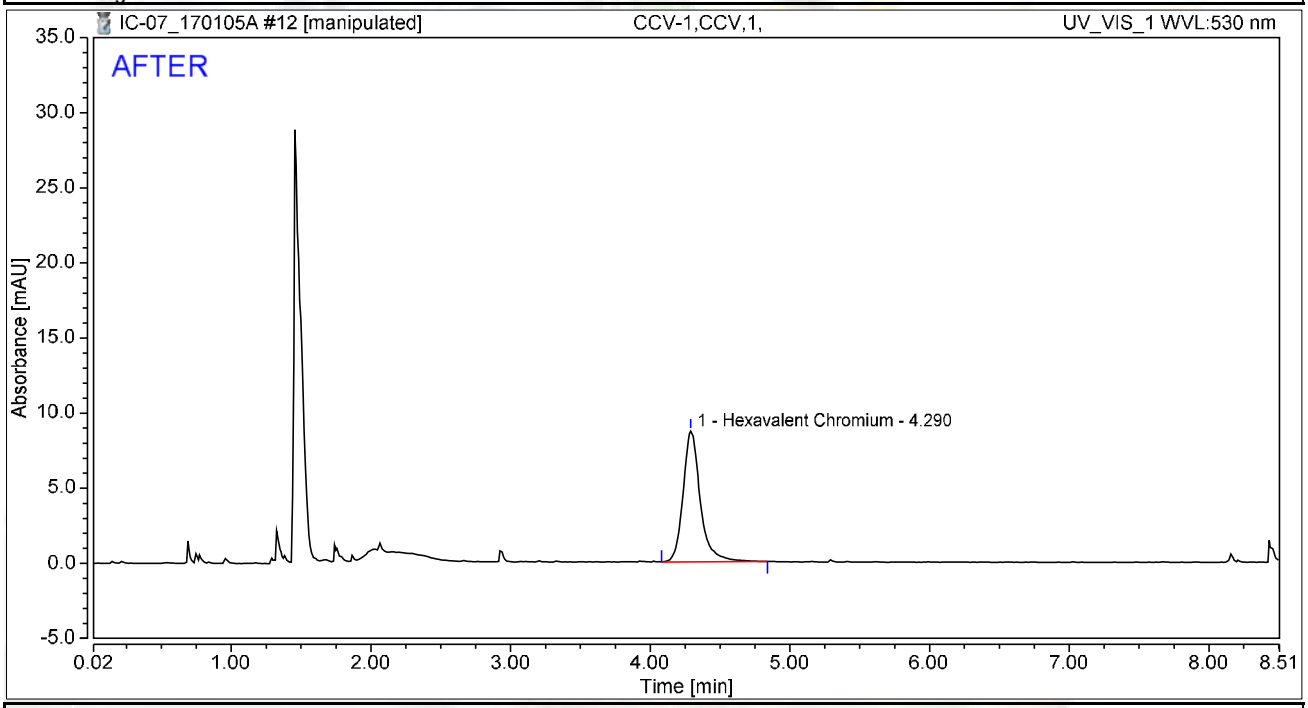
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.473	0.017	0.849	23.51	21.27	0.0671
2		4.540	0.054	3.143	76.49	78.73	n.a.
Total:			**0.070**	**3.993**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.245	8.702	100.00	100.00	5.0610
Total:			**1.245**	**8.702**	**100.00**	**100.00**	

rba 1/7/2017

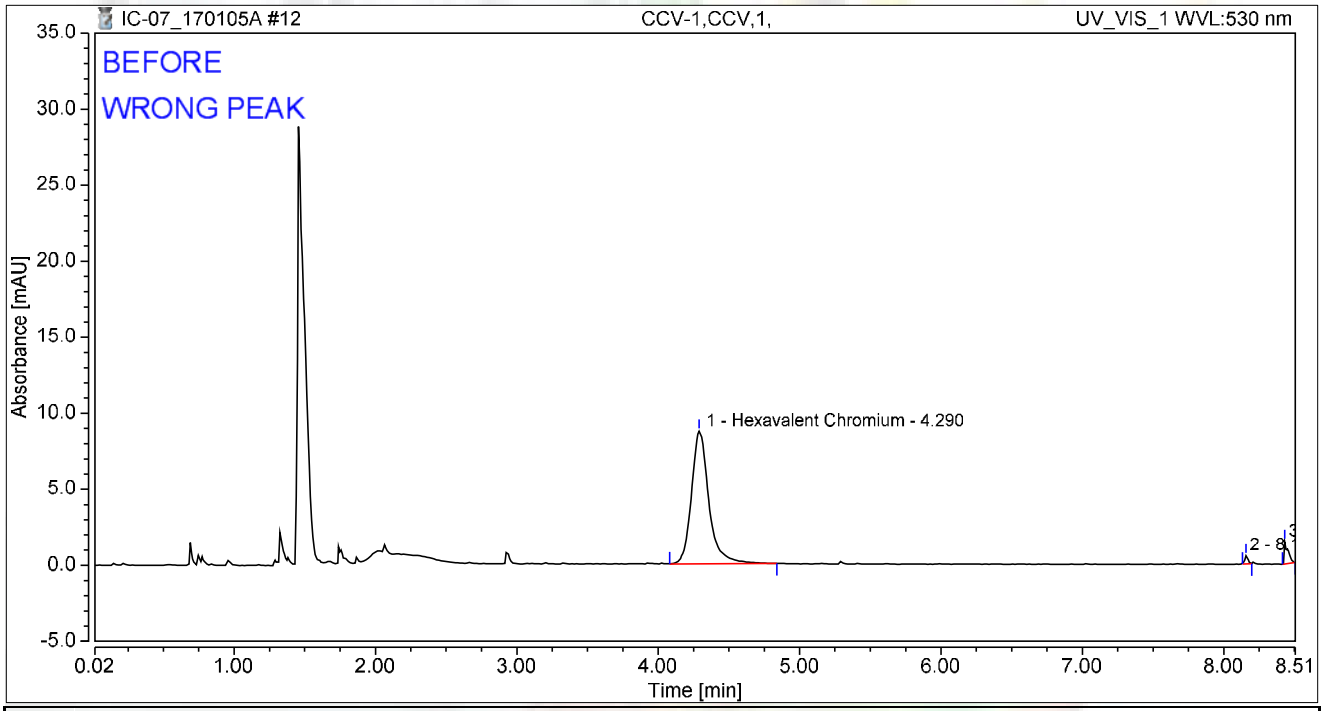
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.245	8.702	95.34	81.42	5.0610
2		8.157	0.015	0.540	1.16	5.05	n.a.
3		8.432	0.046	1.446	3.50	13.53	n.a.
Total:			**1.305**	**10.688**	**100.00**	**100.00**	

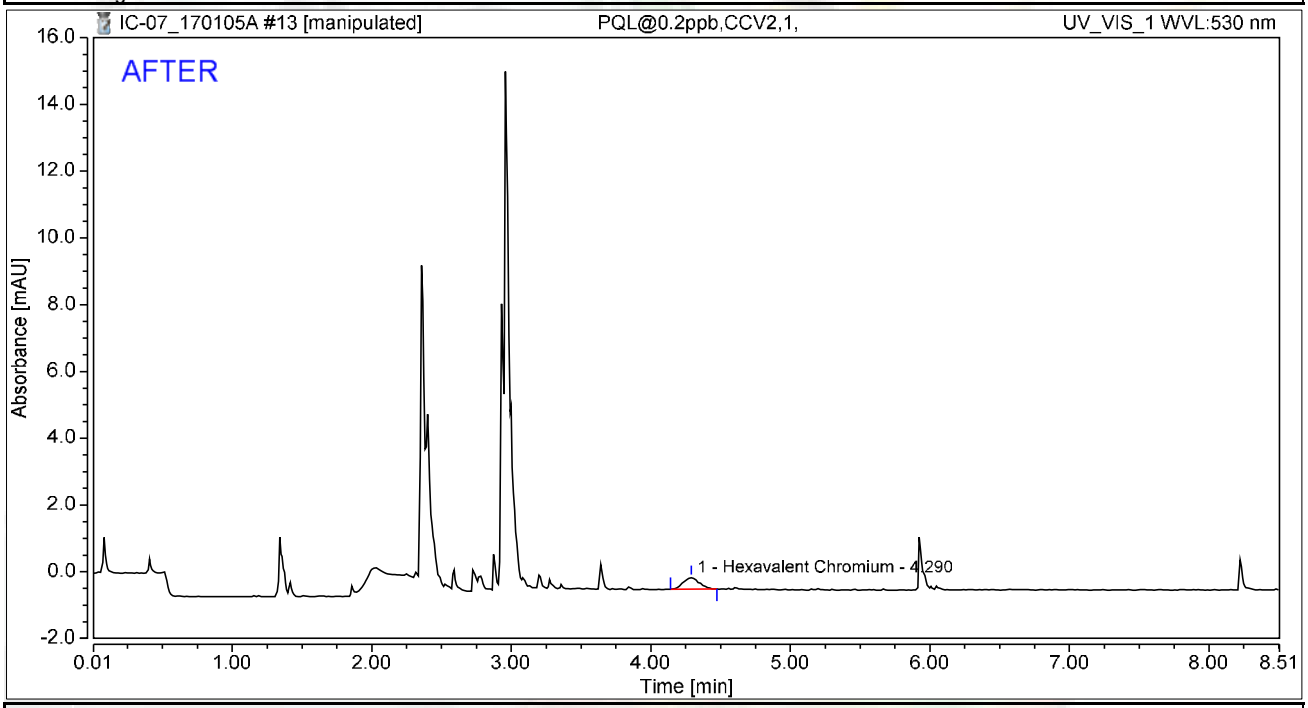
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.045	0.343	100.00	100.00	0.1848
Total:			**0.045**	**0.343**	**100.00**	**100.00**	

rba 1/7/2017

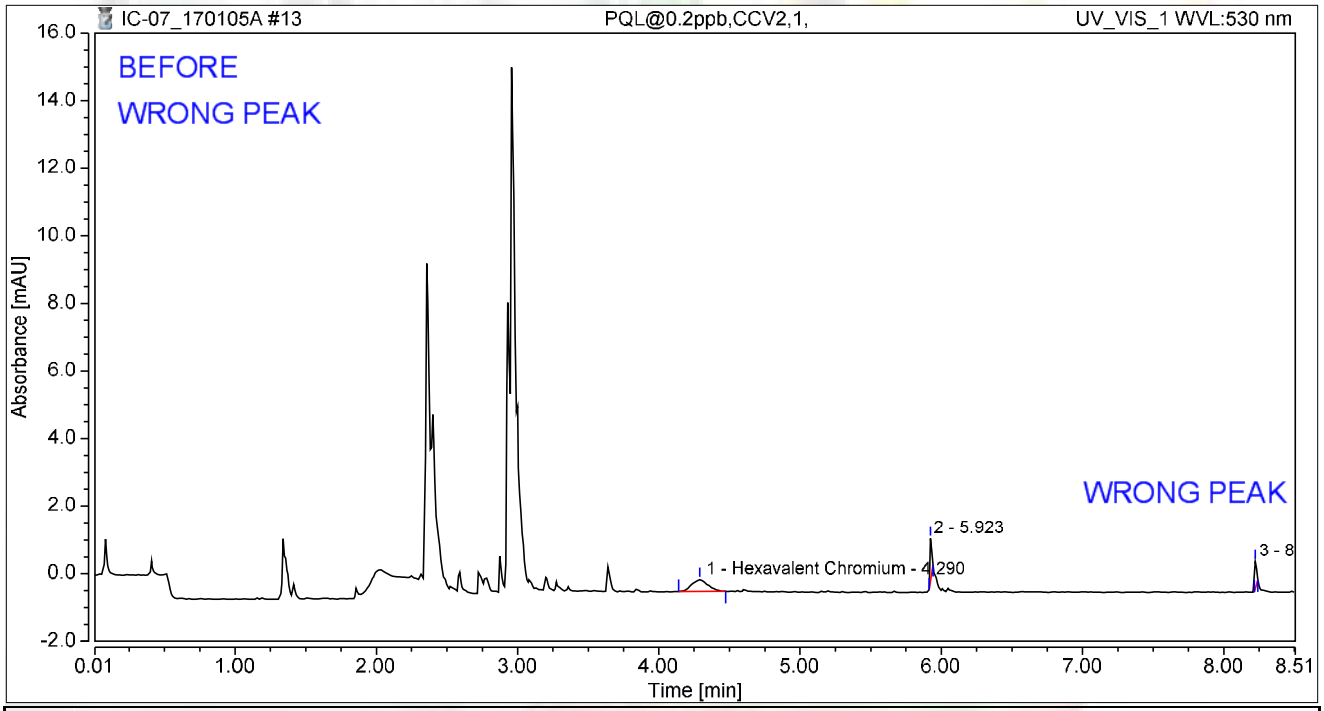
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.045	0.343	63.45	14.40	0.1848
2		5.923	0.016	1.260	22.20	52.84	n.a.
3		8.223	0.010	0.781	14.35	32.76	n.a.
Total:			**0.072**	**2.385**	**100.00**	**100.00**	

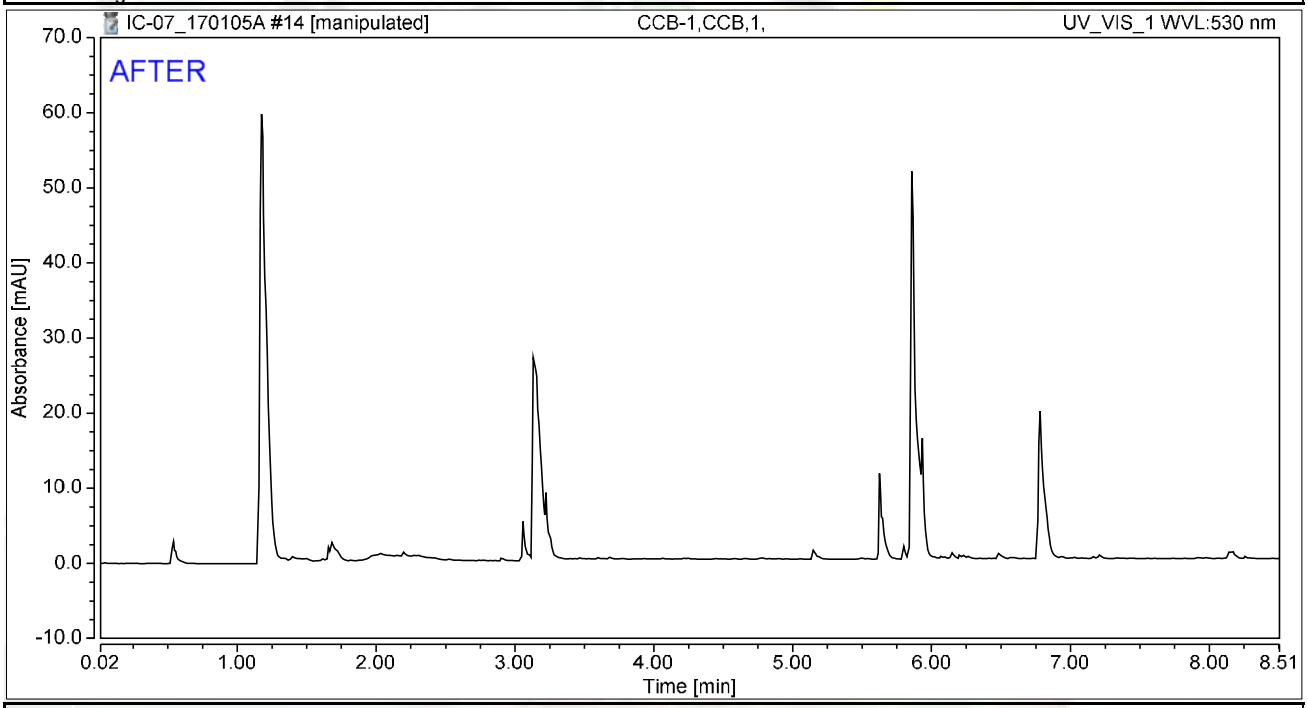
rba **1/7/2017**

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

rba 1/7/2017

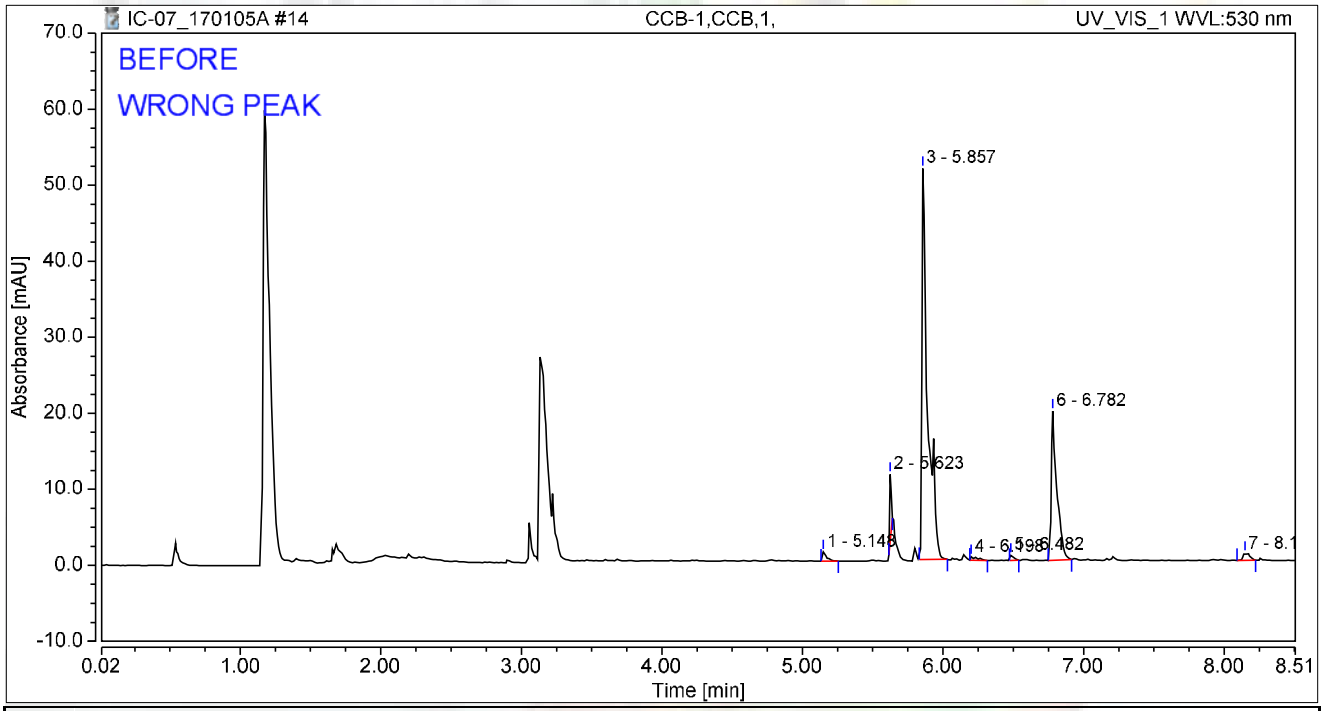
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.148	0.038	1.206	1.08	1.45	n.a.
2		5.623	0.118	8.994	3.32	10.81	n.a.
3		5.857	2.412	51.438	67.78	61.80	n.a.
4		6.198	0.024	0.418	0.67	0.50	n.a.
5		6.482	0.020	0.699	0.55	0.84	n.a.
6		6.782	0.898	19.605	25.22	23.55	n.a.
7		8.148	0.049	0.875	1.38	1.05	n.a.
Total:			**3.559**	**83.236**	**100.00**	**100.00**	

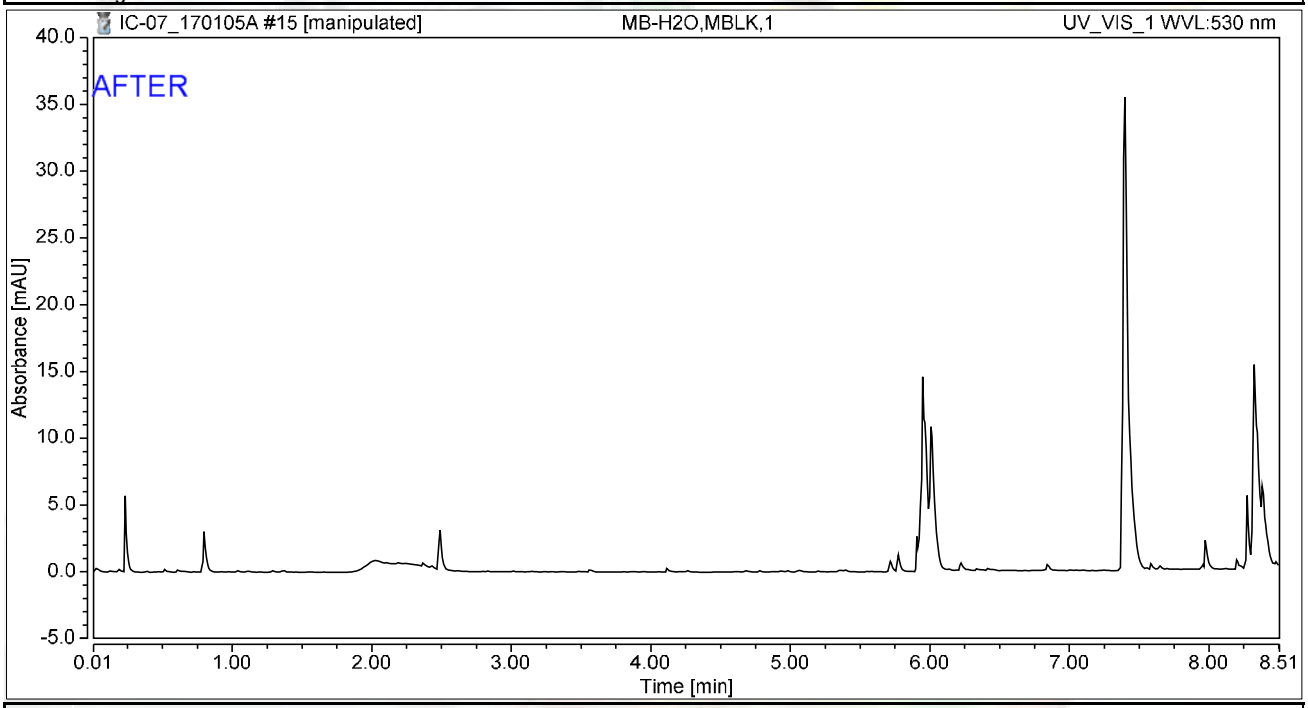
rba **1/7/2017**

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

rba 1/7/2017

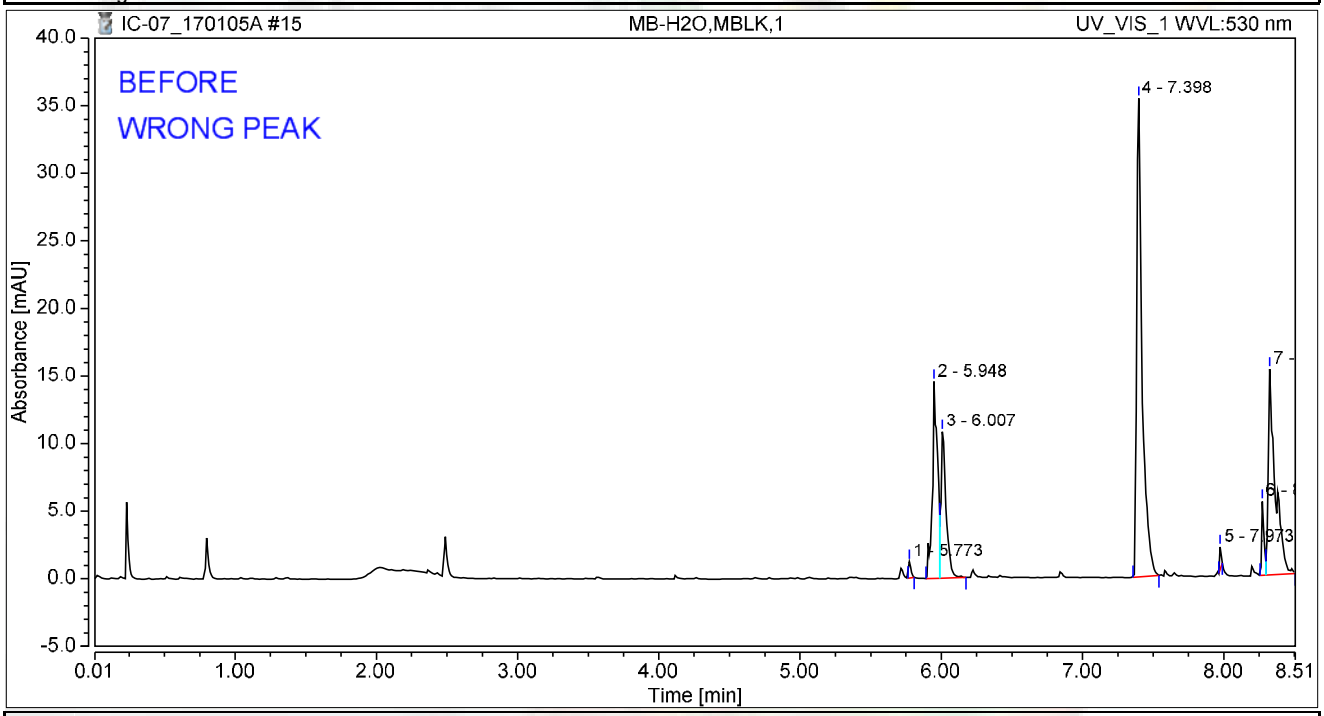
Reviewed
by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.773	0.021	1.224	0.58	1.45	n.a.
2		5.948	0.622	14.563	17.13	17.24	n.a.
3		6.007	0.448	10.839	12.32	12.83	n.a.
4		7.398	1.549	35.422	42.64	41.94	n.a.
5		7.973	0.022	1.700	0.61	2.01	n.a.
6		8.273	0.098	5.475	2.71	6.48	n.a.
7		8.323	0.873	15.230	24.02	18.03	n.a.
Total:			**3.633**	**84.453**	**100.00**	**100.00**	

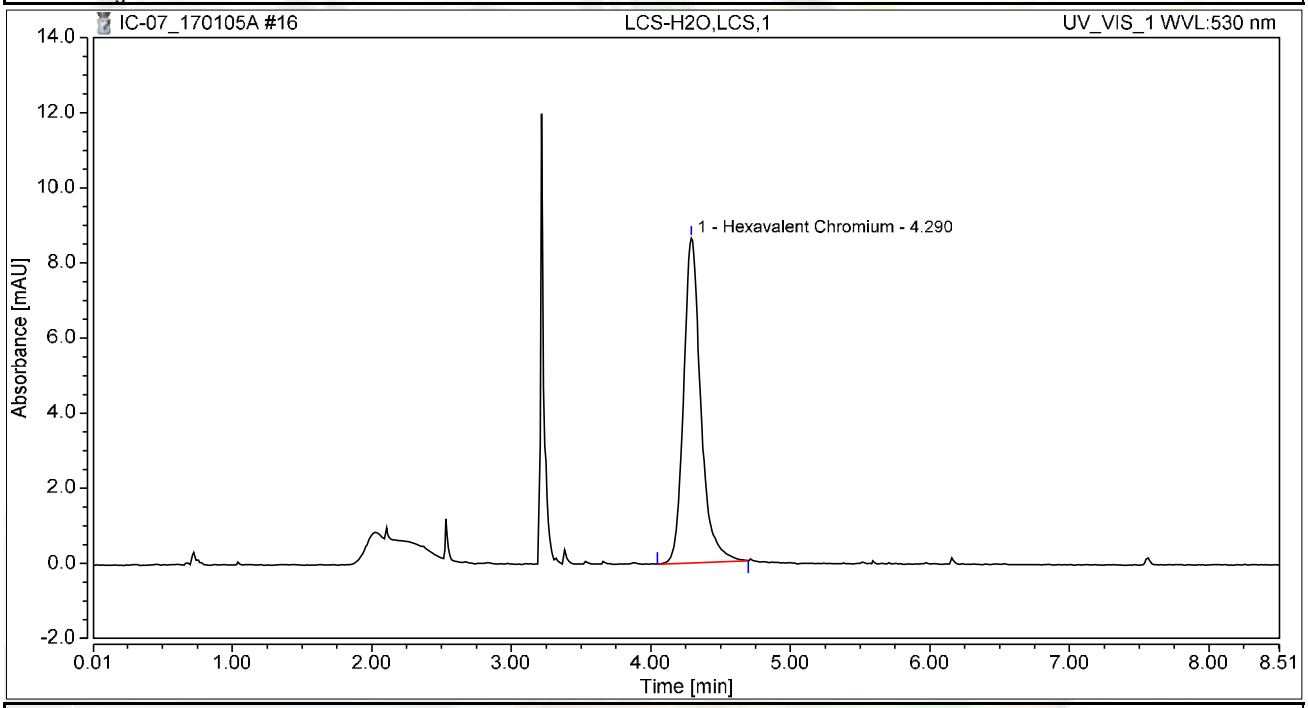
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

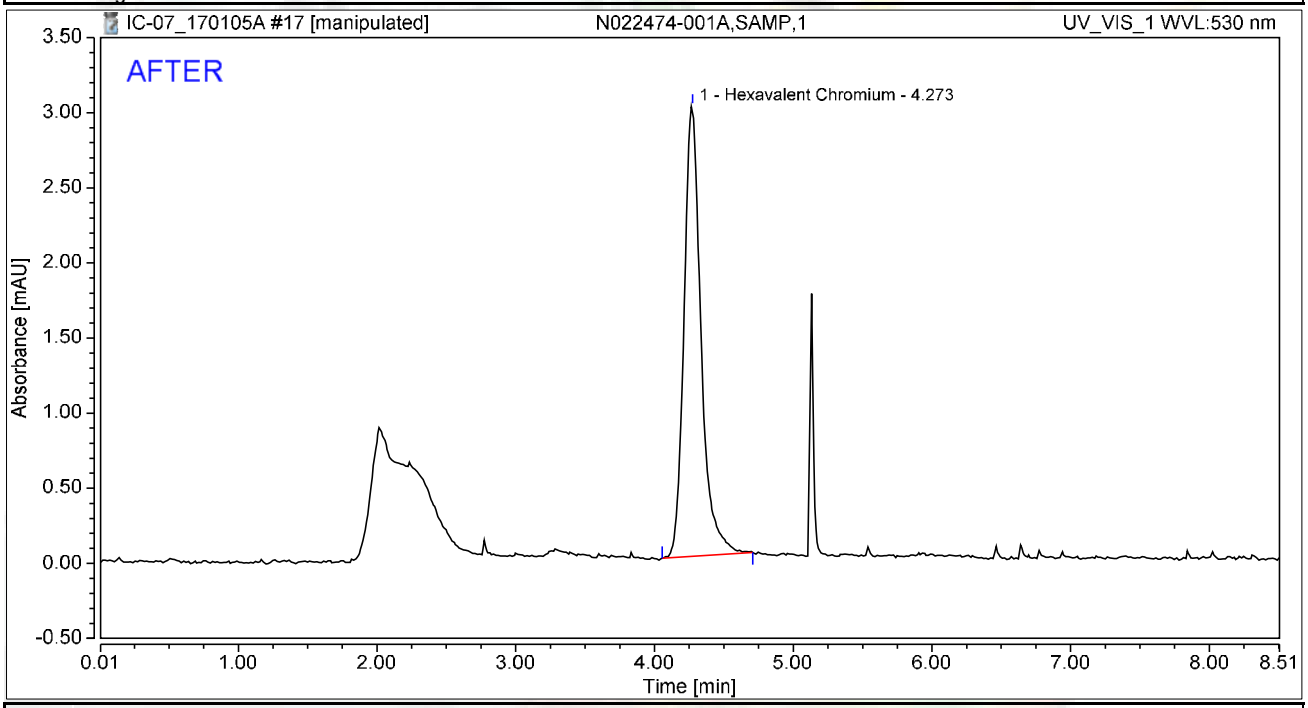
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.234	8.651	100.00	100.00	5.0171
Total:			**1.234**	**8.651**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022474-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.428	2.998	100.00	100.00	1.7385
Total:			**0.428**	**2.998**	**100.00**	**100.00**	

rba 1/7/2017

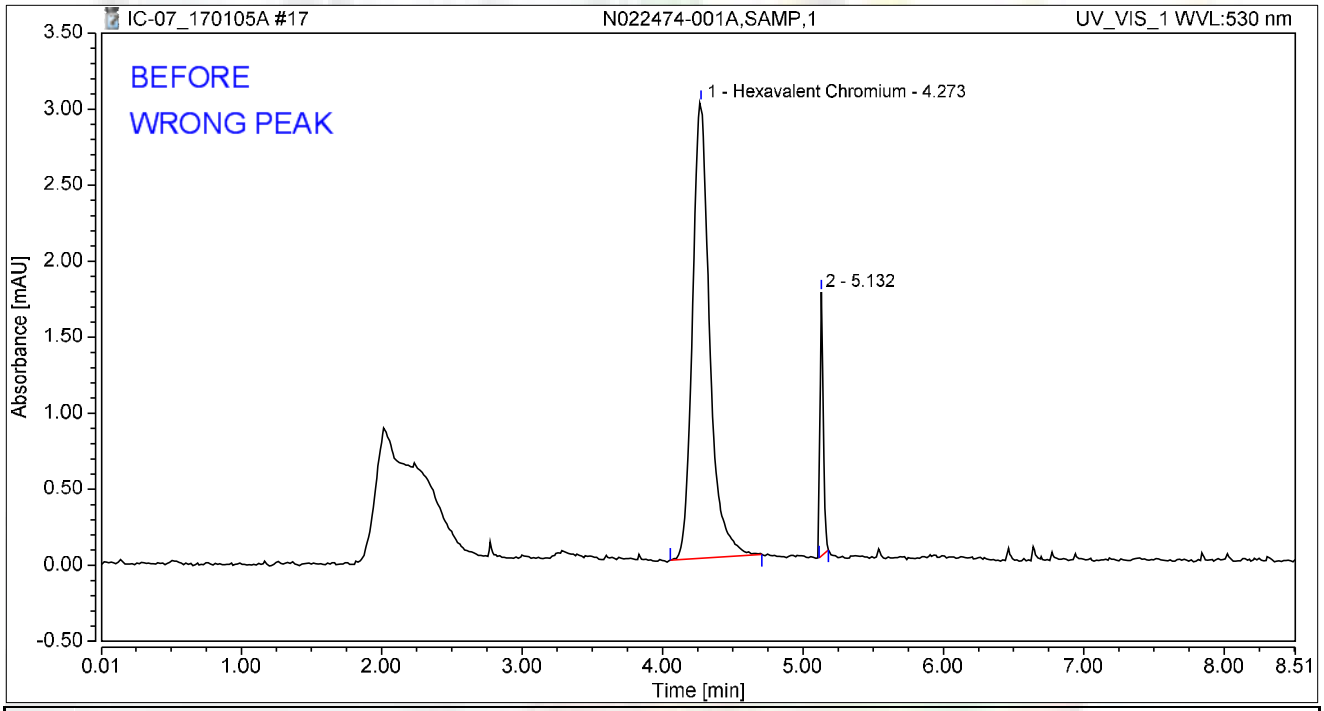
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022474-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.428	2.998	90.80	63.35	1.7385
2		5.132	0.043	1.734	9.20	36.65	n.a.
Total:			**0.471**	**4.732**	**100.00**	**100.00**	

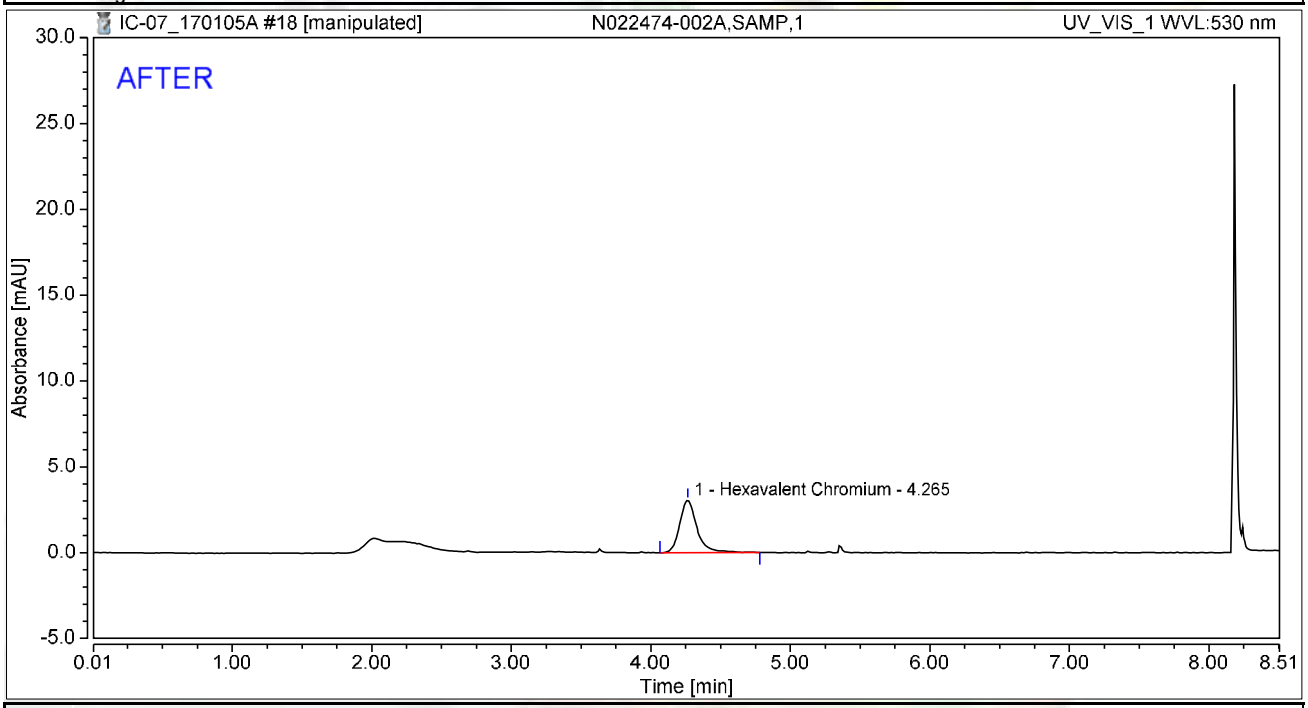
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022474-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.440	3.051	100.00	100.00	1.7910
Total:			**0.440**	**3.051**	**100.00**	**100.00**	

rba 1/7/2017

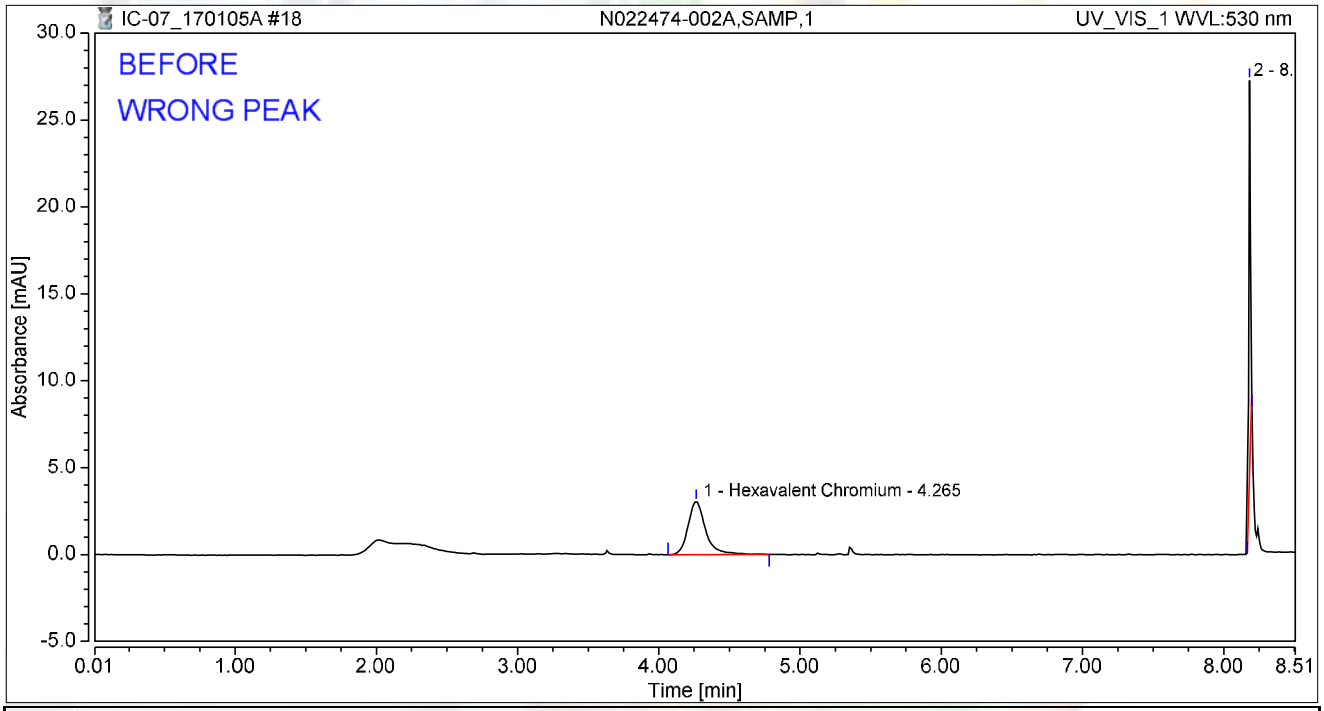
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022474-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.440	3.051	57.07	11.87	1.7910
2		8.182	0.331	22.641	42.93	88.13	n.a.
Total:			**0.772**	**25.692**	**100.00**	**100.00**	

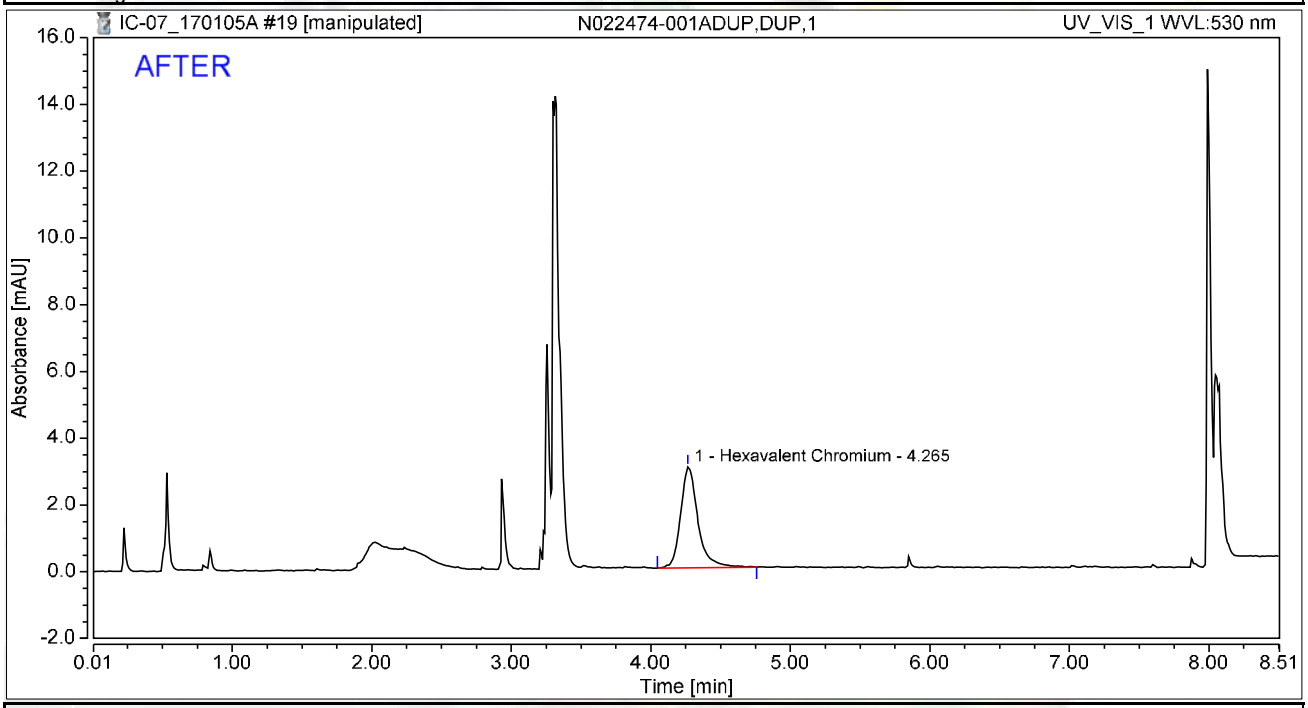
rba **1/7/2017**

Chromatogram and Results

Injection Details

Injection Name:	**N022474-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.436	3.019	100.00	100.00	1.7725
Total:			**0.436**	**3.019**	**100.00**	**100.00**	

rba 1/7/2017

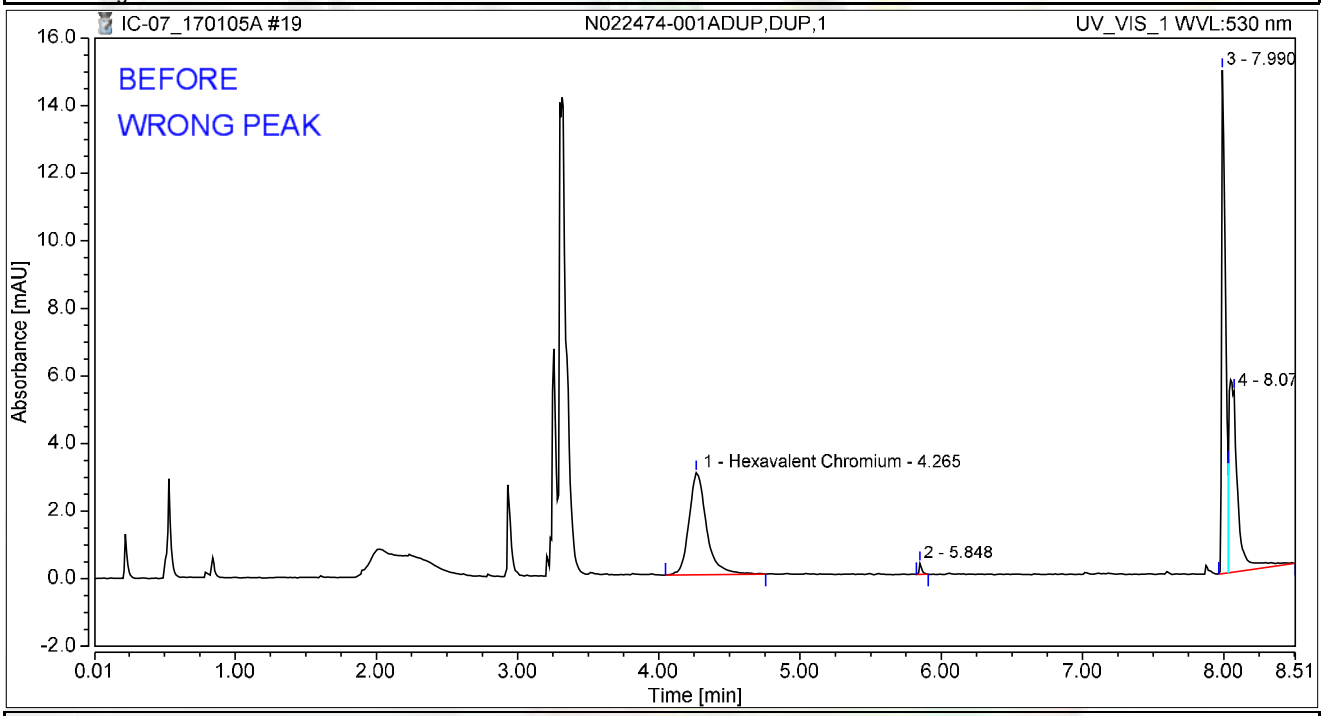
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022474-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.436	3.019	33.67	12.79	1.7725
2		5.848	0.006	0.323	0.50	1.37	n.a.
3		7.990	0.447	14.897	34.49	63.12	n.a.
4		8.073	0.406	5.362	31.35	22.72	n.a.
Total:			**1.295**	**23.601**	**100.00**	**100.00**	

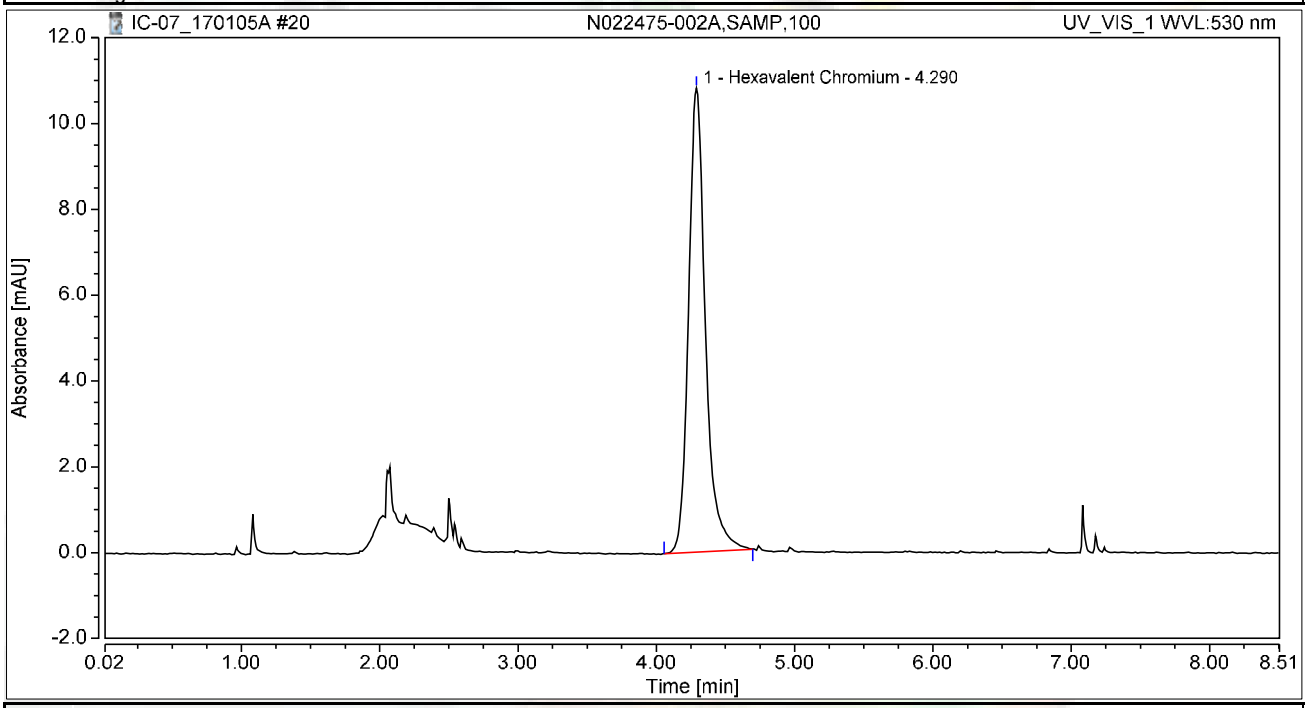
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-002A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

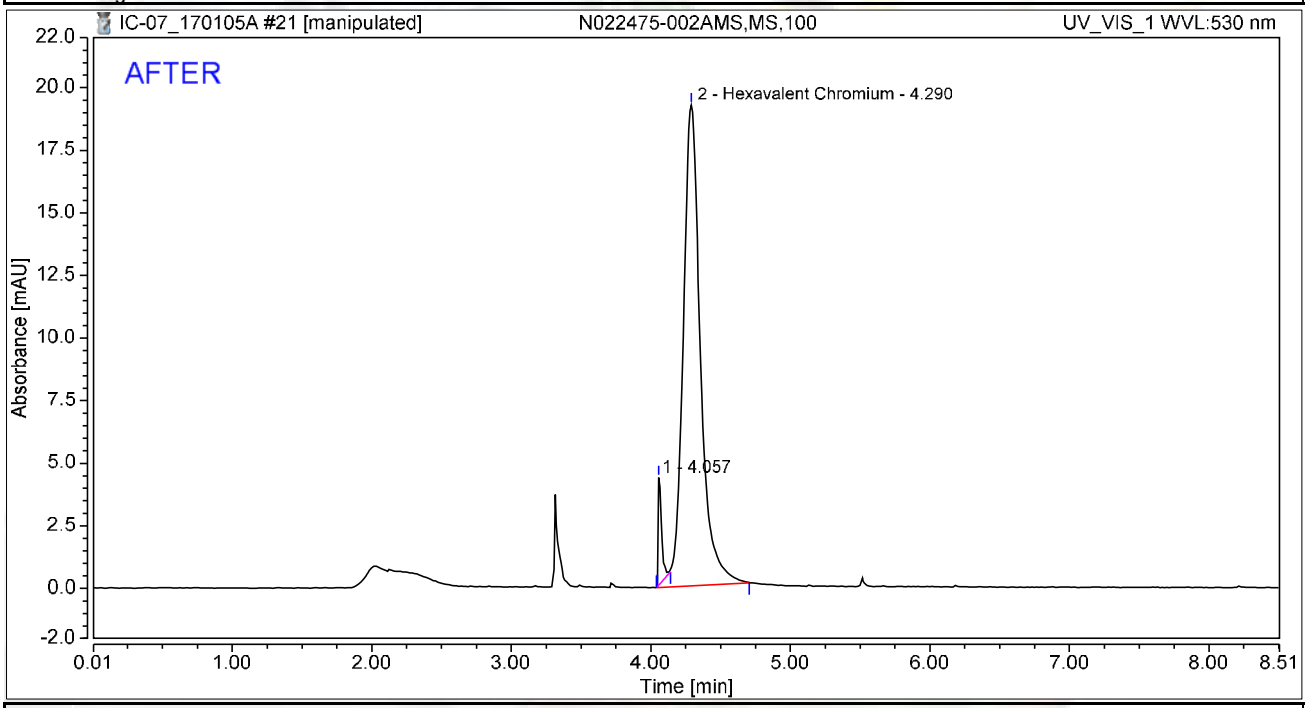
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.527	10.807	100.00	100.00	6.2103
Total:			**1.527**	**10.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022475-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.057	0.117	4.295	4.07	18.28	n.a.
2	Hexavalent Chromium	4.290	2.758	19.197	95.93	81.72	11.2159
Total:			**2.875**	**23.492**	**100.00**	**100.00**	

rba 1/7/2017

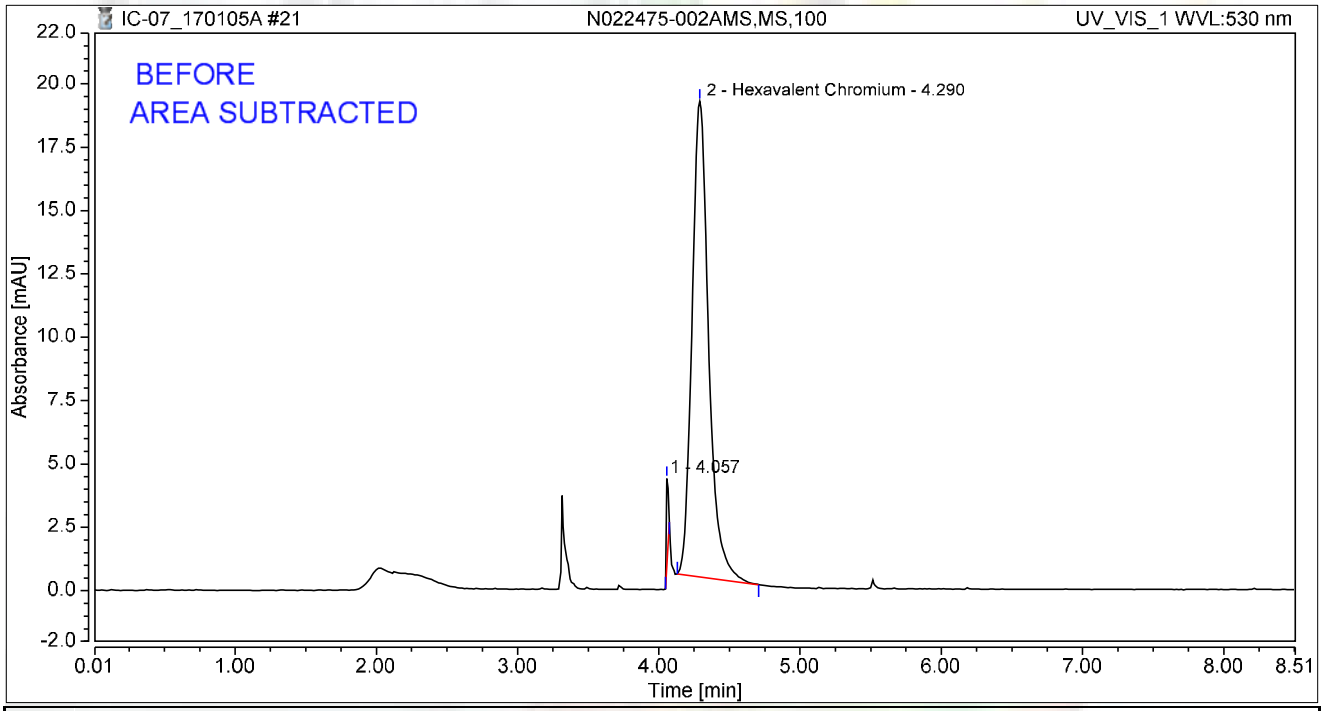
Reviewed by: Nancy 1/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.057	0.047	3.474	1.81	15.62	n.a.
2	Hexavalent Chromium	4.290	2.564	18.767	98.19	84.38	10.4264
Total:			**2.612**	**22.242**	**100.00**	**100.00**	

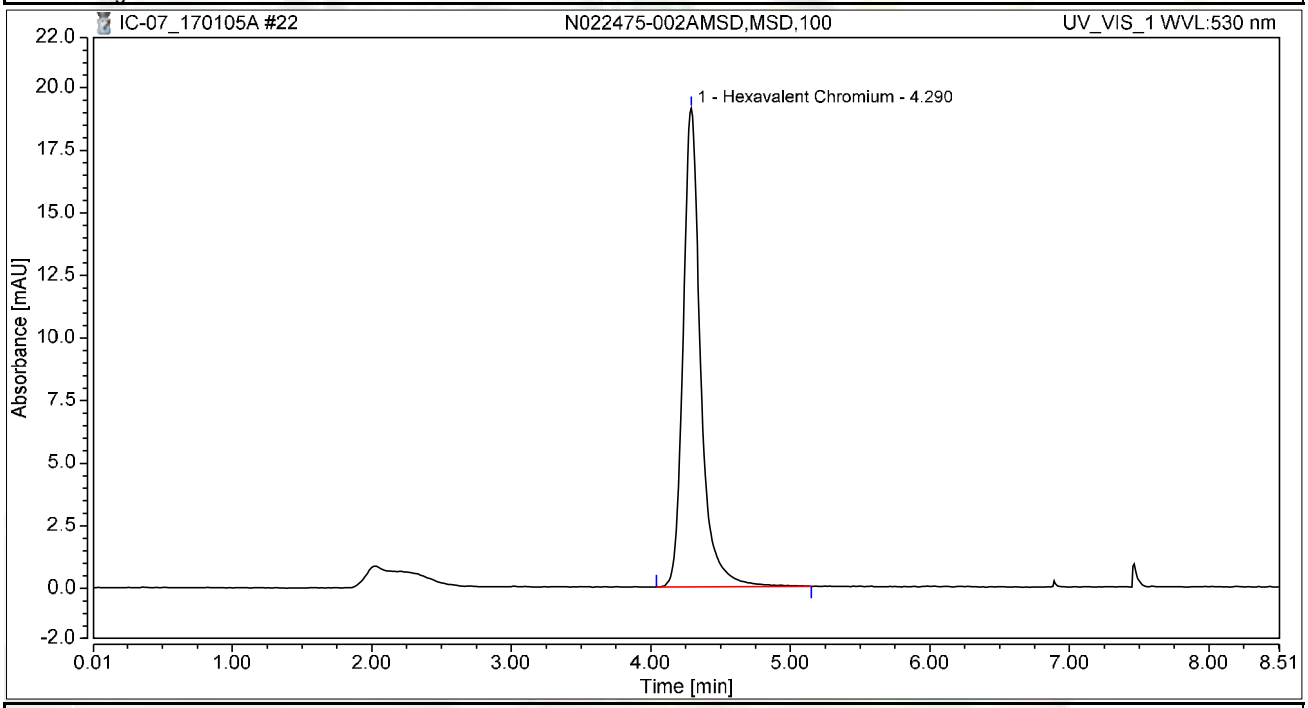
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-002AMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

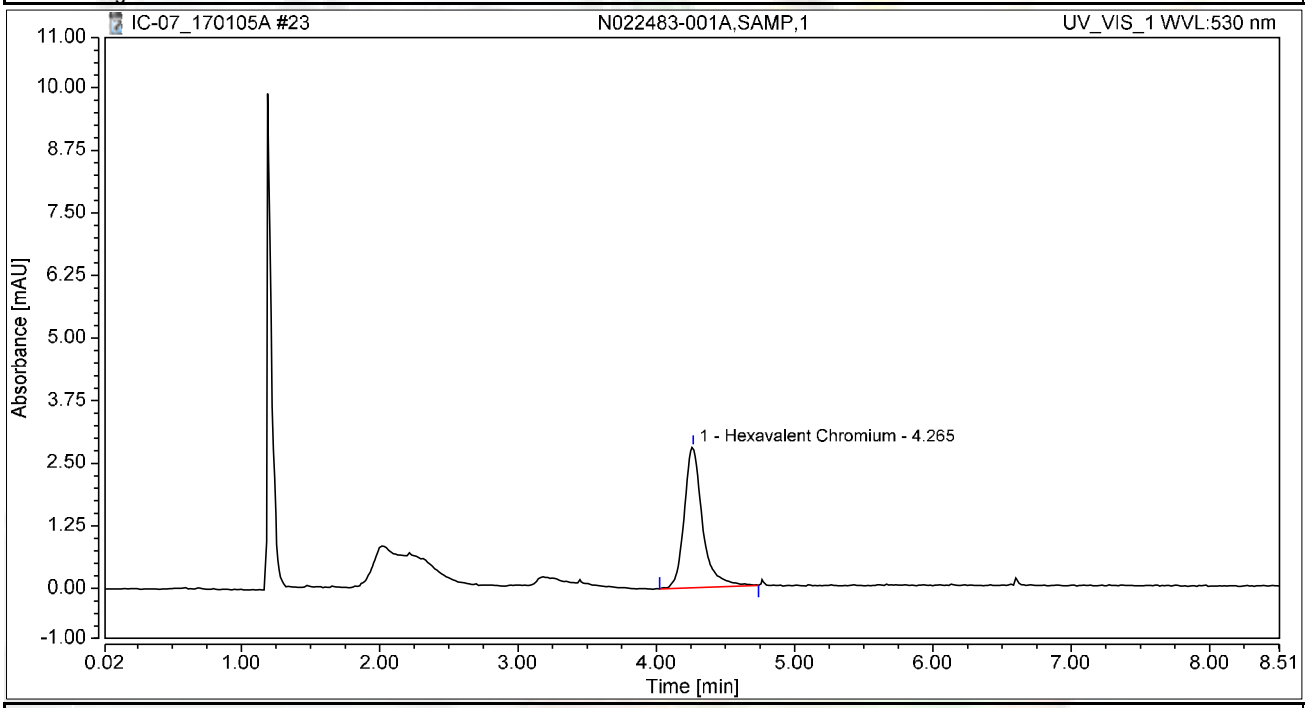
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.777	19.111	100.00	100.00	11.2924
Total:			**2.777**	**19.111**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

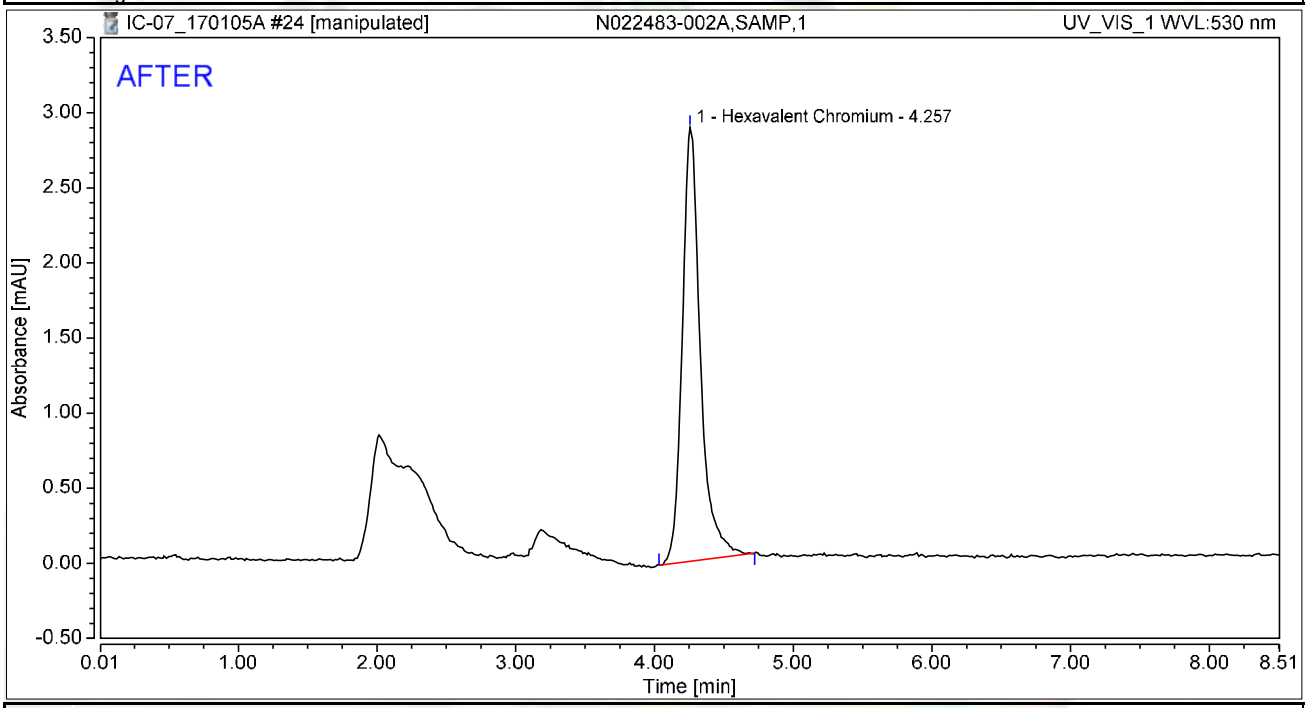
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.432	2.809	100.00	100.00	1.7580
Total:			**0.432**	**2.809**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.257	0.437	2.889	100.00	100.00	1.7784
Total:			**0.437**	**2.889**	**100.00**	**100.00**	

rba 1/7/2017

Reviewed by: Dianey 1/12/2017

My first report/Integration

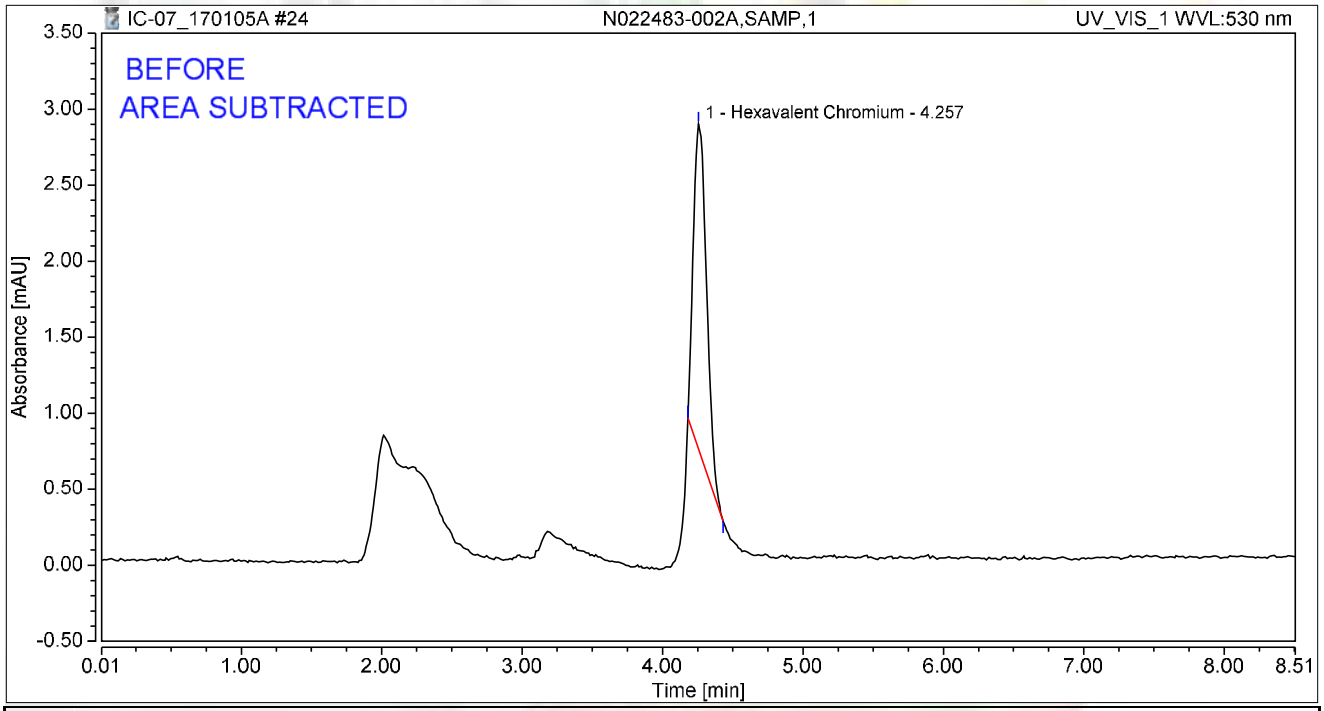
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022483-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.257	0.234	2.135	100.00	100.00	0.9533
Total:			**0.234**	**2.135**	**100.00**	**100.00**	

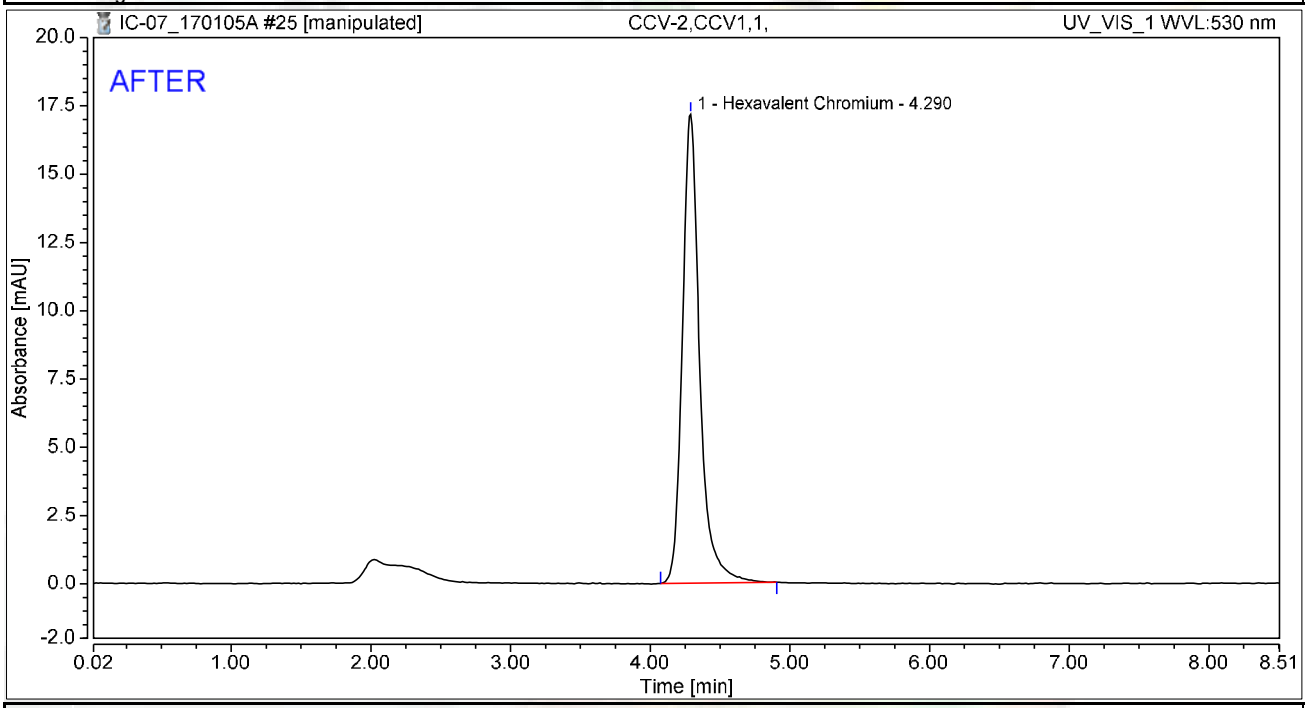
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.466	17.163	100.00	100.00	10.0275
Total:			**2.466**	**17.163**	**100.00**	**100.00**	

rba 1/7/2017

Reviewed
by: Nancy 1/11/2017

My first report/Integration

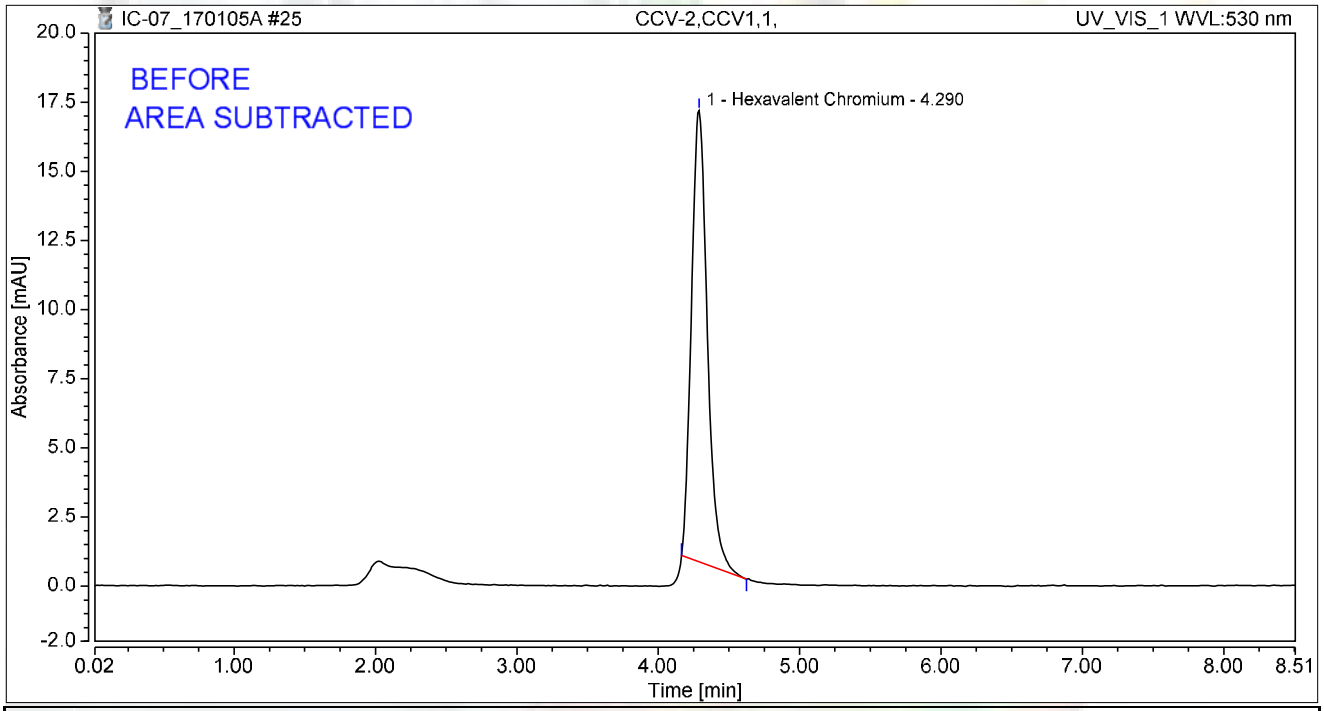
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.128	16.312	100.00	100.00	8.6530
Total:			**2.128**	**16.312**	**100.00**	**100.00**	

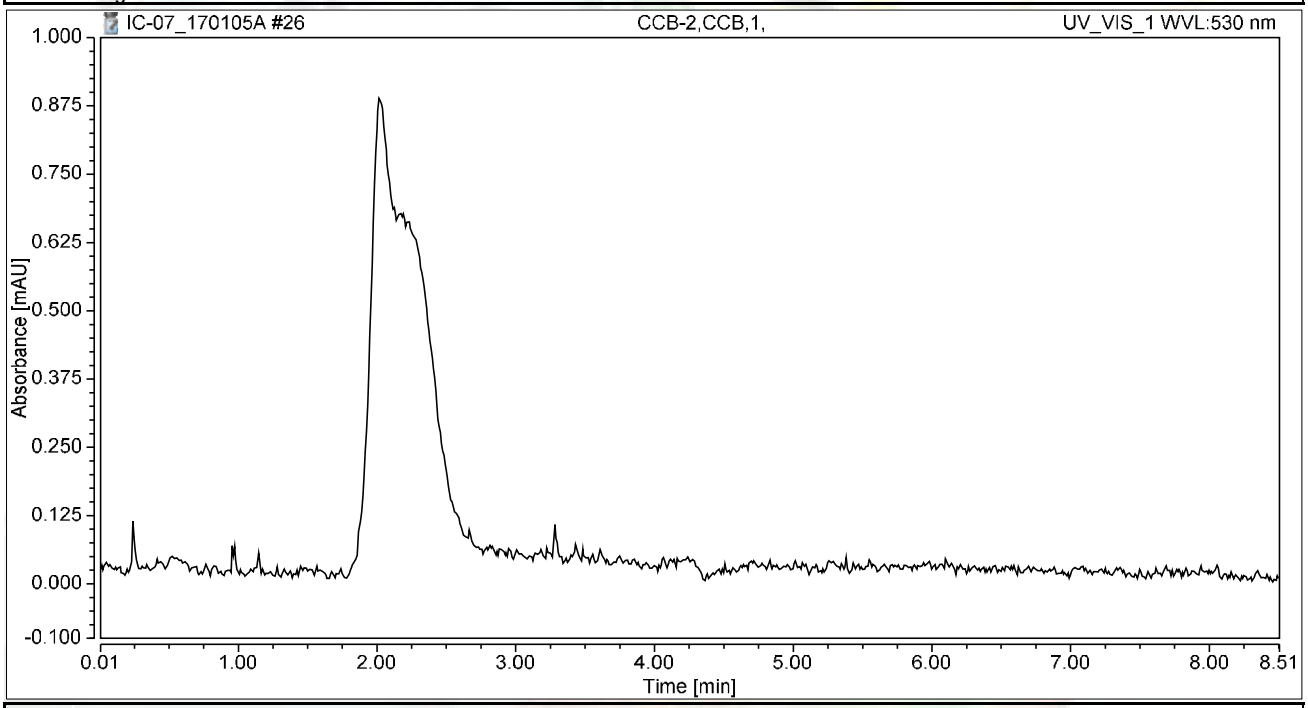
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

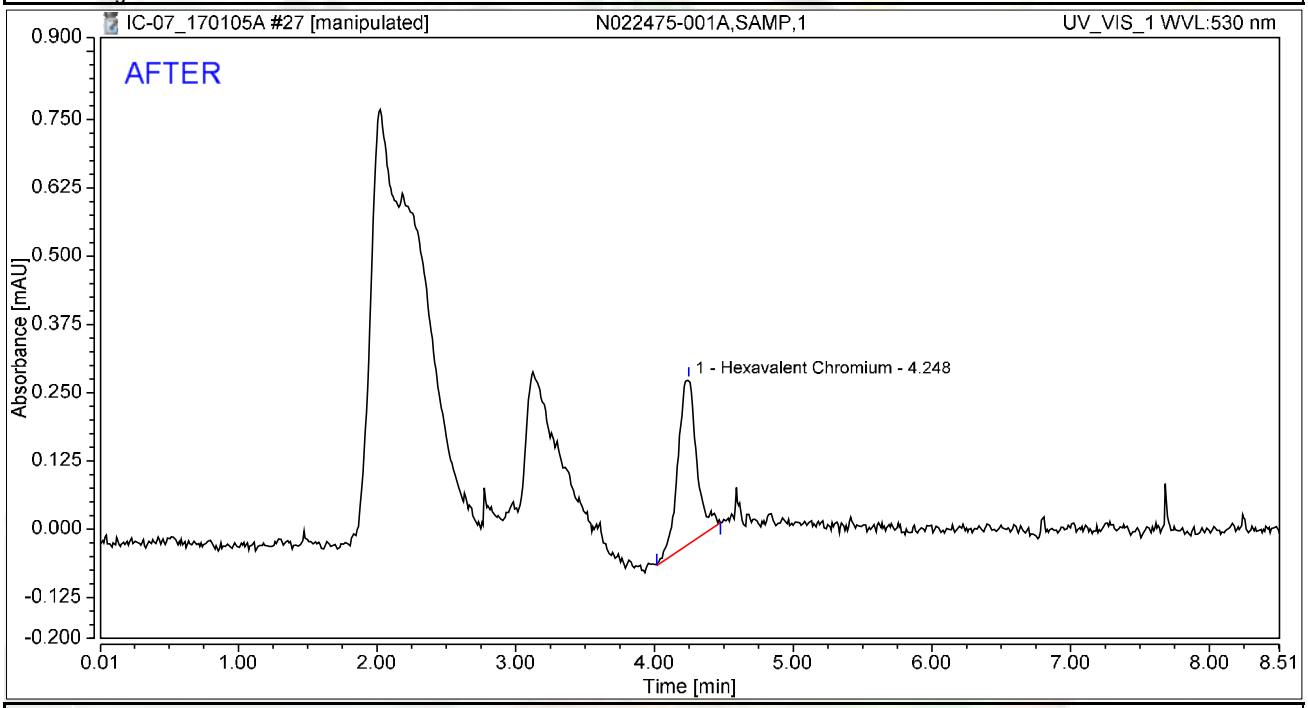
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022475-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.047	0.301	100.00	100.00	0.1927
Total:			**0.047**	**0.301**	**100.00**	**100.00**	

rba 1/7/2017

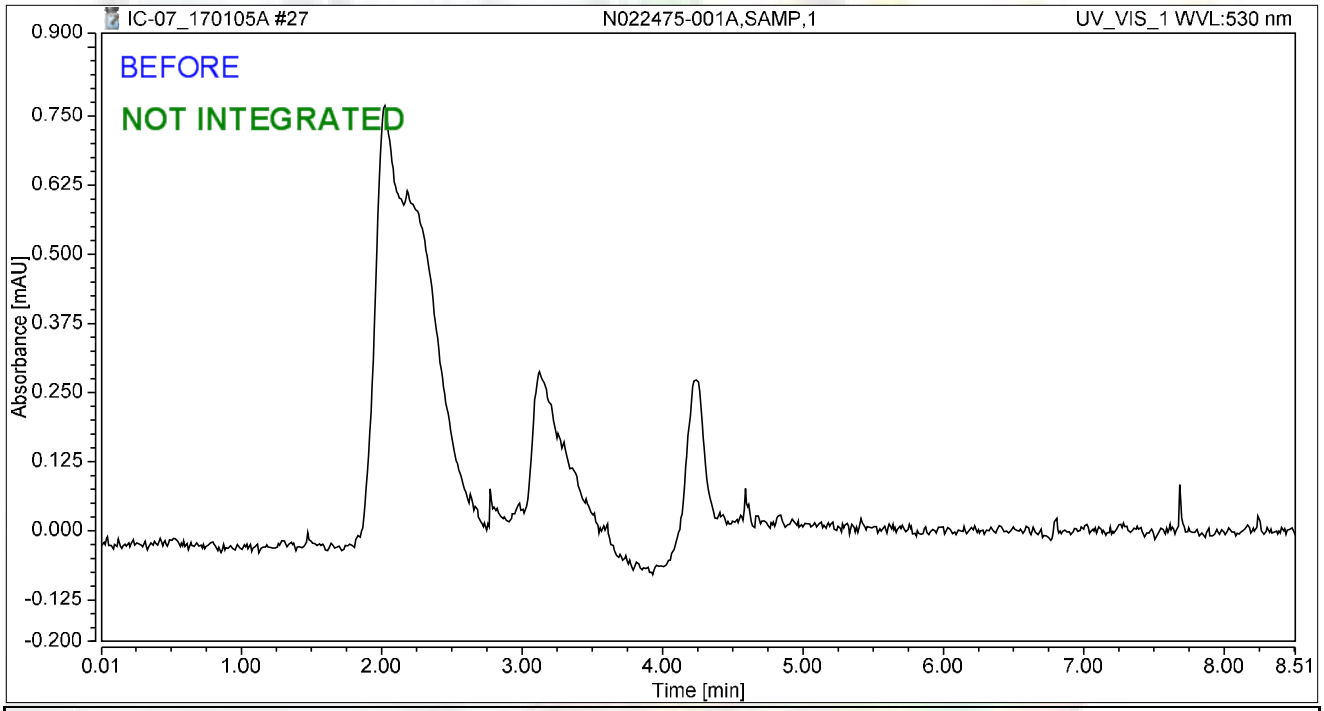
Reviewed by: Nancy 1/12/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

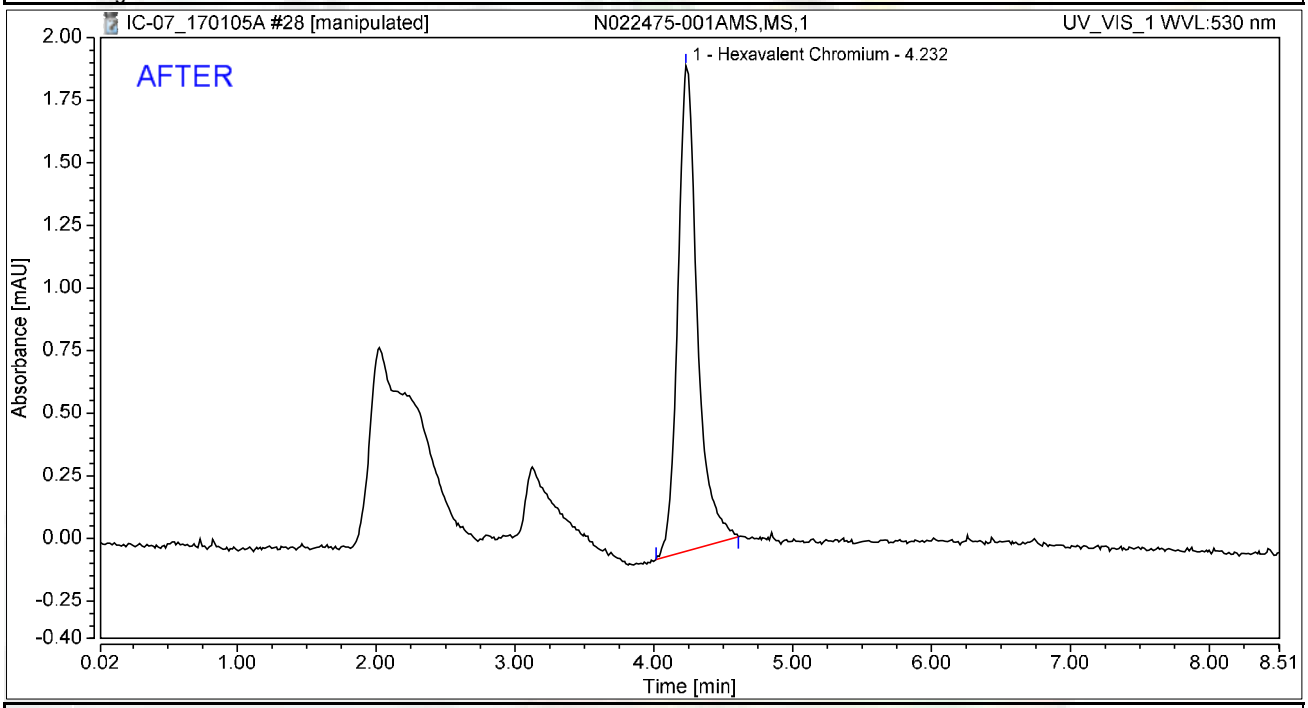
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.232	0.316	1.938	100.00	100.00	1.2863
Total:			**0.316**	**1.938**	**100.00**	**100.00**	

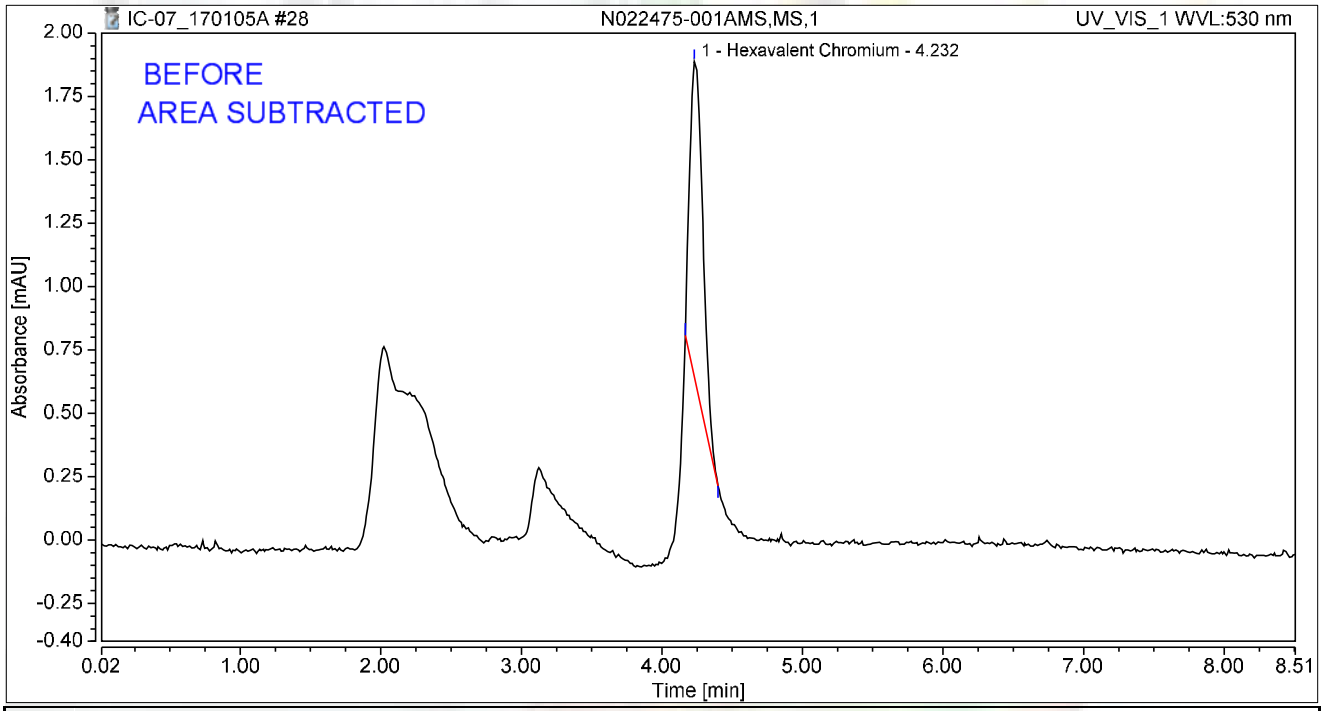
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022475-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.232	0.137	1.249	100.00	100.00	0.5579
Total:			**0.137**	**1.249**	**100.00**	**100.00**	

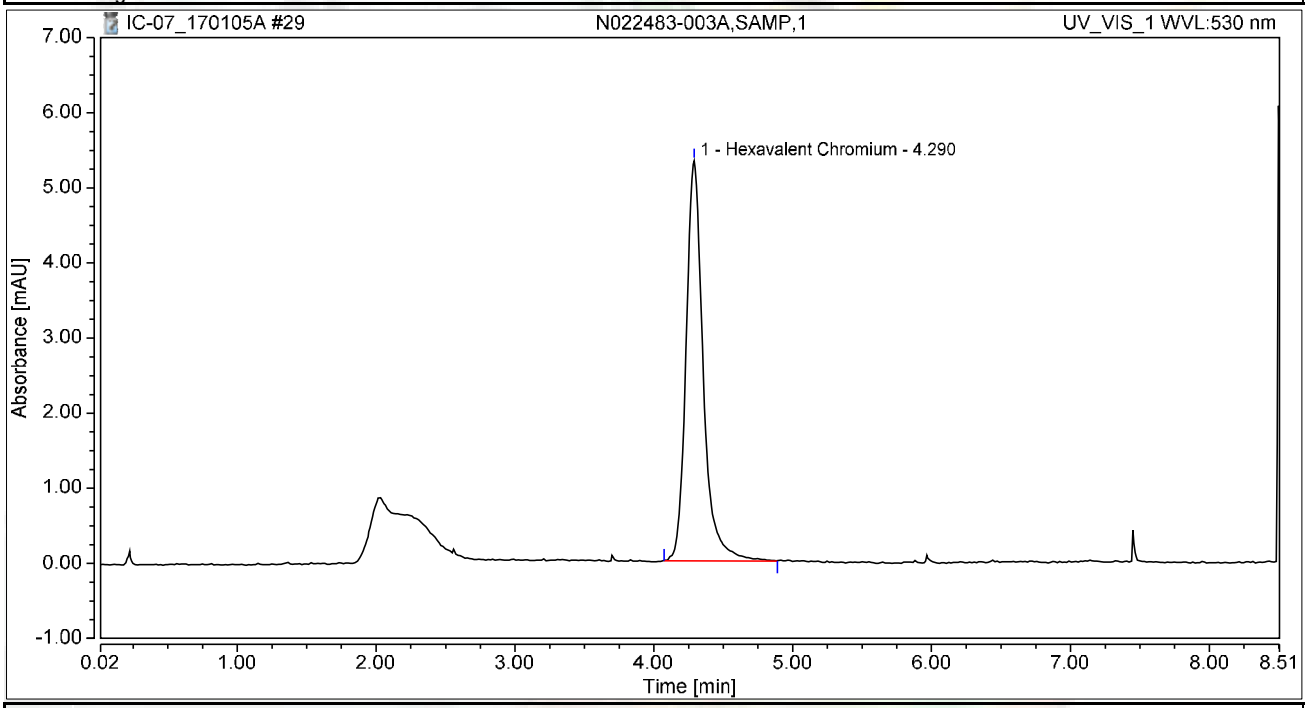
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022483-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 12:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

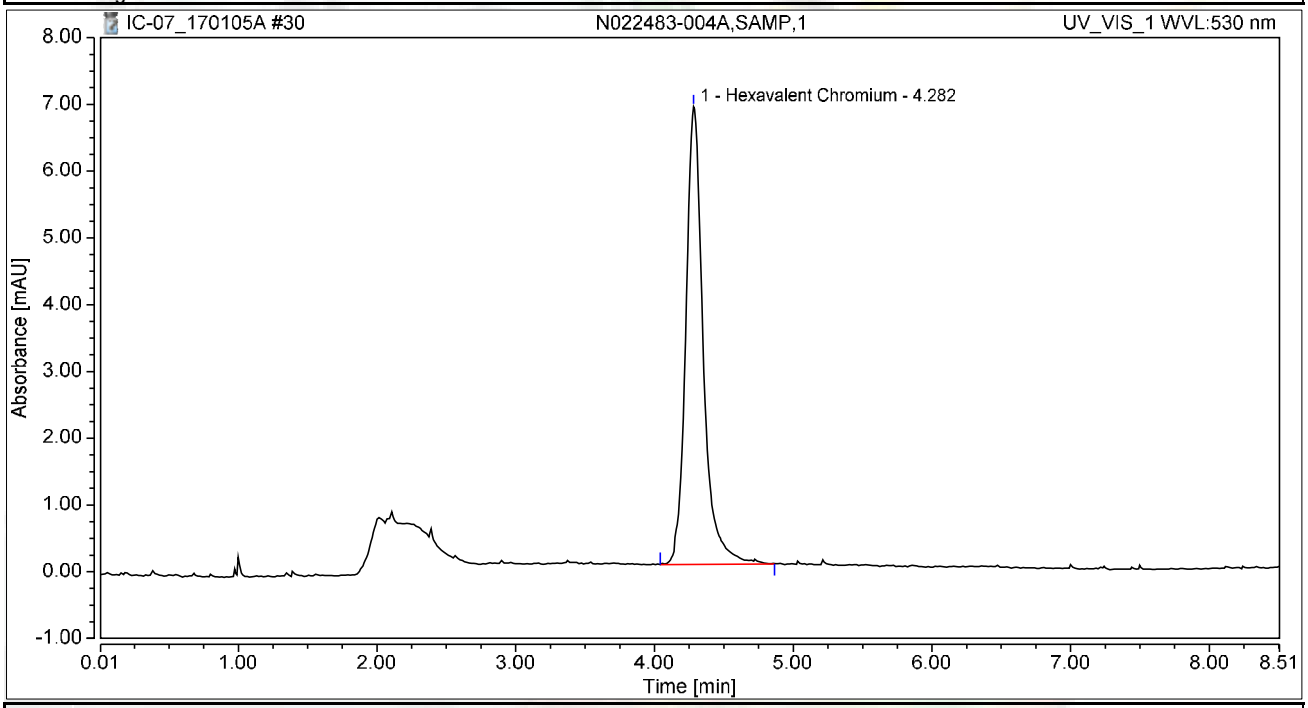
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.763	5.330	100.00	100.00	3.1034
Total:			**0.763**	**5.330**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

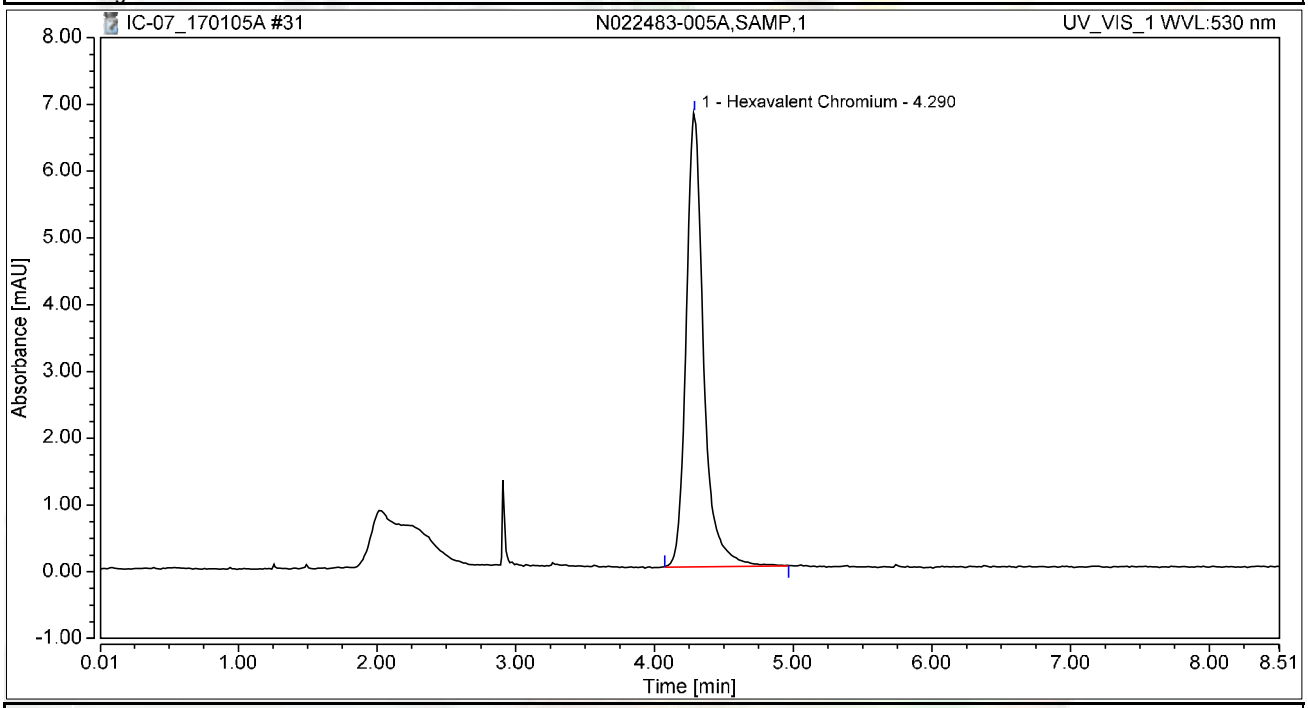
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.997	6.855	100.00	100.00	4.0533
Total:			**0.997**	**6.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

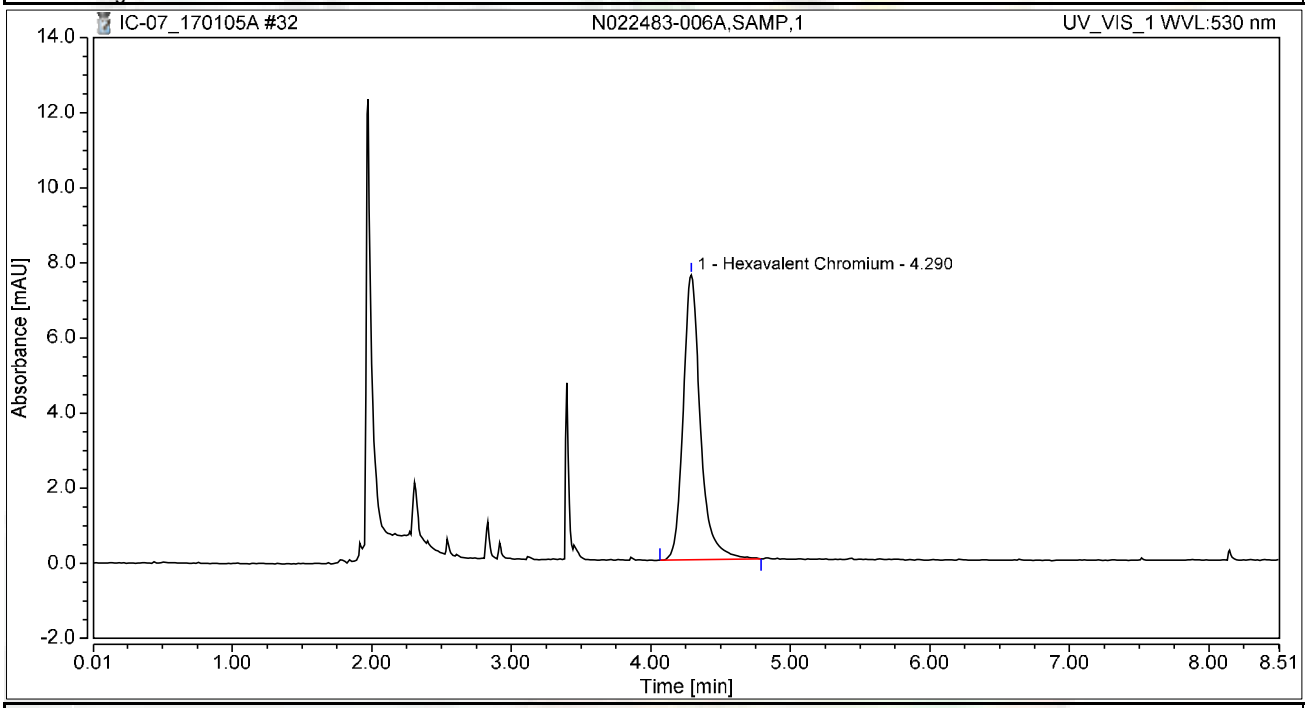
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	0.986	6.796	100.00	100.00	4.0110
Total:			**0.986**	**6.796**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

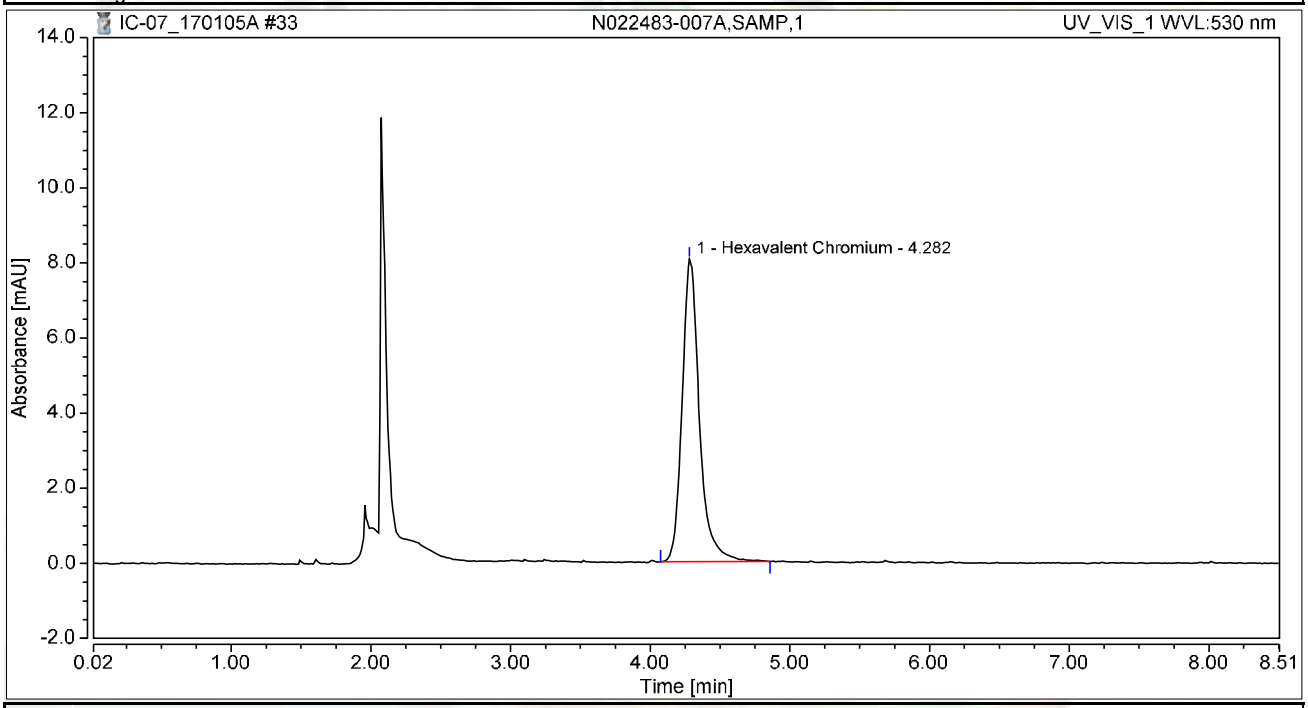
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.083	7.592	100.00	100.00	4.4044
Total:			**1.083**	**7.592**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

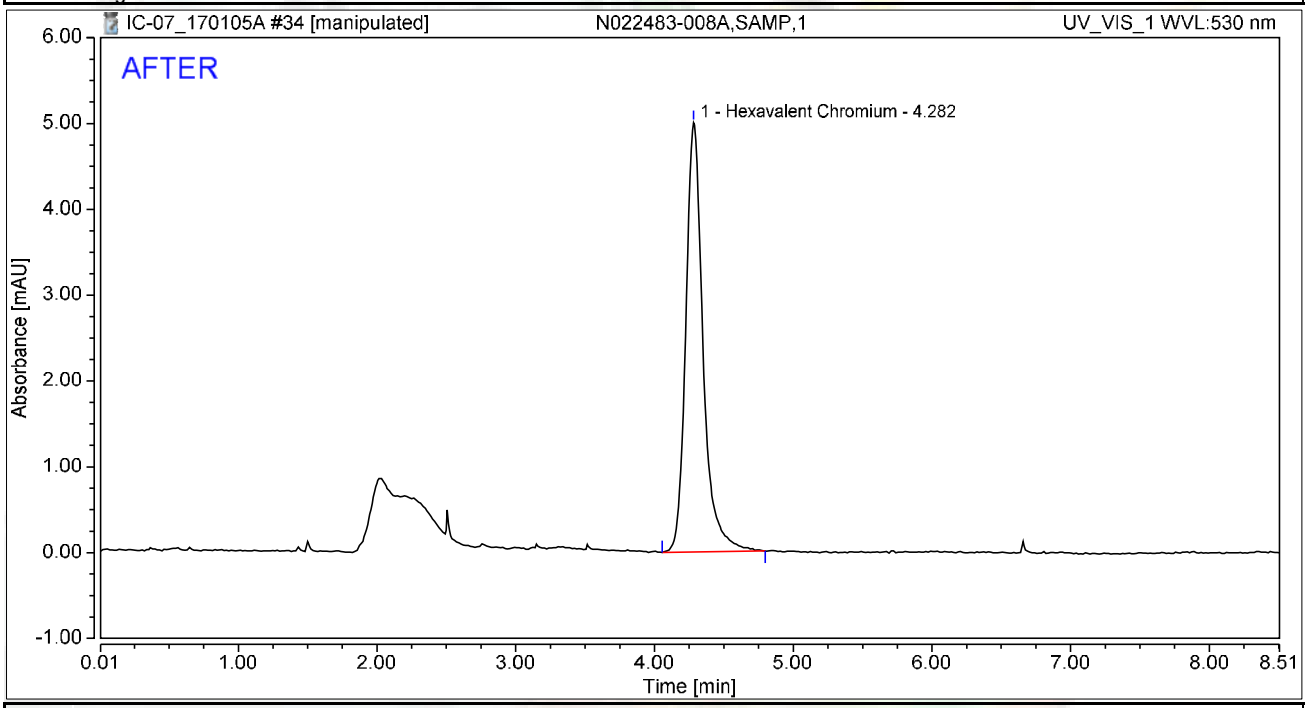
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	1.158	8.060	100.00	100.00	4.7087
Total:			**1.158**	**8.060**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.723	5.005	100.00	100.00	2.9389
Total:			**0.723**	**5.005**	**100.00**	**100.00**	

rba 1/7/2017

Reviewed
Nancy 1/12/2017

My first report integration

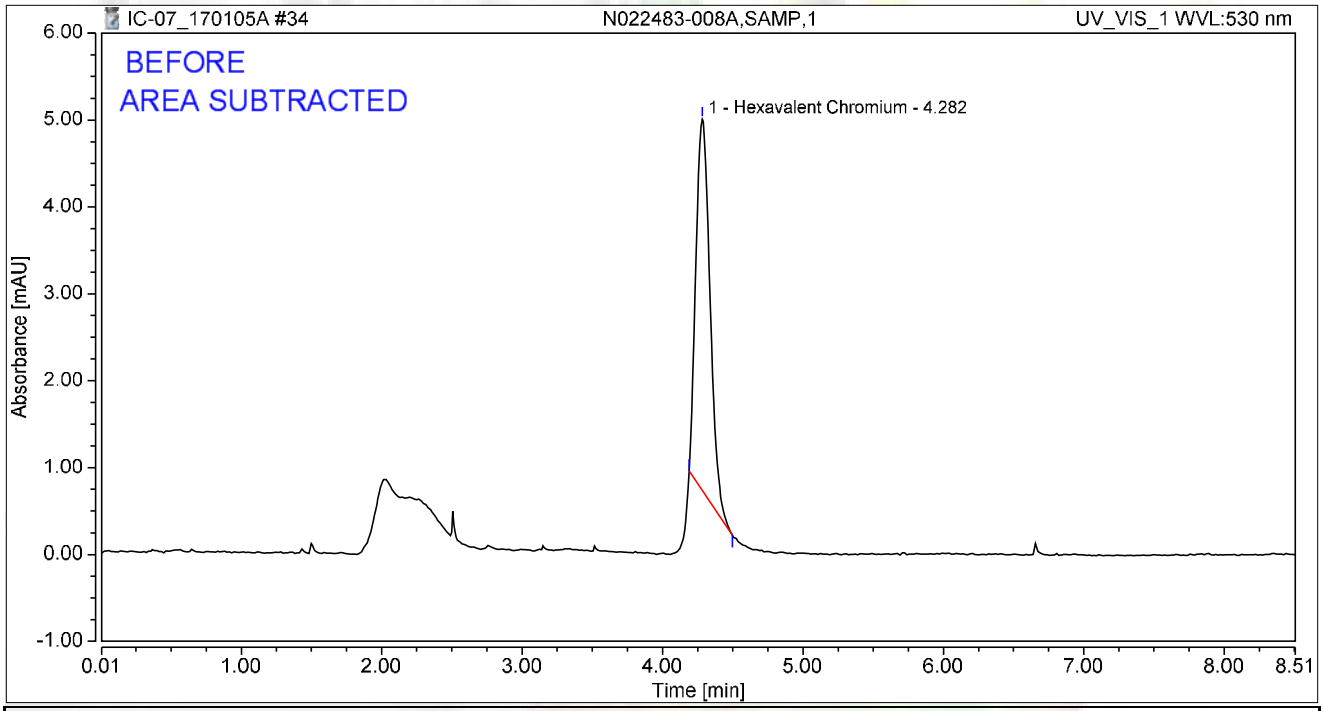
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022483-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.499	4.271	100.00	100.00	2.0294
Total:			**0.499**	**4.271**	**100.00**	**100.00**	

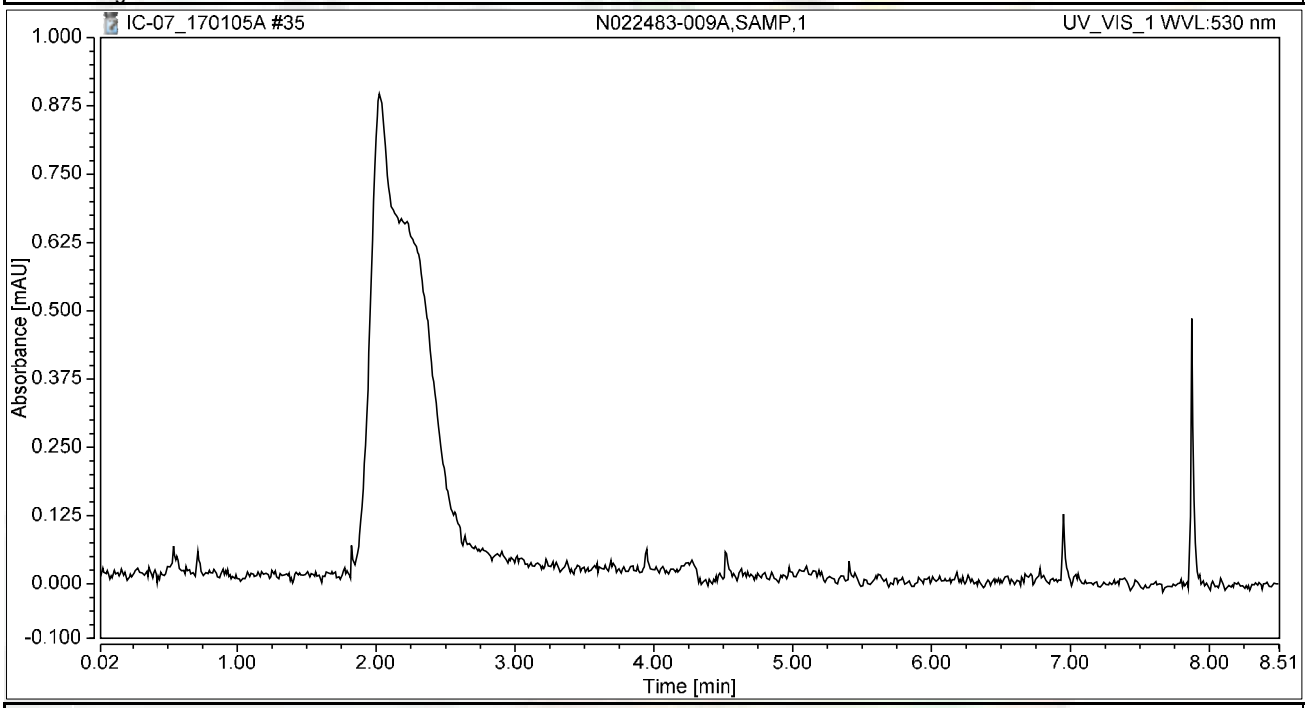
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022483-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

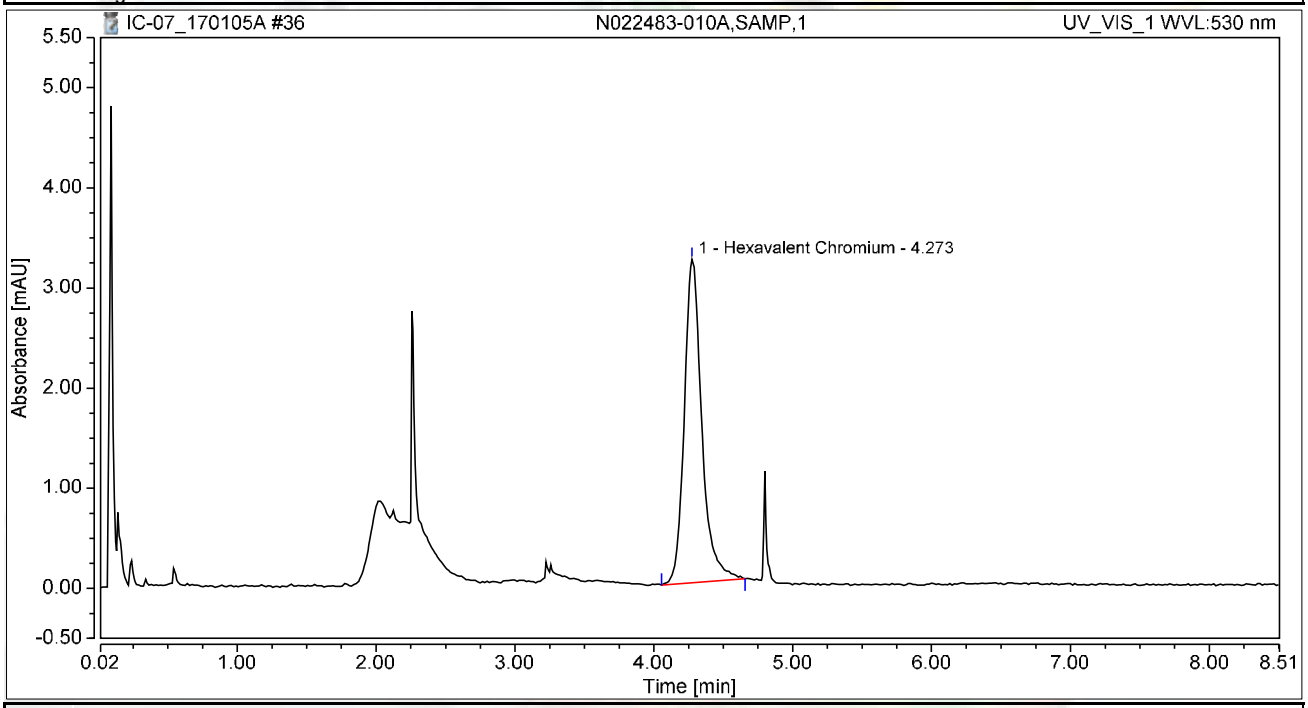
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

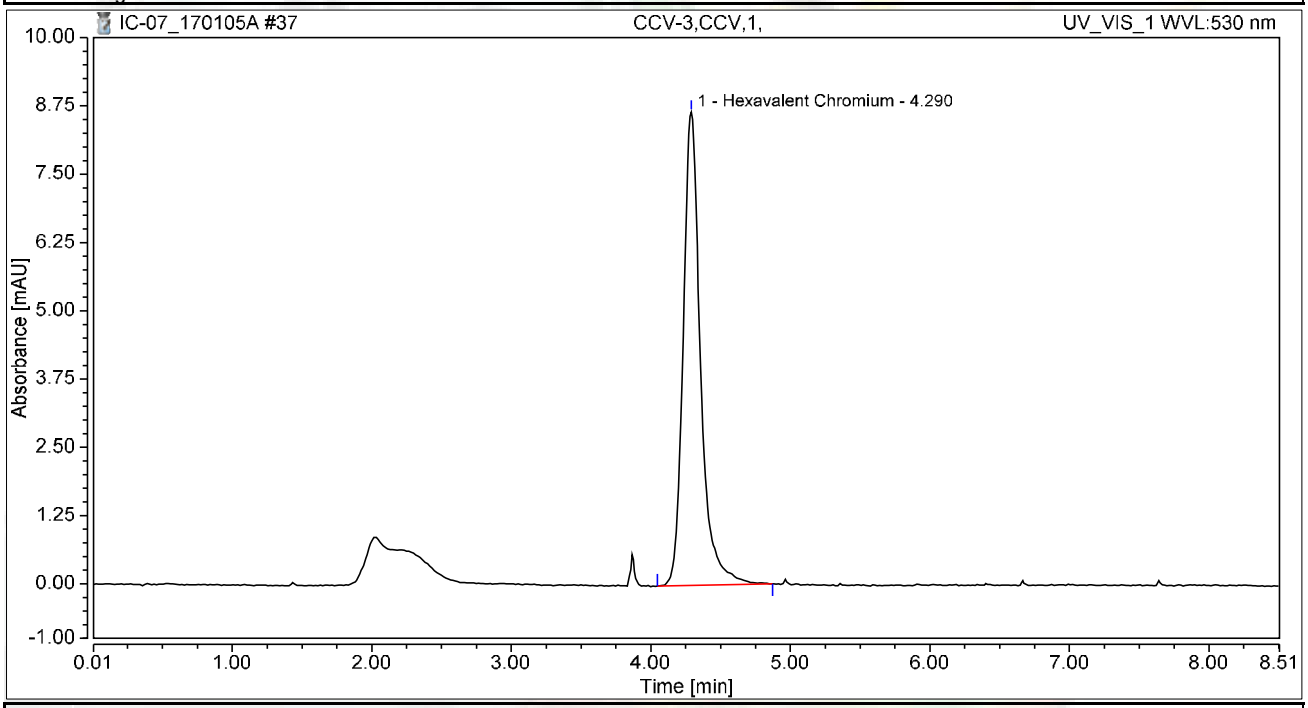
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.473	3.231	100.00	100.00	1.9214
Total:			**0.473**	**3.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

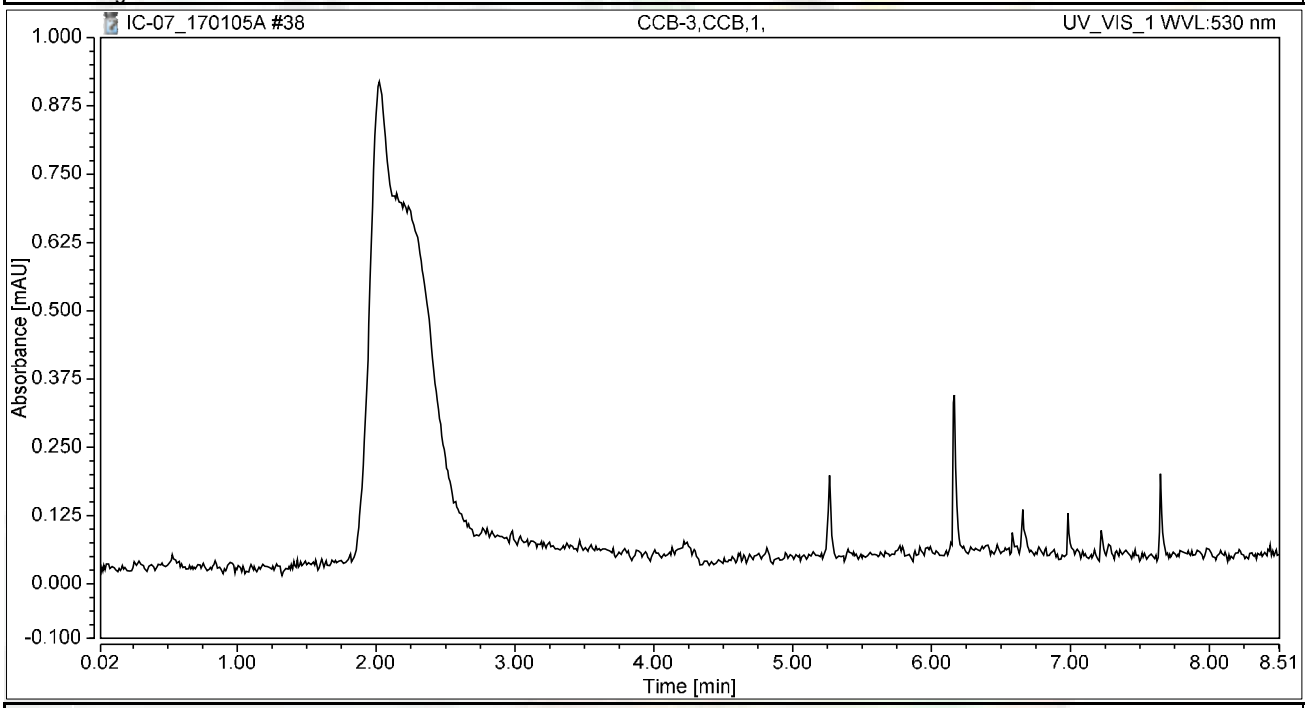
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.246	8.665	100.00	100.00	5.0668
Total:			**1.246**	**8.665**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

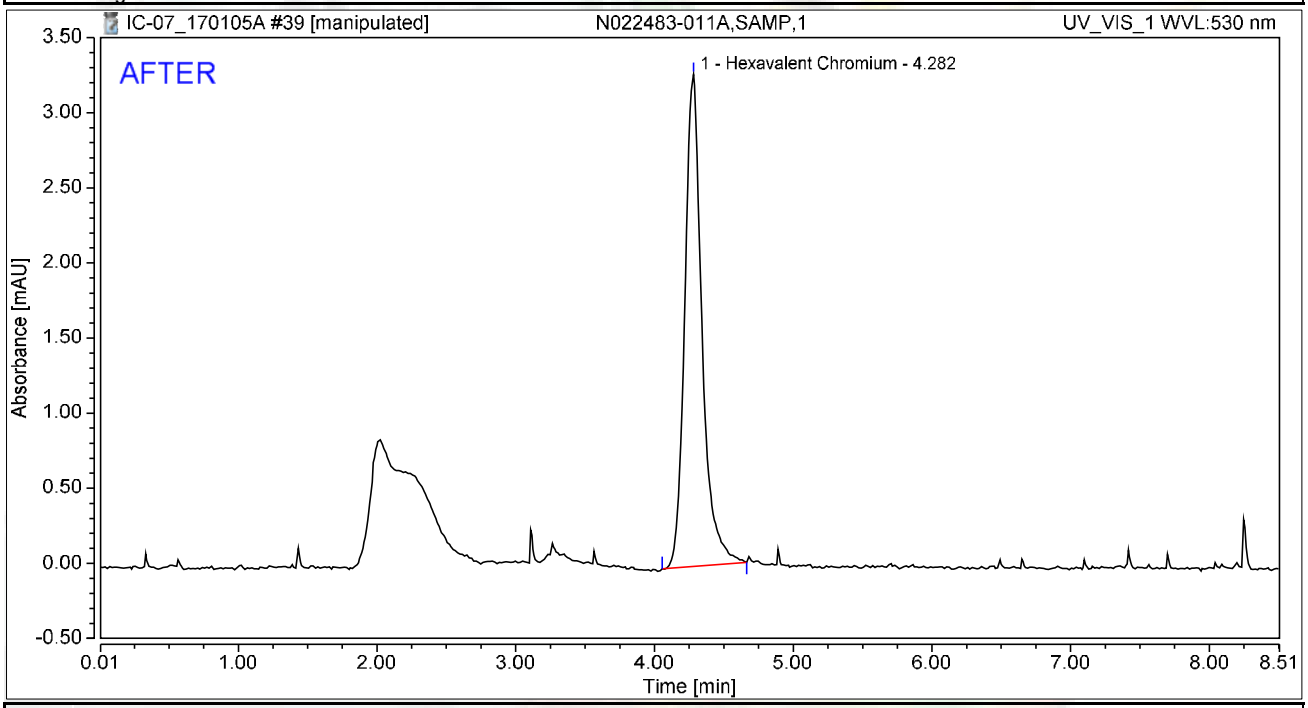
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022483-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.471	3.275	100.00	100.00	1.9147
Total:			**0.471**	**3.275**	**100.00**	**100.00**	

rba 1/7/2017

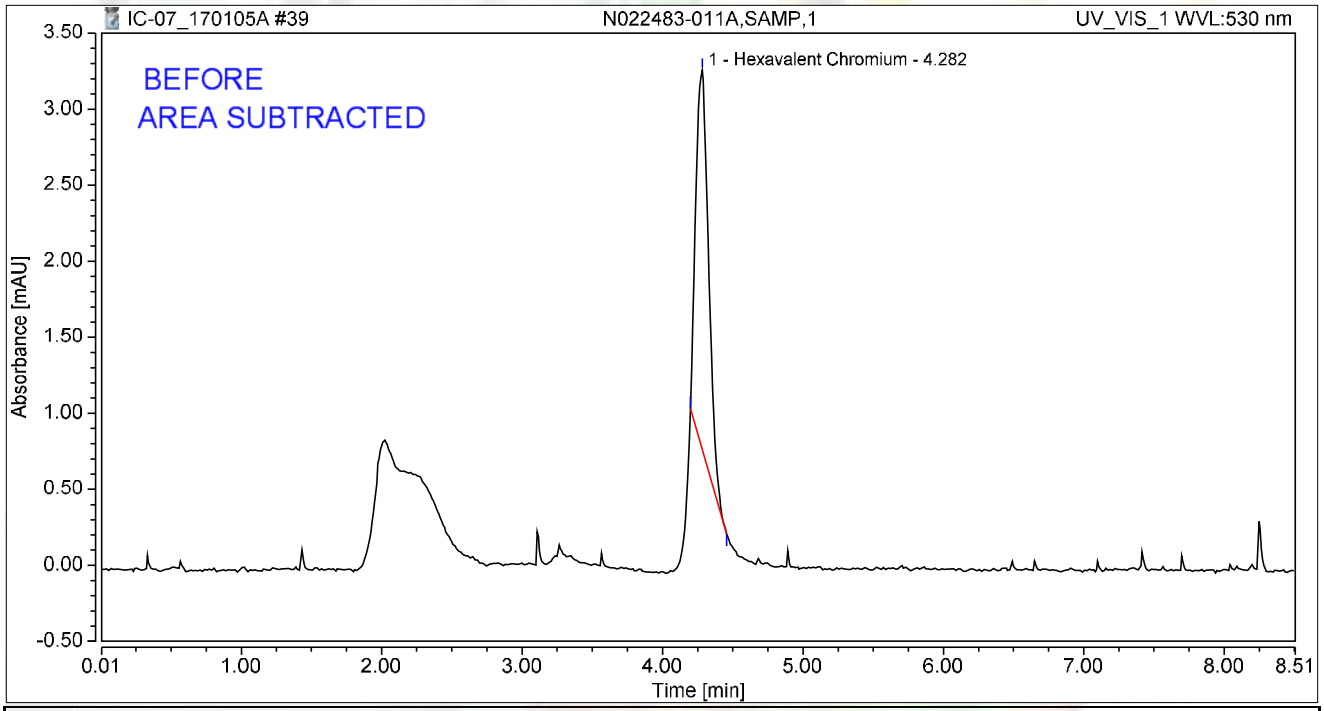
Reviewed by: Nancy 1/12/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022483-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.262	2.489	100.00	100.00	1.0649
Total:			**0.262**	**2.489**	**100.00**	**100.00**	

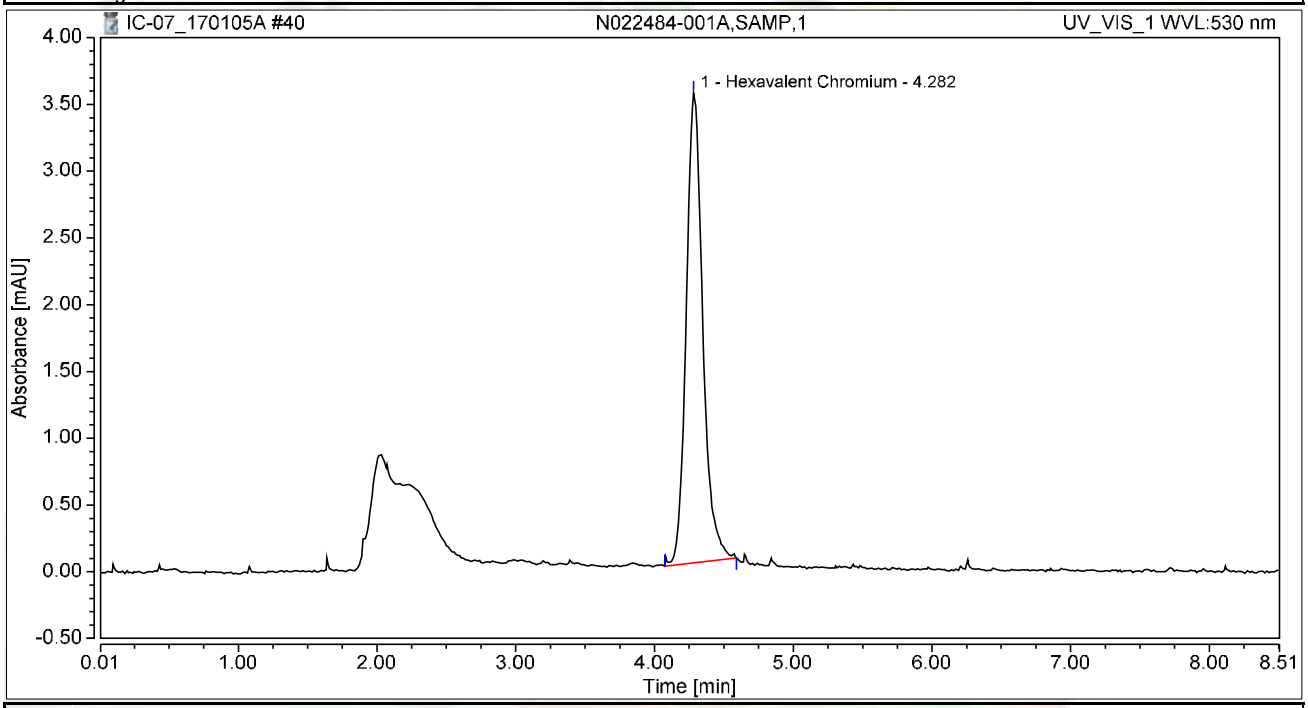
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022484-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

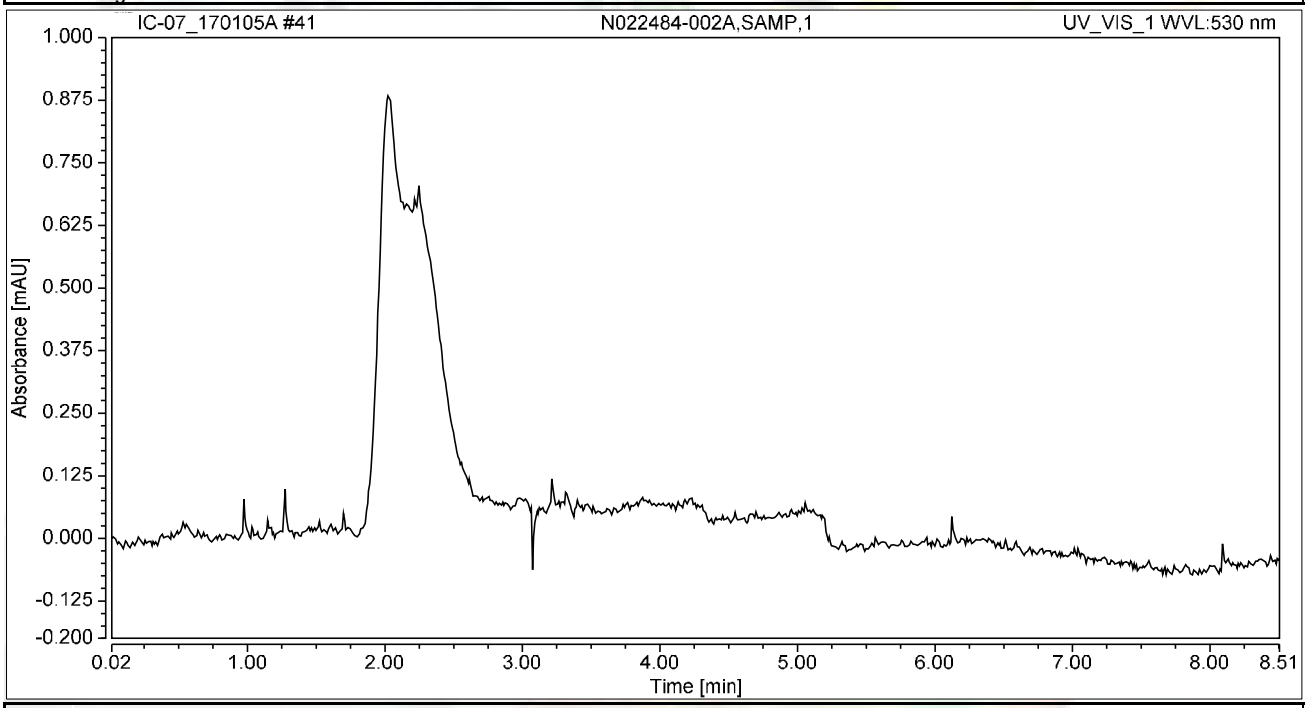
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.487	3.518	100.00	100.00	1.9786
Total:			**0.487**	**3.518**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022484-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

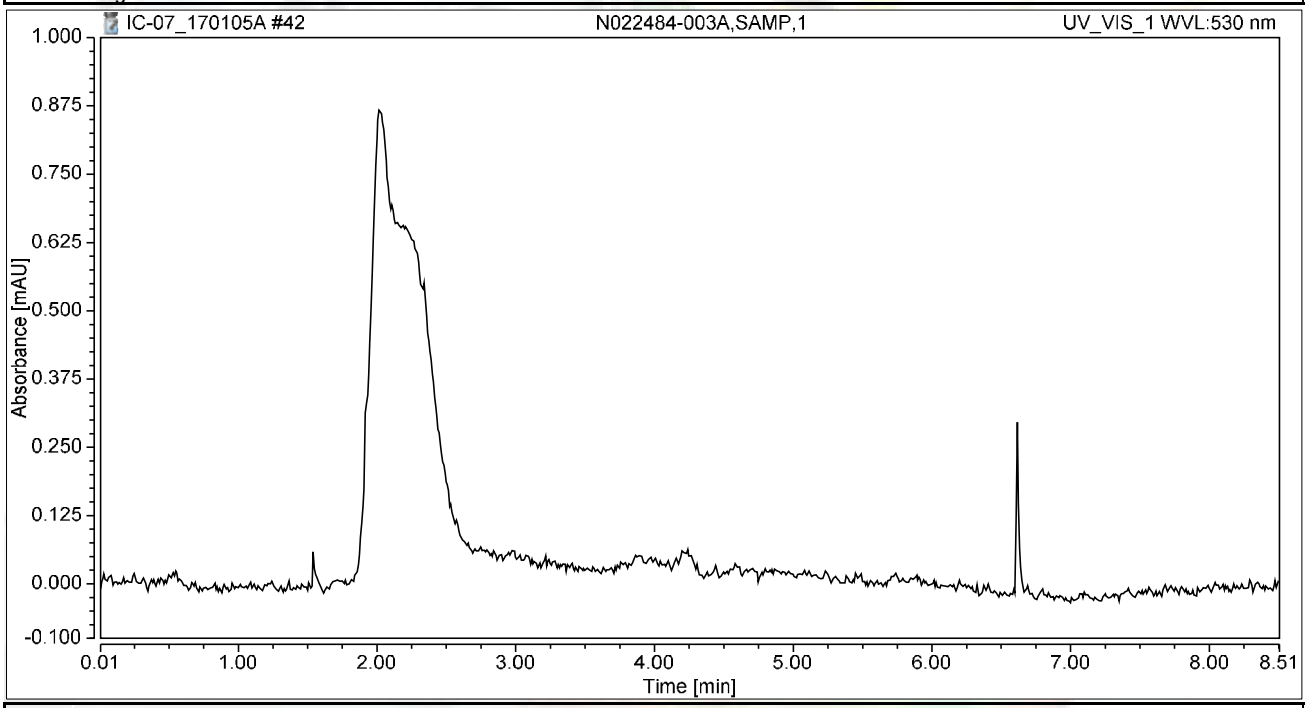
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022484-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

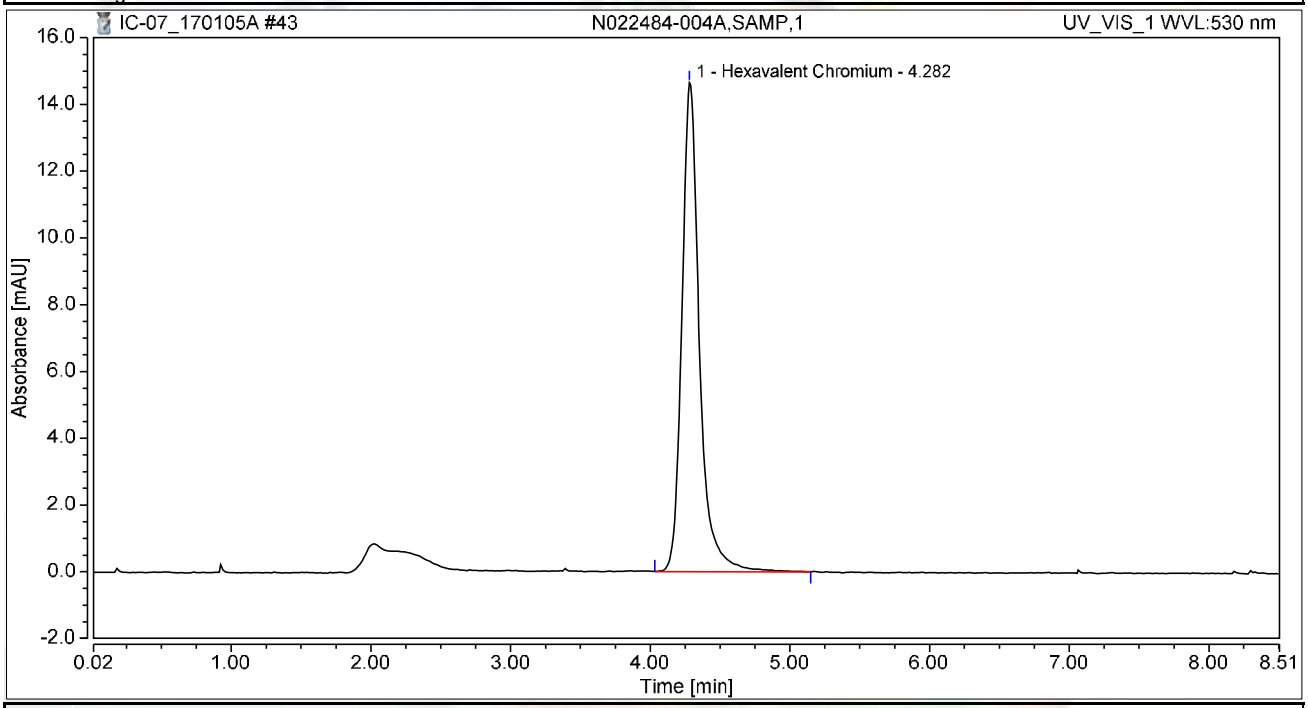
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022484-004A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

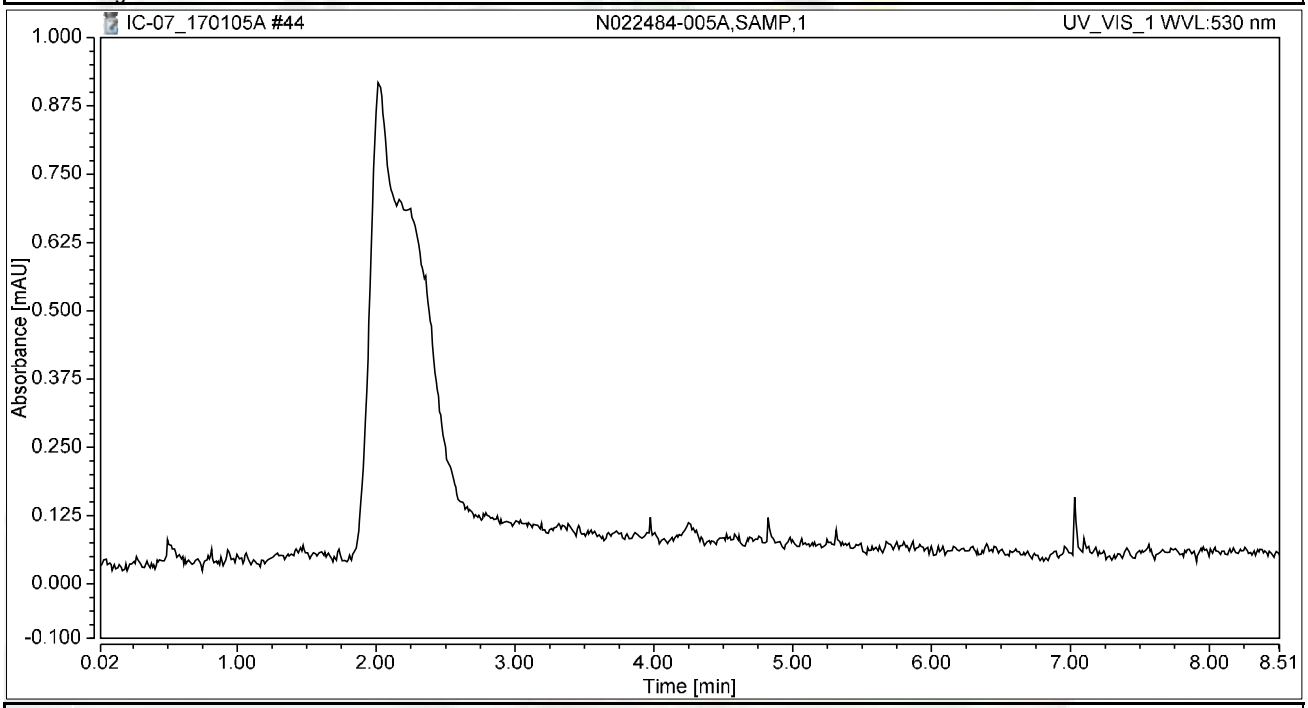
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	2.132	14.643	100.00	100.00	8.6696
Total:			**2.132**	**14.643**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022484-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

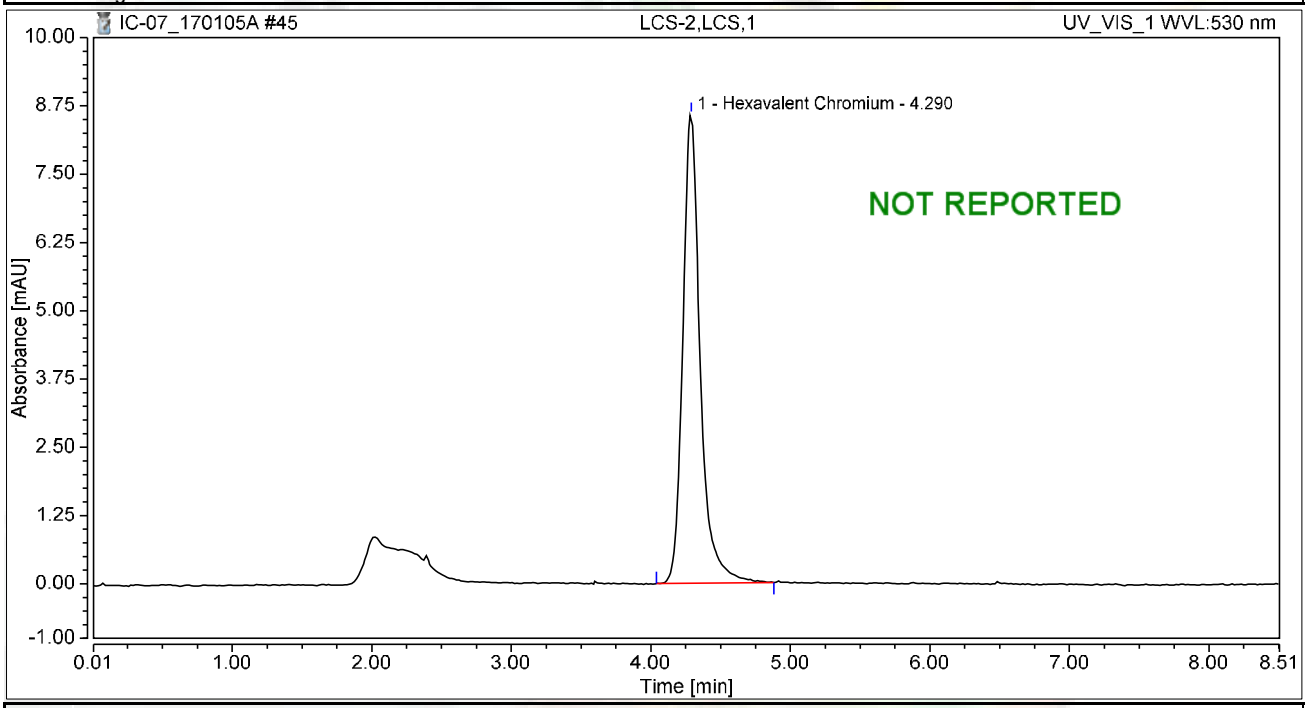
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

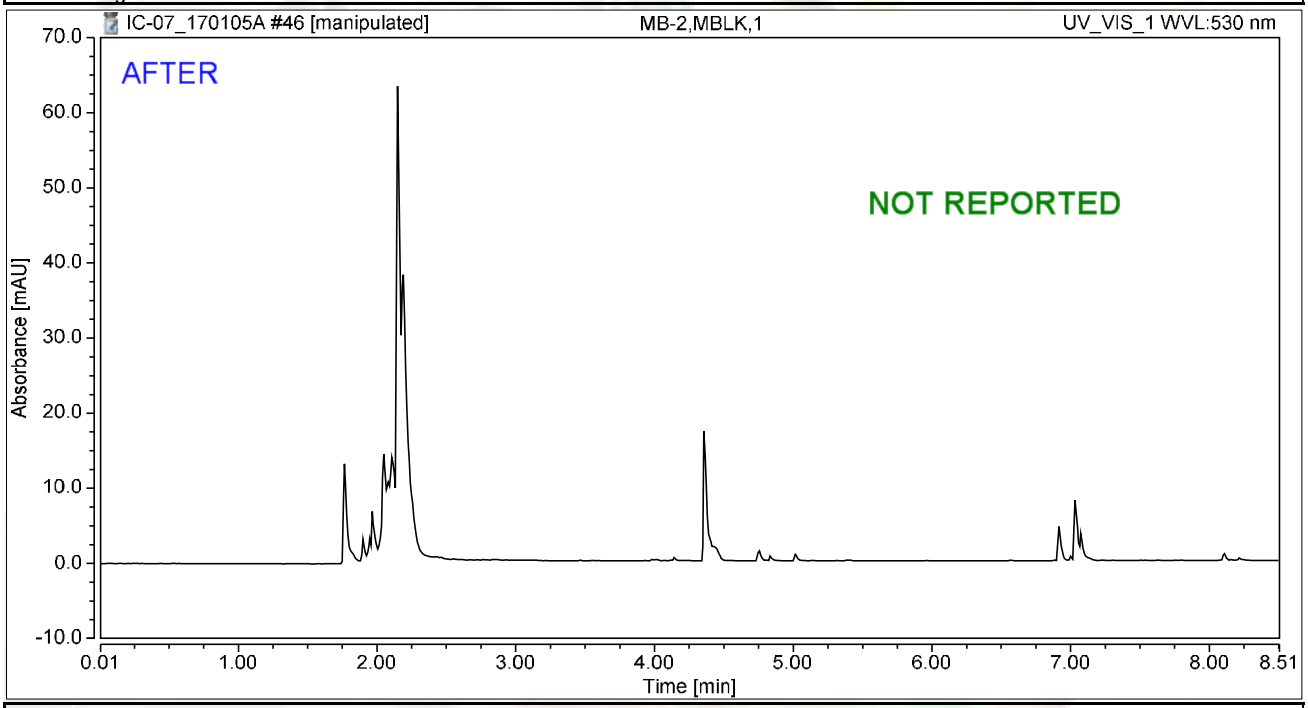
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.242	8.580	100.00	100.00	5.0499
Total:			**1.242**	**8.580**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

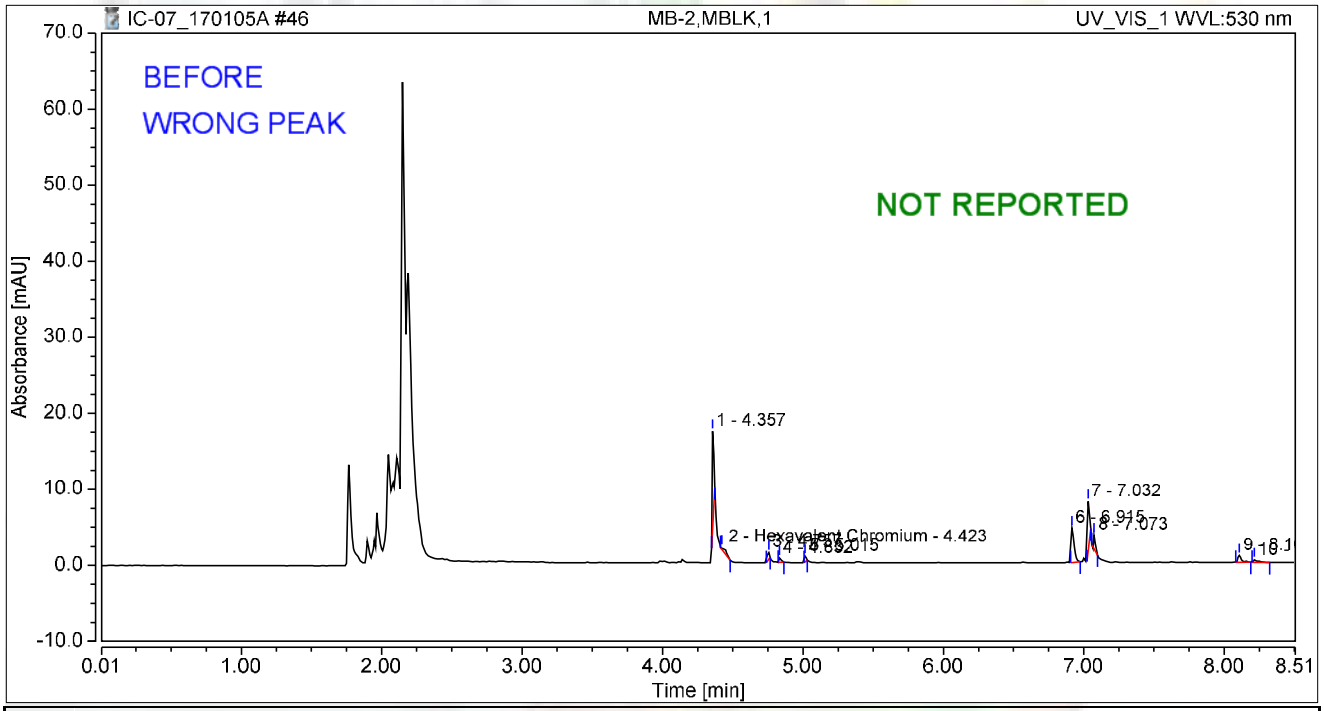
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.357	0.164	12.673	34.49	43.44	n.a.
2	Hexavalent Chromium	4.423	0.017	0.235	3.63	0.80	0.0702
3		4.757	0.014	0.872	3.04	2.99	n.a.
4		4.832	0.012	0.594	2.48	2.04	n.a.
5		5.015	0.010	0.743	2.02	2.55	n.a.
6		6.915	0.100	4.562	20.96	15.64	n.a.
7		7.032	0.095	6.477	20.01	22.20	n.a.
8		7.073	0.024	1.765	5.14	6.05	n.a.
9		8.107	0.027	0.883	5.65	3.03	n.a.
10		8.215	0.012	0.370	2.58	1.27	n.a.
Total:			**0.476**	**29.173**	**100.00**	**100.00**	

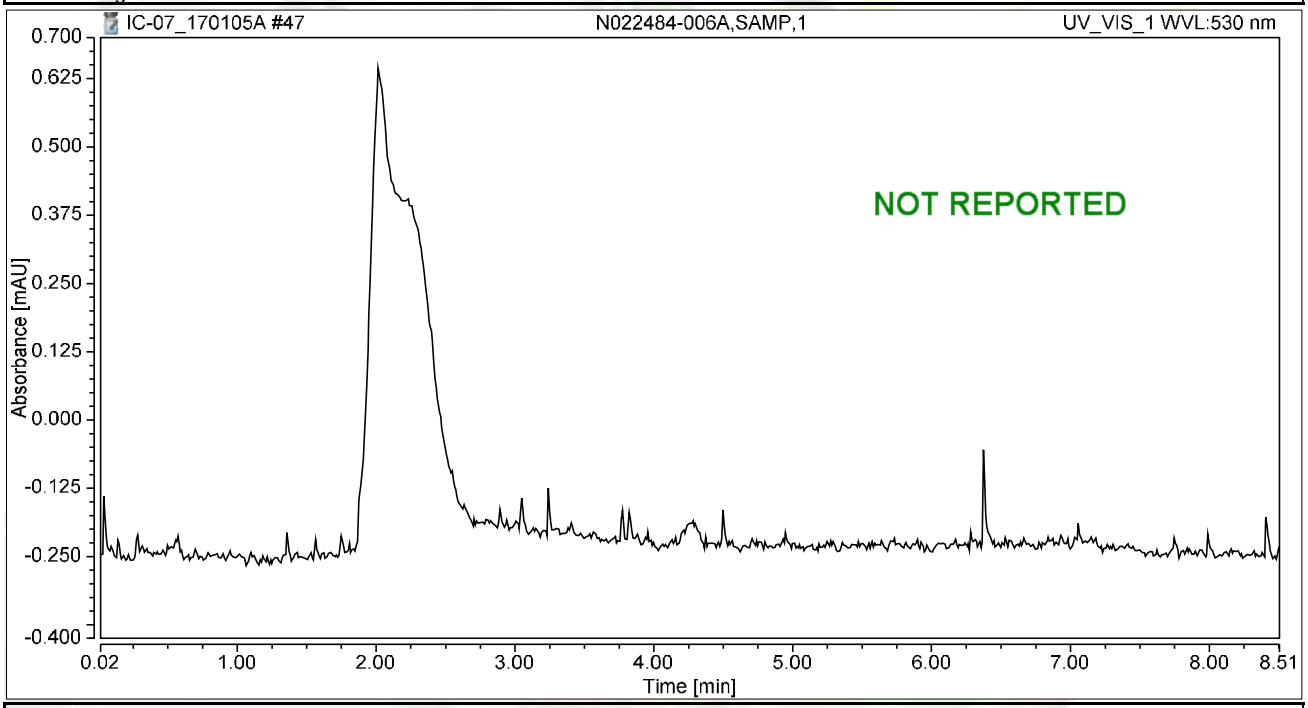
rba 1/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022484-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

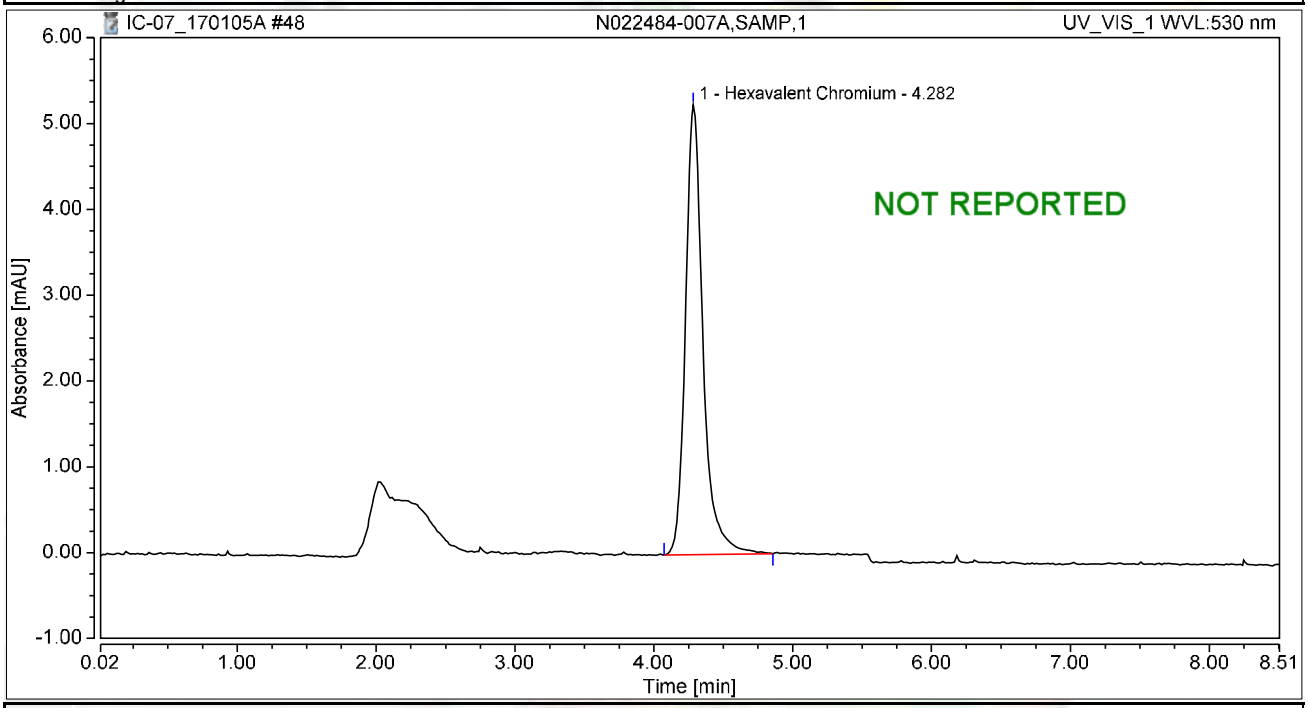
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022484-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

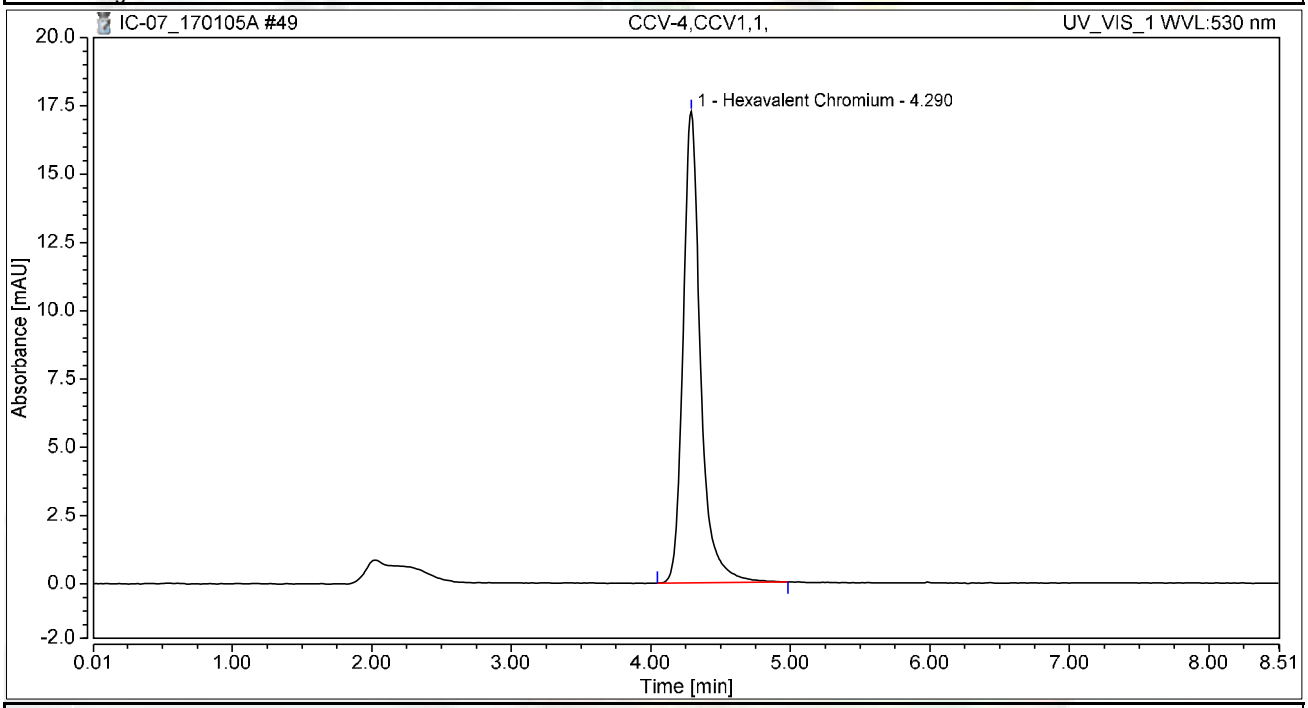
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.764	5.242	100.00	100.00	3.1050
Total:			**0.764**	**5.242**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 16:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

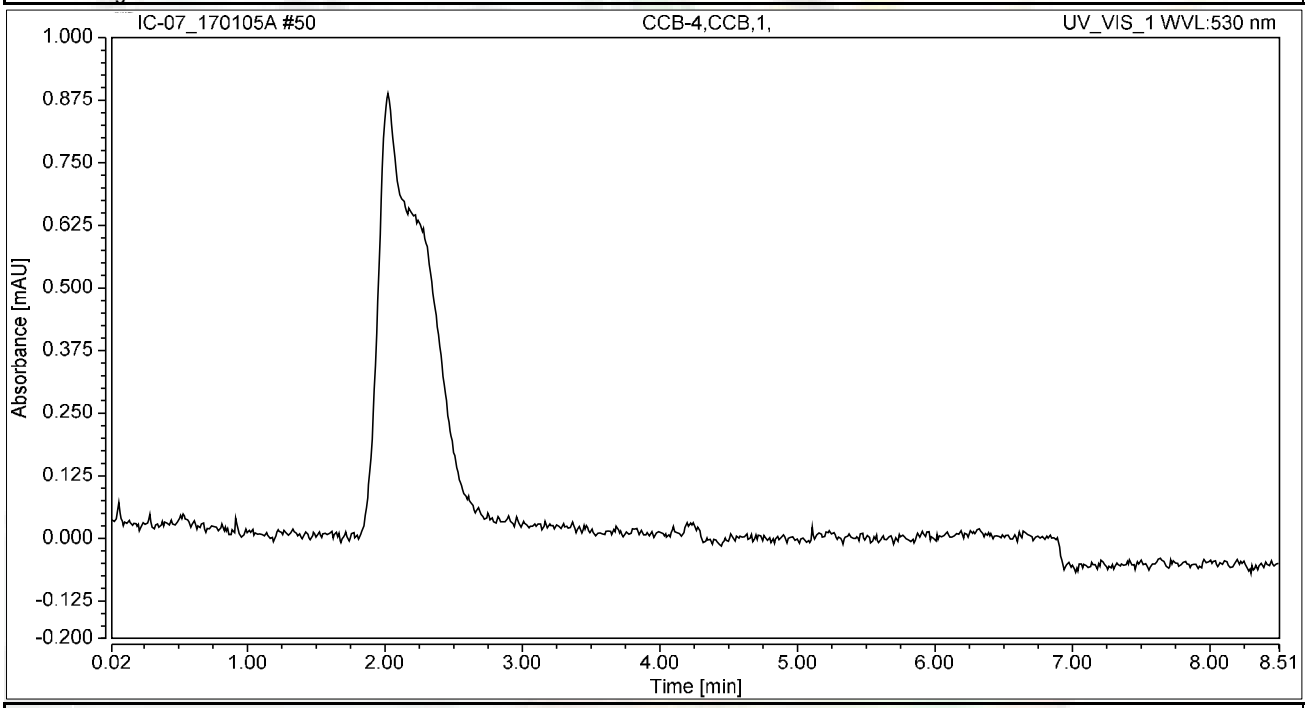
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.499	17.264	100.00	100.00	10.1626
Total:			**2.499**	**17.264**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**161213_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/17 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R112668 **Analyst:** LSR

ASSET #: N022475 **Date Analyzed:** 1/6/2017

Method: EPA 2320

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

Comments:

SECOND LEVEL REVIEW:

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

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

2nd Level Reviewer Nancy 1/12/2017 Date: —

SAMPLE CALCULATION

Sample ID: **N022475-001C @ pH 7.61**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.10 mL)

= **0.02252 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.90) (0.02252 N) (1) * 1000

= 222.9480 mg/**L**

Reporting results in two significant figures,

= **220 mg/L** as CaCO3

Silia Ramit 1/12/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02252 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.90 mL) (0.02252) (1) * 1000

= 222.9480 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **222.9480 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **220 mg/L**

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.17	50	0.00	0.05	MBLK
LCS-1	8.12	50	0.00	4.60	LCS
N022475-001C	7.61	50	0.00	9.90	SAMP
N022475-002C	7.45	50	0.00	6.75	SAMP
N022475-001CDUP	7.66	50	0.00	10.00	DUP
N022475-002CMS	7.76	50	0.00	11.20	MS
N022475-002CMSD	7.73	50	0.00	11.40	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.1**	ml
N H2SO4	**0.02252**	Normal
Date Analyzed:	**1/6/17**	
Time:	**10:30 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R161216B**	

Julia Ramit 1/12/2017

Date Analyzed:	1/6/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	10:30 AM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.1	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R161216B							**P > 1/2 T**
									N H2SO4	0.02252	**N**		**P = T**
Sample ID	**Sample Vol/Wt.**	**Sample pH**	**Std. Code**	**Spike Amount**	**Spike Conc.**	**Normality, Titrant**	**Vol. Used to pH 8.3, ml.**	**Vol. Used pH 8.3 to 4.5, ml.**	**Total Vol. Used, ml.**	**DF (50ml/Vsamp.)**	**P Alkalinity**	**T Alkalinity**	**Comments**
MB-1	50	5.17				0.02252	0.00	0.05	0.05	1	0.00	1.13	
LCS-1	50	8.12				0.02252	0.00	4.60	4.60	1	0.00	103.60	
N022475-001C	50	7.61				0.02252	0.00	9.90	9.90	1	0.00	222.97	
N022475-002C	50	7.45				0.02252	0.00	6.75	6.75	1	0.00	152.03	
N022475-001CDU	50	7.66				0.02252	0.00	10.00	10.00	1	0.00	225.23	
N022475-002CMS	50	7.76				0.02252	0.00	11.20	11.20	1	0.00	252.25	
N022475-002CMS	50	7.73				0.02252	0.00	11.40	11.40	1	0.00	256.76	

Julia Ramit 1/12/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	1/6/17
Time:	10:30 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.13	1.13	1.13		P = 0
LCS-1	0.00	0.00	103.60	103.60	103.60		P = 0
N022475-001C	0.00	0.00	222.97	222.97	222.97		P = 0
N022475-002C	0.00	0.00	152.03	152.03	152.03		P = 0
N022475-001CDUP	0.00	0.00	225.23	225.23	225.23		P = 0
N022475-002CMS	0.00	0.00	252.25	252.25	252.25		P = 0
N022475-002CMSD	0.00	0.00	256.76	256.76	256.76		P = 0

Julia Ramit 1/12/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 1/6/17
Time Extracted: 1/6/17
Extracted By: LSR

Date Analyzed: 1/6/17
Time Analyzed: 1030
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV - 1601255B
Hydrochloric Acid: -
Sulfuric Acid: R1612216B
Sodium Bicarbonate: CINV - 1506014

pH meter CALIBRATION:
SLOPE: 98.8%
pH 4 - 4.01 - CINV1610 25B
7 - 6.99 - 1610 25A
10 - 10.04 - 1609 02D

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.62	IWST170106A	5 mL	0.05 N	-	-	11.10	50/50	N H_2SO_4 = (2.65 g/L) (5 ml) / (53) (V titrant)	= 0.022522522
	#2	↓	10.60	↓	↓	↓	-	-	11.10	↓		
1)	MBLK	50 mL	5.17	-	-	-	0.02252	0	0.05	50/50		
2)	LCS	↓	8.12	IWST170106B	5 mL	0.05 N	↓	0	4.60	↓		
3)	N022475-001C	↓	7.61	-	-	-	↓	0	9.90	↓		
4)	2C	↓	7.45	-	-	-	↓	0	6.75	↓		
5)	1COUP	↓	7.66	-	-	-	↓	0	10.00	↓		
6)	2CMS	↓	7.76	IWST170106B	5 mL	0.05 N	↓	0	11.20	↓		
7)	2CMSD	↓	7.73	↓		↓	↓	0	11.40	↓		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50{,}000)}{Vsx}$								
17)												
18)												
19)												
20)				$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50{,}000)}{Vsx}$							Julia Ramit 1/12/2017	
	MS											
	MSD											
	LCS											

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R112786 **Analyst:** REB

ASSET #: N022475 **Date Analyzed:** 1/12/2017

Method: 4500_NO3

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer RB 01/18/17 Date:

2nd Level Reviewer Nancy 1/18/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022475-002D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6717*5

= 3.3585 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 3.4

RB 01/18/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

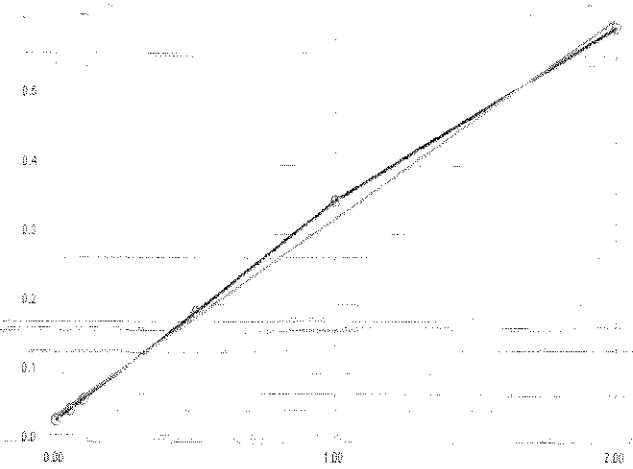
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2864x + 0.0383
Correlation	.998054

Calibrant	Energy	Set	Conc
1	0.0318	0.0000	-0.0227
2	0.0471	0.0500	0.0307
3	0.0610	0.1000	0.0793
4	0.1881	0.5000	0.5230
5	0.3499	1.0000	1.0878
6	0.5974	2.0000	1.9519



Notes:

2% CuSO4- R161219C
R1 Buffer- R170102A
R2 Coloring reagent- R170102B

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 01/18/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ICV** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCV** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	95.9	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCV** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	98.9	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCV** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2529003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.469	0.050	0.5000	0	93.8	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022475
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **ICB** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528972**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCB** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528984**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCB** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2528995**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **112786**
Client ID: **CCB** Batch ID: **R112786** TestNo: **SM4500-NO3** Analysis Date: **1/12/2017** SeqNo: **2529004**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-12-2017 10:38
Time end: 01-12-2017 13:34

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	12:52:53	0.0105		0.0413
2	<BLANK>	12:53:48	-0.0150		0.0340
3	<CAL1>	12:54:48	-0.0227	[0]	0.0318
4	<CAL2>	12:55:43	0.0307	[0.05]	0.0471
5	<CAL3>	12:56:39	0.0793	[0.1]	0.0610
6	<CAL4>	12:57:38	0.5230	[0.5]	0.1881
7	<CAL5>	12:58:34	1.0878	[1]	0.3499
8	<CAL6>	12:59:30	1.9519	[2]	0.5974
9	,BLANK,BLANK,1,	13:00:31	-0.0112		0.0351
10	,ICV,ICV,1,	13:01:25	0.5202		0.1873
11	,ICB,ICB,1,	13:02:20	-0.0220		0.0320
12	,MB-H2O,MBLK,1,	13:03:22	-0.0300		0.0297
13	,LCS-H2O,LCS,1,	13:04:16	0.5373		0.1922
14	,N022475-001D,SAMP,1,	13:05:11	-0.0181		0.0331
15	,N022475-002D,SAMP,5,	13:06:13	0.6717		0.2307
16	,N022475-002DDUP,DUP,5,	13:07:08	0.6438		0.2227
17	,N022475-002DMS,MS,5,	13:08:08	1.2180		0.3872
18	,N022475-002DMSD,MSD,5,	13:09:04	1.1192		0.3589
19	,N022498-001D,SAMP,1,	13:10:00	0.2692		0.1154
20	,N022498-002D,SAMP,1,	13:11:06	0.3736		0.1453
21	,BLANK,BLANK,1	13:11:55	-0.0317		0.0292
22	,CCV-1,CCV,1,	13:12:50	0.4797		0.1757
23	,CCB-1,CCB,1,	13:13:52	-0.0206		0.0324
24	,N022499-001C,SAMP,1,	13:14:46	0.3872		0.1492
25	,N022499-002C,SAMP,1,	13:15:48	0.2521		0.1105
26	,N022499-003C,SAMP,1,	13:16:43	0.5513		0.1962

RB 01/18/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022499-004C,SAMP,2,	13:17:37	0.1746		0.0883
28	,N022500-001D,SAMP,1,	13:18:27	0.8892		0.2930
29	,N022500-002D,SAMP,1,	13:19:11	0.4668		0.1720
30	,N022516-001D,SAMP,1,	13:19:59	1.1297		0.3619
31	,N022519-001D,SAMP,1,	13:20:42	0.9025		0.2968
32	,N022520-001D,SAMP,1,	13:21:30	0.3659		0.1431
33	,BLANK,BLANK,1	13:22:13	-0.0314		0.0293
34	,CCV-2,CCV,1,	13:22:55	0.4947		0.1800
35	,CCB-2,CCB,1,	13:23:39	-0.0311		0.0294
36	,N022520-002D,SAMP,1,	13:24:28	1.0592		0.3417
37	,N022521-001D,SAMP,1,	13:25:10	0.0981		0.0664
38	,N022521-002D,SAMP,1,	13:25:54	0.0918		0.0646
39	,N022521-003D,SAMP,1,	13:26:42	0.0890		0.0638
40	,N022525-001D,SAMP,1,	13:27:25	0.9475		0.3097
41	,N022545-001D,SAMP,1,	13:28:13	0.2674		0.1149
42	,N022585-001D,SAMP,1,	13:28:57	0.5513		0.1962
43	,BLANK,BLANK,1,	13:29:40	-0.0195		0.0327
44	,CCV-3,CCV,1,	13:30:28	0.4689		0.1726
45	,CCV-3,CCV,1, not used	13:31:11	0.4996		0.1814
46	,CCB-3,CCB,1,	13:31:53	-0.0349		0.0283

RB 01/18/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 01/12/17
Time Analyzed: 10:38 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170102B
Color reagent: R170102B
2% Copper Sulfate: R161219C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022475-001D		8.50						
2)	N022475-002D		7.70						
3)	N022498-001D		8.83						
4)	N022498-002D		7.22						
5)	N022499-001C		7.22						
6)	N022499-002C		7.13						
7)	N022499-003C		8.85						
8)	N022499-004C		6.38						
9)	N022500-001D		8.35						
10)	N022500-002D		7.31						
11)	N022516-001D		8.64						
12)	N022519-001D		7.88						
13)	N022520-001D		8.35						
14)	N022520-002D		8.58						
15)	N022521-001D		7.80						
16)	N022521-002D		8.22						
17)	N022521-003D		8.61						
18)	N022525-001D		8.65						
19)	N022545-001D		8.76						
20)	N022585-001D		8.75						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 01/18/17

February 07, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N022819

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 24, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022819-001A	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001B	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001C	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001D	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001E	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-002A	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002B	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002C	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002D	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002E	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-003A	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003B	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003C	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003D	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003E	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-004A	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004B	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004C	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004D	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004E	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-005A	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005B	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005C	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005D	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005E	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-006A	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006B	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006C	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006D	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022819-006E	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-007A	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007B	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007C	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007D	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007E	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-008A	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008B	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008C	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008D	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008E	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-009A	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009B	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009C	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009D	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009E	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-010A	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-010B	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-010C	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-011A	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017
N022819-011B	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017
N022819-011C	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **N022819-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1113.000	0.10						1115	0.180	10	

Sample ID: **N022820-005CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1086.000	0.10						1084	0.184	10	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022819-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.320	0.241	10	H
Temp. at time of pH Analysis	16.400	0.10						16.00	2.47	10	H

Sample ID **N022820-005CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.280	0.10						7.320	0.548	10	H
Temp. at time of pH Analysis	15.800	0.10						15.60	1.27	10	H

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61055	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	LCSW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID	MB-61055	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	PBW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022819-001D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	ZZZZZZ	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 10:21 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:20 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 10:42 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:01 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:31 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:20 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:37 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:57 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:42 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 11:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate	**1/30/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:53 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:59 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 12:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:17 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 12:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:23 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 02:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113215** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **PBW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550948**

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

Sample ID **LCS-R113215** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **LCSW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	90	110				

Sample ID **N022819-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Sample ID **N022819-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N022819-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N022819-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022819-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N022819-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N022819-005AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110	1.080	1.29	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N022820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N022820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

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

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

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

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61090	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	PBW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549831

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

Sample ID	LCS-61090	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	LCSW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.562	1.0	10.00	0	106	85	115				

Sample ID	N022819-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.389	1.0	10.00	0	93.9	75	125				

Sample ID	N022819-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549862

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.458	1.0	10.00	0	94.6	75	125	9.389	0.737	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113095** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **PBW** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.042	0.050									

Sample ID **LCS-R113095** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **LCSW** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.500	0.050	0.5000	0	100	85	115				

Sample ID **N022778-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.253	0.050						0.2542	0.671	20	

Sample ID **N022778-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.740	0.050	0.5000	0.2542	97.1	75	125				

Sample ID **N022778-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.741	0.050	0.5000	0.2542	97.4	75	125	0.7398	0.176	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	62	1.8	20		ug/L	1	2/3/2017 04:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	150	1.8	20		ug/L	1	2/3/2017 06:49 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 04:54 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	160	1.8	20		ug/L	1	2/3/2017 07:17 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/3/2017 04:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	250	1.8	20		ug/L	1	2/3/2017 07:22 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	210	1.8	20		ug/L	1	2/3/2017 07:26 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/3/2017 07:31 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:32 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/3/2017 07:46 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:37 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	2/3/2017 07:51 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	140	1.8	20		ug/L	1	2/3/2017 07:56 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/3/2017 08:01 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61046** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **PBW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.068	20									

Sample ID **LCS-61046** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **LCSW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.528	20	100.0	0	111	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	145.129	20	100.0	62.36	82.8	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	146.407	20	100.0	62.36	84.0	75	125	145.1	0.877	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-61045	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	PBW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554747

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

Sample ID	LCS-61045	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	LCSW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.370	20	100.0	0	114	85	115				

Sample ID	N022819-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.130	20	100.0	151.7	91.4	75	125				

Sample ID	N022819-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.348	20	100.0	151.7	91.6	75	125	243.1	0.0894	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:20 PM
Barium	120	0.35	5.0		µg/L	5	1/31/2017 05:38 PM
Manganese	1.7	0.056	0.50		µg/L	1	1/31/2017 03:20 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/31/2017 03:20 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:20 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:26 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:26 PM
Manganese	0.79	0.056	0.50		µg/L	1	1/31/2017 03:26 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/31/2017 03:26 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/31/2017 03:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:31 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:31 PM
Manganese	2.2	0.056	0.50		µg/L	1	1/31/2017 03:31 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 03:31 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:31 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:37 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:37 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:37 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 03:37 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:37 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:42 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:42 PM
Manganese	0.56	0.056	0.50		µg/L	1	1/31/2017 03:42 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 03:42 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:42 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:48 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:48 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:48 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 03:48 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:53 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:53 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:53 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 03:53 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:53 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:59 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:59 PM
Manganese	0.78	0.056	0.50		µg/L	1	1/31/2017 03:59 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 03:59 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:59 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 04:17 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:17 PM
Manganese	1.4	0.056	0.50		µg/L	1	1/31/2017 04:17 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 04:17 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:17 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61090** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61090** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.486	0.10	10.00	0	105	85	115				
Barium	106.579	1.0	100.0	0	107	85	115				
Manganese	105.581	0.50	100.0	0	106	85	115				
Molybdenum	9.901	0.50	10.00	0	99.0	85	115				
Selenium	9.761	0.50	10.00	0	97.6	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.862	0.10	10.00	2.132	97.3	75	125				
Manganese	93.651	0.50	100.0	1.695	92.0	75	125				
Molybdenum	16.358	0.50	10.00	5.035	113	75	125				
Selenium	10.857	0.50	10.00	1.466	93.9	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.863	5.0	100.0	123.1	108	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.020	0.10	10.00	2.132	98.9	75	125	11.86	1.32	20	
Manganese	93.710	0.50	100.0	1.695	92.0	75	125	93.65	0.0636	20	
Molybdenum	16.253	0.50	10.00	5.035	112	75	125	16.36	0.640	20	
Selenium	10.967	0.50	10.00	1.466	95.0	75	125	10.86	1.01	20	

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.394	5.0	100.0	123.1	107	75	125	230.9	0.203	20	

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By:
Title: Jason Mahn
Signature: Date: 1/24/17
I hereby authorize ASSET Labs to perform the tests indicated below
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: [illegible]
Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/24/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	3	
6. Method of Cooling:	ice	
Sample Temp:	3.2°C / 3.2°C	

Courier:
Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
~~1~~		~~C-NR4-S-0117L~~				X		X		X	X		X	X			X	X				~~(DN)~~
2	N022819- 01	C-R22A-D-0117L	1/24/17	1045		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
3	- 02	C-R22A-S-0117L	1/24/17	1100		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
4	- 03	C-R27-D-0117L	1/24/17	1205		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
5	- 04	C-R27-S-0117L	1/24/17	1225		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
	- 05	C-TAZ-D-0117L	1/24/17	0825		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
7	- 06	MW-907-Q117L	1/24/17	0830		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
8	- 07	C-TAZ-S-0117L	1/24/17	0840		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
~~9~~		~~R-19-0117L~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~ ~~(DN)~~
10	- 08	R-28-0117L	1/24/17	1300		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
11	- 09	R63-0117L	1/24/17	1010		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
~~12~~		~~RRB-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS ~~(DN)~~
13	- 10	SW1-0117L	1/24/17	1430		X		X					X	X					E	~~7~~	P	BNS 5
14	- 11	SW2-0117L	1/24/17	1450		X		X					X	X					E	~~7~~	P	BNS 5

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
[signature]	1/24/17	[signature]	1/24/17 1600
[signature]	1/24/17 1442	[signature]	1/24/17 1442

Turn Around Time (TAT)

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

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

Special Instruction:

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

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

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	1/24/2017	Workorder:	N022819
Rep sample Temp (Deg C):	2.1/3.2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 1/25/2017

Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-001A	C-R22A-D-0117L	1/24/2017 10:45:00 AM	2/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-001B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-001C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-001D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-001E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-002A	C-R22A-S-0117L	1/24/2017 11:00:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-002B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-002C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-002D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-002D	C-R22A-S-0117L	1/24/2017 11:00:00 AM	2/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-002E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-003A	C-R27-D-0117L	1/24/2017 12:05:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-003B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-003C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-003D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-003E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-004A	C-R27-S-0117L	1/24/2017 12:25:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-004B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-004B	C-R27-S-0117L	1/24/2017 12:25:00 PM	2/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-004C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-004D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-004E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-005A	C-TAZ-D-0117L	1/24/2017 8:25:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-005B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-005C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-005D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-005E	C-TAZ-D-0117L	1/24/2017 8:25:00 AM	2/7/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-006A	MW-907-Q117L	1/24/2017 8:30:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-006B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-006C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-006D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-006E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-007A	C-TAZ-S-0117L	1/24/2017 8:40:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-007B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-007C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-007C	C-TAZ-S-0117L	1/24/2017 8:40:00 AM	2/7/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-007D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-007E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-008A	R-28-0117L	1/24/2017 1:00:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-008B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-008C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-008D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-008E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-009A	R63-0117L	1/24/2017 10:10:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-009B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-009B	R63-0117L	1/24/2017 10:10:00 AM	2/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-009C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-009D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-009E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-010A	SW1-0117L	1/24/2017 2:30:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-010B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-010C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022819-011A	SW2-0117L	1/24/2017 2:50:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-011B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-011C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022819-012A	FOLDER		2/7/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-012A	FOLDER		2/7/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N022819

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022819

Item	Pages
Cover Page	1-6
Analytical Result / QC Summary Reports	7-91
Sample Receiving Items	92-101
List of Analysts	102
Raw Data	
EPA 120.1	103-106
SM 4500-H+B	107-111
SM 2540D	112-122
EPA 218.6	123-351
SM 4500-NO3F	352-365
EPA 6010B_Dissolved	366-400
EPA 6010B	401-439
EPA 6020_Dissolved	440-498

February 07, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N022819

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 24, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022819-001A	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001B	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001C	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001D	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-001E	C-R22A-D-0117L	Groundwater	1/24/2017 10:45:00 AM	1/24/2017	2/7/2017
N022819-002A	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002B	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002C	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002D	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-002E	C-R22A-S-0117L	Groundwater	1/24/2017 11:00:00 AM	1/24/2017	2/7/2017
N022819-003A	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003B	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003C	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003D	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-003E	C-R27-D-0117L	Groundwater	1/24/2017 12:05:00 PM	1/24/2017	2/7/2017
N022819-004A	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004B	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004C	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004D	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-004E	C-R27-S-0117L	Groundwater	1/24/2017 12:25:00 PM	1/24/2017	2/7/2017
N022819-005A	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005B	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005C	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005D	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-005E	C-TAZ-D-0117L	Groundwater	1/24/2017 8:25:00 AM	1/24/2017	2/7/2017
N022819-006A	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006B	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006C	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-006D	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022819-006E	MW-907-Q117L	Groundwater	1/24/2017 8:30:00 AM	1/24/2017	2/7/2017
N022819-007A	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007B	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007C	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007D	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-007E	C-TAZ-S-0117L	Groundwater	1/24/2017 8:40:00 AM	1/24/2017	2/7/2017
N022819-008A	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008B	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008C	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008D	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-008E	R-28-0117L	Groundwater	1/24/2017 1:00:00 PM	1/24/2017	2/7/2017
N022819-009A	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009B	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009C	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009D	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-009E	R63-0117L	Groundwater	1/24/2017 10:10:00 AM	1/24/2017	2/7/2017
N022819-010A	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-010B	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-010C	SW1-0117L	Groundwater	1/24/2017 2:30:00 PM	1/24/2017	2/7/2017
N022819-011A	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017
N022819-011B	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017
N022819-011C	SW2-0117L	Groundwater	1/24/2017 2:50:00 PM	1/24/2017	2/7/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **N022819-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1113.000	0.10						1115	0.180	10	

Sample ID: **N022820-005CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1086.000	0.10						1084	0.184	10	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022819-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.320	0.241	10	H
Temp. at time of pH Analysis	16.400	0.10						16.00	2.47	10	H

Sample ID **N022820-005CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.280	0.10						7.320	0.548	10	H
Temp. at time of pH Analysis	15.800	0.10						15.60	1.27	10	H

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170126F** QC Batch: **61055** PrepDate **1/26/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61055	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	LCSW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID	MB-61055	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	PBW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022819-001D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	ZZZZZZ	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 10:21 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:20 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 10:42 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:01 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:31 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:20 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:37 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 11:57 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:42 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 11:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:53 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 11:45 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 03:59 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 12:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:17 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 12:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:23 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 02:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113215** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **PBW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550948**

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

Sample ID **LCS-R113215** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **LCSW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	90	110				

Sample ID **N022819-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Sample ID **N022819-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N022819-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N022819-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022819-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N022819-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N022819-005AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110	1.080	1.29	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N022820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N022820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

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

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

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

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61090	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	PBW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549831

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

Sample ID	LCS-61090	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	LCSW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.562	1.0	10.00	0	106	85	115				

Sample ID	N022819-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.389	1.0	10.00	0	93.9	75	125				

Sample ID	N022819-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549862

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.458	1.0	10.00	0	94.6	75	125	9.389	0.737	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170125H** QC Batch: **R113095** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/25/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113095** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **PBW** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.042	0.050									

Sample ID **LCS-R113095** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **LCSW** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.500	0.050	0.5000	0	100	85	115				

Sample ID **N022778-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.253	0.050						0.2542	0.671	20	

Sample ID **N022778-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.740	0.050	0.5000	0.2542	97.1	75	125				

Sample ID **N022778-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ZZZZZZ** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.741	0.050	0.5000	0.2542	97.4	75	125	0.7398	0.176	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	62	1.8	20		ug/L	1	2/3/2017 04:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	150	1.8	20		ug/L	1	2/3/2017 06:49 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 04:54 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	160	1.8	20		ug/L	1	2/3/2017 07:17 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/3/2017 04:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	250	1.8	20		ug/L	1	2/3/2017 07:22 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**			PrepDate		**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**			PrepDate		**1/26/2017**	Analyst: **CEI**
Iron	210	1.8	20		ug/L	1	2/3/2017 07:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/3/2017 07:31 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:32 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/3/2017 07:46 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**			PrepDate		**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:37 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**			PrepDate		**1/26/2017**	Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	2/3/2017 07:51 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:42 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	140	1.8	20		ug/L	1	2/3/2017 07:56 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/3/2017 08:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61046** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **PBW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.068	20									

Sample ID **LCS-61046** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **LCSW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.528	20	100.0	0	111	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	145.129	20	100.0	62.36	82.8	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	146.407	20	100.0	62.36	84.0	75	125	145.1	0.877	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-61045	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	PBW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554747

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

Sample ID	LCS-61045	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	LCSW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.370	20	100.0	0	114	85	115				

Sample ID	N022819-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.130	20	100.0	151.7	91.4	75	125				

Sample ID	N022819-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.348	20	100.0	151.7	91.6	75	125	243.1	0.0894	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:20 PM
Barium	120	0.35	5.0		µg/L	5	1/31/2017 05:38 PM
Manganese	1.7	0.056	0.50		µg/L	1	1/31/2017 03:20 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/31/2017 03:20 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:20 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:26 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:26 PM
Manganese	0.79	0.056	0.50		µg/L	1	1/31/2017 03:26 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/31/2017 03:26 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/31/2017 03:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:31 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:31 PM
Manganese	2.2	0.056	0.50		µg/L	1	1/31/2017 03:31 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 03:31 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:31 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:37 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:37 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:37 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 03:37 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:37 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:42 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:42 PM
Manganese	0.56	0.056	0.50		µg/L	1	1/31/2017 03:42 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 03:42 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:42 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:48 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:48 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:48 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 03:48 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**				PrepDate	**1/30/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 03:53 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 03:53 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 03:53 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 03:53 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 03:53 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 03:59 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 03:59 PM
Manganese	0.78	0.056	0.50		µg/L	1	1/31/2017 03:59 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 03:59 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 03:59 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0117L
Lab Order:	N022819	**Collection Date:**	1/24/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022819-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 04:17 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:17 PM
Manganese	1.4	0.056	0.50		µg/L	1	1/31/2017 04:17 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 04:17 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:17 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61090** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61090** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.486	0.10	10.00	0	105	85	115				
Barium	106.579	1.0	100.0	0	107	85	115				
Manganese	105.581	0.50	100.0	0	106	85	115				
Molybdenum	9.901	0.50	10.00	0	99.0	85	115				
Selenium	9.761	0.50	10.00	0	97.6	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.862	0.10	10.00	2.132	97.3	75	125				
Manganese	93.651	0.50	100.0	1.695	92.0	75	125				
Molybdenum	16.358	0.50	10.00	5.035	113	75	125				
Selenium	10.857	0.50	10.00	1.466	93.9	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.863	5.0	100.0	123.1	108	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.020	0.10	10.00	2.132	98.9	75	125	11.86	1.32	20	
Manganese	93.710	0.50	100.0	1.695	92.0	75	125	93.65	0.0636	20	
Molybdenum	16.253	0.50	10.00	5.035	112	75	125	16.36	0.640	20	
Selenium	10.967	0.50	10.00	1.466	95.0	75	125	10.86	1.01	20	

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.394	5.0	100.0	123.1	107	75	125	230.9	0.203	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By:
Title: Jason Mahn
Signature: Date: 1/24/17
I hereby authorize ASSET Labs to perform the tests indicated below
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: [illegible]
Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/24/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com
P.O.#
Phone: 949-727-1400, ext 200
Fax:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	3	
6. Method of Cooling:	ice	
Sample Temp:	2.2 / 3.2	

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
~~1~~		~~C-NR4-S-0117L~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~		~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~	~~(DN)~~
2	N022819- 01	C-R22A-D-0117L	1/24/17	1045		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
3	- 02	C-R22A-S-0117L	1/24/17	1100		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
4	- 03	C-R27-D-0117L	1/24/17	1205		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
5	- 04	C-R27-S-0117L	1/24/17	1225		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
	- 05	C-TAZ-D-0117L	1/24/17	0825		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
7	- 06	MW-907-Q117L	1/24/17	0830		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
8	- 07	C-TAZ-S-0117L	1/24/17	0840		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
~~9~~		~~R-19-0117L~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~		~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~	~~(DN)~~
10	- 08	R-28-0117L	1/24/17	1300		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
11	- 09	R63-0117L	1/24/17	1010		X		X		X	X		X	X		X	X	E	~~9~~	P	BNS	7
~~12~~		~~RRB-0117L~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~		~~X~~	~~X~~	E	9	P	BNS	(DN)
13	- 10	SW1-0117L	1/24/17	1430		X		X					X	X				E	7	P	BNS	5
14	- 11	SW2-0117L	1/24/17	1450		X		X					X	X				E	7	P	BNS	5

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name)	Date/Time:
[signature]	1/24/17	[signature]	1/24/17 1600
[signature]	1/24/17 1442	[signature]	1/24/17 1442

Turn Around Time (TAT)

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

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

Special Instruction:

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

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

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On:	1/24/2017	Workorder:	N022819
Rep sample Temp (Deg C):	2.1/3.2	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 1/25/2017

Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-001A	C-R22A-D-0117L	1/24/2017 10:45:00 AM	2/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-001B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-001C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-001D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-001E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-002A	C-R22A-S-0117L	1/24/2017 11:00:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-002B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-002C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-002D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-002D	C-R22A-S-0117L	1/24/2017 11:00:00 AM	2/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-002E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-003A	C-R27-D-0117L	1/24/2017 12:05:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-003B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-003C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-003D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-003E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-004A	C-R27-S-0117L	1/24/2017 12:25:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-004B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-004B	C-R27-S-0117L	1/24/2017 12:25:00 PM	2/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-004C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-004D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-004E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-005A	C-TAZ-D-0117L	1/24/2017 8:25:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-005B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-005C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-005D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-005E	C-TAZ-D-0117L	1/24/2017 8:25:00 AM	2/7/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-006A	MW-907-Q117L	1/24/2017 8:30:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-006B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-006C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-006D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-006E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-007A	C-TAZ-S-0117L	1/24/2017 8:40:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-007B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-007C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-007C	C-TAZ-S-0117L	1/24/2017 8:40:00 AM	2/7/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-007D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-007E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-008A	R-28-0117L	1/24/2017 1:00:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-008B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-008C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-008D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-008E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-009A	R63-0117L	1/24/2017 10:10:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-009B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-009B	R63-0117L	1/24/2017 10:10:00 AM	2/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-009C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022819-009D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022819-009E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022819-010A	SW1-0117L	1/24/2017 2:30:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-010B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-010C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022819-011A	SW2-0117L	1/24/2017 2:50:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022819-011B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022819-011C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022819-012A	FOLDER		2/7/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022819

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022819-012A	FOLDER		2/7/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022819**

NAME	TEST METHOD
Quennie Manimtim	SM 2540D
Claire Ignacio	EPA 6020, EPA 6010B
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500-H+B
Ria Abes	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113068 **Analyst:** LSR

ASSET #: N022819 **Date Analyzed:** 1/25/2017

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer LSR Date: 2/7/17

2nd Level Reviewer Nancy 2/7/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/25/17 1500

Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 mS/cm	CINV-161025C	10.53 mS/cm @18.1°C	% Rec: (90-110%)
1413	160902A	1429 @18.1°C	
10043	161220I	10110 @18.0°C	
99938	161220J	101200 @18.0°C	

	Sample ID	Matrix	Reading	Comments
1	N022819-001D	H_2O	975 @19.1°C	
2	2D		965 @19.2°C	
3	3D		964 @19.0°C	
4	4D		967 @19.0°C	
5	5D		970 @18.9°C	
6	6D		975 @18.8°C	
7	7D		970 @18.8°C	
8	8D		972 @18.8°C	
9	9D		975 @18.8°C	
10	10C		1115 @18.8°C	
Dup	10C DUP		1113 @18.8°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:

Analyst: CONT'D

Standard	Std ID	Reading	Comments
1413 mS/cm	CINV-160929A	1434 uS/cm @19.5°C	% Rec: (90-110%)
10043	160909C	10170 @19.7°C	
99899	161104A	99800 @19.8°C	

	Sample ID	Matrix	Reading	Comments
1	N022819-011C	H_2O	1068 @19.1°C	
2	N022820-001D		9603 @19.0°C	
3	2D		974 @18.8°C	
4	3D		967 @19.0°C	
5	4D	HR	9677 @18.8C	977
6	5C		1084 @19.0°C	
7	5C DUP		1086 @19.1°C	
8				
9	1413 mS/cm	CINV-160929A	1436 uS/cm @19.6°C	
10	10043	160909C	10190 @19.9°C	
Dup	99899	161104A	100600 @20.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113067 **Analyst:** LSR

ASSET #: N022819 **Date Analyzed:** 1/25/2017

Method: EPA 150.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 2/6/2017

2nd Level Reviewer 2/7/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/24/17 1705
Analyst: LSR

CONT'D

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.04 @ 20.0°C	SLOPE 98.3%
Buffer 7	161027A	6.95 @ 20.2°C	
Buffer 10	161214A	10.04 @ 20.0°C	

	Sample ID	Matrix	pH	Comments
1	N022805-004A	H2O	4.41 @ 18.7°C	
2	N022816-001C		7.32 @ 15.9°C	
3	2C		7.43 @ 16.1°C	
4	3C		5.68 @ 16.3°C	
5	N022817-001C		7.48 @ 16.1°C	
6	2C		7.57 @ 16.0°C	
7	3C		7.59 @ 15.9°C	
8	4C		7.52 @ 16.1°C	
9	N022818-001D		7.28 @ 16.0°C	
10	DUP		7.30 @ 17°C	
Dup	N022816-003C DUP		5.74 @ 16.6°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.02 @ 19.8°C	Accept: +/-0.1 pH units from expected value

Date: 1/25/17 945
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022819-001D	H2O	8.32 @ 16.0°C	
2	2D		8.24 @ 16.6°C	
3	3D		8.32 @ 16.0°C	
4	4D		8.30 @ 16.3°C	
5	5D		8.28 @ 16.4°C	
6	6D		8.31 @ 15.8°C	
7	7D		8.31 @ 16.3°C	
8	8D		8.30 @ 16.8°C	
9	9D		8.29 @ 16.3°C	
10	10C		8.02 @ 16.6°C	
Dup	1D DUP		8.30 @ 16.4°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.05 @ 17.8°C	Accept: +/-0.1 pH units from expected value

Logbook #10

Julia Ramit 2/6/2017

pH Logbook

Date: 1/25/17 945
Analyst: LSR

CONT'D

Standard	Std ID	pH	Comments
Buffer 4	CIW-161015B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022819-011C	H2O	7.31 @ 16.4°C	
2	N022820-001D		8.25 @ 16.1°C	
3	2D		8.26 @ 16.4°C	
4	3D		8.29 @ 15.9°C	
5	4D		8.28 @ 16.3°C	
6	5C		7.32 @ 15.6°C	
7	5C DVP		7.28 @ 15.8°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10 (Circle one)	CIW-161010A	7.05 @ 17.4°C	Accept: +/-0.1 pH units from expected value

Julia Ramit 2/6/2017

Date: 1/25/17 1530
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CIW-161015B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022824-001A	H2O	6.63 @ 18.4°C	
2	1A DVP		6.67 @ 18.5°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10 (Circle one)	CIW-161010A	6.97 @ 20.1°C	Accept: +/-0.1 pH units from expected value

Logbook #10

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61055 **Analyst:** QBM

ASSET #: N022819 **Date Analyzed:** 1/26/2017

Method: 160.2

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer 2/7/2017 Date:

2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

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

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

Where:

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

For **N022819-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4058- 1.4055) *1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

2/7/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 9:29:23 A**
Prep End Date: **1/26/2017 5:25:00 P**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/2017

Prep Batch **61055** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61055	Water		100	☐	0	0	100	1.000		
MB-61055	Water		100	☐	0	0	100	1.000		
N022819-001D	Groundwater		100	☐	0	0	100	1.000		
N022819-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N022819-002D	Groundwater		100	☐	0	0	100	1.000		
N022819-003D	Groundwater		100	☐	0	0	100	1.000		
N022819-004D	Groundwater		100	☐	0	0	100	1.000		
N022819-005D	Groundwater		100	☐	0	0	100	1.000		
N022819-006D	Groundwater		100	☐	0	0	100	1.000		
N022819-007D	Groundwater		100	☐	0	0	100	1.000		
N022819-008D	Groundwater		100	☐	0	0	100	1.000		
N022819-009D	Groundwater		100	☐	0	0	100	1.000		
N022820-001D	Groundwater		100	☐	0	0	100	1.000		

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

Number	Reagent Name
8832	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 9:29:23 A**
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: _____

Prep Batch **61055** Prep Code: **160.2 W PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61055	Water	INST120118A	100	☐	0	0	100	1.000		
MB-61055	Water		100	☐	0	0	100	1.000		
N022819-001D	Groundwater		100	☐	0	0	100	1.000		
N022819-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N022819-002D	Groundwater		100	☐	0	0	100	1.000		
N022819-003D	Groundwater		100	☐	0	0	100	1.000		
N022819-004D	Groundwater		100	☐	0	0	100	1.000		
N022819-005D	Groundwater		100	☐	0	0	100	1.000		
N022819-006D	Groundwater		100	☐	0	0	100	1.000		
N022819-007D	Groundwater		100	☐	0	0	100	1.000		
N022819-008D	Groundwater		100	☐	0	0	100	1.000		
N022819-009D	Groundwater		100	☐	0	0	100	1.000		
N022820-001D	Groundwater		100	☐	0	0	100	1.000		

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

8832

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TOTAL SUSPENDED SOLIDS, TSS

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

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/26/2017							
MB-61055	100	1.3986	1.3985	-1.0000	1.00	-1	MBLK
LCS-61055	100	1.3921	1.4850	929.0000	1.00	929	LCS
N022819-001D	100	1.4055	1.4058	3.0000	1.00	3	SAMP
N022819-001D-DUP	100	1.3989	1.3991	2.0000	1.00	2	DUP
N022819-002D	100	1.4077	1.4079	2.0000	1.00	2	SAMP
N022819-003D	100	1.3986	1.3991	5.0000	1.00	5	SAMP
N022819-004D	100	1.4071	1.4076	5.0000	1.00	5	SAMP
N022819-005D	100	1.4196	1.4197	1.0000	1.00	1	SAMP
N022819-006D	100	1.4068	1.4069	1.0000	1.00	1	SAMP
N022819-007D	100	1.4069	1.407	1.0000	1.00	1	SAMP
N022819-008D	100	1.4295	1.4298	3.0000	1.00	3	SAMP
N022819-009D	100	1.4062	1.4065	3.0000	1.00	3	SAMP
N022820-001D	100	1.3913	1.3918	5.0000	1.00	5	SAMP

SOLIDS RAW DATA

TEST (TSS) TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/26/17	MB-61055 mb	100	1.3989 1.3986	1.3986 1.3985	
	LCS-61055 LCS	100	1.3924 1.3921	1.4851 1.4850	
	N022819-0010 1	100	1.4057 1.4055	1.4059 1.4058	
	10DWP DWP	100	1.3990 1.3989	1.3992 1.3991	
	2D 2	100	1.4078 1.4077	1.4080 1.4079	
	3D 3	100	1.3988 1.3986	1.3992 1.3991	
	4D 4	100	1.4073 1.4071	1.4078 1.4076	
	5D 5	100	1.4199 1.4196	1.4197 1.4197	
	6D 6	100	1.4069 1.4068	1.4069 1.4069	
	7D 7	100	1.4070 1.4069	1.4070 1.4070	

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7434
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
SBA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3101 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/ELAP Cert 4046

SOLIDS RAW DATA

TEST (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/20/17	N022819-0086 8	100	1.4297 1.4205	1.4299 1.4298	
	9b 9	100	1.4063 1.4062	1.4067 1.4065	
	N022820-0010 10	100	1.3915 1.3913	1.3920 1.3918	

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11120 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2521
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113215
ASSET #: N022819

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/30/2017

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer 2/7/2017 Date: —

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113260
ASSET #: N022819

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/2/2017

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer 2/7/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

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

where:

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

For Sample **N022819-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0441 * 1$$

$$Cr^{+6}, \mu g/L = 0.044$$

Since PQL is 0.2 µg/L,

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

rba 2/6/2017

ANALYSIS RUN LOG

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMP	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMP	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMP	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMP	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMP	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMP	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMP	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMP	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMP	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMP	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMP	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMP	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMP	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMP	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMP	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMP	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMP	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMP	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMP	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMP	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMP	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMP	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMP	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMP	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMP	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMP	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMP	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMP	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/30/17 9:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/30/17 9:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/30/17 9:51 AM	Reported
15	MB-R113215	MBLK	1	Hexavalent Chromium	01/30/17 10:00 AM	Reported
16	LCS-R113215	LCS	1	Hexavalent Chromium	01/30/17 10:09 AM	Reported
17	N022819-001A	SAMP	1	Hexavalent Chromium	01/30/17 10:21 AM	Reported
18	N022819-001AMS	MS	1	Hexavalent Chromium	01/30/17 10:32 AM	Reported
19	N022819-002A	SAMP	1	Hexavalent Chromium	01/30/17 10:42 AM	Reported
20	N022819-002AMS	MS	1	Hexavalent Chromium	01/30/17 10:51 AM	Reported
21	N022819-003A	SAMP	1	Hexavalent Chromium	01/30/17 11:01 AM	Reported
22	N022819-003AMS	MS	1	Hexavalent Chromium	01/30/17 11:10 AM	Reported
23	N022819-004A	SAMP	1	Hexavalent Chromium	01/30/17 11:20 AM	Reported
24	N022819-004AMS	MS	1	Hexavalent Chromium	01/30/17 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/30/17 11:38 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/30/17 11:48 AM	Reported
27	N022819-005A	SAMP	1	Hexavalent Chromium	01/30/17 11:57 AM	Reported
28	N022819-005AMS	MS	1	Hexavalent Chromium	01/30/17 12:07 PM	Reported
29	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 12:16 PM	Not Reported
30	N022819-006A	SAMP	1	Hexavalent Chromium	01/30/17 12:26 PM	Reported
31	N022819-006ADUP	DUP	1	Hexavalent Chromium	01/30/17 12:35 PM	Reported
32	N022819-006AMS	MS	1	Hexavalent Chromium	01/30/17 12:45 PM	Reported
33	N022819-007A	SAMP	1	Hexavalent Chromium	01/30/17 12:54 PM	Reported
34	N022819-007AMS	MS	1	Hexavalent Chromium	01/30/17 1:04 PM	Reported
35	N022819-008A	SAMP	1	Hexavalent Chromium	01/30/17 1:13 PM	Not Reported
36	N022819-008AMS	MS	1	Hexavalent Chromium	01/30/17 1:23 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/30/17 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:41 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:53 PM	Not Reported
40	N022819-009A	SAMP	1	Hexavalent Chromium	01/30/17 2:04 PM	Not Reported
41	N022819-009AMS	MS	1	Hexavalent Chromium	01/30/17 2:14 PM	Not Reported
42	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 2:23 PM	Reported
43	N022819-010A	SAMP	1	Hexavalent Chromium	01/30/17 2:33 PM	Not Reported
44	N022819-010AMS	MS	1	Hexavalent Chromium	01/30/17 2:42 PM	Not Reported

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
45	N022819-011A	SAMP	1	Hexavalent Chromium	01/30/17 2:51 PM	Reported
46	N022819-011AMS	MS	1	Hexavalent Chromium	01/30/17 3:01 PM	Reported
47	N022820-001A	SAMP	1	Hexavalent Chromium	01/30/17 3:10 PM	Not Reported
48	N022820-001AMS	MS	1	Hexavalent Chromium	01/30/17 3:20 PM	Not Reported
49	N022820-002A	SAMP	1	Hexavalent Chromium	01/30/17 3:29 PM	Not Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	01/30/17 3:39 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	01/30/17 3:48 PM	Reported
52	N022820-002AMS	MS	1	Hexavalent Chromium	01/30/17 3:58 PM	Not Reported
53	N022820-003A	SAMP	1	Hexavalent Chromium	01/30/17 4:07 PM	Not Reported
54	N022820-003AMS	MS	1	Hexavalent Chromium	01/30/17 4:17 PM	Not Reported
55	N022820-004A	SAMP	1	Hexavalent Chromium	01/30/17 4:26 PM	Reported
56	N022820-004AMS	MS	1	Hexavalent Chromium	01/30/17 4:36 PM	Reported
57	N022820-005A	SAMP	1	Hexavalent Chromium	01/30/17 4:45 PM	Reported
58	N022820-005AMS	MS	1	Hexavalent Chromium	01/30/17 4:54 PM	Reported
59	N022820-006A	SAMP	1	Hexavalent Chromium	01/30/17 5:04 PM	Reported
60	N022820-006AMS	MS	1	Hexavalent Chromium	01/30/17 5:17 PM	Reported
61	N022773-016A	SAMP	1	Hexavalent Chromium	01/30/17 5:29 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	01/30/17 5:38 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	01/30/17 5:47 PM	Reported
64	N022820-007A	SAMP	1	Hexavalent Chromium	01/30/17 5:57 PM	Reported
65	N022820-007AMS	MS	1	Hexavalent Chromium	01/30/17 6:06 PM	Reported
66	N022702-012A	SAMP	2	Hexavalent Chromium	01/30/17 6:16 PM	Not Reported
67	N022702-012AMS	MS	2	Hexavalent Chromium	01/30/17 6:25 PM	Not Reported
68	LCS-R113217	LCS	1	Hexavalent Chromium	01/30/17 6:35 PM	Reported
69	MB-R113217	MBLK	1	Hexavalent Chromium	01/30/17 6:44 PM	Reported
70	N022866-005A	SAMP	50	Hexavalent Chromium	01/30/17 6:54 PM	Reported
71	N022866-005AMS	MS	50	Hexavalent Chromium	01/30/17 7:03 PM	Reported
72	N022866-005AMSD	MSD	50	Hexavalent Chromium	01/30/17 7:13 PM	Reported
73	N022866-001A	SAMP	50	Hexavalent Chromium	01/30/17 7:22 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	01/30/17 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	01/30/17 7:41 PM	Reported
76	N022866-001ADUP	DUP	50	Hexavalent Chromium	01/30/17 7:50 PM	Reported
77	N022866-002A	SAMP	1	Hexavalent Chromium	01/30/17 8:00 PM	Reported
78	N022866-003A	SAMP	1	Hexavalent Chromium	01/30/17 8:09 PM	Reported
79	N022866-004A	SAMP	1	Hexavalent Chromium	01/30/17 8:19 PM	Reported
80	N022866-006A	SAMP	1	Hexavalent Chromium	01/30/17 8:28 PM	Reported
81	N022866-007A	SAMP	1	Hexavalent Chromium	01/30/17 8:38 PM	Reported
82	N022869-001A	SAMP	1	Hexavalent Chromium	01/30/17 8:47 PM	Reported
83	N022822-011A	SAMP	1	Hexavalent Chromium	01/30/17 8:57 PM	Reported
84	N022822-011AMS	MS	1	Hexavalent Chromium	01/30/17 9:06 PM	Reported
85	N022822-012A	SAMP	1	Hexavalent Chromium	01/30/17 9:16 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	01/30/17 9:25 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	01/30/17 9:35 PM	Reported
88	N022822-012AMS	MS	1	Hexavalent Chromium	01/30/17 9:44 PM	Reported

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
89	N022822-013A	SAMP	1	Hexavalent Chromium	01/30/17 10:17 PM	Reported
90	N022822-013AMS	MS	1	Hexavalent Chromium	01/30/17 10:28 PM	Reported
91	N022822-014A	SAMP	1	Hexavalent Chromium	01/30/17 10:37 PM	Reported
92	N022822-014AMS	MS	1	Hexavalent Chromium	01/30/17 10:47 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	01/30/17 10:56 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	01/30/17 11:06 PM	Reported
95	MB-61081	MBLK	1	Hexavalent Chromium	01/30/17 11:15 PM	Reported
96	N022615-001D_STLC	SAMP	10000	Hexavalent Chromium	01/30/17 11:25 PM	Reported
97	N022615-001DREP	DUP	10000	Hexavalent Chromium	01/30/17 11:34 PM	Reported
98	CCV-9	CCV	1	Hexavalent Chromium	01/30/17 11:44 PM	Reported
99	CCB-9	CCB	1	Hexavalent Chromium	01/30/17 11:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170130A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Feb/17 16:00:29**
No. of Injections:	**102**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/30/2017 09:11	Finished	
11	BLANK	2	1000	Unknown		01/30/2017 09:22	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/30/2017 09:32	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/30/2017 09:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/30/2017 09:51	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/30/2017 10:00	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/30/2017 10:09	Finished	LCS, IWST-161114D
17	N022819-001A,SAMF	9	1000	Unknown		01/30/2017 10:21	Finished	SAMP, 10mL
18	N022819-001AMS,MS	10	1000	Unknown		01/30/2017 10:32	Finished	MS (1ppb), IWST-161114D,10
19	N022819-002A,SAMF	11	1000	Unknown		01/30/2017 10:42	Finished	SAMP, 10mL
20	N022819-002AMS,MS	12	1000	Unknown		01/30/2017 10:51	Finished	MS (1ppb), IWST-161114D,10
21	N022819-003A,SAMF	13	1000	Unknown		01/30/2017 11:01	Finished	SAMP, 10mL
22	N022819-003AMS,MS	14	1000	Unknown		01/30/2017 11:10	Finished	MS (1ppb), IWST-161114D,10
23	N022819-004A,SAMF	15	1000	Unknown		01/30/2017 11:20	Finished	SAMP, 10mL
24	N022819-004AMS,MS	16	1000	Unknown		01/30/2017 11:29	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		01/30/2017 11:38	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/30/2017 11:48	Finished	CCB R170112D
27	N022819-005A,SAMF	19	1000	Unknown		01/30/2017 11:57	Finished	SAMP, 10mL
28	N022819-005AMS,MS	20	1000	Unknown		01/30/2017 12:07	Finished	MS (1ppb), IWST-161114D,10
29	N022819-005AMSD,M	21	1000	Unknown		01/30/2017 12:16	Finished	MSD (1ppb), IWST-161114D,1
30	N022819-006A,SAMF	22	1000	Unknown		01/30/2017 12:26	Finished	SAMP, 10mL
31	N022819-006ADUP,D	23	1000	Unknown		01/30/2017 12:35	Finished	DUP, 10mL
32	N022819-006AMS,MS	24	1000	Unknown		01/30/2017 12:45	Finished	MS (1ppb), IWST-161114D,0.0
33	N022819-007A,SAMF	25	1000	Unknown		01/30/2017 12:54	Finished	SAMP, 10mL
34	N022819-007AMS,MS	26	1000	Unknown		01/30/2017 13:04	Finished	MS (1ppb), IWST-161114D,10
35	N022819-008A,SAMF	27	1000	Unknown		01/30/2017 13:13	Finished	SAMP, 10mL
36	N022819-008AMS,MS	28	1000	Unknown		01/30/2017 13:23	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		01/30/2017 13:32	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:41	Finished	CCB R170112D
39	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:53	Finished	CCB R170112D
40	N022819-009A,SAMF	31	1000	Unknown		01/30/2017 14:04	Finished	SAMP, 10mL
41	N022819-009AMS,MS	32	1000	Unknown		01/30/2017 14:14	Finished	MS (1ppb), IWST-161114D,10
42	N022819-005AMSD,M	33	1000	Unknown		01/30/2017 14:23	Finished	MSD (1ppb), IWST-161114D,1
43	N022819-010A,SAMF	34	1000	Unknown		01/30/2017 14:33	Finished	SAMP, 10mL
44	N022819-010AMS,MS	35	1000	Unknown		01/30/2017 14:42	Finished	MS (1ppb), IWST-161114D,10
45	N022819-011A,SAMF	36	1000	Unknown		01/30/2017 14:51	Finished	SAMP, 10mL
46	N022819-011AMS,MS	37	1000	Unknown		01/30/2017 15:01	Finished	MS (1ppb), IWST-161114D,10
47	N022820-001A,SAMF	38	1000	Unknown		01/30/2017 15:10	Finished	SAMP, 10mL
48	N022820-001AMS,MS	39	1000	Unknown		01/30/2017 15:20	Finished	MS (1ppb), IWST-161114D,10
49	N022820-002A,SAMF	40	1000	Unknown		01/30/2017 15:29	Finished	SAMP, 10mL
50	CCV-4,CCV1,1,	41	1000	Unknown		01/30/2017 15:39	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	42	1000	Unknown		01/30/2017 15:48	Finished	CCB R170112D
52	N022820-002AMS,MS	43	1000	Unknown		01/30/2017 15:58	Finished	MS (1ppb), IWST-161114D,10
53	N022820-003A,SAMF	44	1000	Unknown		01/30/2017 16:07	Finished	SAMP, 10mL
54	N022820-003AMS,MS	45	1000	Unknown		01/30/2017 16:17	Finished	MS (1ppb), IWST-161114D,10
55	N022820-004A,SAMF	46	1000	Unknown		01/30/2017 16:26	Finished	SAMP, 10mL
56	N022820-004AMS,MS	47	1000	Unknown		01/30/2017 16:36	Finished	MS (1ppb), IWST-161114D,10
57	N022820-005A,SAMF	48	1000	Unknown		01/30/2017 16:45	Finished	SAMP, 10mL
58	N022820-005AMS,MS	49	1000	Unknown		01/30/2017 16:54	Finished	MS (1ppb), IWST-161114D,10
59	N022820-006A,SAMF	50	1000	Unknown		01/30/2017 17:04	Finished	SAMP, 10mL
60	N022820-006AMS,MS	1	1000	Unknown		01/30/2017 17:17	Finished	MS (1ppb), IWST-161114D,10

61	N022773-016A,SAMF	2	1000	Unknown		01/30/2017 17:29	Finished	SAMP, 10mL
62	CCV-5,CCV,1,	3	1000	Unknown		01/30/2017 17:38	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	4	1000	Unknown		01/30/2017 17:47	Finished	CCB R170112D
64	N022820-007A,SAMF	5	1000	Unknown		01/30/2017 17:57	Finished	SAMP, 10mL
65	N022820-007AMS,MS	6	1000	Unknown		01/30/2017 18:06	Finished	MS (1ppb), IWST-161114D,10
66	N022702-012A,SAMF	7	1000	Unknown		01/30/2017 18:16	Finished	SAMP, 5>10mL
67	N022702-012AMS,MS	8	1000	Unknown		01/30/2017 18:25	Finished	MS (5ppb), IWST-161114D,5>
68	LCS-2,LCS,1	9	1000	Unknown		01/30/2017 18:35	Finished	LCS, IWST-161114D
69	MB-2,MBLK,1	10	1000	Unknown		01/30/2017 18:44	Finished	MB R170112D
70	N022866-005A,SAMF	11	1000	Unknown		01/30/2017 18:54	Finished	SAMP, 0.2>10mL
71	N022866-005AMS,MS	12	1000	Unknown		01/30/2017 19:03	Finished	MS (5ppb), IWST-161114D,0.2
72	N022866-005AMSD,M	13	1000	Unknown		01/30/2017 19:13	Finished	MSD (5ppb), IWST-161114D,0
73	N022866-001A,SAMF	14	1000	Unknown		01/30/2017 19:22	Finished	SAMP, 0.2>10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		01/30/2017 19:32	Finished	CCV @10ppb, IWST-161114C
75	CCB-6,CCB,1,	16	1000	Unknown		01/30/2017 19:41	Finished	CCB R170103B
76	N022866-001ADUP,D	17	1000	Unknown		01/30/2017 19:50	Finished	DUP, 0.2>10mL
77	N022866-002A,SAMF	18	1000	Unknown		01/30/2017 20:00	Finished	SAMP, 10mL
78	N022866-003A,SAMF	19	1000	Unknown		01/30/2017 20:09	Finished	SAMP, 10mL
79	N022866-004A,SAMF	20	1000	Unknown		01/30/2017 20:19	Finished	SAMP, 10mL
80	N022866-006A,SAMF	21	1000	Unknown		01/30/2017 20:28	Finished	SAMP, 10mL
81	N022866-007A,SAMF	22	1000	Unknown		01/30/2017 20:38	Finished	SAMP, 10mL
82	N022869-001A,SAMF	23	1000	Unknown		01/30/2017 20:47	Finished	SAMP, 10mL
83	N022822-011A,SAMF	24	1000	Unknown		01/30/2017 20:57	Finished	SAMP, 10mL
84	N022822-011AMS,MS	25	1000	Unknown		01/30/2017 21:06	Finished	MS (1ppb), IWST-161114D,10
85	N022822-012A,SAMF	26	1000	Unknown		01/30/2017 21:16	Finished	SAMP, 10mL
86	CCV-7,CCV,1,	27	1000	Unknown		01/30/2017 21:25	Finished	CCV @5ppb, IWST-161114C
87	CCB-7,CCB,1,	28	1000	Unknown		01/30/2017 21:35	Finished	CCB R170112D
88	N022822-012AMS,MS	29	1000	Unknown		01/30/2017 21:44	Finished	MS (1ppb), IWST-161114D,10
89	N022822-013A,SAMF	30	1000	Unknown		01/30/2017 22:17	Finished	SAMP, 10mL
90	N022822-013AMS,MS	31	1000	Unknown		01/30/2017 22:28	Finished	MS (1ppb), IWST-161114D,10
91	N022822-014A,SAMF	32	1000	Unknown		01/30/2017 22:37	Finished	SAMP, 10mL
92	N022822-014AMS,MS	33	1000	Unknown		01/30/2017 22:47	Finished	MS (1ppb), IWST-161114D,10
93	CCV-8,CCV1,1,	34	1000	Unknown		01/30/2017 22:56	Finished	CCV @10ppb, IWST-161114C
94	CCB-8,CCB,1,	35	1000	Unknown		01/30/2017 23:06	Finished	CCB R170103B
95	MB-61081,MBLK,1	36	1000	Unknown		01/30/2017 23:15	Finished	MB R170112D
96	N022615-001D_STLC	37	1000	Unknown		01/30/2017 23:25	Finished	SAMP,0.001>10mL
97	N022615-001DREP,D	38	1000	Unknown		01/30/2017 23:34	Finished	REP,0.001>10mL
98	CCV-9,CCV,1,	39	1000	Unknown		01/30/2017 23:44	Finished	CCV @5ppb, IWST-161114C
99	CCB-9,CCB,1,	40	1000	Unknown		01/30/2017 23:53	Finished	CCB R170103B
100	SHUTDOWN	41	1000	Unknown		01/31/2017 00:03	Finished	
101	Eluent: R170130A	42	1000	Unknown		n.a.	Finished	Eluent
102	PCR: R170127B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Not Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMP	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMP	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMP	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMP	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMP	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMP	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMP	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMP	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMP	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMP	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMP	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMP	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMP	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMP	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMP	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMP	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMP	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMP	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMP	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMP	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 9:15
Prepared By: RBA / MG

slope: 98.5%
pH 4: 4.01 @ 17.9°C
7: 7.02 @ 18°C
10: 10.05 @ 18°C
LS: 7.03 @ 17.9°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CW-1610 12A
NH4OH + NH4SO4 eluent: R170125A / R170202A
NH4OH + NH4SO4 buffer: R170103B / R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022829-001A	8.83	9.40	~250 mL	~250 mL	+5 mL R170123B	
2)	2A	1.22	1.36			+5 mL R170123B	
3)	3A	8.84	9.42			+4 "	
4)	4A	8.90	9.45			+4 "	
5)	6A	7.56	9.49				
6)	7A	7.41	9.48			+5 mL R170123B	
7)	~~N0775~~ MG 1/26/17					+5 mL R170123B	
8)	N022773-11A	9.61	–				R170112D
9)	13A	9.62	–				
10)	14A	9.61	–				
11)	15A	9.60	–				
12)	16A	9.61	–				
13)	N022819-1A	9.49	–				1/3
14)	1A	9.50	–				2/3
15)	1A	9.50	–				3/3
	N022819-2A	9.47	–				1/3

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 9:15
Prepared By: MG

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CW-1610 12A
NH4OH + NH4SO4 eluent: ~~R170125A~~ / R170302A / R170202A
NH4OH + NH4SO4 buffer: ~~R170103B~~ R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022819-2A	9.46	–	~250 mL	~250 mL		2/3 R170112D
2)	2A	9.47	–				3/3
3)	3A	9.49	–				1/3
4)	3A	9.48	–				2/3
5)	3A	9.47	–				3/3
6)	4A	9.46	–				1/3
7)	4A	9.49	–				2/3
8)	4A	9.47	–				3/3
9)	5A	9.50	–				1/3
10)	5A	9.50	–				2/3
11)	5A	9.50	–				3/3
12)	6A	9.48	–				1/3
13)	6A	9.49	–				2/3
14)	6A	9.50	–				3/3
15)	7A	9.45	–				1/3
	7A	9.48					2/3

Logbook No. 12

rba 2/6/2017

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'N

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-1610 12A
NH4OH + NH4SO4 eluent: R170130A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022819 - 7A	9.48	–	~250 mL	~250 mL		3/3 R170112D
2)	8A	9.47	–				1/3
3)	8A	9.47	–				2/3
4)	8A	9.47	–				3/3
5)	9A	9.48	–				1/3
6)	9A	9.49	–				2/3
7)	9A	9.46	–				3/3
8)	10A	9.40	–				1/3
9)	10A	9.39	–				2/3
10)	10A	9.40	–				3/3
11)	11A	9.37	–				1/3
12)	11A	9.35	–				2/3
13)	11A	9.38	–				3/3
14)	N022820 - 1A	9.47	–				1/3
15)	1A	9.46	–				2/3
	1A	9.45	–				3/3

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'N

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: INV-1610 12A
NH4OH + NH4SO4 eluent: R170130A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022820 - 2A	9.44	–	~250 mL	~250 mL		1/3 R170112D
2)	2A	9.47	–				2/3
3)	2A	9.43	–				3/3
4)	3A	9.46	–				1/3
5)	3A	9.45	–				2/3
6)	3A	9.48	–				3/3
7)	4A	9.48	–				1/3
8)	4A	9.49	–				2/3
9)	4A	9.48	–				3/3
10)	5A	9.38	–				1/3
11)	5A	9.39	–				2/3
12)	5A	9.37	–				3/3
13)	6A	9.57	–				
14)	7A	9.57	–				
15)	11A	9.53	–				
	12A	9.40	–				

Logbook No. 12

jrba 2/6/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/9/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0502	0.2519	1.2883	2.5528	3.8621	5.0920	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ICV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.086	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.209	0.20	10.00	0	102	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.032	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.115	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2551000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.219	0.20	10.00	0	102	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.178	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.203	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.368	0.20	10.00	0	104	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.205	0.20	5.000	0	104	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.397	0.20	10.00	0	104	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.212	0.20	5.000	0	104	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.359	0.20	10.00	0	104	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ICB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550944**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550947**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550959**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550971**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550983**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113215
Client ID:	CCB	Batch ID:	R113215	TestNo:	EPA 218.6			Analysis Date:	1/30/2017	SeqNo:	2550995

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

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113215
Client ID:	CCB	Batch ID:	R113215	TestNo:	EPA 218.6			Analysis Date:	1/30/2017	SeqNo:	2551001

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553834**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553837**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553846**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553854**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553862**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553874

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

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553880

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	

Average	4.272
Actual RT Window	4.192 - 4.352
Applied RT Window	4.072 - 4.472

MB-R113215	N.A.	N.A.
LCS-R113215	4.273	PASS
N022819-001A	4.256	PASS
N022819-001AMS	4.273	PASS
N022819-002A	4.256	PASS
N022819-002AMS	4.265	PASS
N022819-003A	4.273	PASS
N022819-003AMS	4.265	PASS
N022819-004A	4.265	PASS
N022819-004AMS	4.265	PASS
N022819-005A	4.256	PASS
N022819-005AMS	4.265	PASS
N022819-005AMSD	4.265	PASS
N022819-006A	4.248	PASS
N022819-006ADUP	4.256	PASS
N022819-006AMS	4.265	PASS
N022819-007A	4.248	PASS
N022819-007AMS	4.265	PASS
N022819-008A	4.256	PASS
N022819-008AMS	4.265	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	
Average	4.272	
Actual RT Window	4.192 - 4.352	
Applied RT Window	4.072 - 4.472	
N022819-009A	4.256	PASS
N022819-009AMS	4.265	PASS
N022819-005AMSD	4.265	PASS
N022819-010A	4.256	PASS
N022819-010AMS	4.265	PASS
N022819-011A	N.A.	N.A.
N022819-011AMS	4.265	PASS
N022820-001A	4.281	PASS
N022820-001AMS	4.265	PASS
N022820-002A	4.223	PASS
N022820-002AMS	4.265	PASS
N022820-003A	4.256	PASS
N022820-003AMS	4.273	PASS
N022820-004A	4.248	PASS
N022820-004AMS	4.265	PASS
N022820-005A	4.248	PASS
N022820-005AMS	4.265	PASS
N022820-006A	N.A.	N.A.
N022820-006AMS	4.273	PASS
N022773-016A	4.265	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	
Average	4.272	
Actual RT Window	4.192 - 4.352	
Applied RT Window	4.072 - 4.472	
N022820-007A	N.A.	N.A.
N022820-007AMS	4.273	PASS
N022702-012A	4.265	PASS
N022702-012AMS	4.256	PASS
LCS-R113217	4.273	PASS
MB-R113217	N.A.	N.A.
N022866-005A	4.273	PASS
N022866-005AMS	4.273	PASS
N022866-005AMSD	4.273	PASS
N022866-001A	4.273	PASS
N022866-001ADUP	4.265	PASS
N022866-002A	4.273	PASS
N022866-003A	N.A.	N.A.
N022866-004A	N.A.	N.A.
N022866-006A	N.A.	N.A.
N022866-007A	N.A.	N.A.
N022869-001A	N.A.	N.A.
N022822-011A	4.256	PASS
N022822-011AMS	4.273	PASS
N022822-012A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	

Average	4.272
Actual RT Window	4.192 - 4.352
Applied RT Window	4.072 - 4.472

N022822-012AMS	4.273	PASS
N022822-013A	N.A.	N.A.
N022822-013AMS	4.273	PASS
N022822-014A	N.A.	N.A.
N022822-014AMS	4.265	PASS
MB-61081	N.A.	N.A.
N022615-001D_STLC	4.273	PASS
N022615-001DREP	4.273	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

MB-H2O	~~4.281~~	~~PASS~~	not reported
LCS-R113260	4.256	PASS	
MB-R113260	N.A.	N.A.	
N022819-006A	4.248	PASS	
N022819-008A	4.256	PASS	
N022819-008AMS	4.256	PASS	
N022819-009A	4.256	PASS	
N022819-009AMS	4.256	PASS	
N022819-010A	4.256	PASS	
N022819-010AMS	4.256	PASS	
N022820-001A	4.256	PASS	
N022820-001AMS	4.256	PASS	
N022774-008A	N.A.	N.A.	
N022774-009A	4.148	PASS	
N022774-010A	4.065	PASS	
N022774-011A	4.098	PASS	
N022830-005A	4.223	PASS	
N022830-005AMS	4.240	PASS	
N022830-006A	4.356	PASS	
N022830-006AMS	4.240	PASS	
N022830-010A	4.223	PASS	

SL 02/08/17

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022830-011A	N.A.	N.A.
N022830-011AMS	4.240	PASS
N022819-006AMS	4.240	PASS
N022819-008AMS	4.240	PASS
N022819-009AMS	4.231	PASS
N022819-010AMS	4.240	PASS
N022820-002A	4.065	PASS
N022820-002AMS	4.240	PASS
N022820-003A	4.206	PASS
N022820-003AMS	4.231	PASS
N022927-004A	4.231	PASS
N022927-004AMS	4.231	PASS
N022927-002A	4.231	PASS
N022927-004AMSD	4.231	PASS
N022927-002ADUP	4.231	PASS
N022927-003A	4.231	PASS
N022927-006A	N.A.	N.A.
N022927-007A	4.240	PASS
N022819-009AMS	4.240	PASS
N022819-010AMS	4.240	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022820-002AMS	4.240	PASS
LCS-R113261	4.248	PASS
MB-R113261	N.A.	N.A.
N022922-005A	4.248	PASS
N022922-005AMS	4.248	PASS
N022922-005AMSD	4.240	PASS
N022922-013A	4.248	PASS
N022922-013AMS	4.248	PASS
N022922-004A	4.240	PASS
N022922-004ADUP	4.240	PASS
N022922-001A	4.248	PASS
N022922-002A	N.A.	N.A.
N022922-003A	4.240	PASS
N022922-006A	4.248	PASS
N022922-007A	4.248	PASS
N022922-008A	N.A.	N.A.
N022922-009A	4.240	PASS
N022922-010A	4.248	PASS
N022922-011A	N.A.	N.A.
N022922-012A	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	
Average	4.249	
Actual RT Window	4.169 - 4.329	
Applied RT Window	4.049 - 4.449	
N022922-014A	4.248	PASS
N022922-003A	4.240	PASS
N022922-009AMS	4.240	PASS
N022922-009AMSD	4.248	PASS
N022922-009A	4.240	PASS
N022828-001AMS	N.A.	N.A.
N022828-001AMS	4.240	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

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

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

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

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

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

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

rba 1/15/2017

1/16/2017

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMF	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMF	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMF	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMF	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMF	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMF	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMF	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMF	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMF	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMF	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMF	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMF	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMF	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMF	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMF	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMF	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMF	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMF	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMF	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMF	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMF	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMF	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMF	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMF	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMF	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMF	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMF	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMF	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

rba 1/15/2017

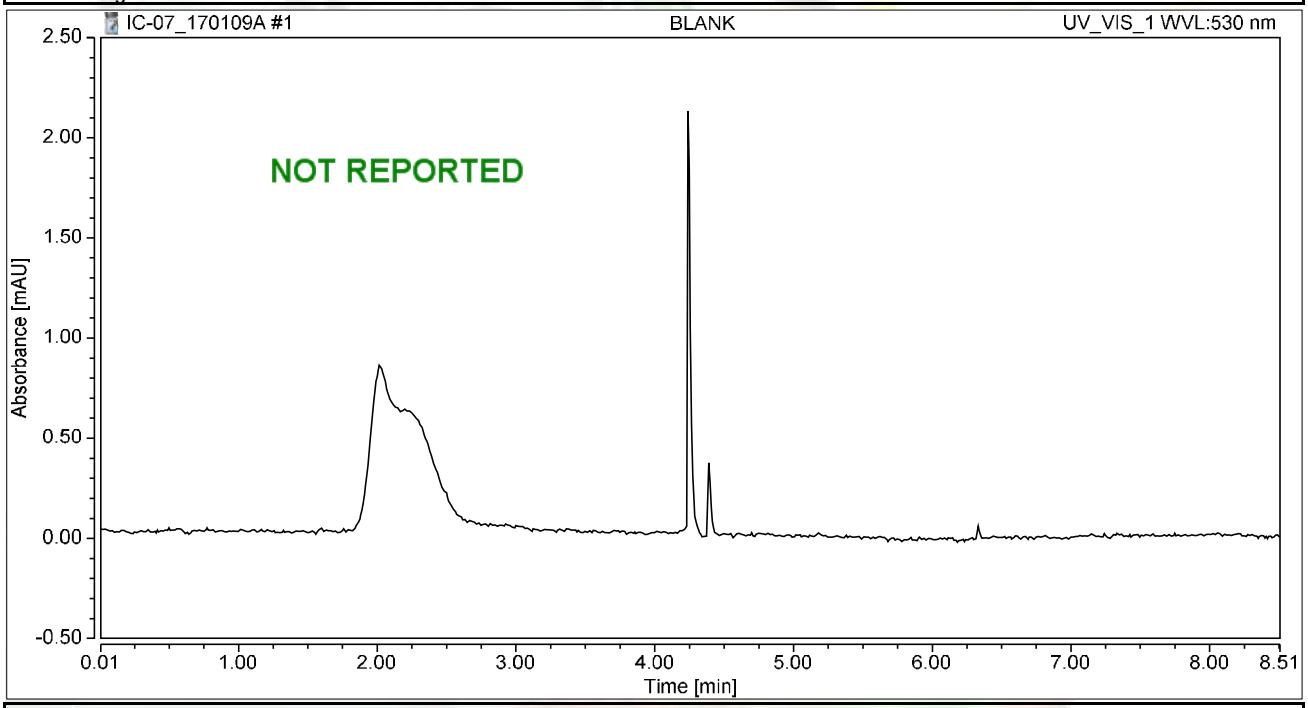
61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

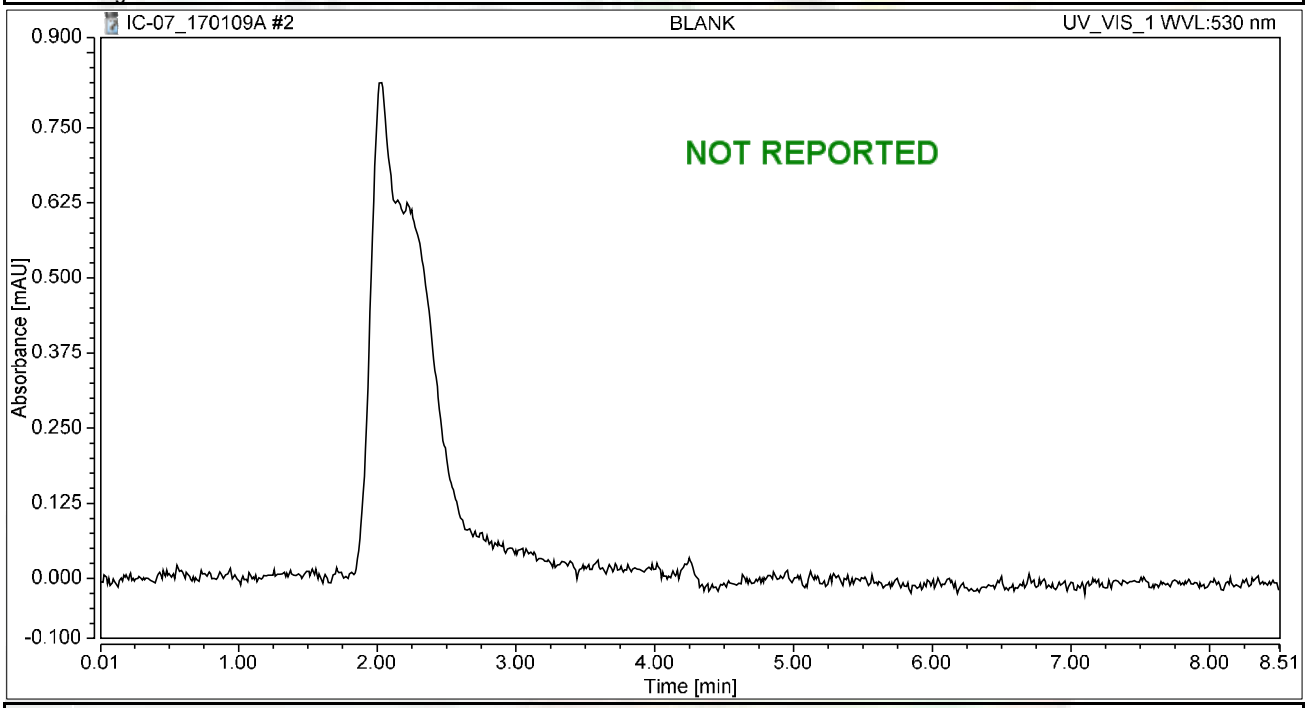
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

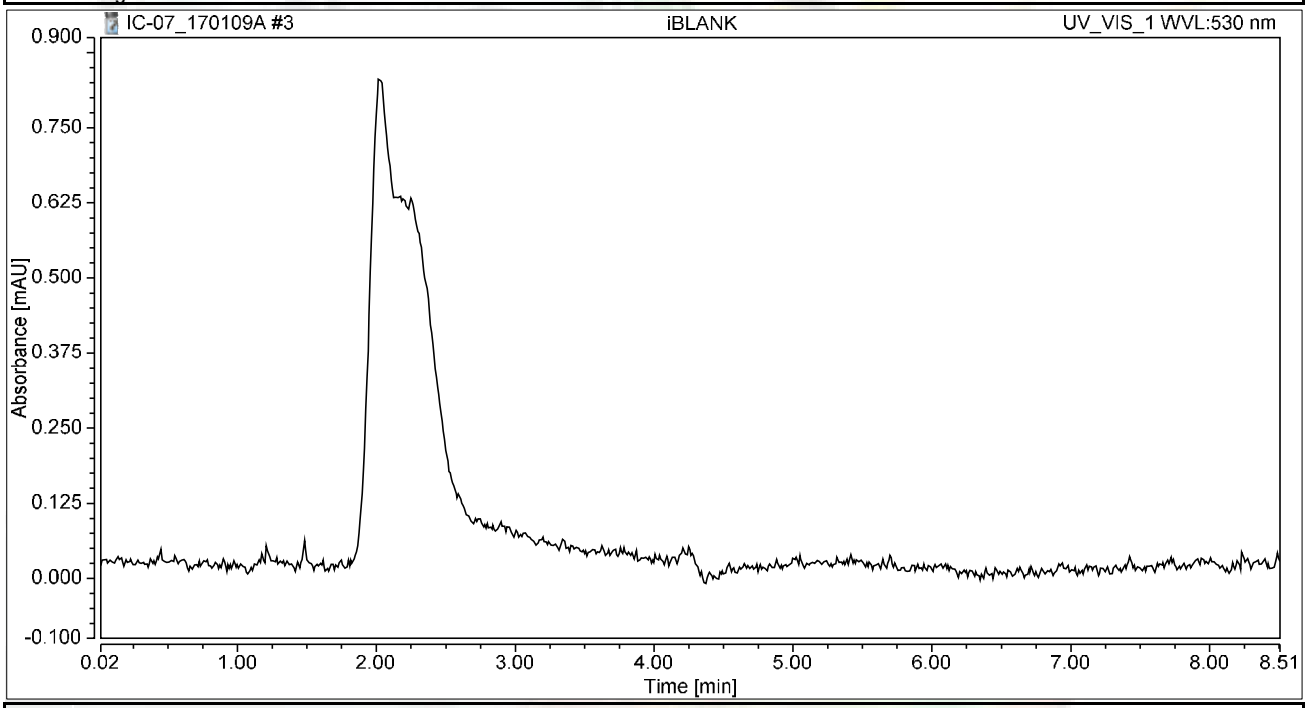
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

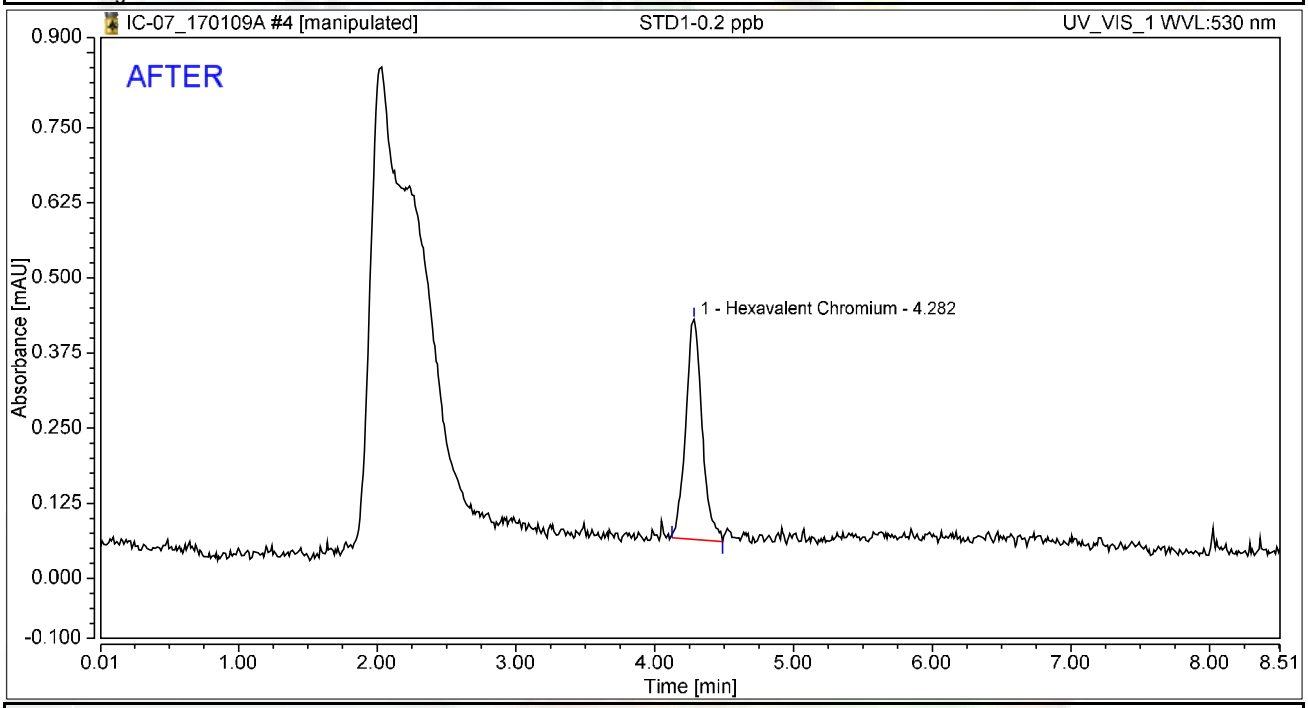
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.050	0.367	100.00	100.00	0.1965
Total:			**0.050**	**0.367**	**100.00**	**100.00**	

rba 1/15/2017

Reviewed by: 1/13/2017

My first report/integration

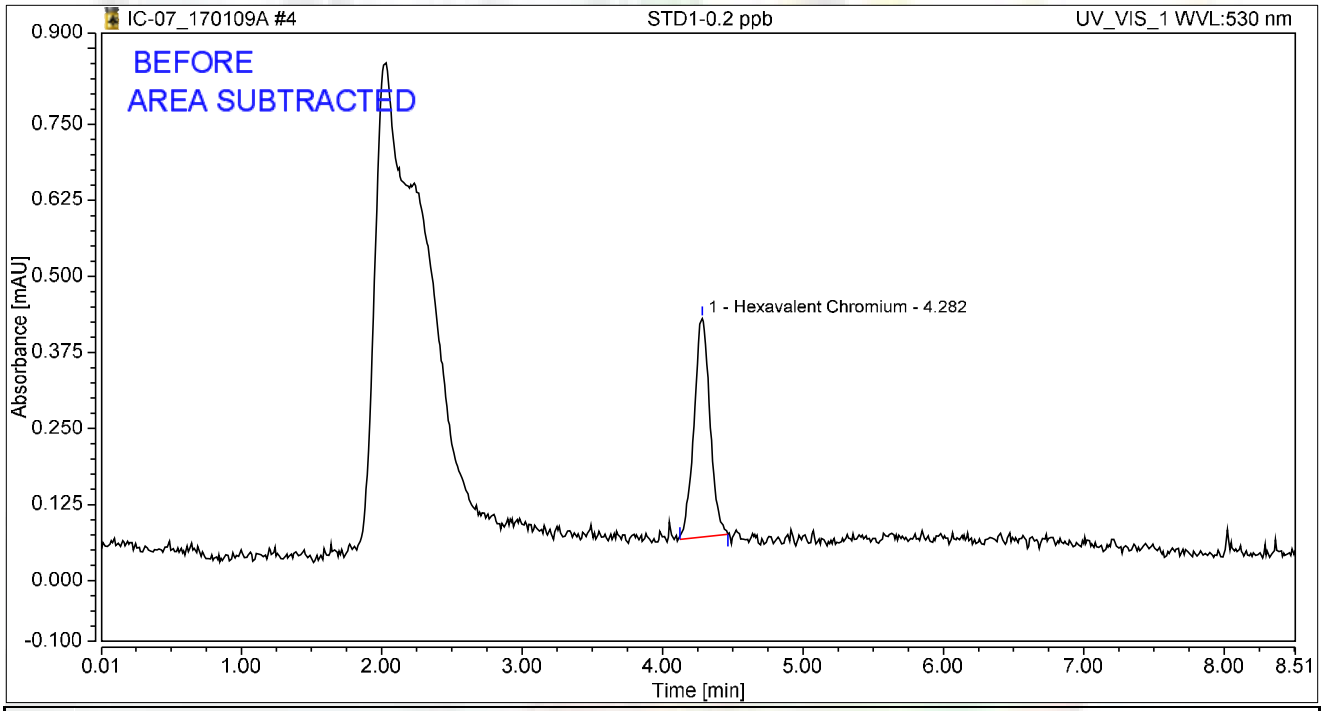
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.047	0.360	100.00	100.00	0.1857
Total:			**0.047**	**0.360**	**100.00**	**100.00**	

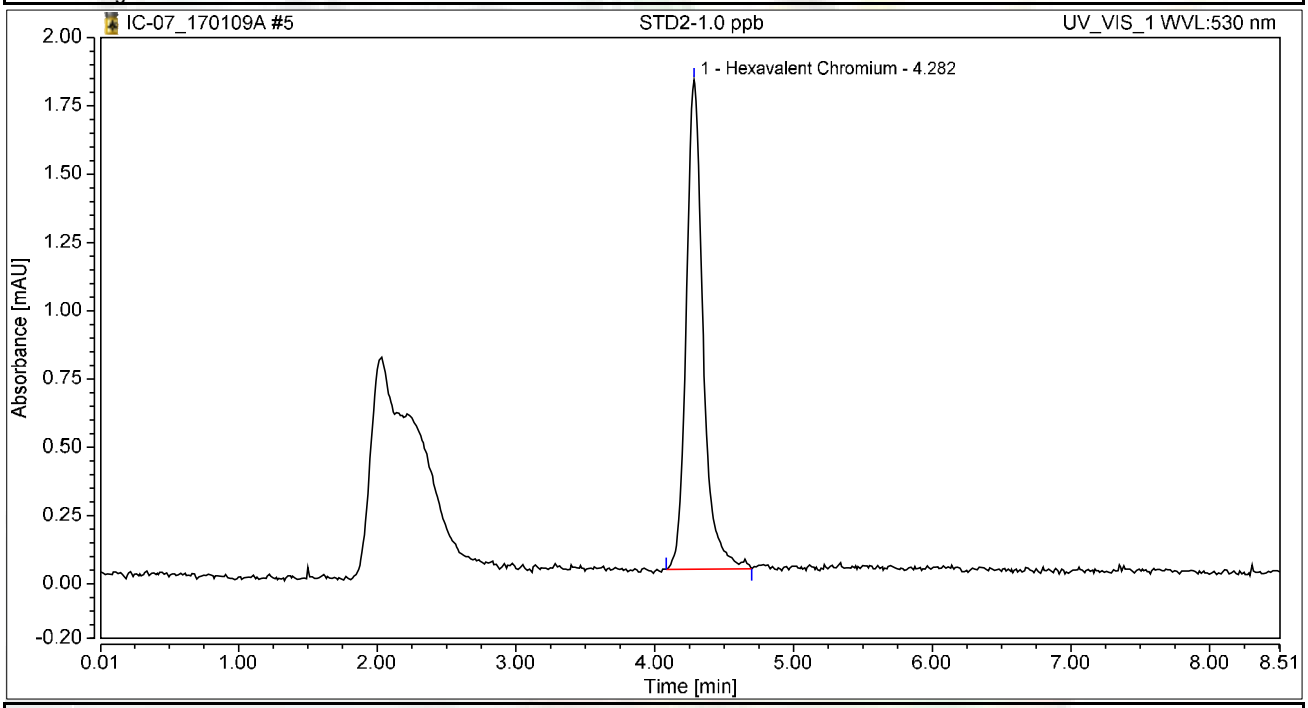
rba 1/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

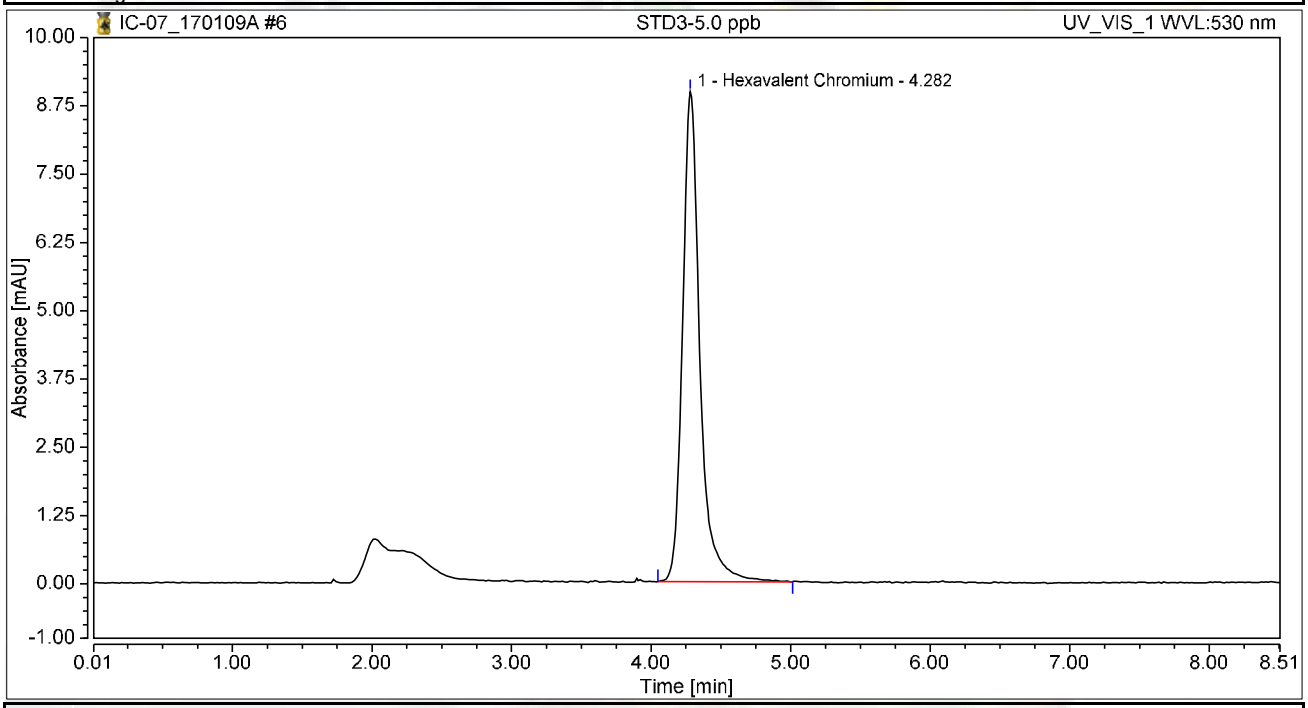
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.252	1.792	100.00	100.00	0.9852
Total:			**0.252**	**1.792**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

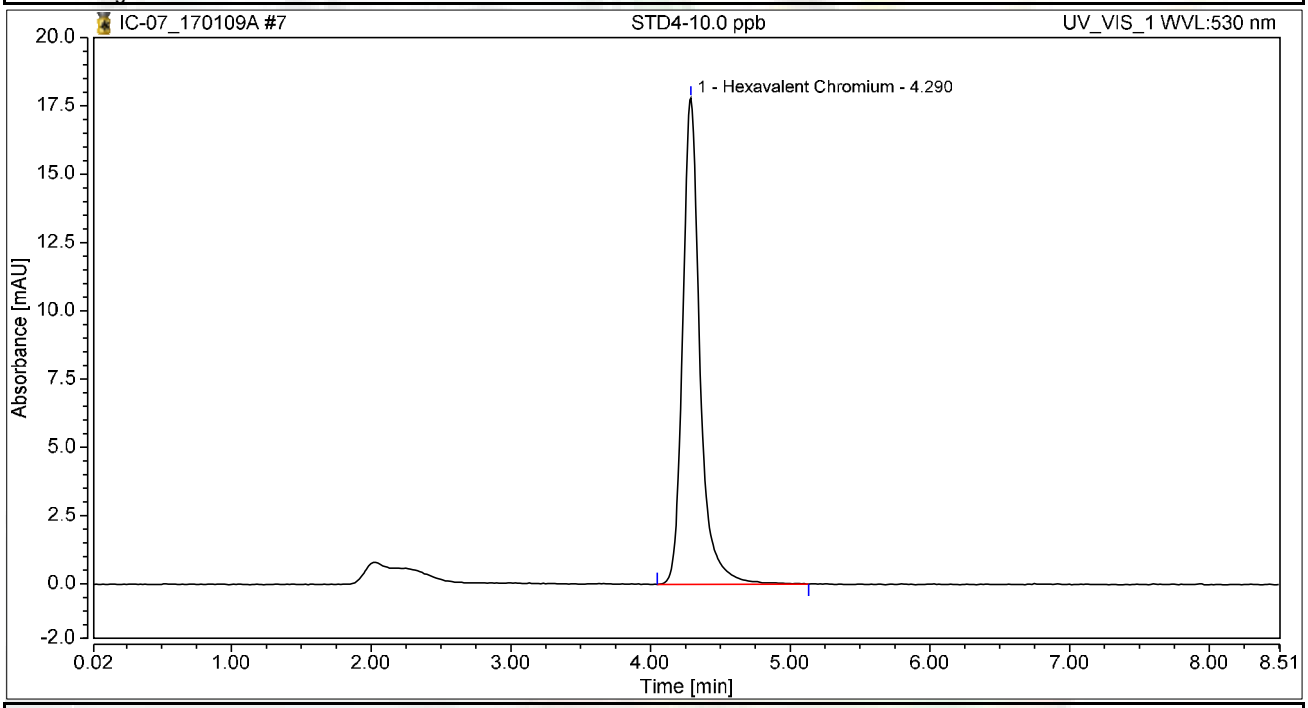
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	1.288	8.975	100.00	100.00	5.0392
Total:			**1.288**	**8.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

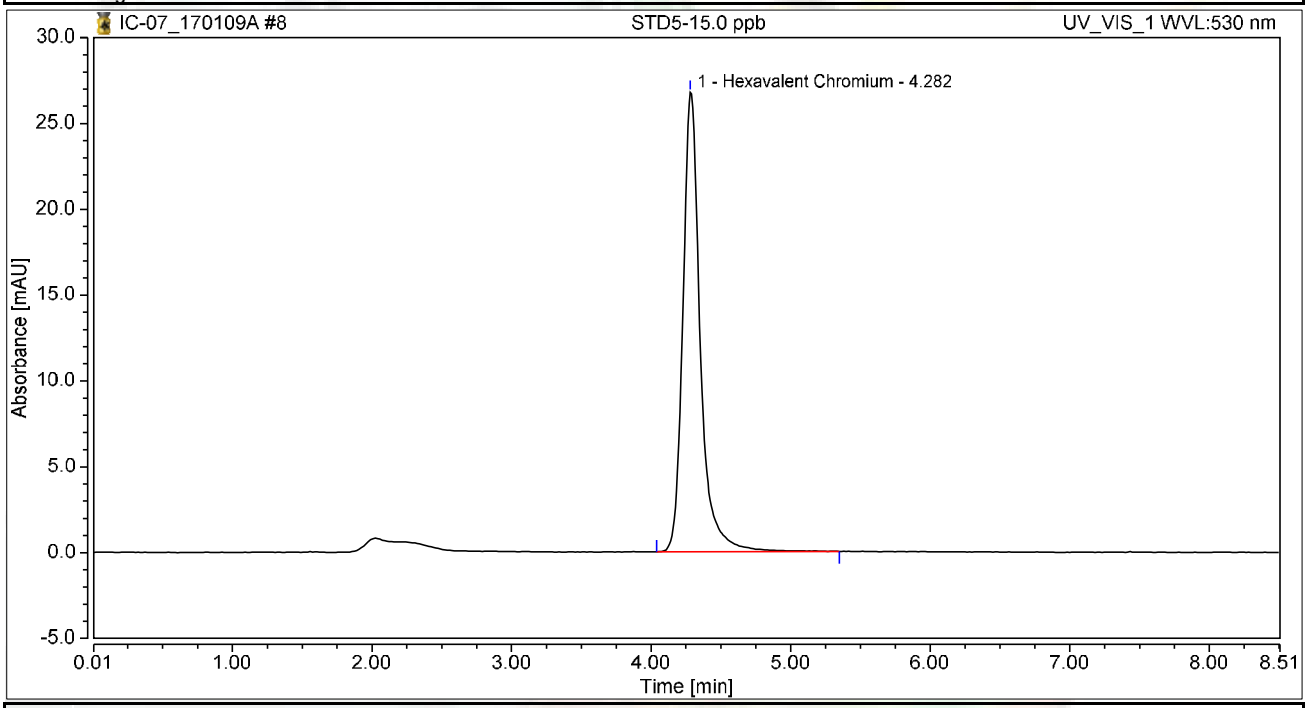
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.553	17.802	100.00	100.00	9.9856
Total:			**2.553**	**17.802**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

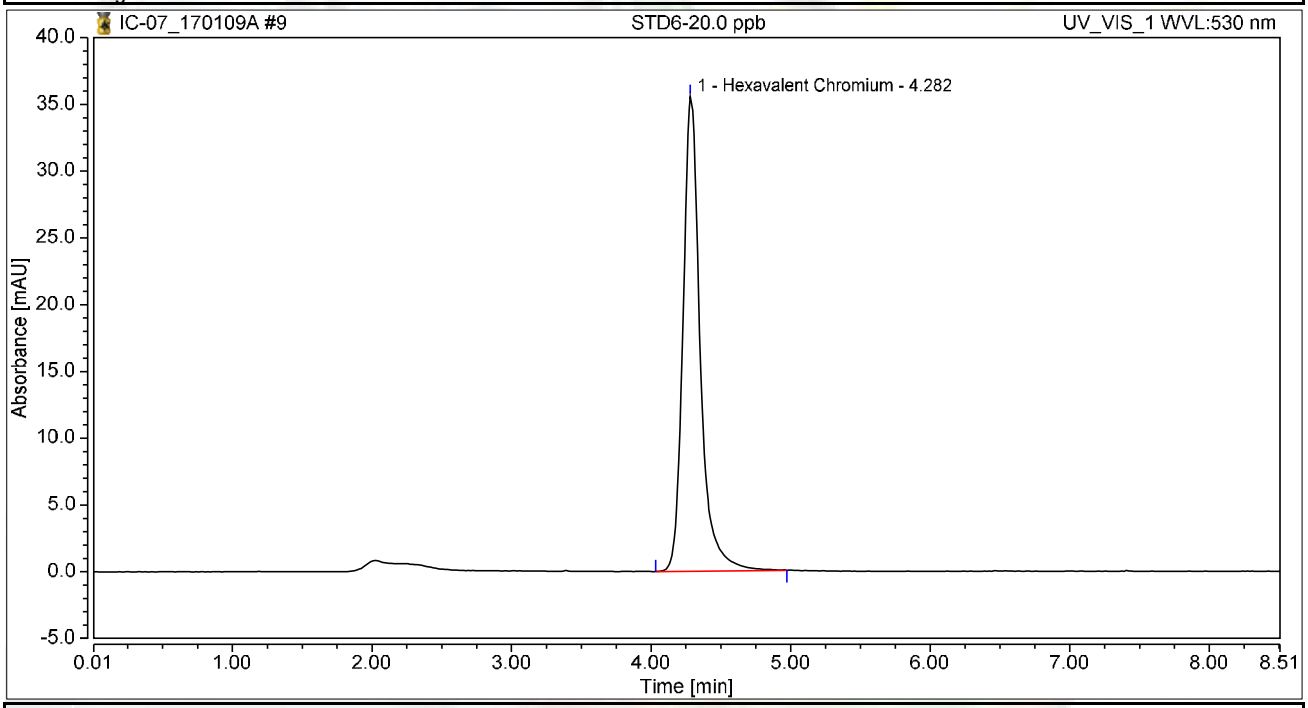
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	3.862	26.764	100.00	100.00	15.1070
Total:			**3.862**	**26.764**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



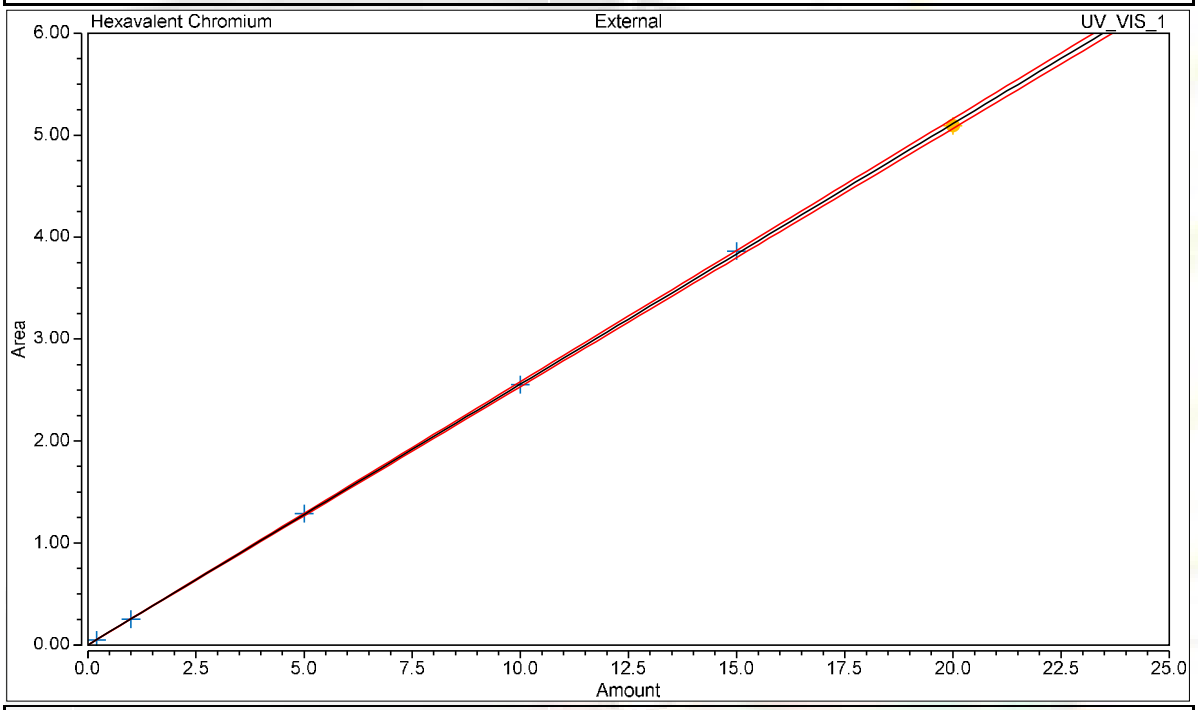
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	5.092	35.542	100.00	100.00	19.9179
Total:			**5.092**	**35.542**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2556
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99994

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

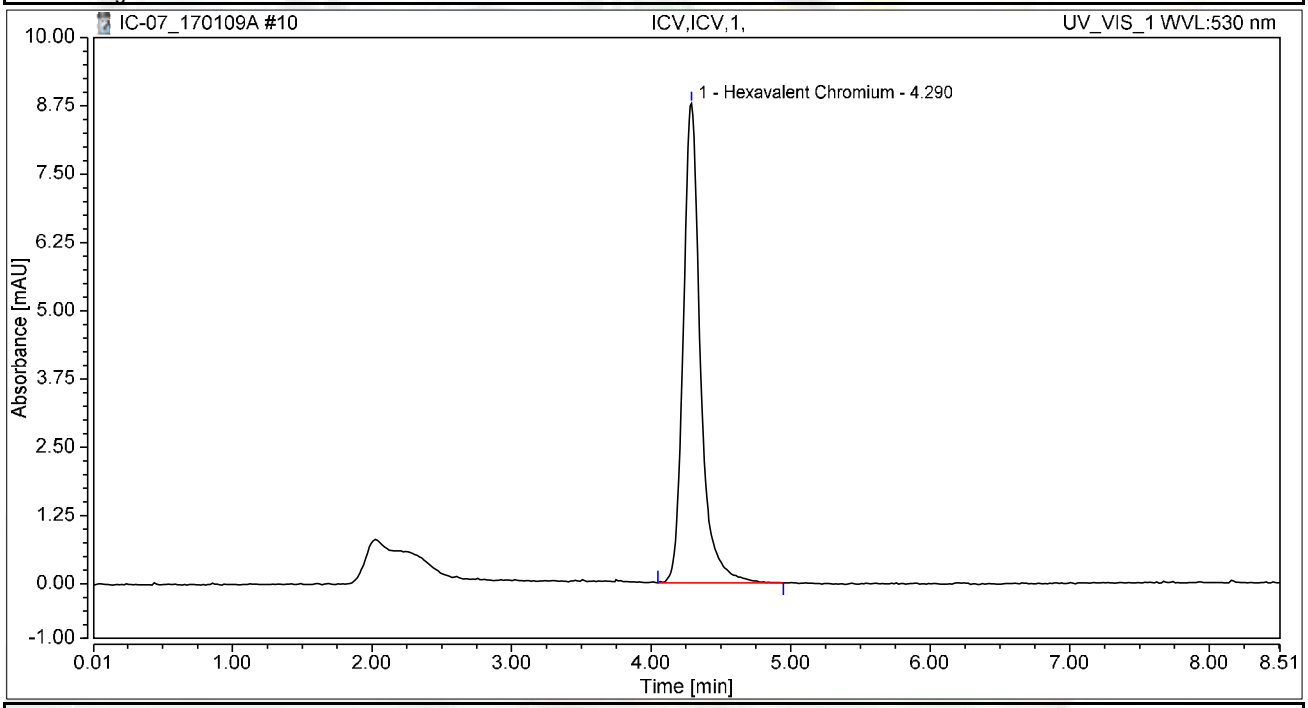
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0502	0.050	0.367
5	STD2-1.0 ppb	02	1.0000	0.2519	0.252	1.792
6	STD3-5.0 ppb	03	5.0000	1.2883	1.288	8.975
7	STD4-10.0 ppb	04	10.0000	2.5528	2.553	17.802
8	STD5-15.0 ppb	05	15.0000	3.8621	3.862	26.764
9	STD6-20.0 ppb	06	20.0000	5.0920	5.092	35.542

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

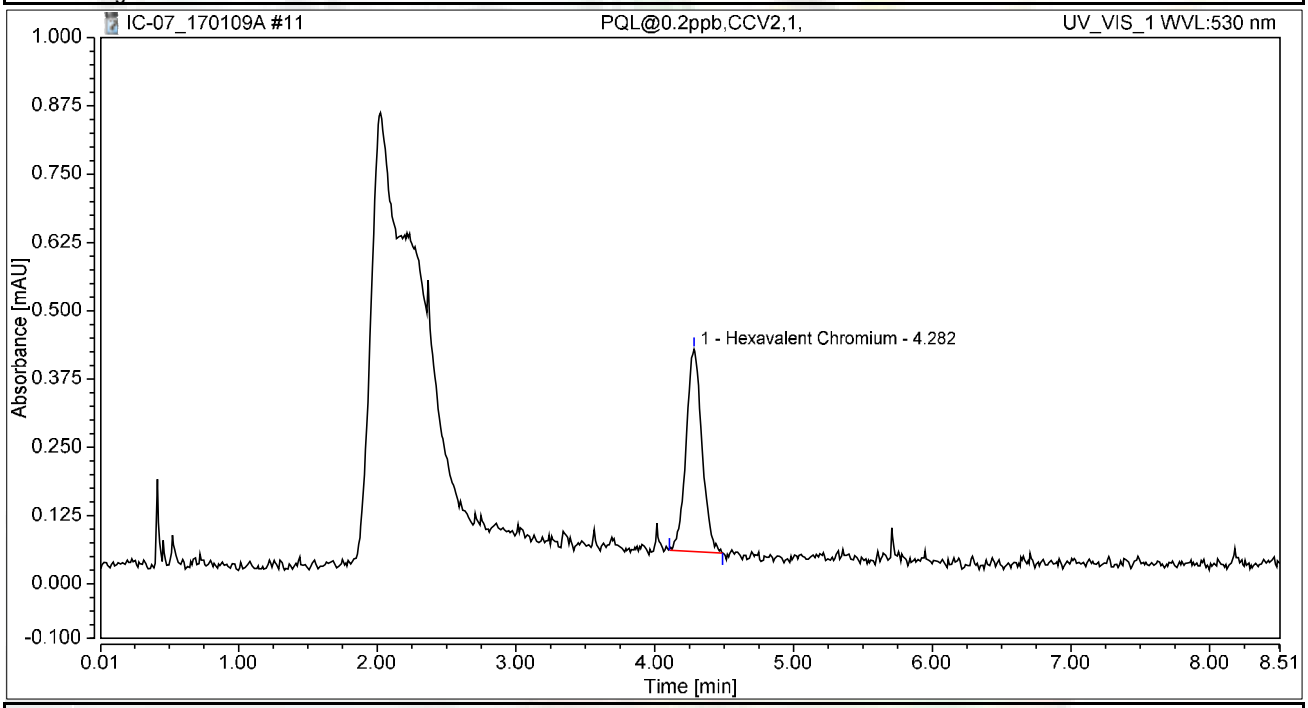
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.249	8.772	100.00	100.00	4.8871
Total:			**1.249**	**8.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

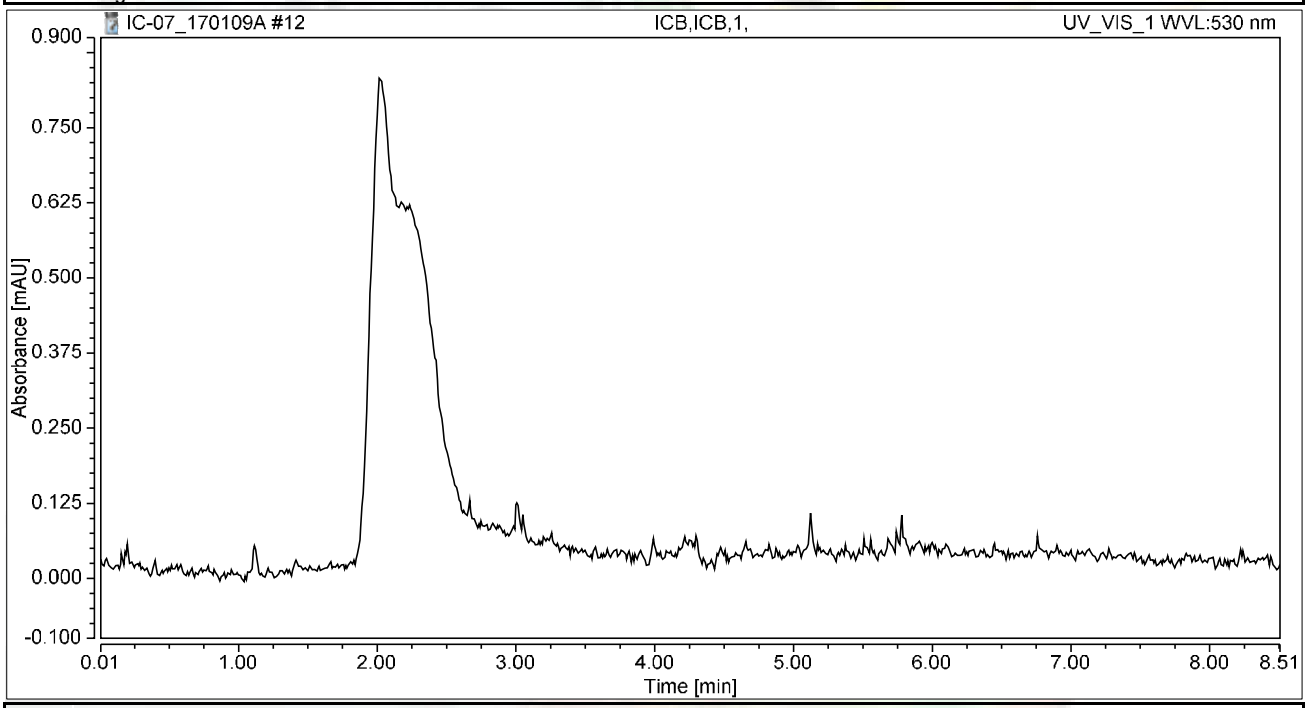
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.049	0.370	100.00	100.00	0.1914
Total:			**0.049**	**0.370**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/30/17 9:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/30/17 9:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/30/17 9:51 AM	Reported
15	MB-R113215	MBLK	1	Hexavalent Chromium	01/30/17 10:00 AM	Reported
16	LCS-R113215	LCS	1	Hexavalent Chromium	01/30/17 10:09 AM	Reported
17	N022819-001A	SAMP	1	Hexavalent Chromium	01/30/17 10:21 AM	Reported
18	N022819-001AMS	MS	1	Hexavalent Chromium	01/30/17 10:32 AM	Reported
19	N022819-002A	SAMP	1	Hexavalent Chromium	01/30/17 10:42 AM	Reported
20	N022819-002AMS	MS	1	Hexavalent Chromium	01/30/17 10:51 AM	Reported
21	N022819-003A	SAMP	1	Hexavalent Chromium	01/30/17 11:01 AM	Reported
22	N022819-003AMS	MS	1	Hexavalent Chromium	01/30/17 11:10 AM	Reported
23	N022819-004A	SAMP	1	Hexavalent Chromium	01/30/17 11:20 AM	Reported
24	N022819-004AMS	MS	1	Hexavalent Chromium	01/30/17 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/30/17 11:38 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/30/17 11:48 AM	Reported
27	N022819-005A	SAMP	1	Hexavalent Chromium	01/30/17 11:57 AM	Reported
28	N022819-005AMS	MS	1	Hexavalent Chromium	01/30/17 12:07 PM	Reported
29	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 12:16 PM	Not Reported
30	N022819-006A	SAMP	1	Hexavalent Chromium	01/30/17 12:26 PM	Not Reported
31	N022819-006ADUP	DUP	1	Hexavalent Chromium	01/30/17 12:35 PM	Reported
32	N022819-006AMS	MS	1	Hexavalent Chromium	01/30/17 12:45 PM	Not Reported
33	N022819-007A	SAMP	1	Hexavalent Chromium	01/30/17 12:54 PM	Reported
34	N022819-007AMS	MS	1	Hexavalent Chromium	01/30/17 1:04 PM	Reported
35	N022819-008A	SAMP	1	Hexavalent Chromium	01/30/17 1:13 PM	Not Reported
36	N022819-008AMS	MS	1	Hexavalent Chromium	01/30/17 1:23 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/30/17 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:41 PM	Not Reported
39	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:53 PM	Reported
40	N022819-009A	SAMP	1	Hexavalent Chromium	01/30/17 2:04 PM	Not Reported
41	N022819-009AMS	MS	1	Hexavalent Chromium	01/30/17 2:14 PM	Not Reported
42	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 2:23 PM	Reported
43	N022819-010A	SAMP	1	Hexavalent Chromium	01/30/17 2:33 PM	Not Reported
44	N022819-010AMS	MS	1	Hexavalent Chromium	01/30/17 2:42 PM	Not Reported
45	N022819-011A	SAMP	1	Hexavalent Chromium	01/30/17 2:51 PM	Reported
46	N022819-011AMS	MS	1	Hexavalent Chromium	01/30/17 3:01 PM	Reported
47	N022820-001A	SAMP	1	Hexavalent Chromium	01/30/17 3:10 PM	Not Reported
48	N022820-001AMS	MS	1	Hexavalent Chromium	01/30/17 3:20 PM	Not Reported
49	N022820-002A	SAMP	1	Hexavalent Chromium	01/30/17 3:29 PM	Not Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	01/30/17 3:39 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	01/30/17 3:48 PM	Reported

rba 2/4/2017

Nancy 2/6/2017

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
52	N022820-002AMS	MS	1	Hexavalent Chromium	01/30/17 3:58 PM	Not Reported
53	N022820-003A	SAMP	1	Hexavalent Chromium	01/30/17 4:07 PM	Not Reported
54	N022820-003AMS	MS	1	Hexavalent Chromium	01/30/17 4:17 PM	Not Reported
55	N022820-004A	SAMP	1	Hexavalent Chromium	01/30/17 4:26 PM	Reported
56	N022820-004AMS	MS	1	Hexavalent Chromium	01/30/17 4:36 PM	Reported
57	N022820-005A	SAMP	1	Hexavalent Chromium	01/30/17 4:45 PM	Reported
58	N022820-005AMS	MS	1	Hexavalent Chromium	01/30/17 4:54 PM	Reported
59	N022820-006A	SAMP	1	Hexavalent Chromium	01/30/17 5:04 PM	Reported
60	N022820-006AMS	MS	1	Hexavalent Chromium	01/30/17 5:17 PM	Reported
61	N022773-016A	SAMP	1	Hexavalent Chromium	01/30/17 5:29 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	01/30/17 5:38 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	01/30/17 5:47 PM	Reported
64	N022820-007A	SAMP	1	Hexavalent Chromium	01/30/17 5:57 PM	Reported
65	N022820-007AMS	MS	1	Hexavalent Chromium	01/30/17 6:06 PM	Reported
66	N022702-012A	SAMP	2	Hexavalent Chromium	01/30/17 6:16 PM	Not Reported
67	N022702-012AMS	MS	2	Hexavalent Chromium	01/30/17 6:25 PM	Not Reported
68	LCS-R113217	LCS	1	Hexavalent Chromium	01/30/17 6:35 PM	Reported
69	MB-R113217	MBLK	1	Hexavalent Chromium	01/30/17 6:44 PM	Reported
70	N022866-005A	SAMP	50	Hexavalent Chromium	01/30/17 6:54 PM	Reported
71	N022866-005AMS	MS	50	Hexavalent Chromium	01/30/17 7:03 PM	Reported
72	N022866-005AMSD	MSD	50	Hexavalent Chromium	01/30/17 7:13 PM	Reported
73	N022866-001A	SAMP	50	Hexavalent Chromium	01/30/17 7:22 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	01/30/17 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	01/30/17 7:41 PM	Reported
76	N022866-001ADUP	DUP	50	Hexavalent Chromium	01/30/17 7:50 PM	Reported
77	N022866-002A	SAMP	1	Hexavalent Chromium	01/30/17 8:00 PM	Reported
78	N022866-003A	SAMP	1	Hexavalent Chromium	01/30/17 8:09 PM	Reported
79	N022866-004A	SAMP	1	Hexavalent Chromium	01/30/17 8:19 PM	Reported
80	N022866-006A	SAMP	1	Hexavalent Chromium	01/30/17 8:28 PM	Reported
81	N022866-007A	SAMP	1	Hexavalent Chromium	01/30/17 8:38 PM	Reported
82	N022869-001A	SAMP	1	Hexavalent Chromium	01/30/17 8:47 PM	Reported
83	N022822-011A	SAMP	1	Hexavalent Chromium	01/30/17 8:57 PM	Reported
84	N022822-011AMS	MS	1	Hexavalent Chromium	01/30/17 9:06 PM	Reported
85	N022822-012A	SAMP	1	Hexavalent Chromium	01/30/17 9:16 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	01/30/17 9:25 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	01/30/17 9:35 PM	Reported
88	N022822-012AMS	MS	1	Hexavalent Chromium	01/30/17 9:44 PM	Reported
89	N022822-013A	SAMP	1	Hexavalent Chromium	01/30/17 10:17 PM	Reported
90	N022822-013AMS	MS	1	Hexavalent Chromium	01/30/17 10:28 PM	Reported
91	N022822-014A	SAMP	1	Hexavalent Chromium	01/30/17 10:37 PM	Reported
92	N022822-014AMS	MS	1	Hexavalent Chromium	01/30/17 10:47 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	01/30/17 10:56 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	01/30/17 11:06 PM	Reported
95	MB-61081	MBLK	1	Hexavalent Chromium	01/30/17 11:15 PM	Reported
96	N022615-001D_STLC	SAMP	10000	Hexavalent Chromium	01/30/17 11:25 PM	Reported
97	N022615-001DREP	DUP	10000	Hexavalent Chromium	01/30/17 11:34 PM	Reported
98	CCV-9	CCV	1	Hexavalent Chromium	01/30/17 11:44 PM	Reported
99	CCB-9	CCB	1	Hexavalent Chromium	01/30/17 11:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170130A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Feb/17 16:00:29**
No. of Injections:	**102**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/30/2017 09:11	Finished	
11	BLANK	2	1000	Unknown		01/30/2017 09:22	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/30/2017 09:32	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/30/2017 09:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/30/2017 09:51	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/30/2017 10:00	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/30/2017 10:09	Finished	LCS, IWST-161114D
17	N022819-001A,SAMF	9	1000	Unknown		01/30/2017 10:21	Finished	SAMP, 10mL
18	N022819-001AMS,MS	10	1000	Unknown		01/30/2017 10:32	Finished	MS (1ppb), IWST-161114D,10
19	N022819-002A,SAMF	11	1000	Unknown		01/30/2017 10:42	Finished	SAMP, 10mL
20	N022819-002AMS,MS	12	1000	Unknown		01/30/2017 10:51	Finished	MS (1ppb), IWST-161114D,10
21	N022819-003A,SAMF	13	1000	Unknown		01/30/2017 11:01	Finished	SAMP, 10mL
22	N022819-003AMS,MS	14	1000	Unknown		01/30/2017 11:10	Finished	MS (1ppb), IWST-161114D,10
23	N022819-004A,SAMF	15	1000	Unknown		01/30/2017 11:20	Finished	SAMP, 10mL
24	N022819-004AMS,MS	16	1000	Unknown		01/30/2017 11:29	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		01/30/2017 11:38	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/30/2017 11:48	Finished	CCB R170112D
27	N022819-005A,SAMF	19	1000	Unknown		01/30/2017 11:57	Finished	SAMP, 10mL
28	N022819-005AMS,MS	20	1000	Unknown		01/30/2017 12:07	Finished	MS (1ppb), IWST-161114D,10
29	N022819-005AMSD,M	21	1000	Unknown		01/30/2017 12:16	Finished	MSD (1ppb), IWST-161114D,1
30	N022819-006A,SAMF	22	1000	Unknown		01/30/2017 12:26	Finished	SAMP, 10mL
31	N022819-006ADUP,D	23	1000	Unknown		01/30/2017 12:35	Finished	DUP, 10mL
32	N022819-006AMS,MS	24	1000	Unknown		01/30/2017 12:45	Finished	MS (1ppb), IWST-161114D,0.0
33	N022819-007A,SAMF	25	1000	Unknown		01/30/2017 12:54	Finished	SAMP, 10mL
34	N022819-007AMS,MS	26	1000	Unknown		01/30/2017 13:04	Finished	MS (1ppb), IWST-161114D,10
35	N022819-008A,SAMF	27	1000	Unknown		01/30/2017 13:13	Finished	SAMP, 10mL
36	N022819-008AMS,MS	28	1000	Unknown		01/30/2017 13:23	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		01/30/2017 13:32	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:41	Finished	CCB R170112D
39	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:53	Finished	CCB R170112D
40	N022819-009A,SAMF	31	1000	Unknown		01/30/2017 14:04	Finished	SAMP, 10mL
41	N022819-009AMS,MS	32	1000	Unknown		01/30/2017 14:14	Finished	MS (1ppb), IWST-161114D,10
42	N022819-005AMSD,M	33	1000	Unknown		01/30/2017 14:23	Finished	MSD (1ppb), IWST-161114D,1
43	N022819-010A,SAMF	34	1000	Unknown		01/30/2017 14:33	Finished	SAMP, 10mL
44	N022819-010AMS,MS	35	1000	Unknown		01/30/2017 14:42	Finished	MS (1ppb), IWST-161114D,10
45	N022819-011A,SAMF	36	1000	Unknown		01/30/2017 14:51	Finished	SAMP, 10mL
46	N022819-011AMS,MS	37	1000	Unknown		01/30/2017 15:01	Finished	MS (1ppb), IWST-161114D,10
47	N022820-001A,SAMF	38	1000	Unknown		01/30/2017 15:10	Finished	SAMP, 10mL
48	N022820-001AMS,MS	39	1000	Unknown		01/30/2017 15:20	Finished	MS (1ppb), IWST-161114D,10
49	N022820-002A,SAMF	40	1000	Unknown		01/30/2017 15:29	Finished	SAMP, 10mL
50	CCV-4,CCV1,1,	41	1000	Unknown		01/30/2017 15:39	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	42	1000	Unknown		01/30/2017 15:48	Finished	CCB R170112D
52	N022820-002AMS,MS	43	1000	Unknown		01/30/2017 15:58	Finished	MS (1ppb), IWST-161114D,10
53	N022820-003A,SAMF	44	1000	Unknown		01/30/2017 16:07	Finished	SAMP, 10mL
54	N022820-003AMS,MS	45	1000	Unknown		01/30/2017 16:17	Finished	MS (1ppb), IWST-161114D,10
55	N022820-004A,SAMF	46	1000	Unknown		01/30/2017 16:26	Finished	SAMP, 10mL
56	N022820-004AMS,MS	47	1000	Unknown		01/30/2017 16:36	Finished	MS (1ppb), IWST-161114D,10
57	N022820-005A,SAMF	48	1000	Unknown		01/30/2017 16:45	Finished	SAMP, 10mL
58	N022820-005AMS,MS	49	1000	Unknown		01/30/2017 16:54	Finished	MS (1ppb), IWST-161114D,10
59	N022820-006A,SAMF	50	1000	Unknown		01/30/2017 17:04	Finished	SAMP, 10mL
60	N022820-006AMS,MS	1	1000	Unknown		01/30/2017 17:17	Finished	MS (1ppb), IWST-161114D,10

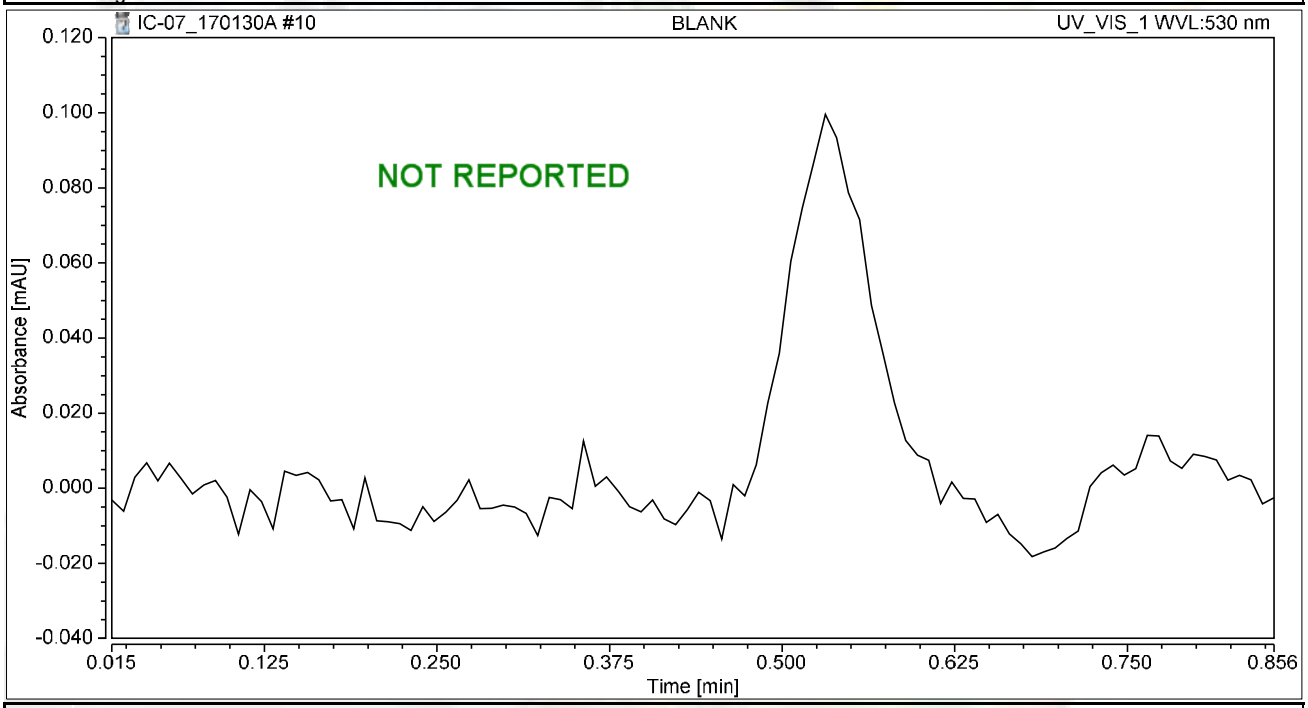
61	N022773-016A,SAMF	2	1000	Unknown		01/30/2017 17:29	Finished	SAMP, 10mL
62	CCV-5,CCV,1,	3	1000	Unknown		01/30/2017 17:38	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	4	1000	Unknown		01/30/2017 17:47	Finished	CCB R170112D
64	N022820-007A,SAMF	5	1000	Unknown		01/30/2017 17:57	Finished	SAMP, 10mL
65	N022820-007AMS,MS	6	1000	Unknown		01/30/2017 18:06	Finished	MS (1ppb), IWST-161114D,10
66	N022702-012A,SAMF	7	1000	Unknown		01/30/2017 18:16	Finished	SAMP, 5>10mL
67	N022702-012AMS,MS	8	1000	Unknown		01/30/2017 18:25	Finished	MS (5ppb), IWST-161114D,5>1
68	LCS-2,LCS,1	9	1000	Unknown		01/30/2017 18:35	Finished	LCS, IWST-161114D
69	MB-2,MBLK,1	10	1000	Unknown		01/30/2017 18:44	Finished	MB R170112D
70	N022866-005A,SAMF	11	1000	Unknown		01/30/2017 18:54	Finished	SAMP, 0.2>10mL
71	N022866-005AMS,MS	12	1000	Unknown		01/30/2017 19:03	Finished	MS (5ppb), IWST-161114D,0.2
72	N022866-005AMSD,M	13	1000	Unknown		01/30/2017 19:13	Finished	MSD (5ppb), IWST-161114D,0.
73	N022866-001A,SAMF	14	1000	Unknown		01/30/2017 19:22	Finished	SAMP, 0.2>10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		01/30/2017 19:32	Finished	CCV @10ppb, IWST-161114C
75	CCB-6,CCB,1,	16	1000	Unknown		01/30/2017 19:41	Finished	CCB R170103B
76	N022866-001ADUP,D	17	1000	Unknown		01/30/2017 19:50	Finished	DUP, 0.2>10mL
77	N022866-002A,SAMF	18	1000	Unknown		01/30/2017 20:00	Finished	SAMP, 10mL
78	N022866-003A,SAMF	19	1000	Unknown		01/30/2017 20:09	Finished	SAMP, 10mL
79	N022866-004A,SAMF	20	1000	Unknown		01/30/2017 20:19	Finished	SAMP, 10mL
80	N022866-006A,SAMF	21	1000	Unknown		01/30/2017 20:28	Finished	SAMP, 10mL
81	N022866-007A,SAMF	22	1000	Unknown		01/30/2017 20:38	Finished	SAMP, 10mL
82	N022869-001A,SAMF	23	1000	Unknown		01/30/2017 20:47	Finished	SAMP, 10mL
83	N022822-011A,SAMF	24	1000	Unknown		01/30/2017 20:57	Finished	SAMP, 10mL
84	N022822-011AMS,MS	25	1000	Unknown		01/30/2017 21:06	Finished	MS (1ppb), IWST-161114D,10
85	N022822-012A,SAMF	26	1000	Unknown		01/30/2017 21:16	Finished	SAMP, 10mL
86	CCV-7,CCV,1,	27	1000	Unknown		01/30/2017 21:25	Finished	CCV @5ppb, IWST-161114C
87	CCB-7,CCB,1,	28	1000	Unknown		01/30/2017 21:35	Finished	CCB R170112D
88	N022822-012AMS,MS	29	1000	Unknown		01/30/2017 21:44	Finished	MS (1ppb), IWST-161114D,10
89	N022822-013A,SAMF	30	1000	Unknown		01/30/2017 22:17	Finished	SAMP, 10mL
90	N022822-013AMS,MS	31	1000	Unknown		01/30/2017 22:28	Finished	MS (1ppb), IWST-161114D,10
91	N022822-014A,SAMF	32	1000	Unknown		01/30/2017 22:37	Finished	SAMP, 10mL
92	N022822-014AMS,MS	33	1000	Unknown		01/30/2017 22:47	Finished	MS (1ppb), IWST-161114D,10
93	CCV-8,CCV1,1,	34	1000	Unknown		01/30/2017 22:56	Finished	CCV @10ppb, IWST-161114C
94	CCB-8,CCB,1,	35	1000	Unknown		01/30/2017 23:06	Finished	CCB R170103B
95	MB-61081,MBLK,1	36	1000	Unknown		01/30/2017 23:15	Finished	MB R170112D
96	N022615-001D_STLC	37	1000	Unknown		01/30/2017 23:25	Finished	SAMP,0.001>10mL
97	N022615-001DREP,D	38	1000	Unknown		01/30/2017 23:34	Finished	REP,0.001>10mL
98	CCV-9,CCV,1,	39	1000	Unknown		01/30/2017 23:44	Finished	CCV @5ppb, IWST-161114C
99	CCB-9,CCB,1,	40	1000	Unknown		01/30/2017 23:53	Finished	CCB R170103B
100	SHUTDOWN	41	1000	Unknown		01/31/2017 00:03	Finished	
101	Eluent: R170130A	42	1000	Unknown		n.a.	Finished	Eluent
102	PCR: R170127B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.84**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

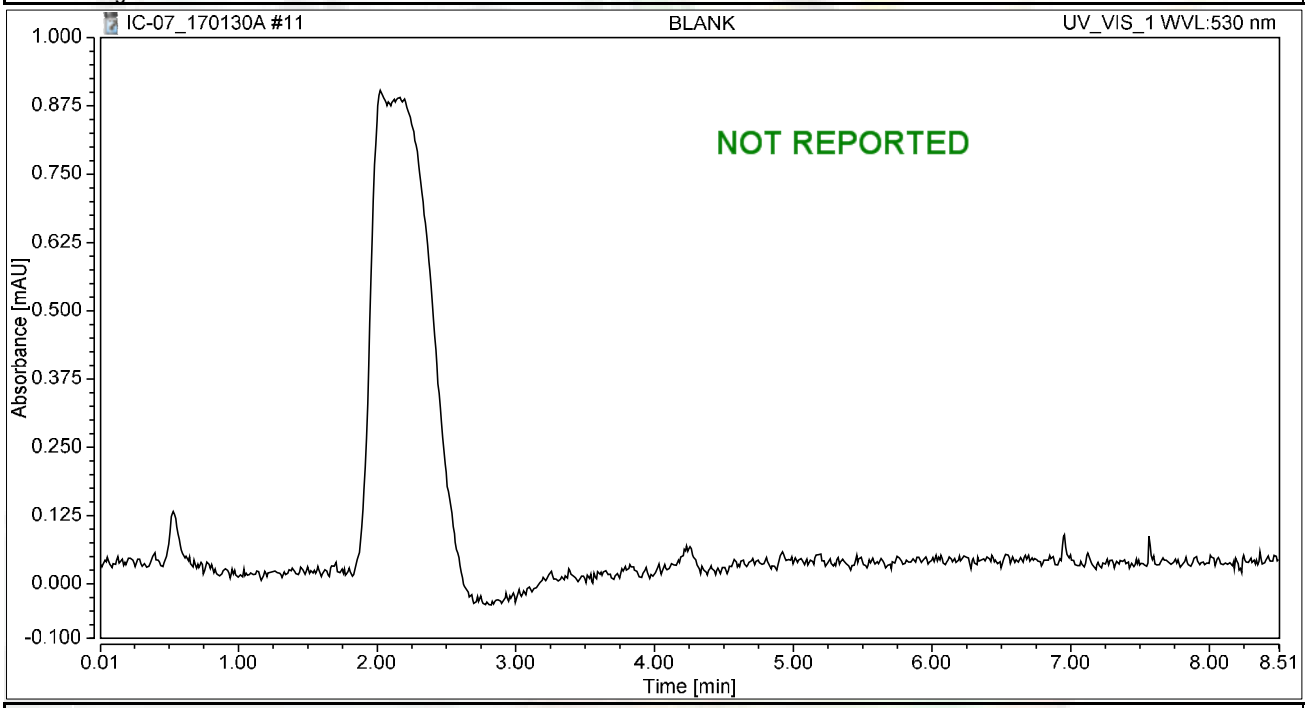
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

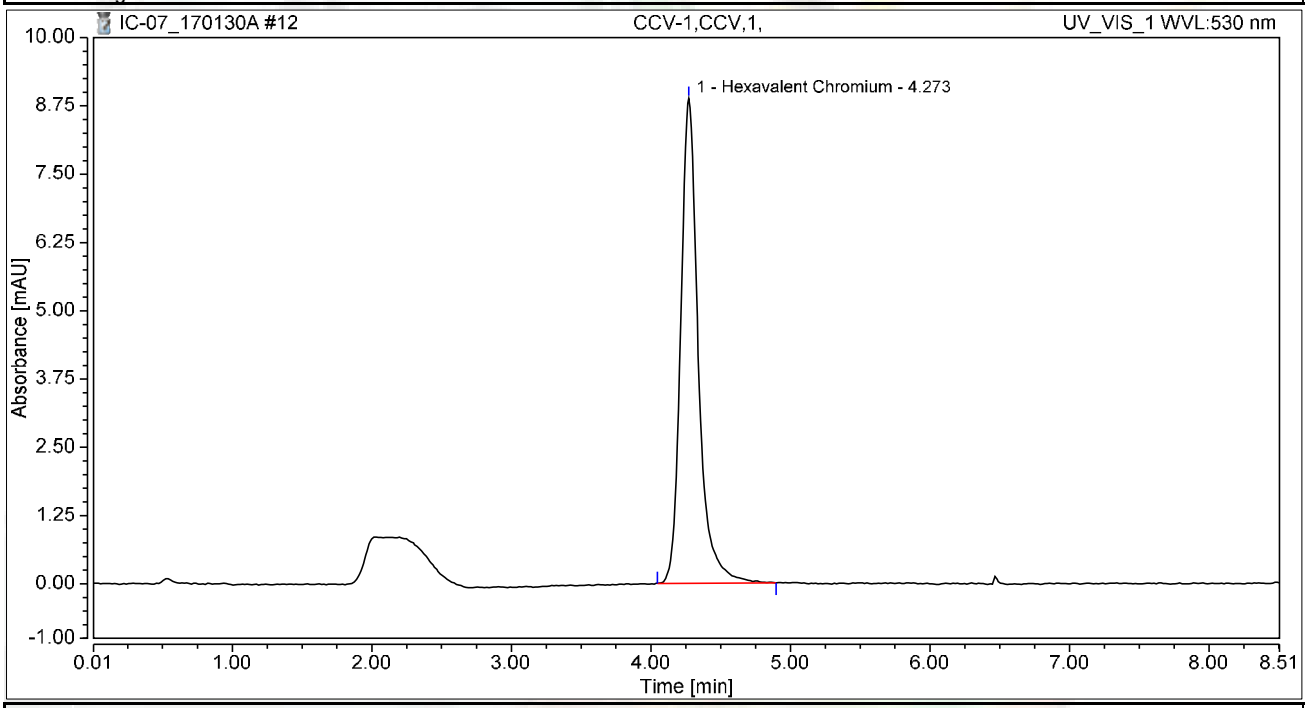
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

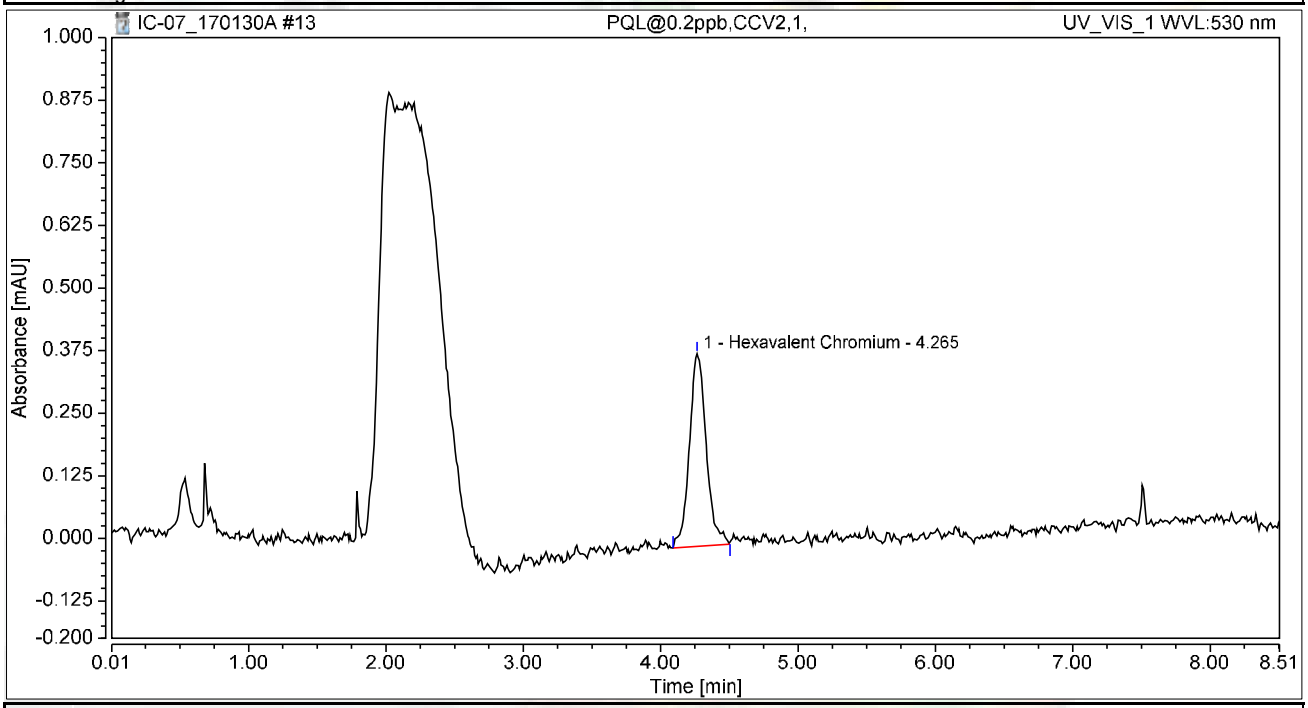
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.300	8.883	100.00	100.00	5.0857
Total:			**1.300**	**8.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

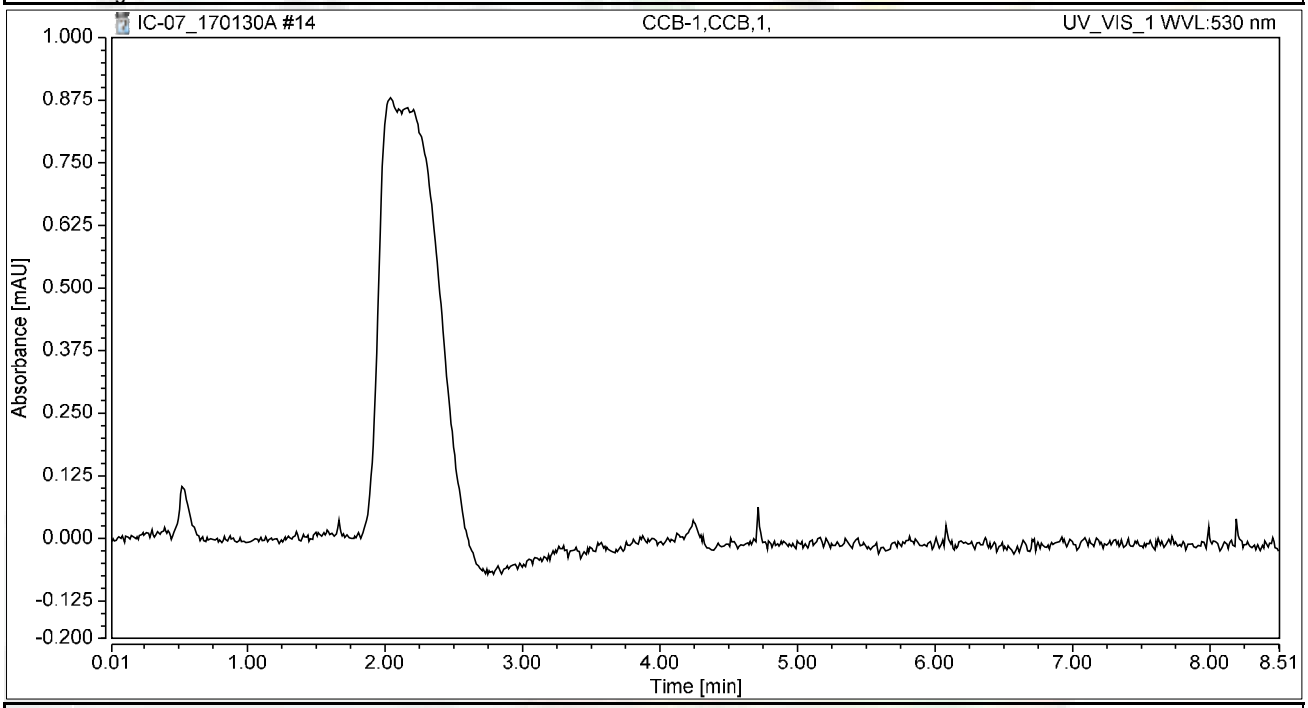
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.055	0.384	100.00	100.00	0.2138
Total:			**0.055**	**0.384**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

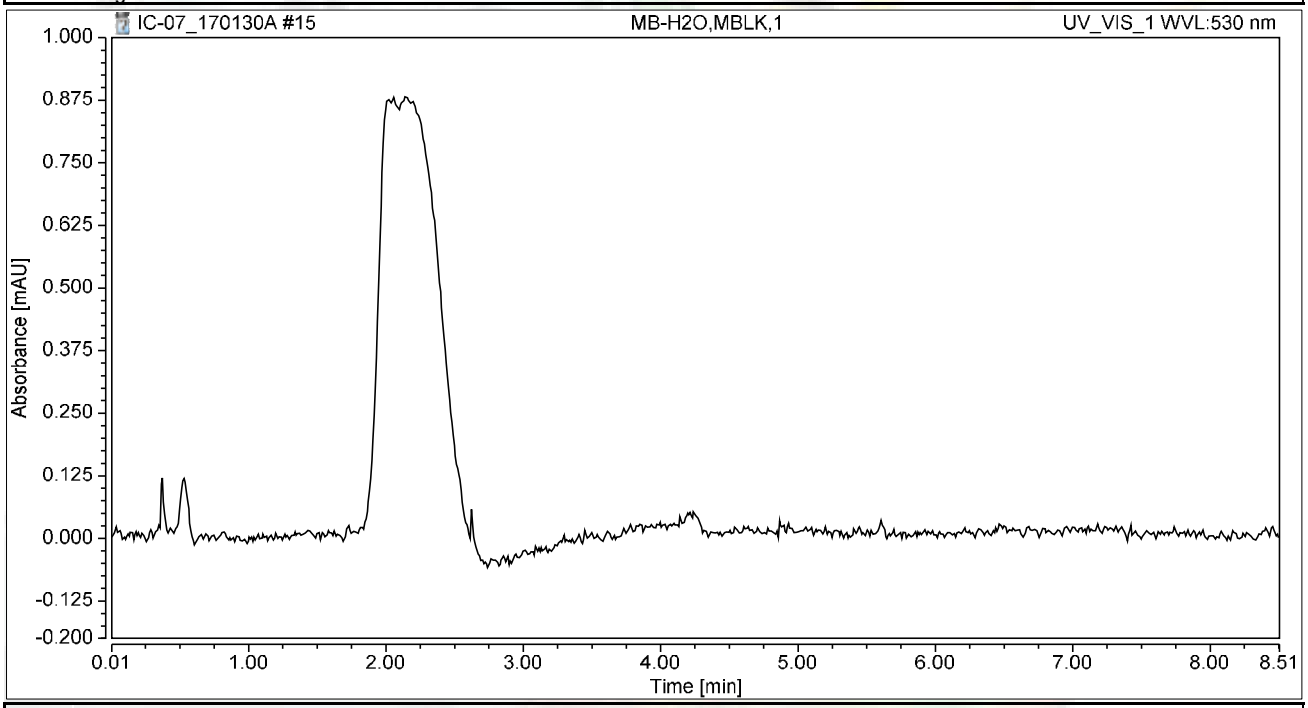
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

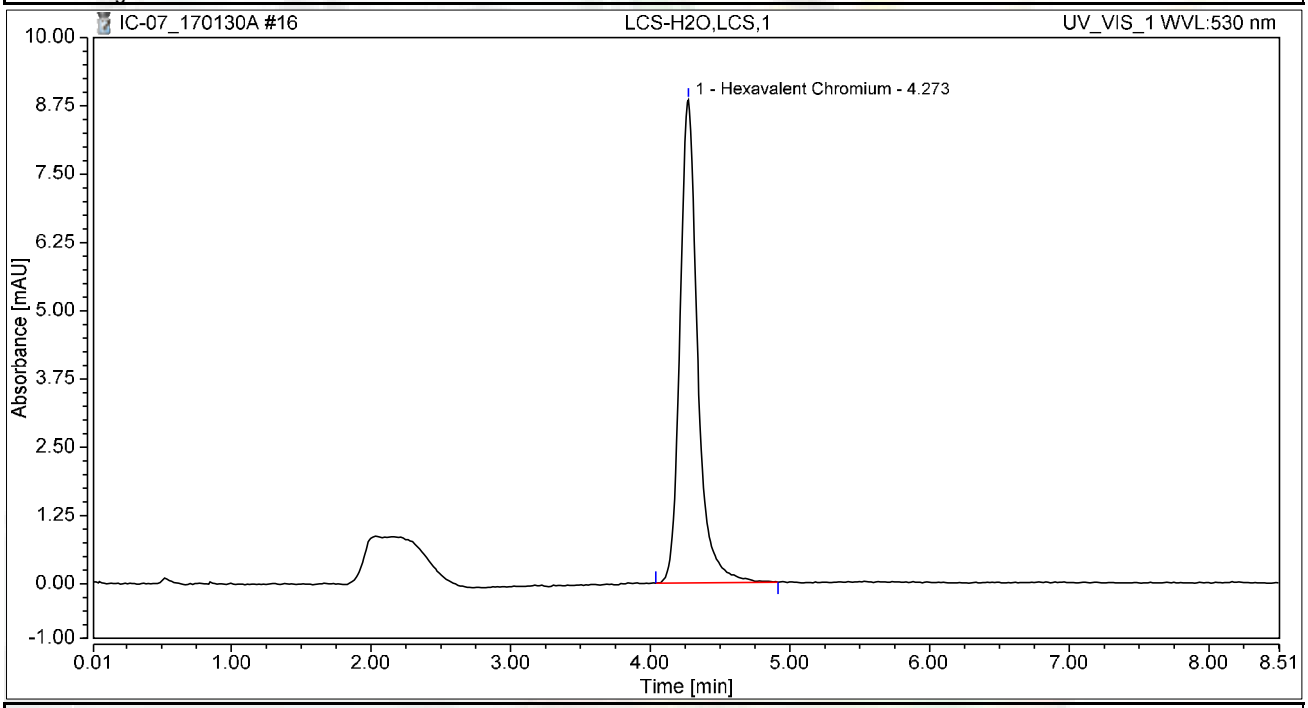
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

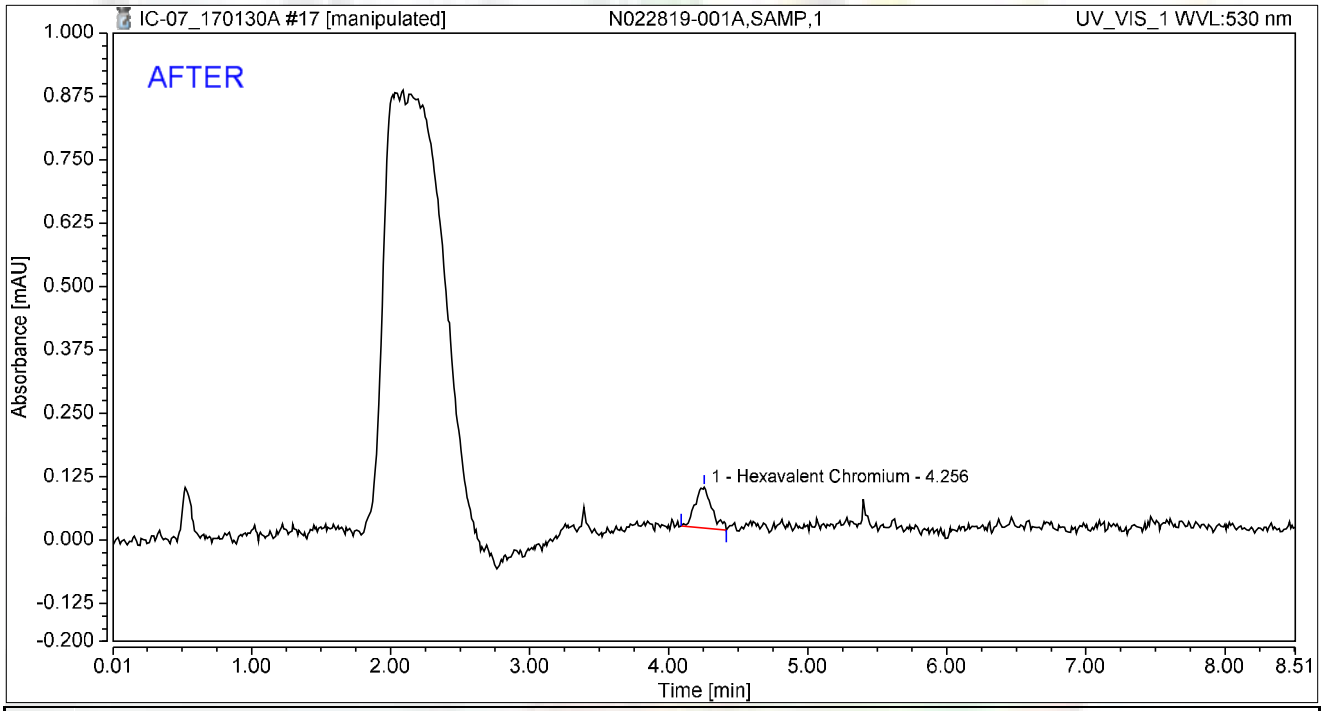
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.295	8.840	100.00	100.00	5.0669
Total:			**1.295**	**8.840**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0441
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/4/2017

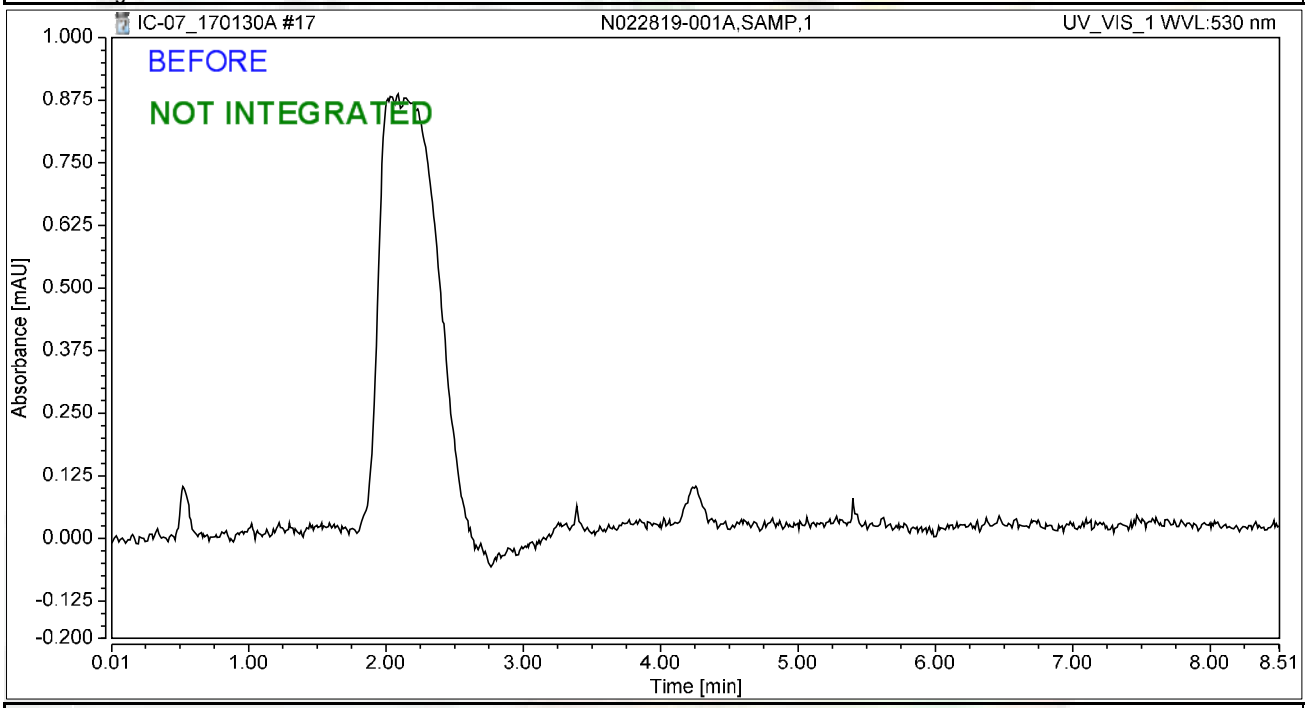
Mary 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

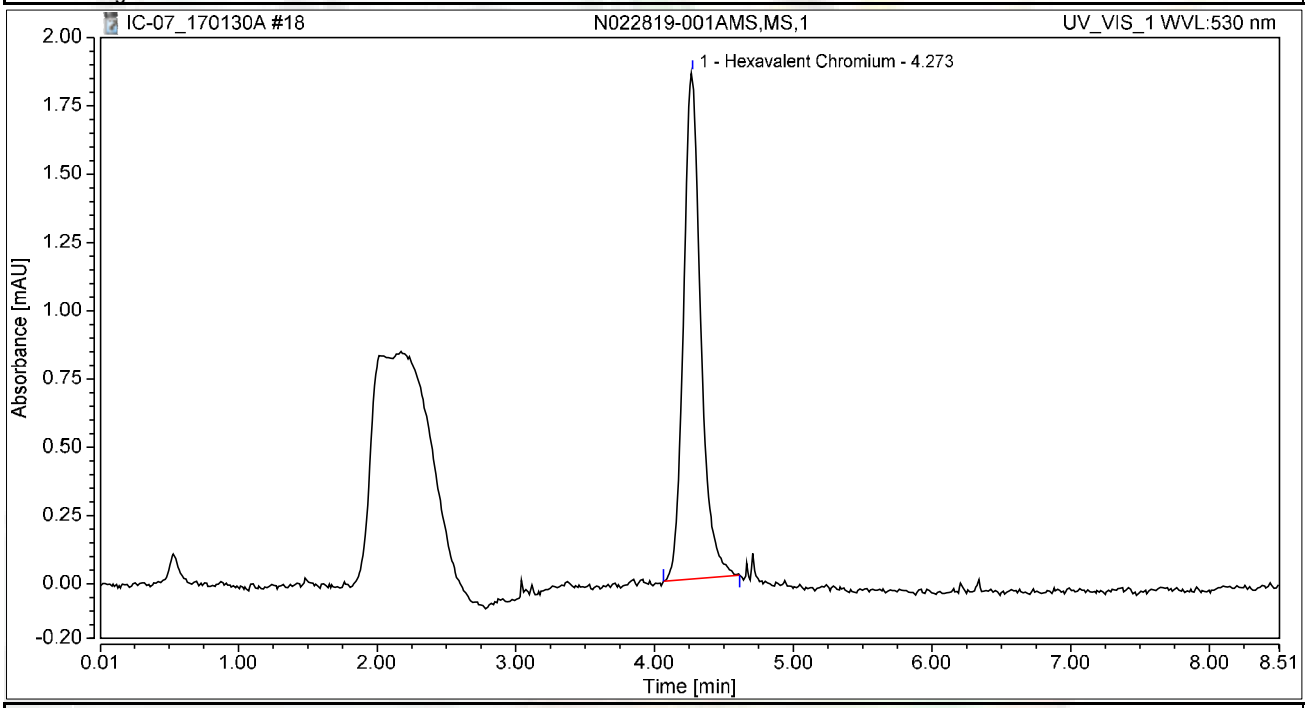
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

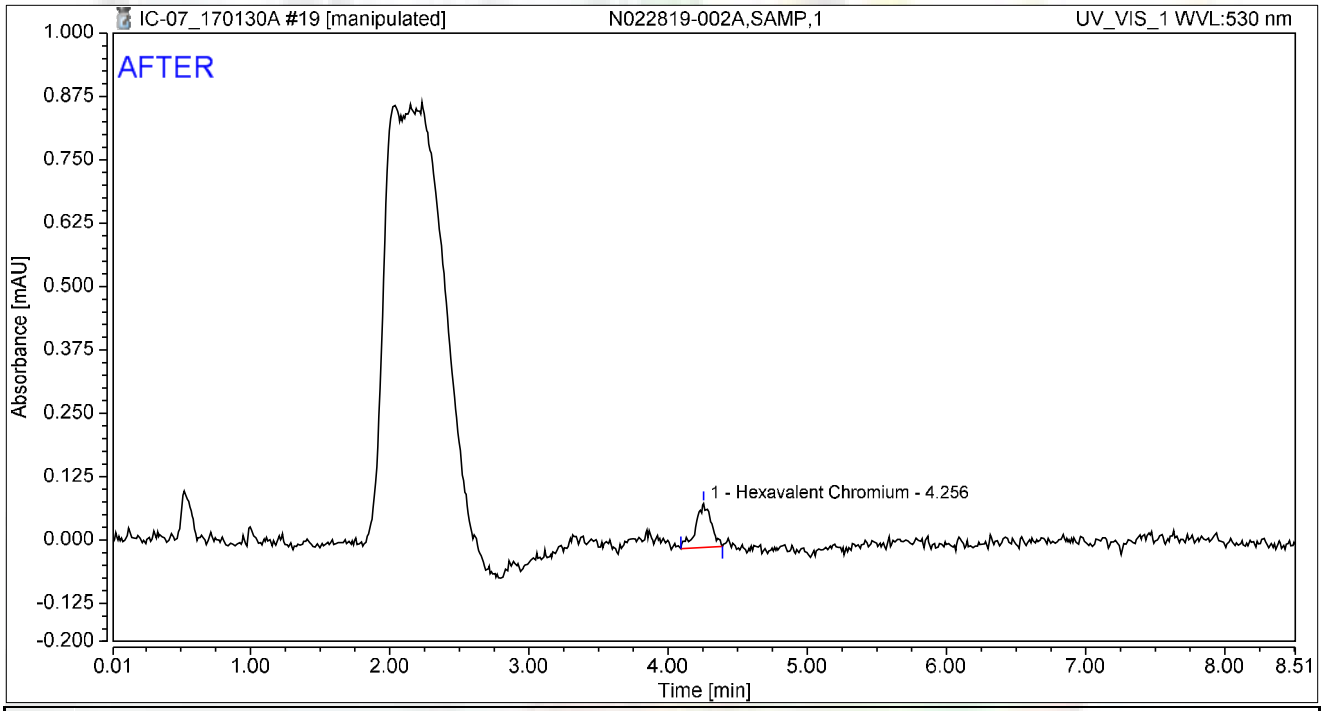
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.268	1.855	100.00	100.00	1.0497
Total:			**0.268**	**1.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.086	100.00	100.00	0.0435
Total:			**0.011**	**0.086**	**100.00**	**100.00**	

rba 2/4/2017

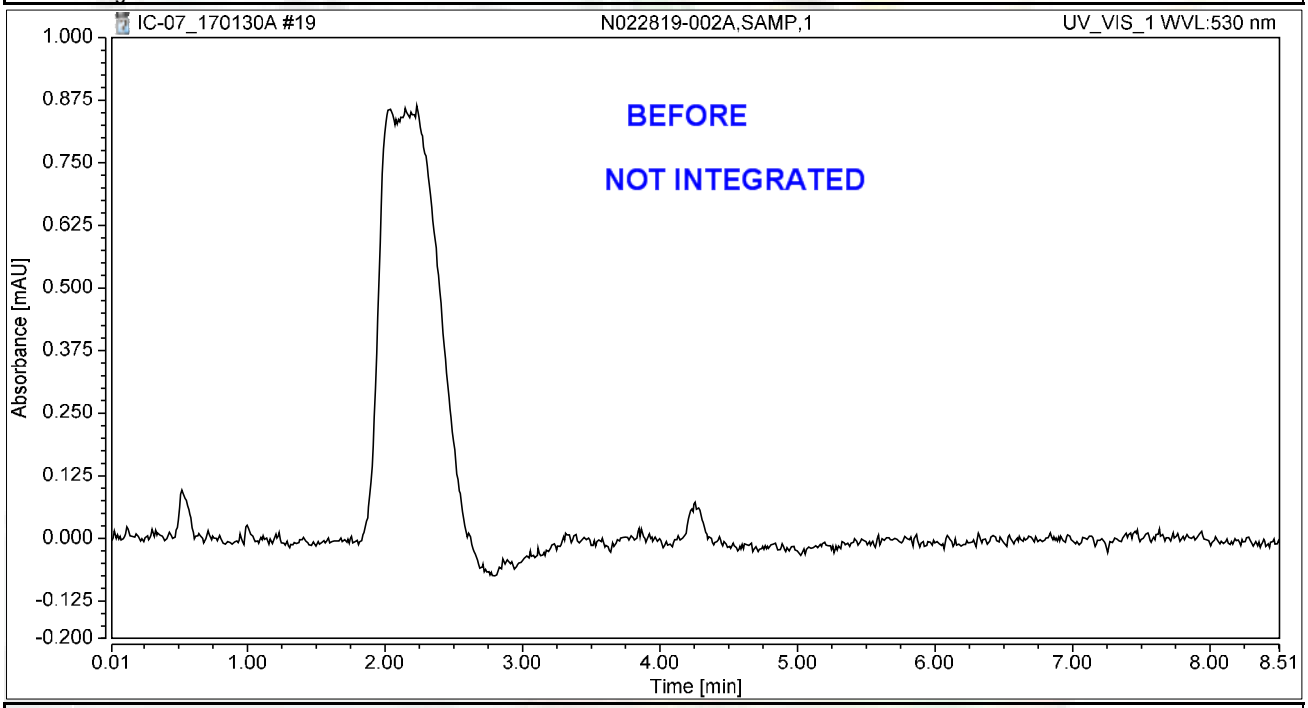
2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

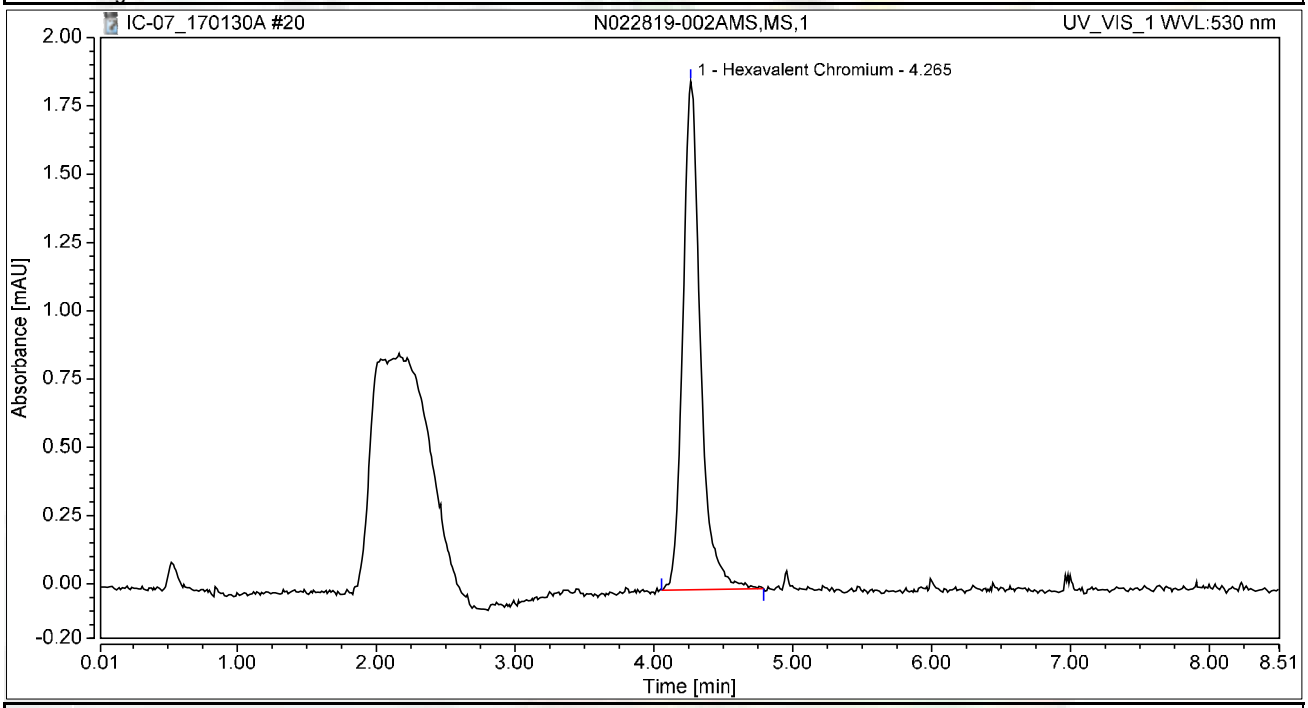
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

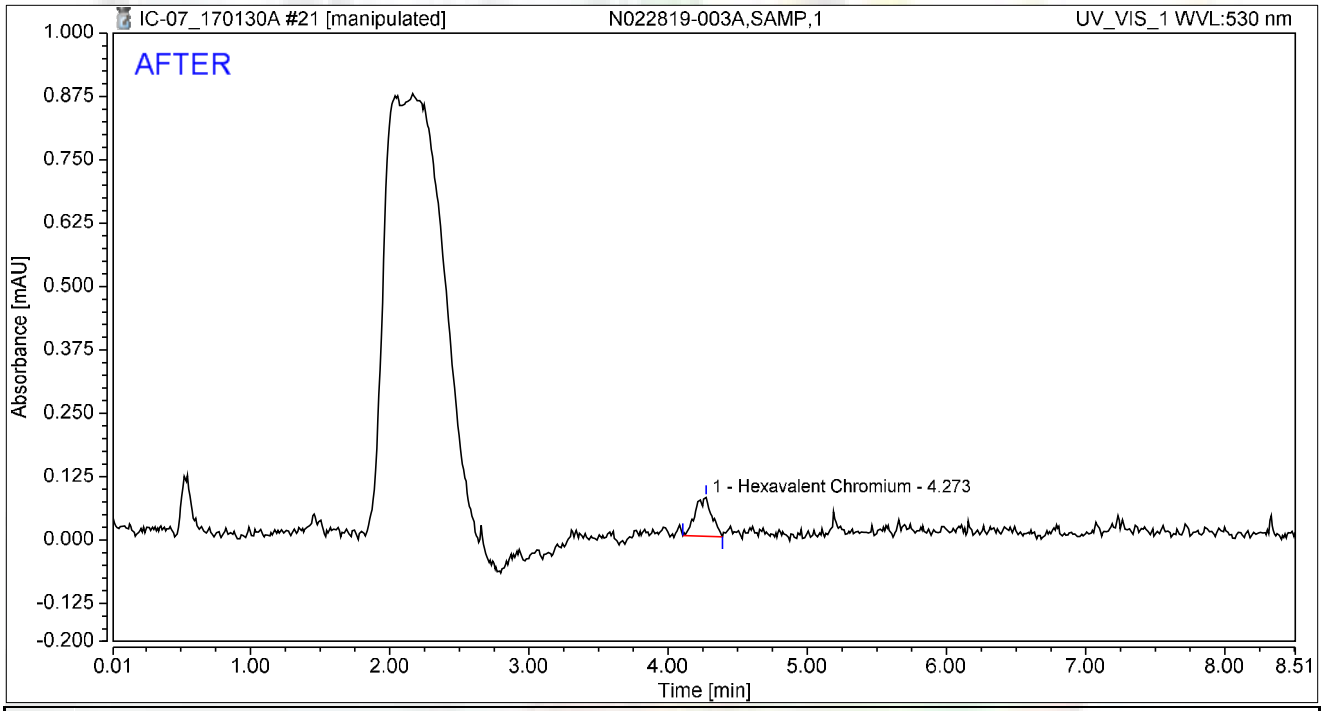
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.274	1.862	100.00	100.00	1.0736
Total:			**0.274**	**1.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.011	0.076	100.00	100.00	0.0411
Total:			**0.011**	**0.076**	**100.00**	**100.00**	

rba 2/4/2017

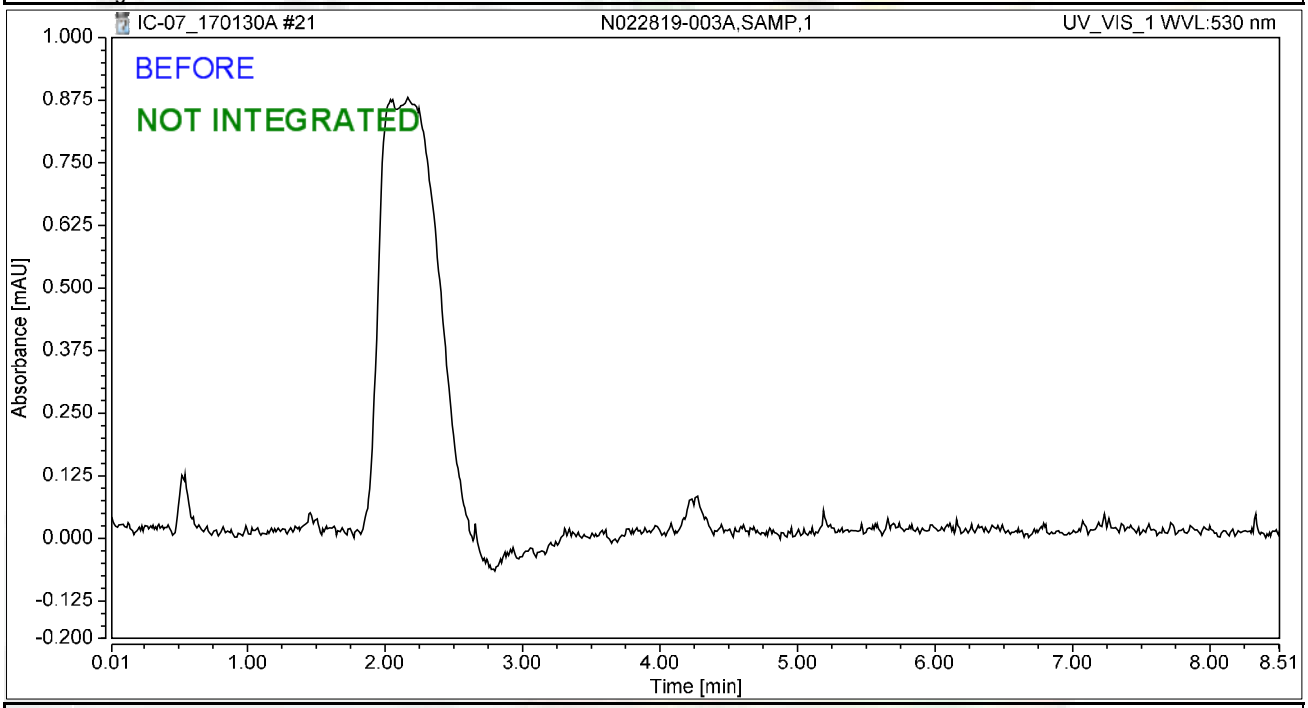
Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

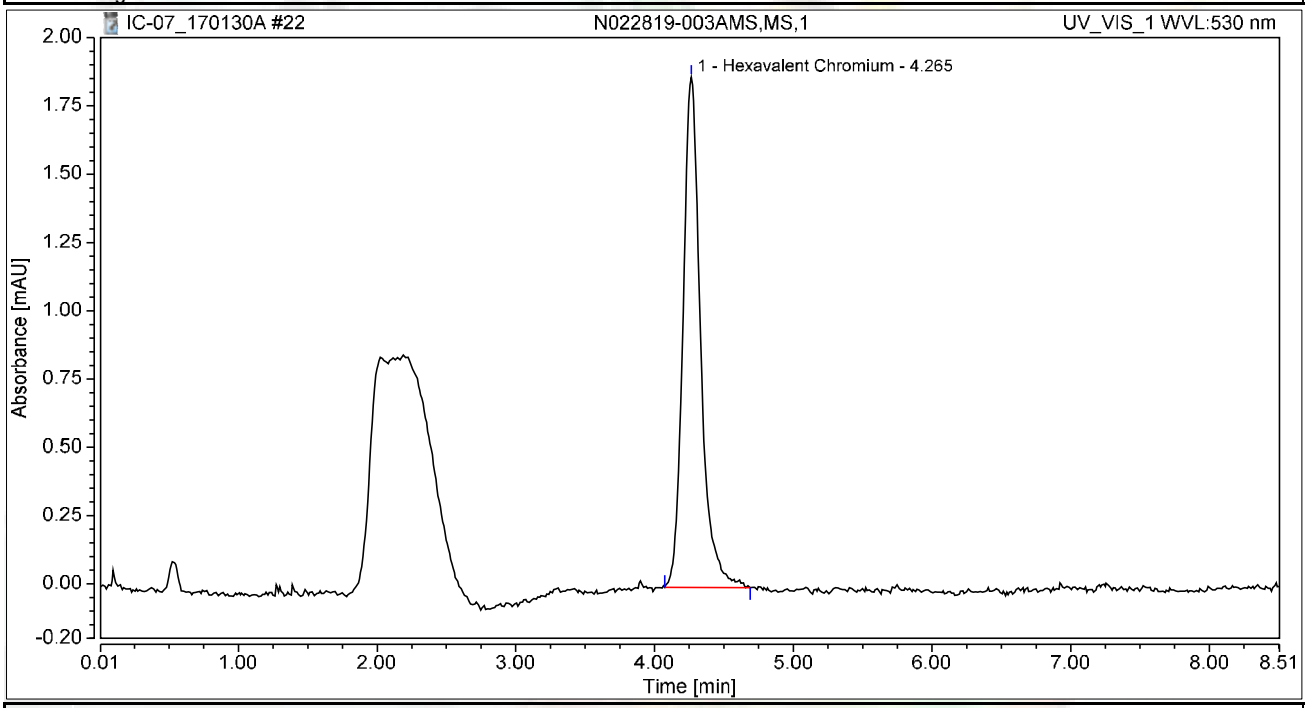
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

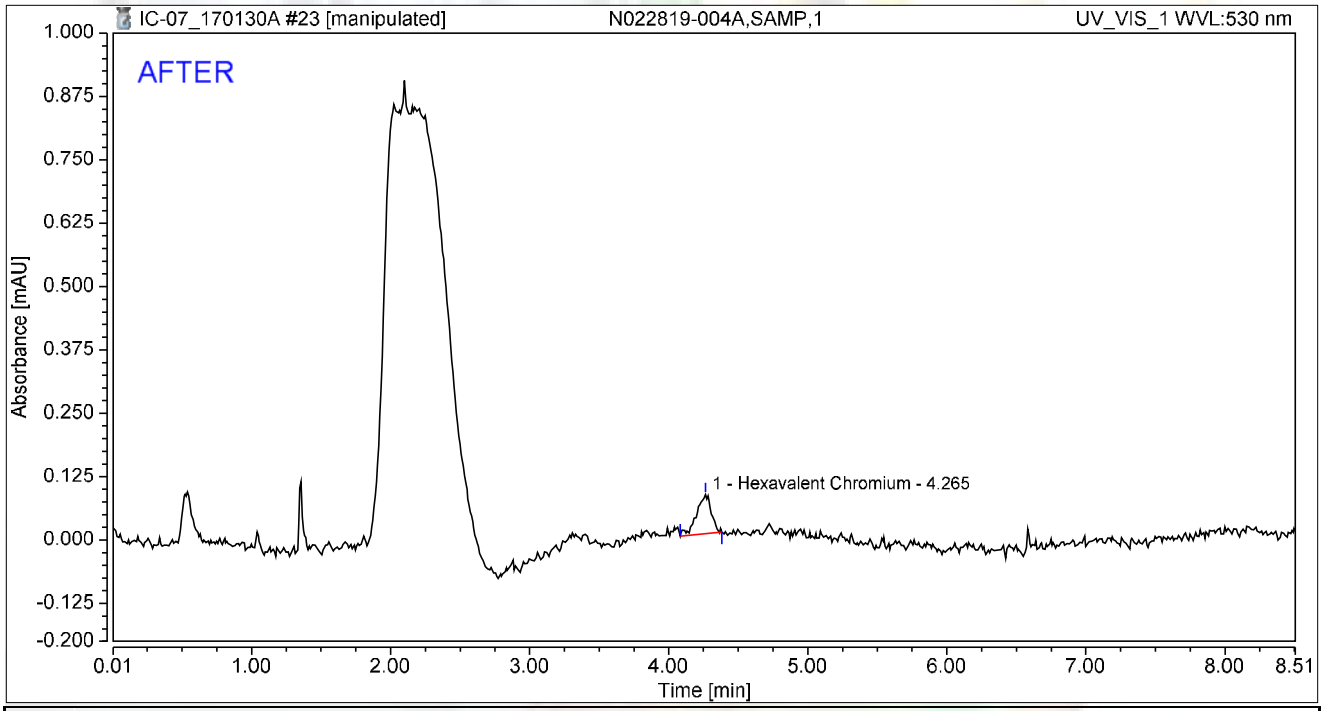
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.274	1.868	100.00	100.00	1.0734
Total:			**0.274**	**1.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.009	0.076	100.00	100.00	0.0369
Total:			**0.009**	**0.076**	**100.00**	**100.00**	

rba 2/4/2017

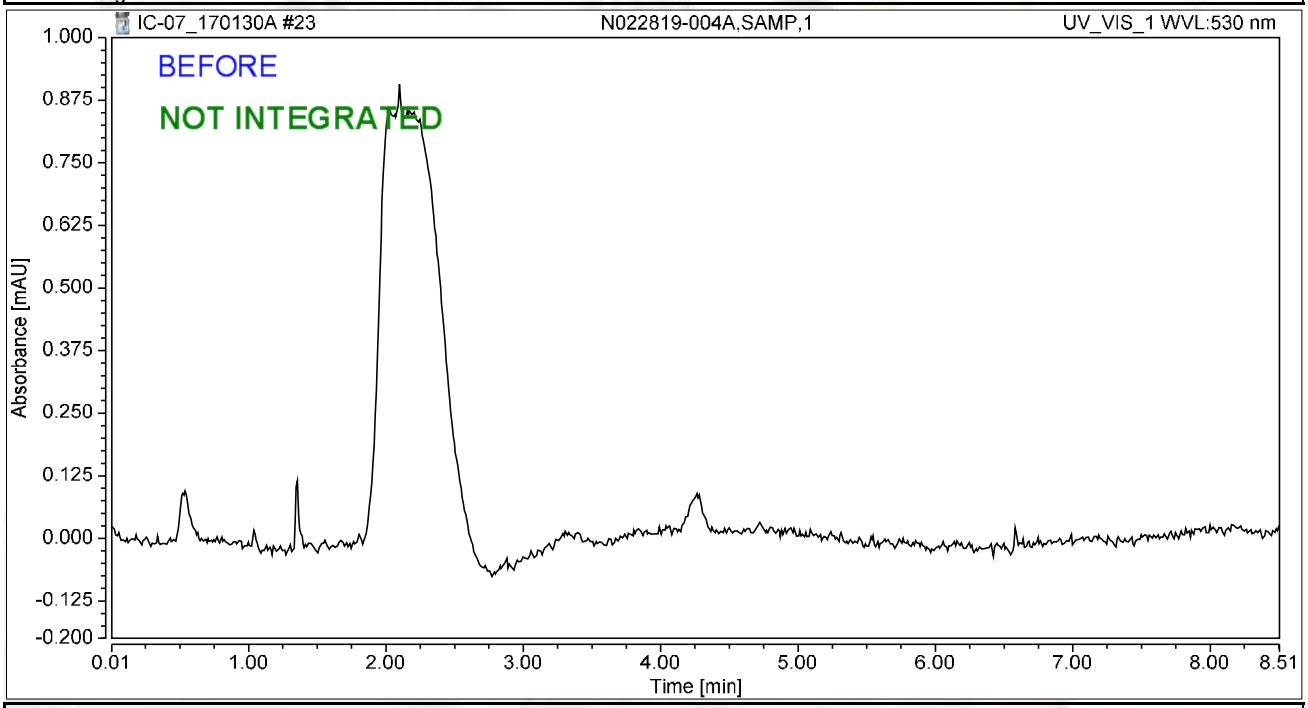
Mary 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

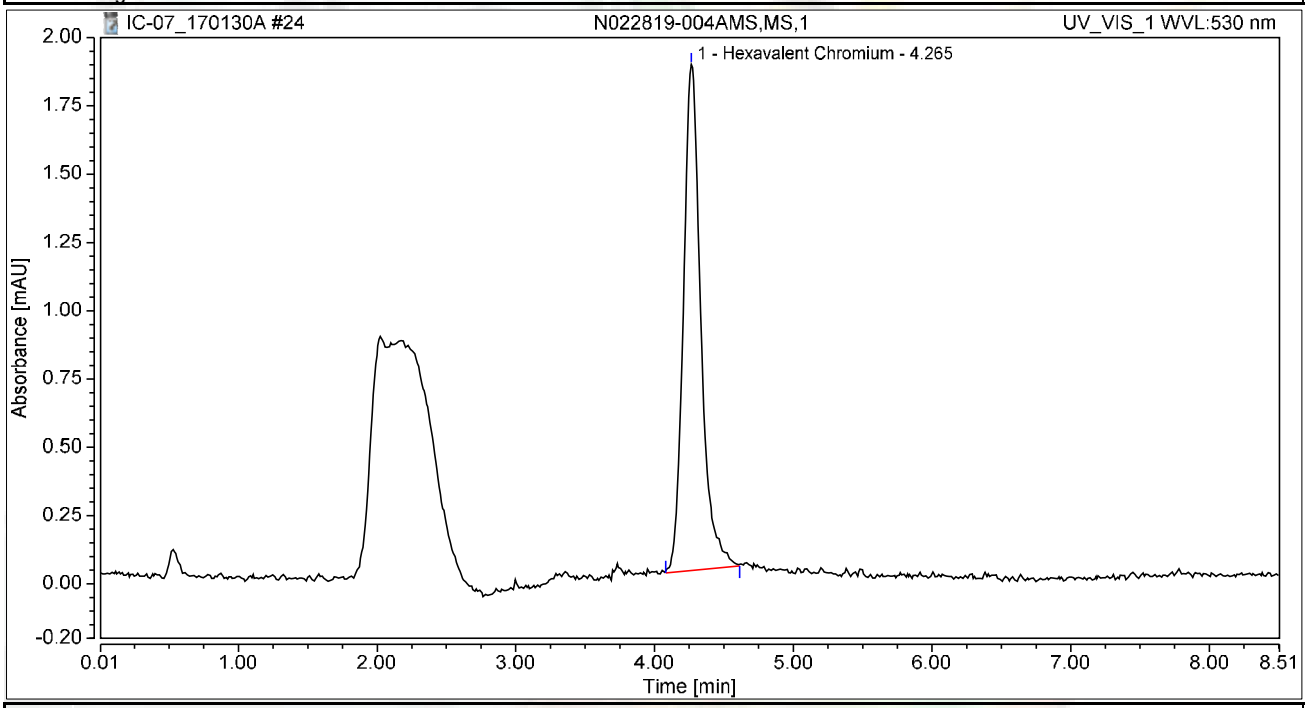
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

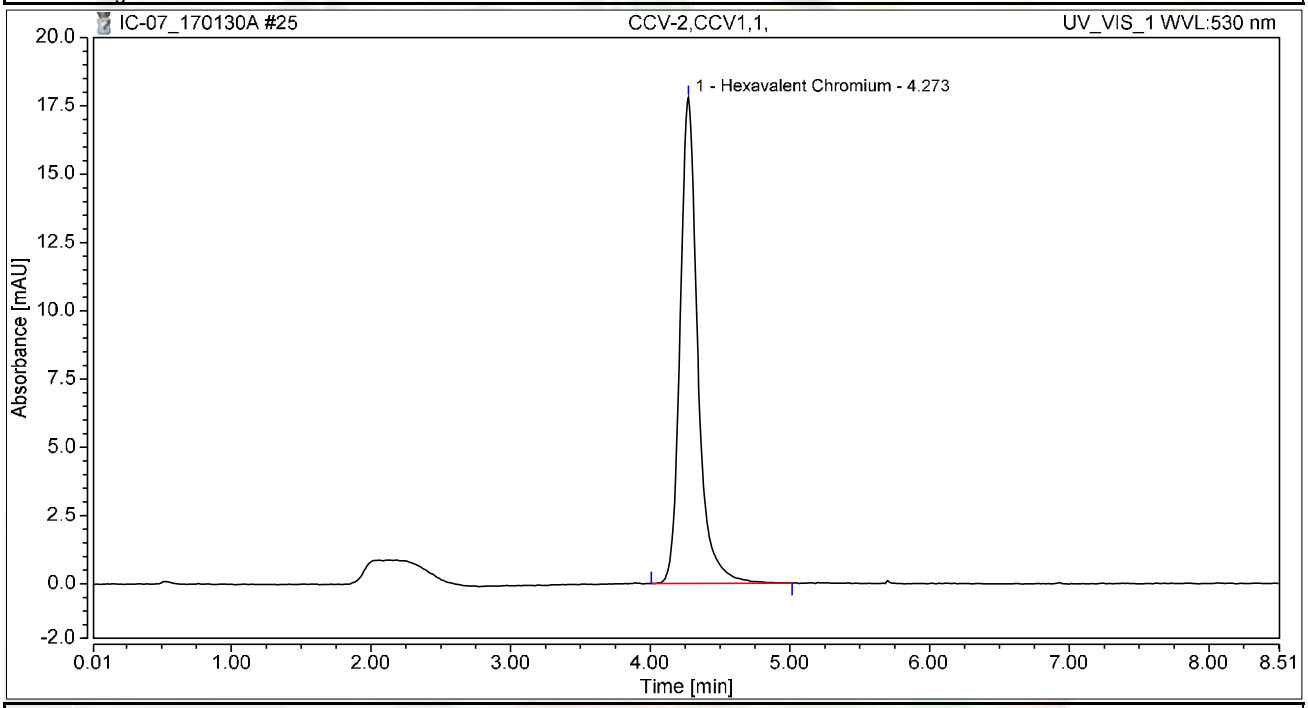
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.270	1.852	100.00	100.00	1.0569
Total:			**0.270**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

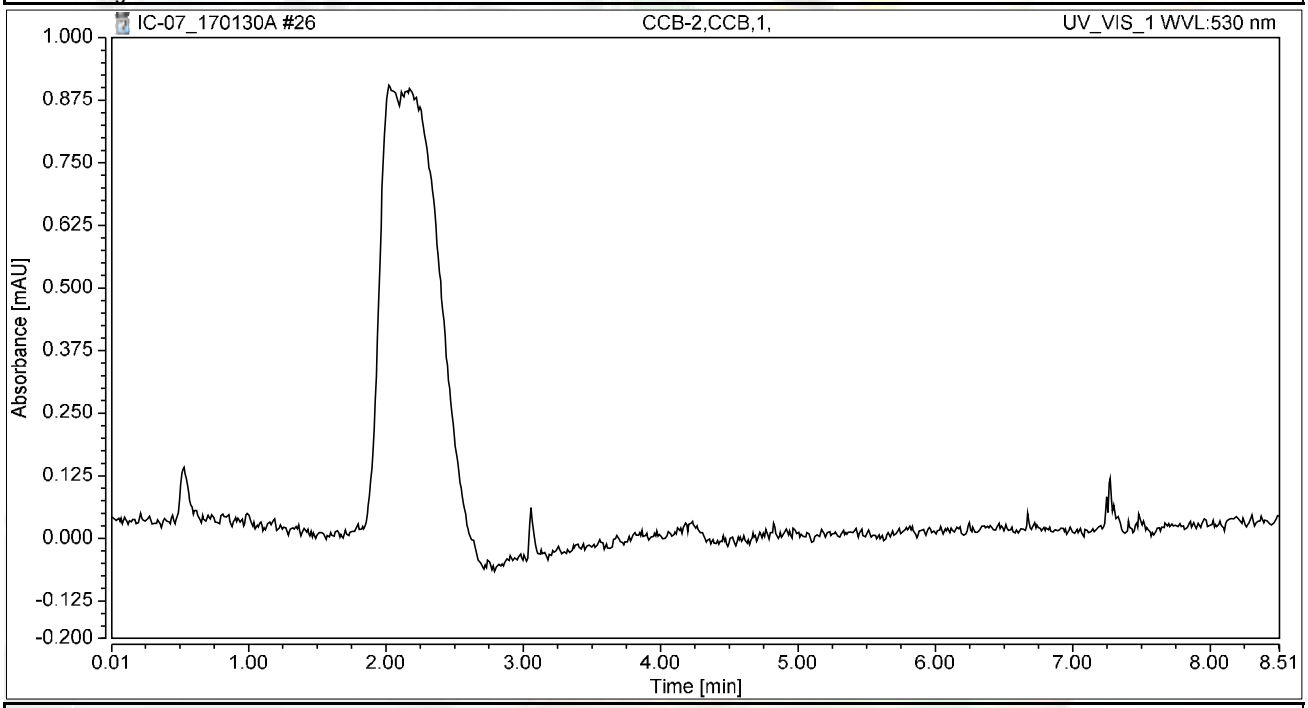
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.610	17.801	100.00	100.00	10.2092
Total:			**2.610**	**17.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

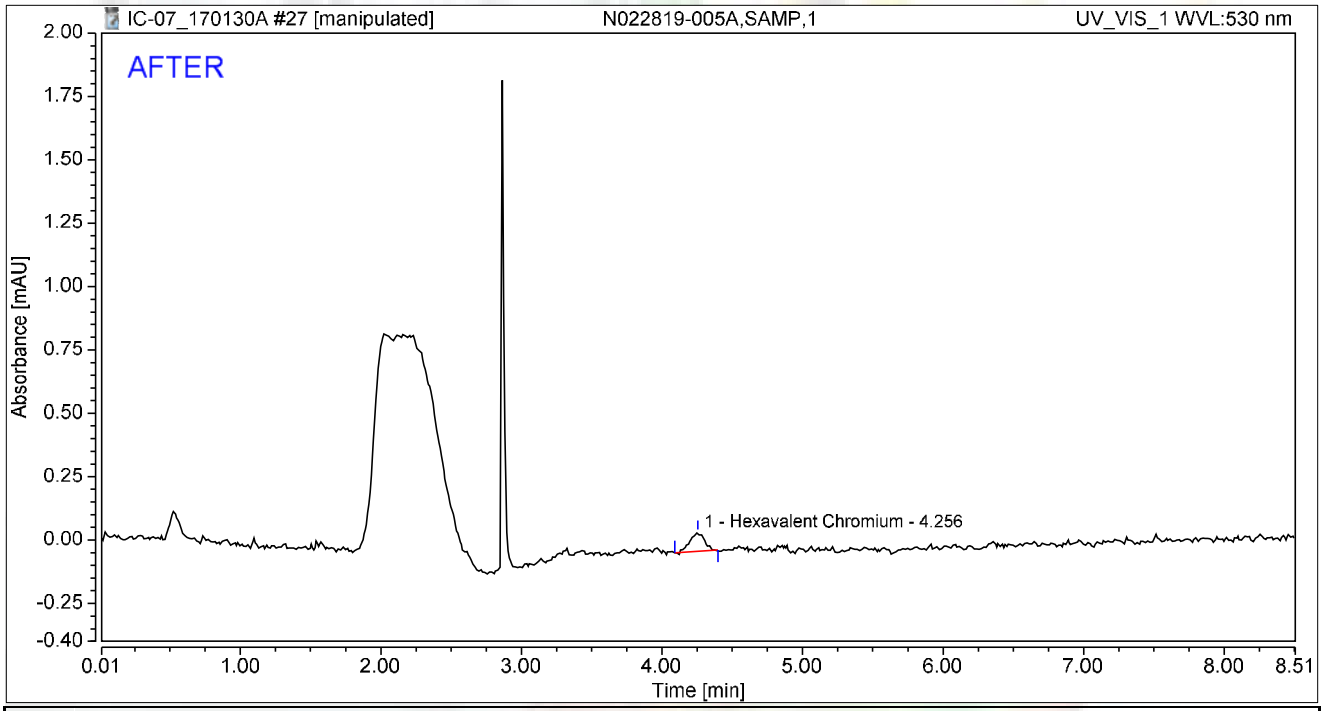
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.009	0.074	100.00	100.00	0.0343
Total:			**0.009**	**0.074**	**100.00**	**100.00**	

rba 2/4/2017

Reviewed by: Nancy 2/6/2017

My first report/Integration

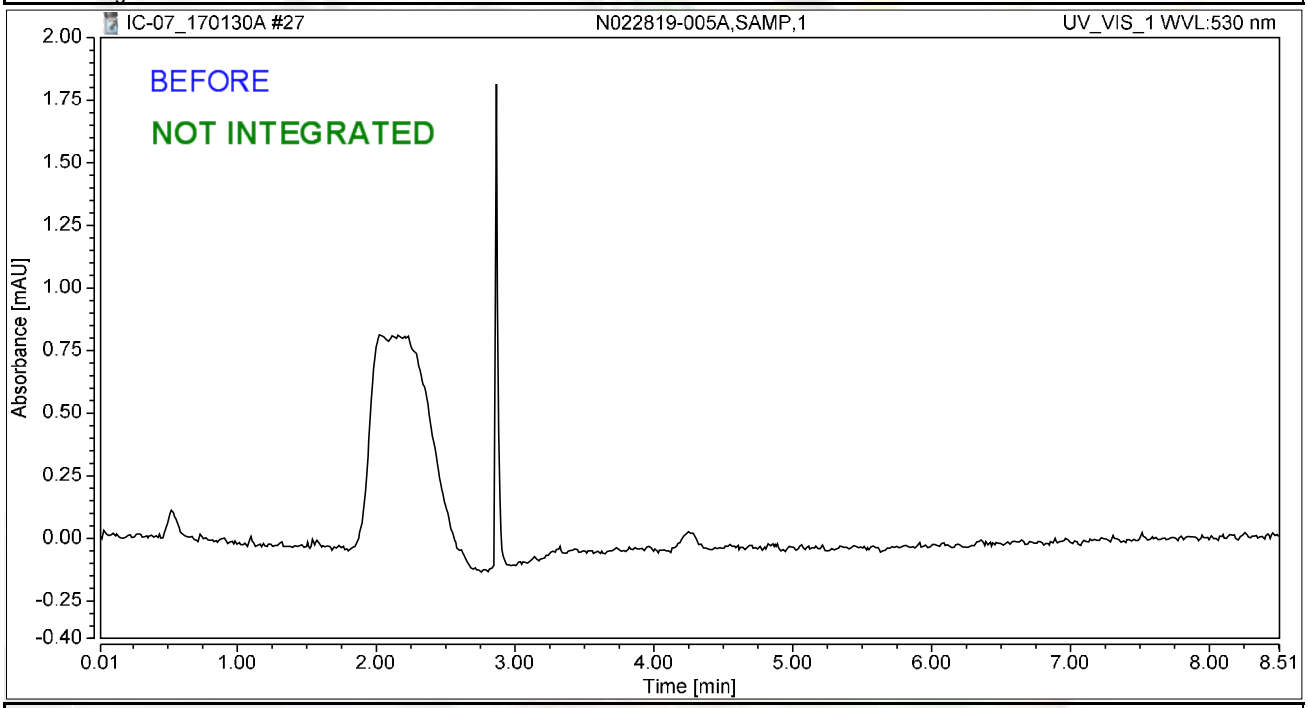
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

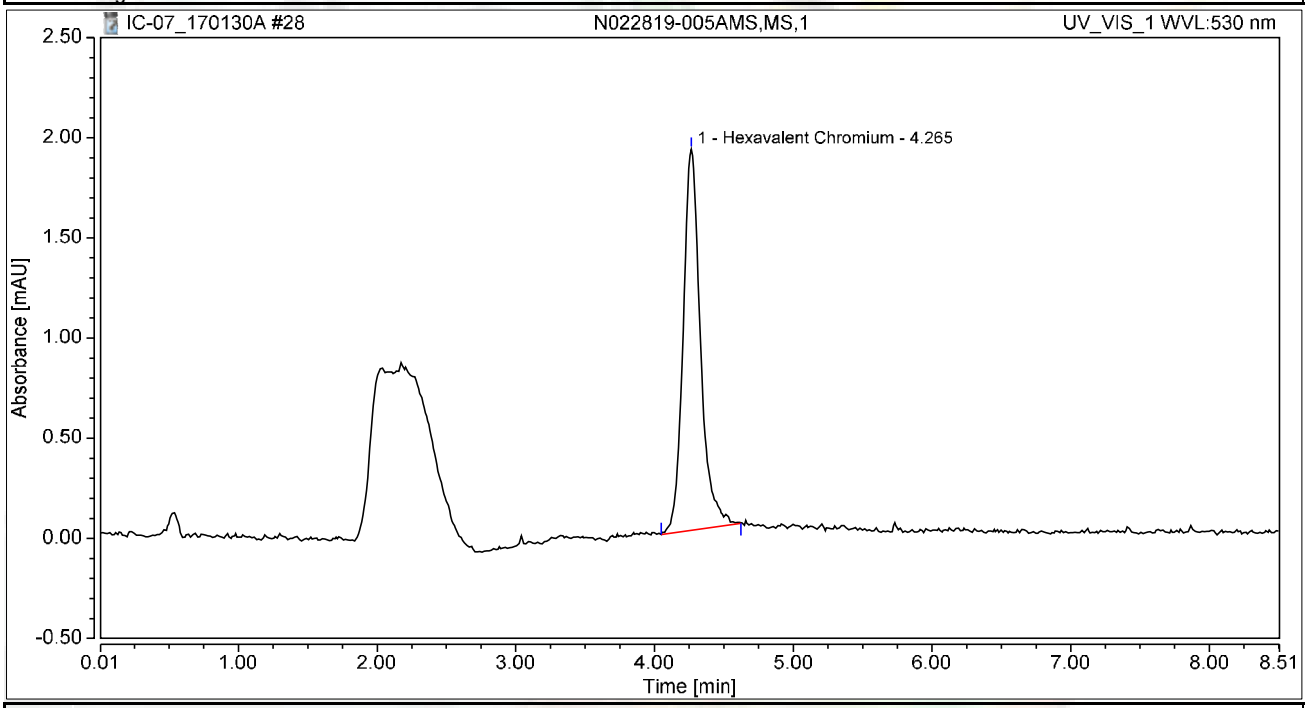
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

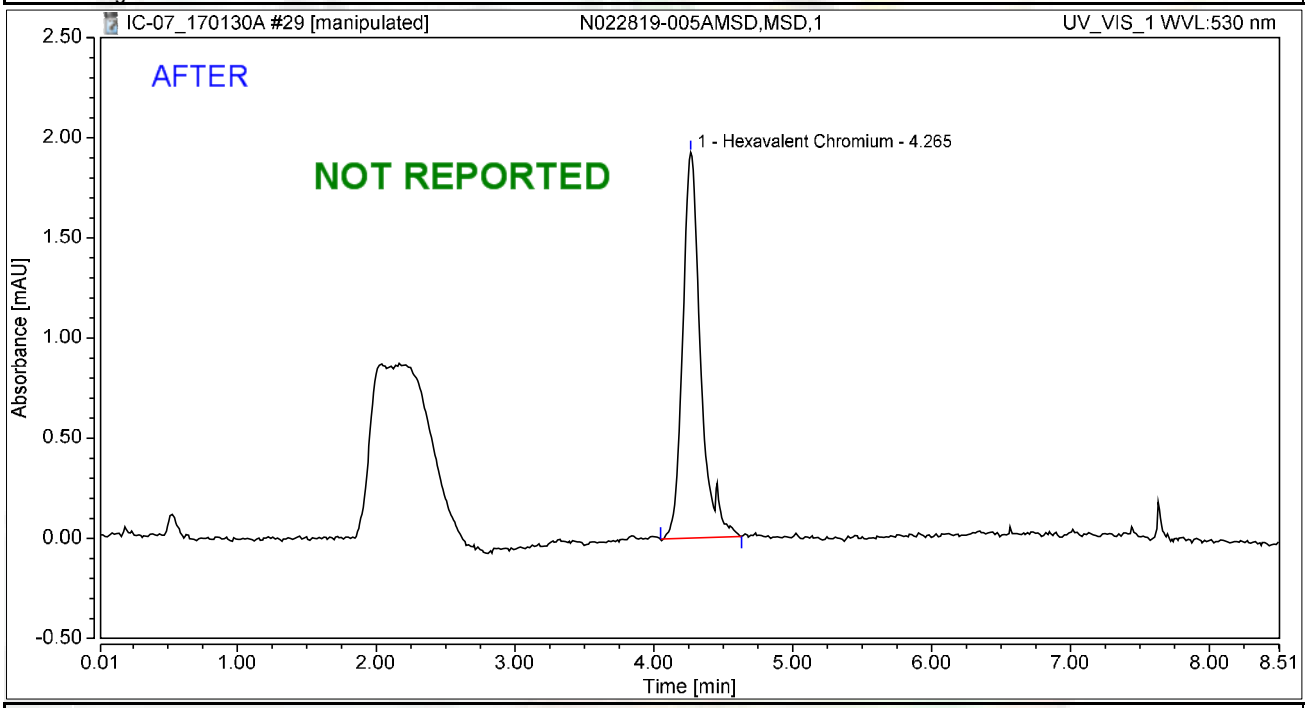
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.276	1.903	100.00	100.00	1.0798
Total:			**0.276**	**1.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.287	1.925	100.00	100.00	1.1219
Total:			**0.287**	**1.925**	**100.00**	**100.00**	

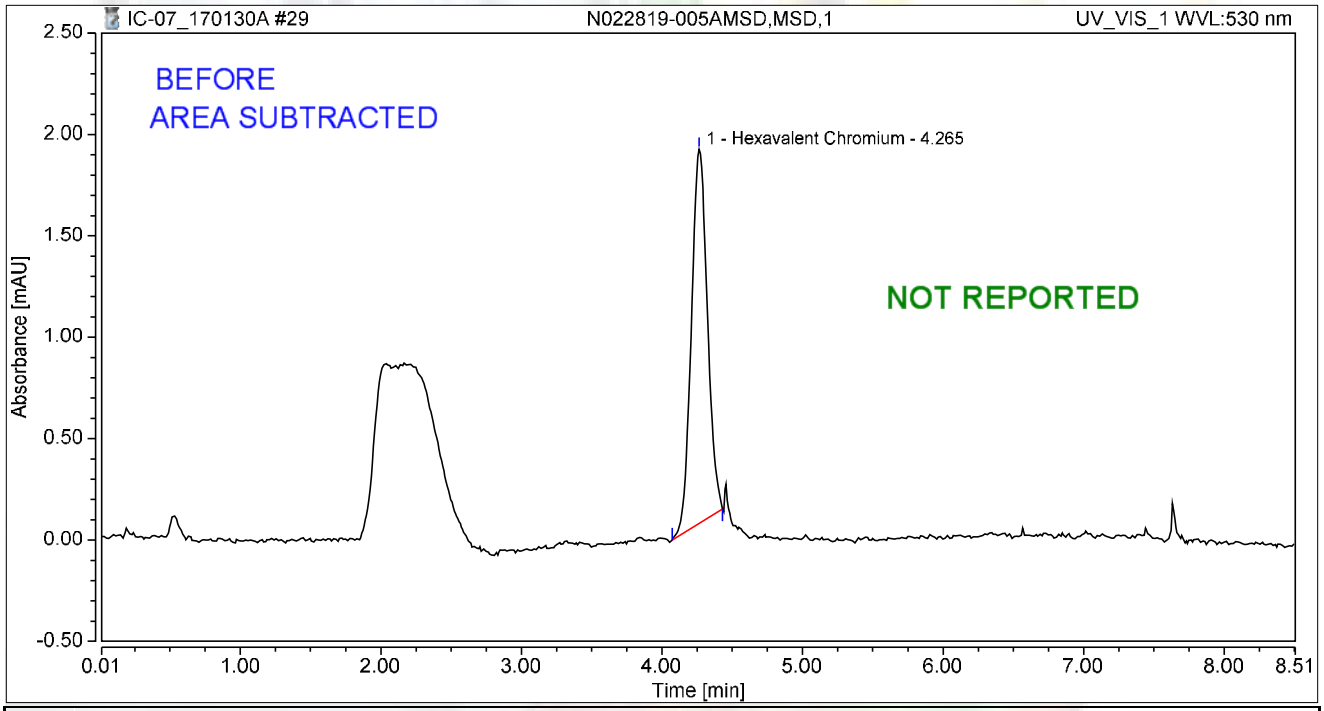
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.244	1.844	100.00	100.00	0.9530
Total:			**0.244**	**1.844**	**100.00**	**100.00**	

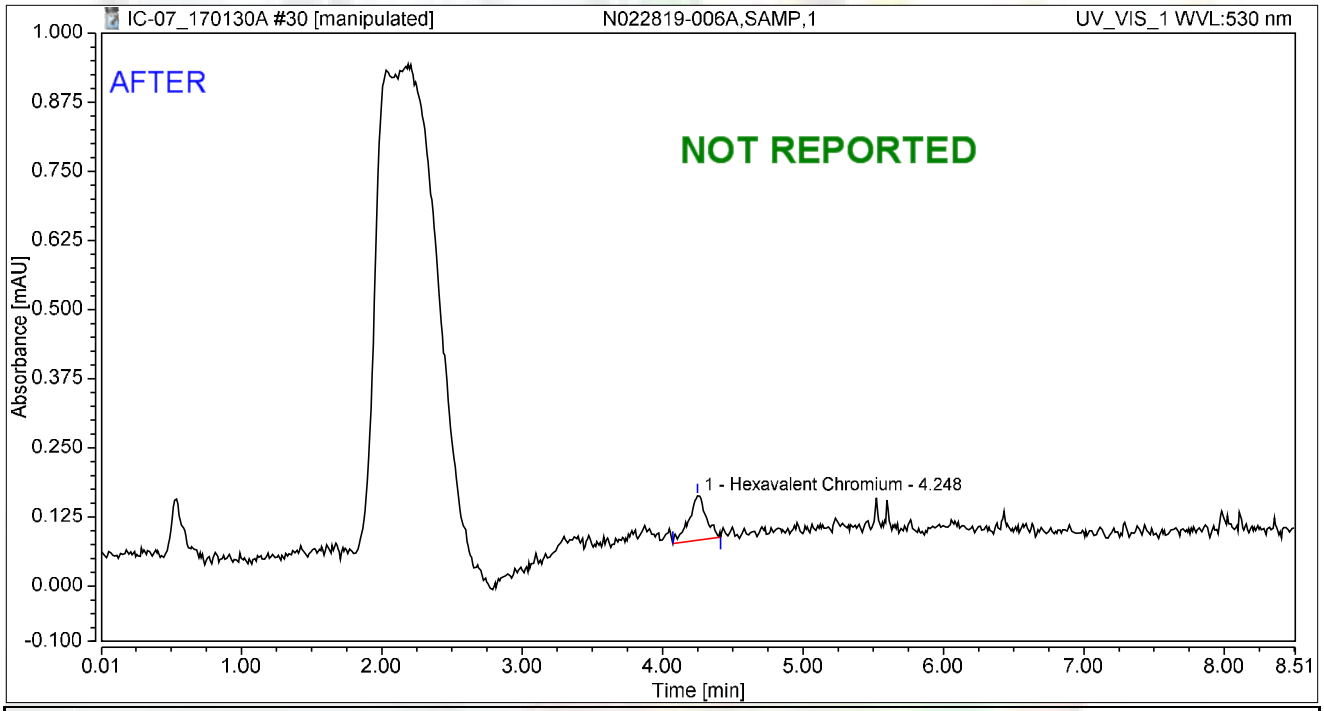
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.080	100.00	100.00	0.0453
Total:			**0.012**	**0.080**	**100.00**	**100.00**	

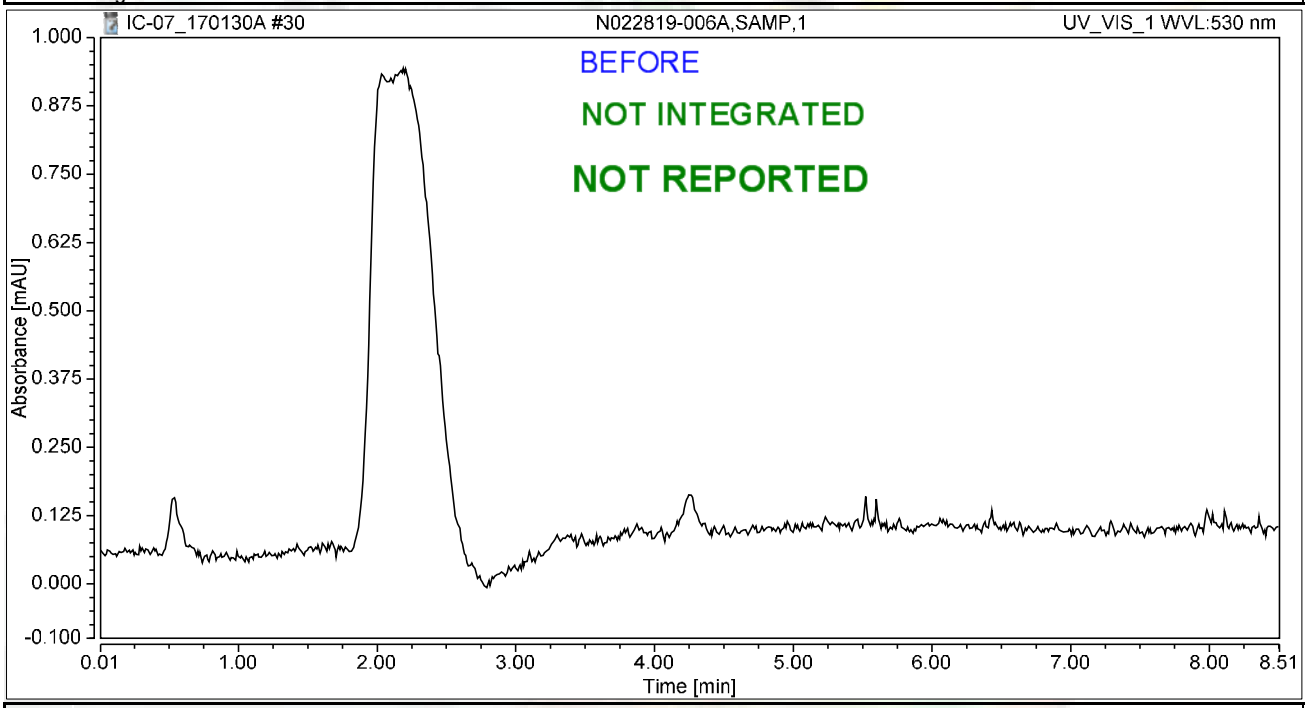
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

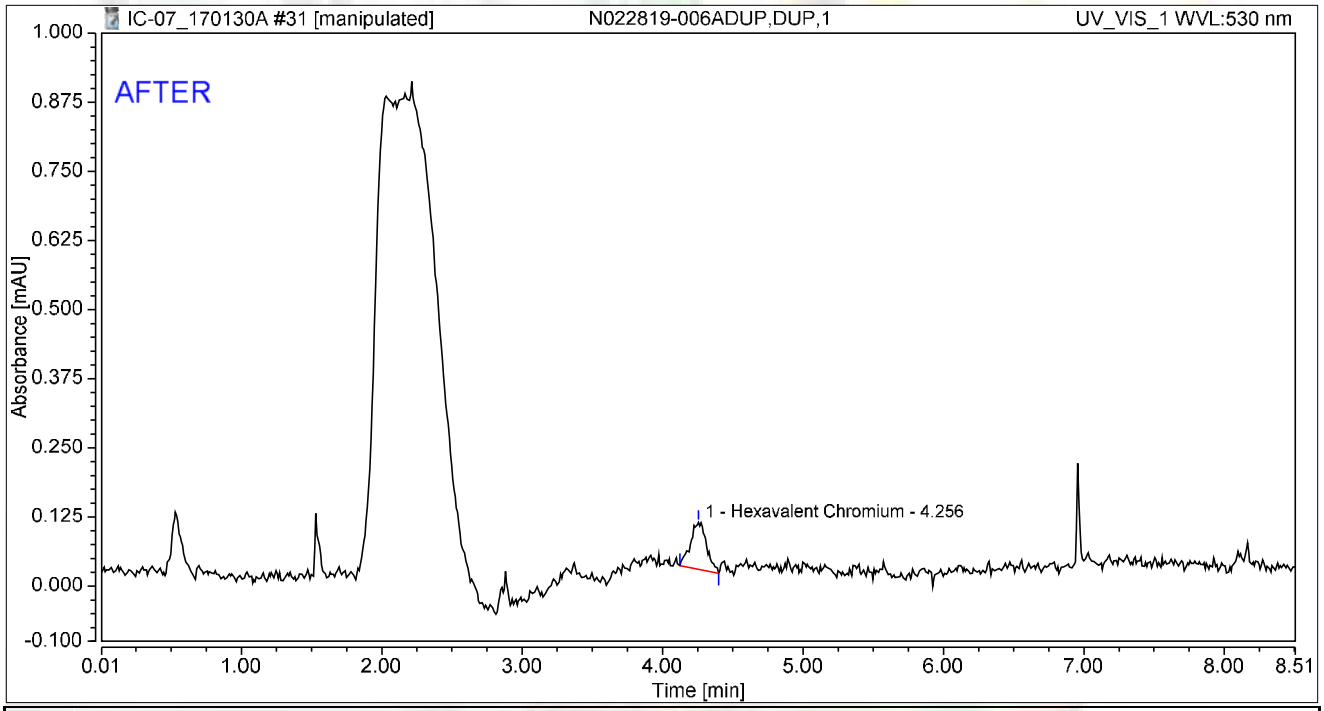
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.084	100.00	100.00	0.0440
Total:			**0.011**	**0.084**	**100.00**	**100.00**	

rba 2/4/2017

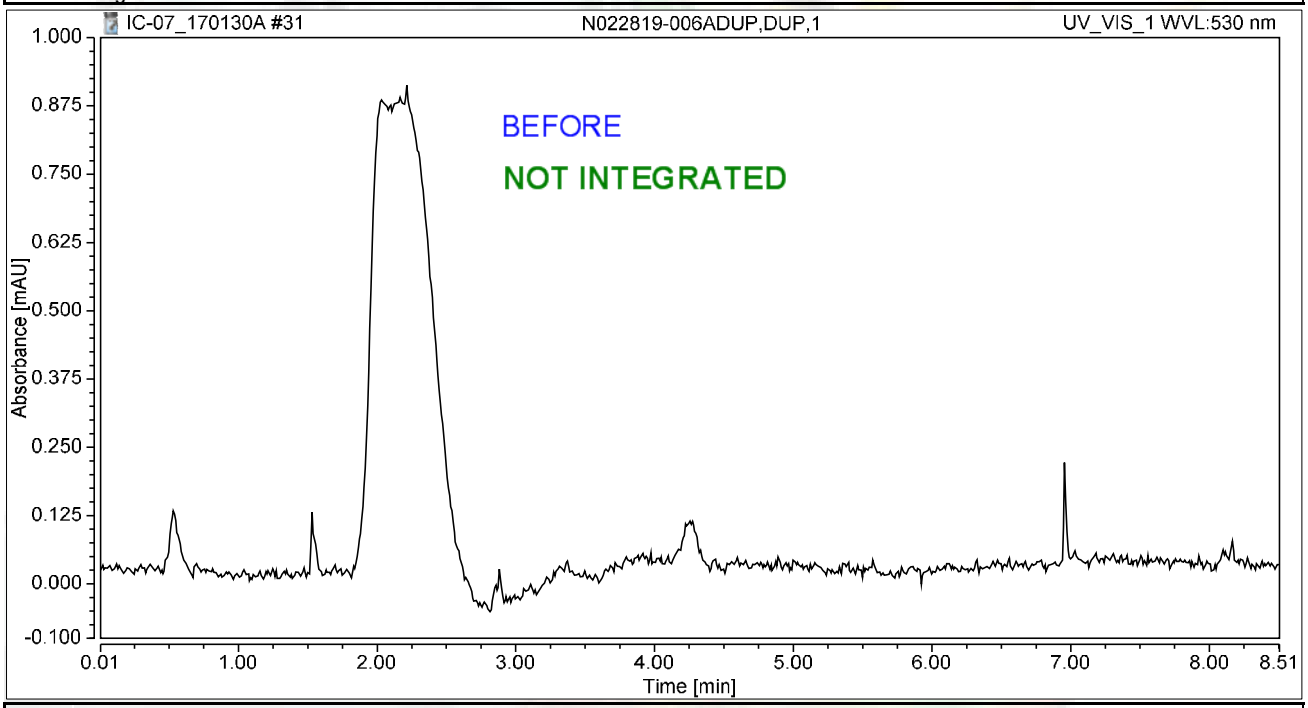
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

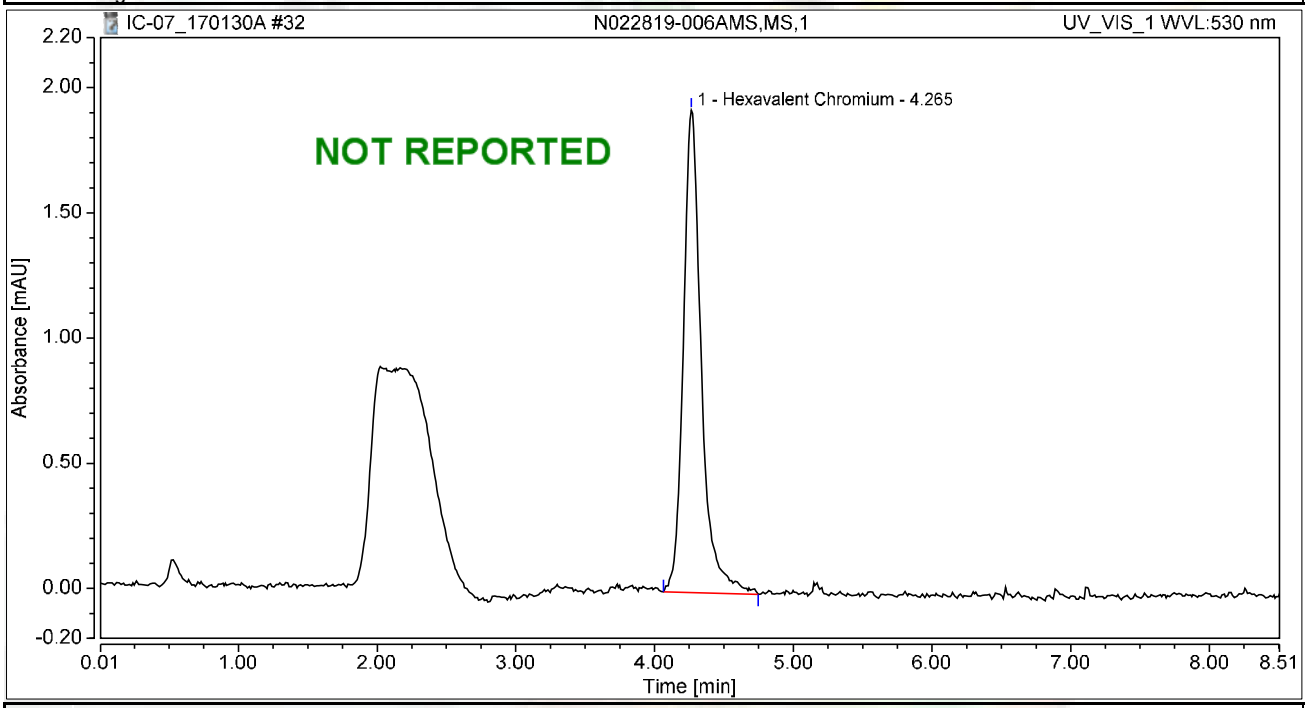
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

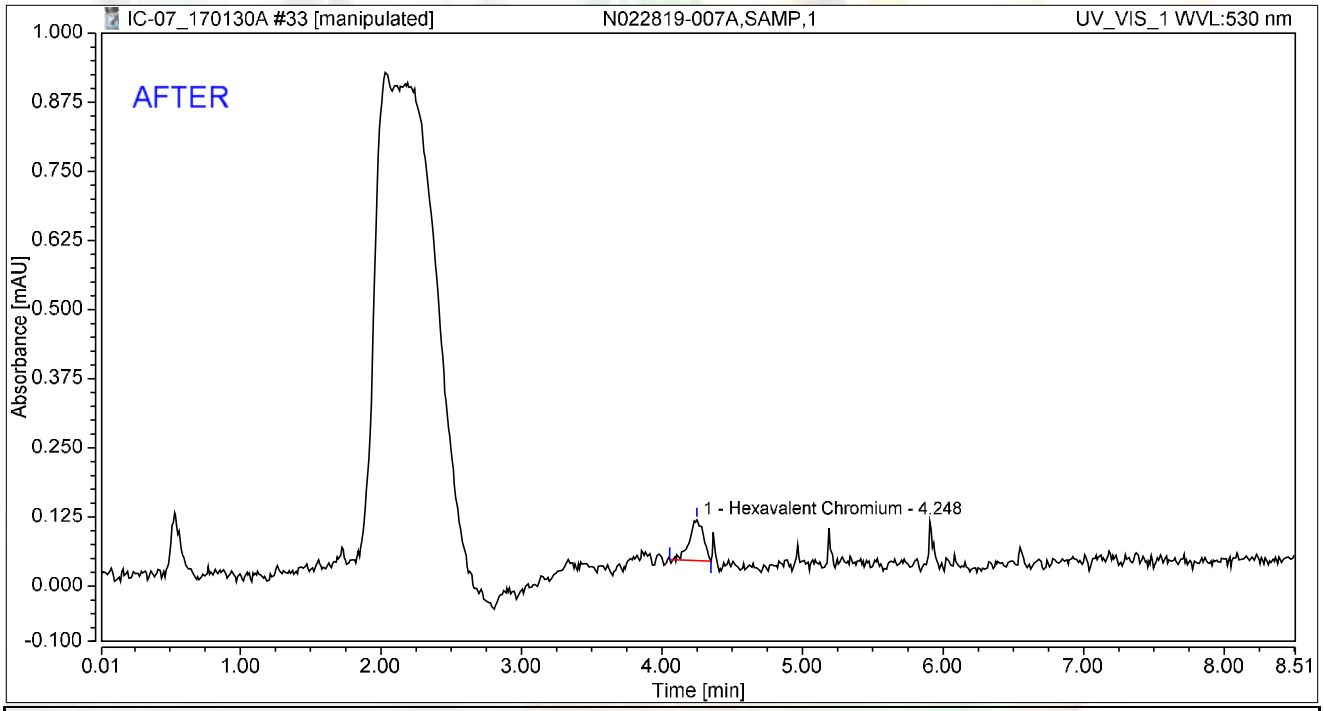
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.290	1.927	100.00	100.00	1.1328
Total:			**0.290**	**1.927**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.008	0.074	100.00	100.00	0.0327
Total:			**0.008**	**0.074**	**100.00**	**100.00**	

rba 2/4/2017

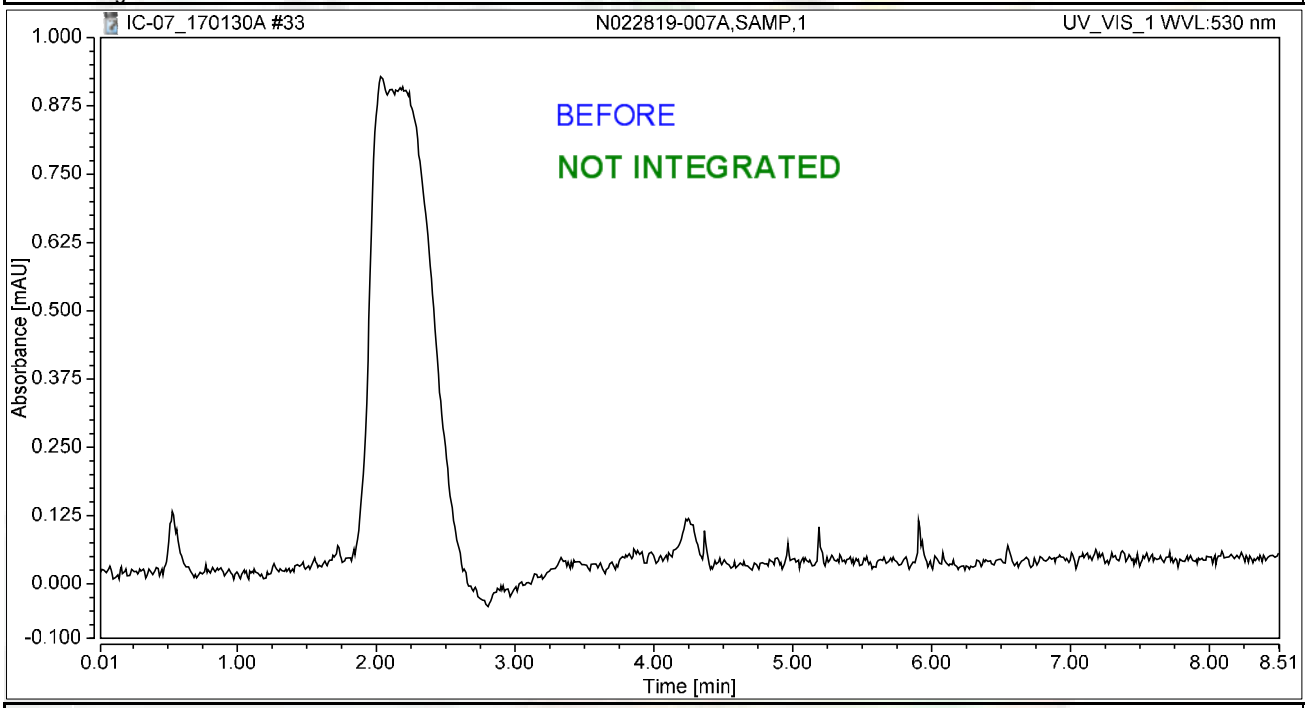
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

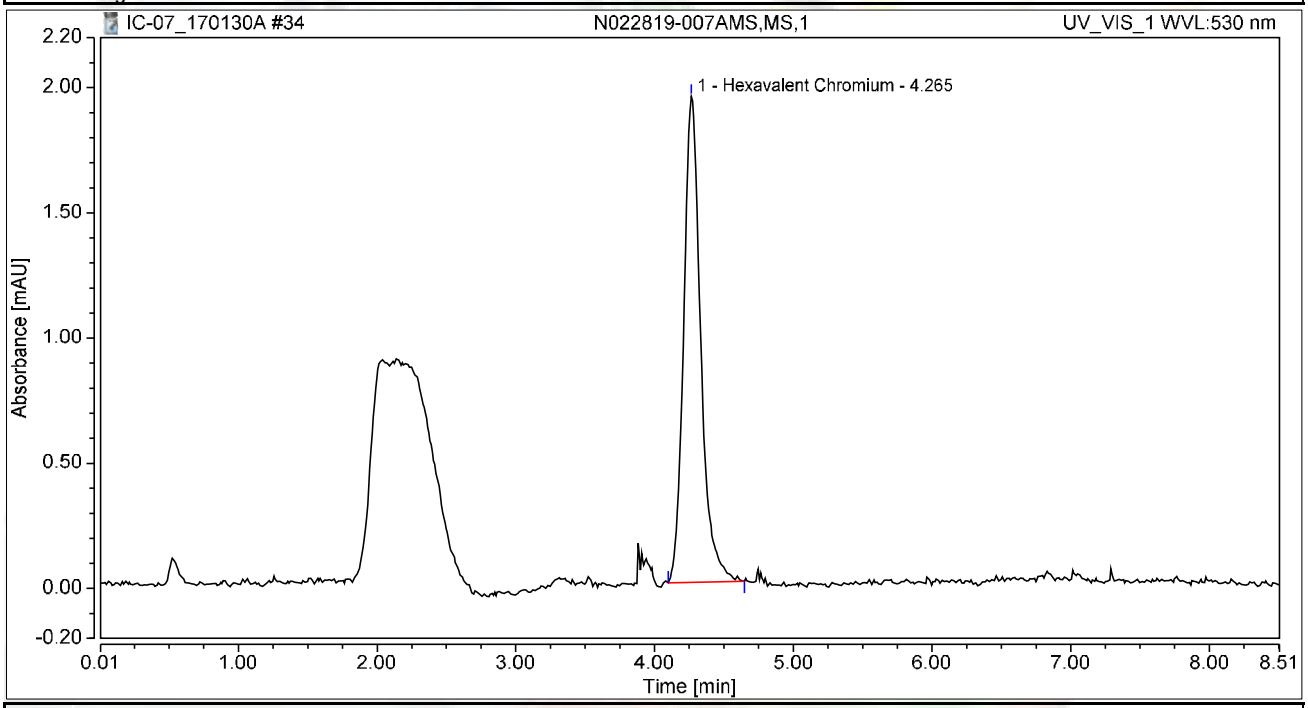
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

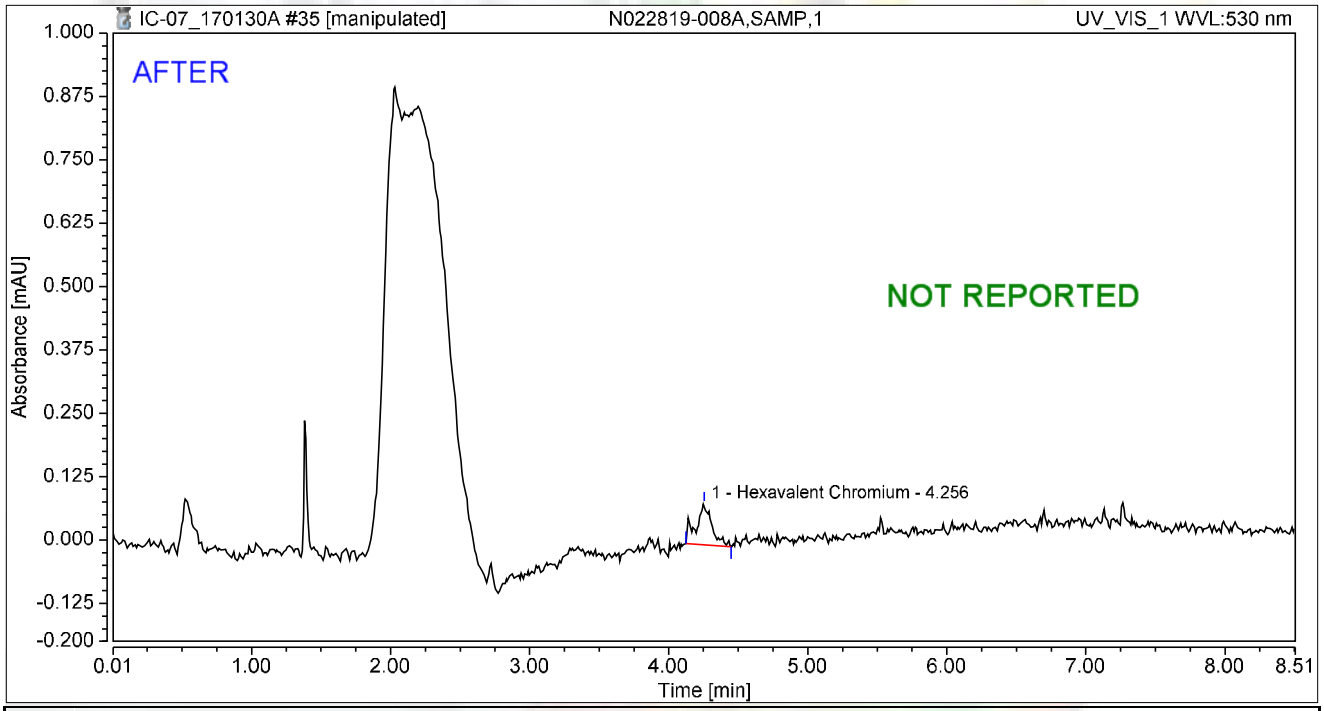
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.277	1.942	100.00	100.00	1.0821
Total:			**0.277**	**1.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0418
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

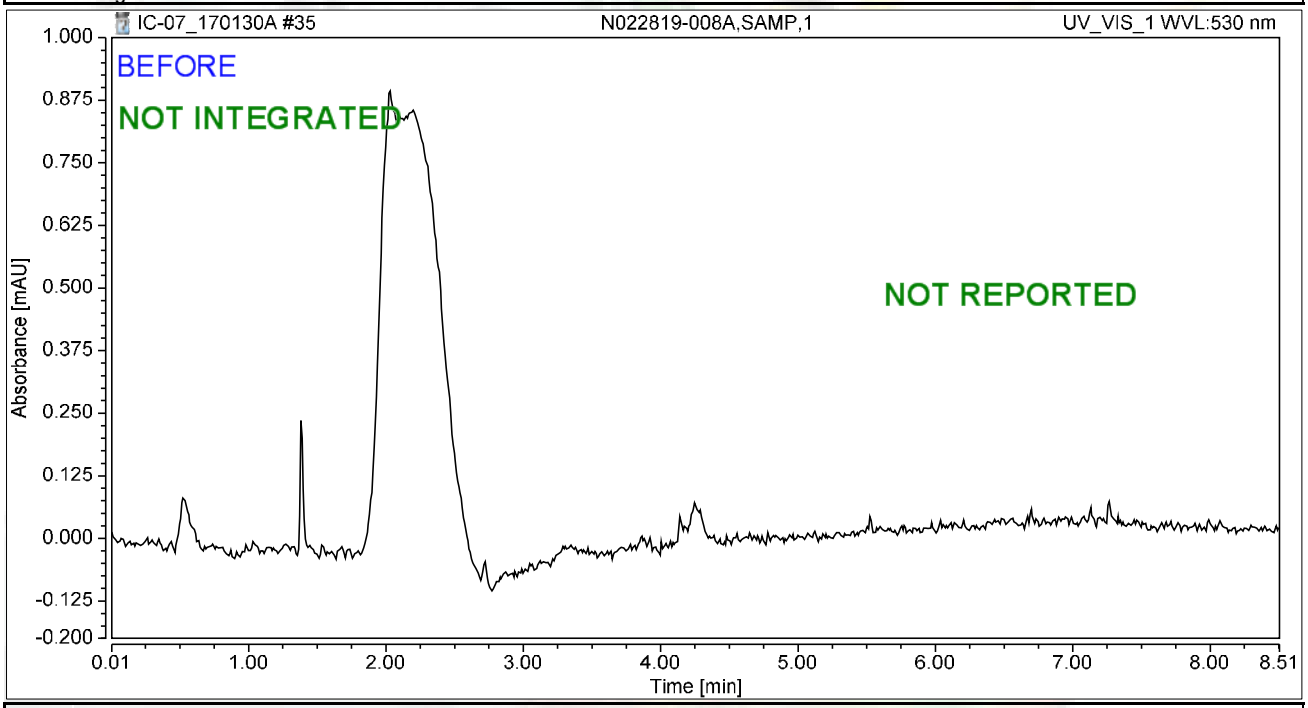
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

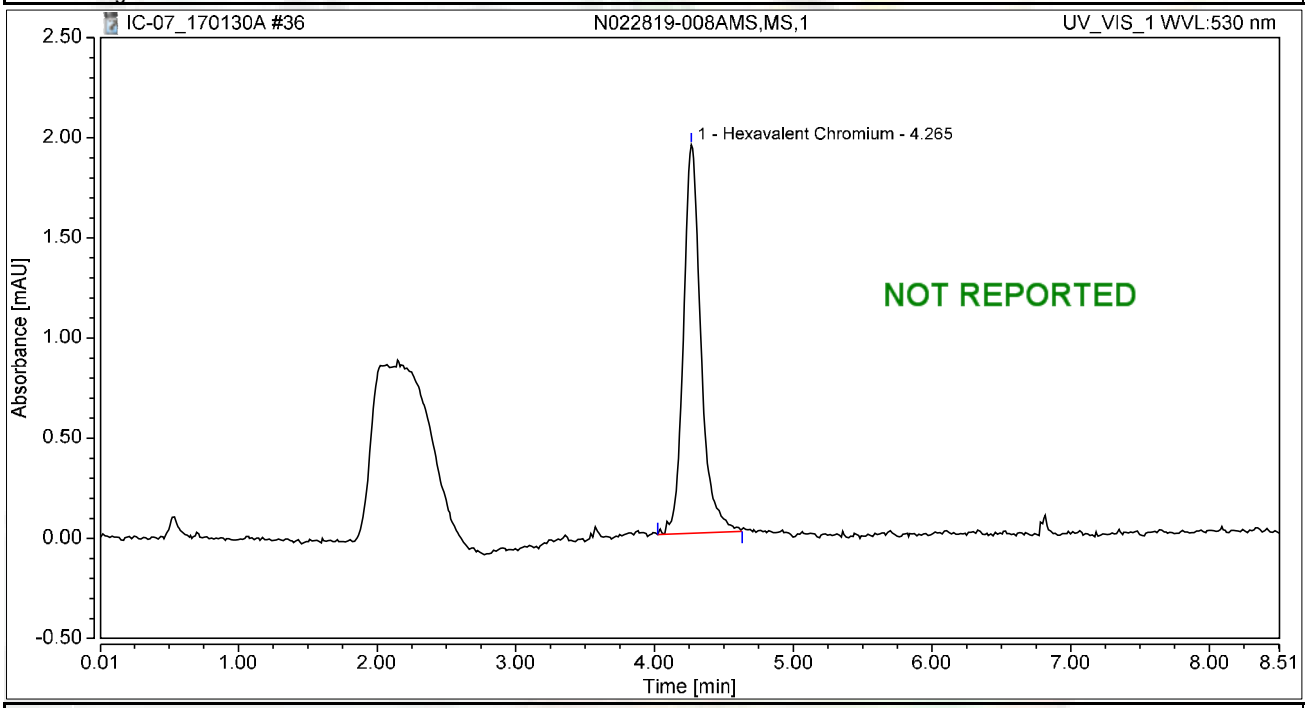
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

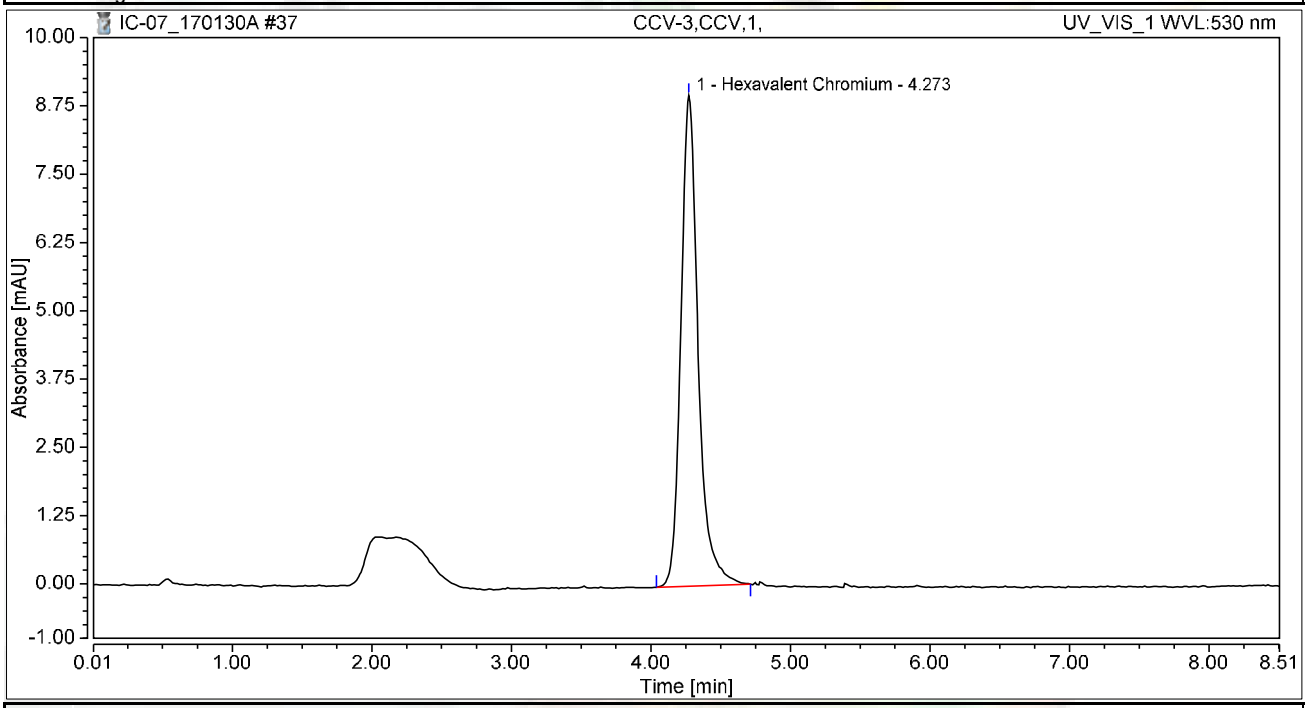
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.284	1.939	100.00	100.00	1.1111
Total:			**0.284**	**1.939**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

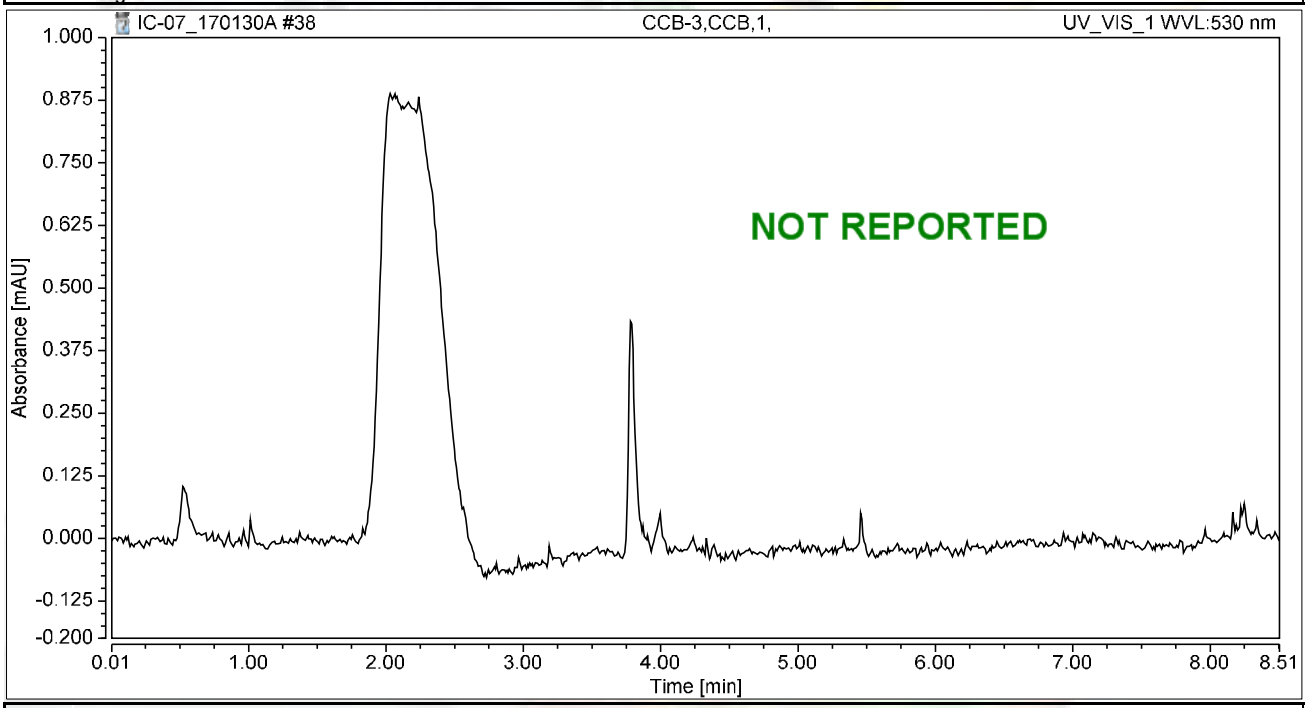
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.286	8.984	100.00	100.00	5.0321
Total:			**1.286**	**8.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

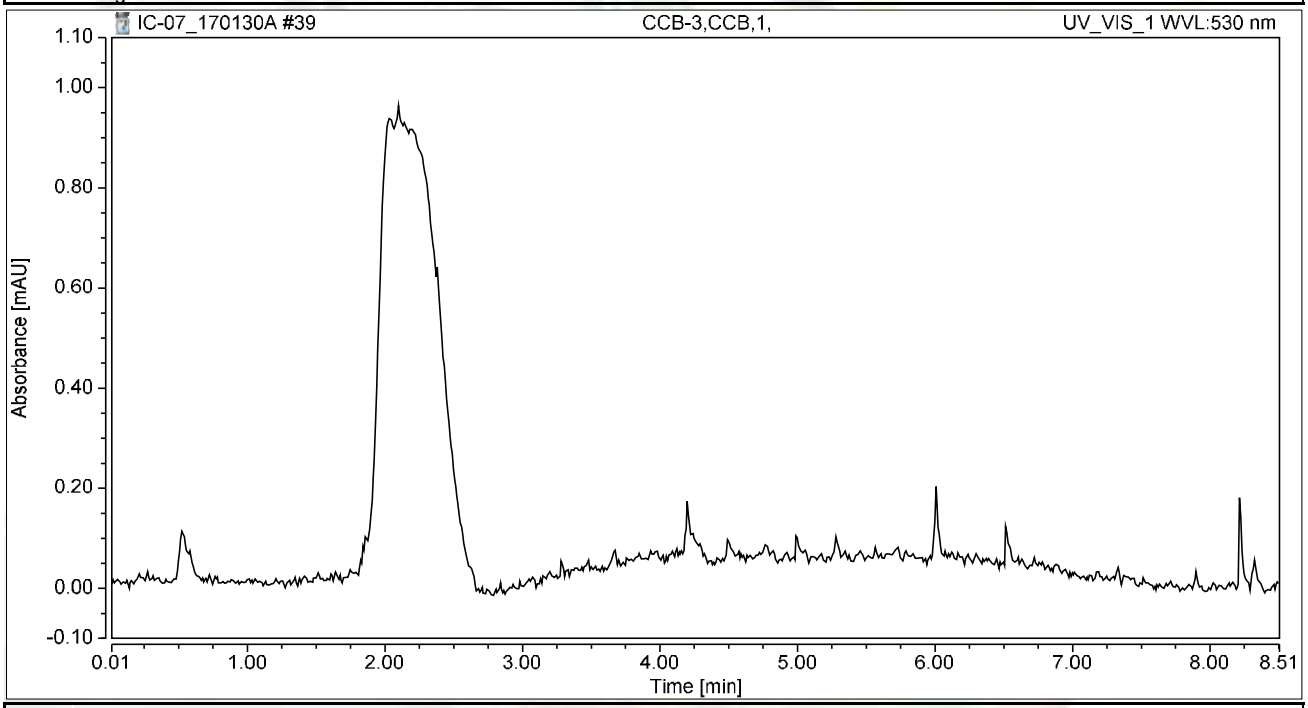
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

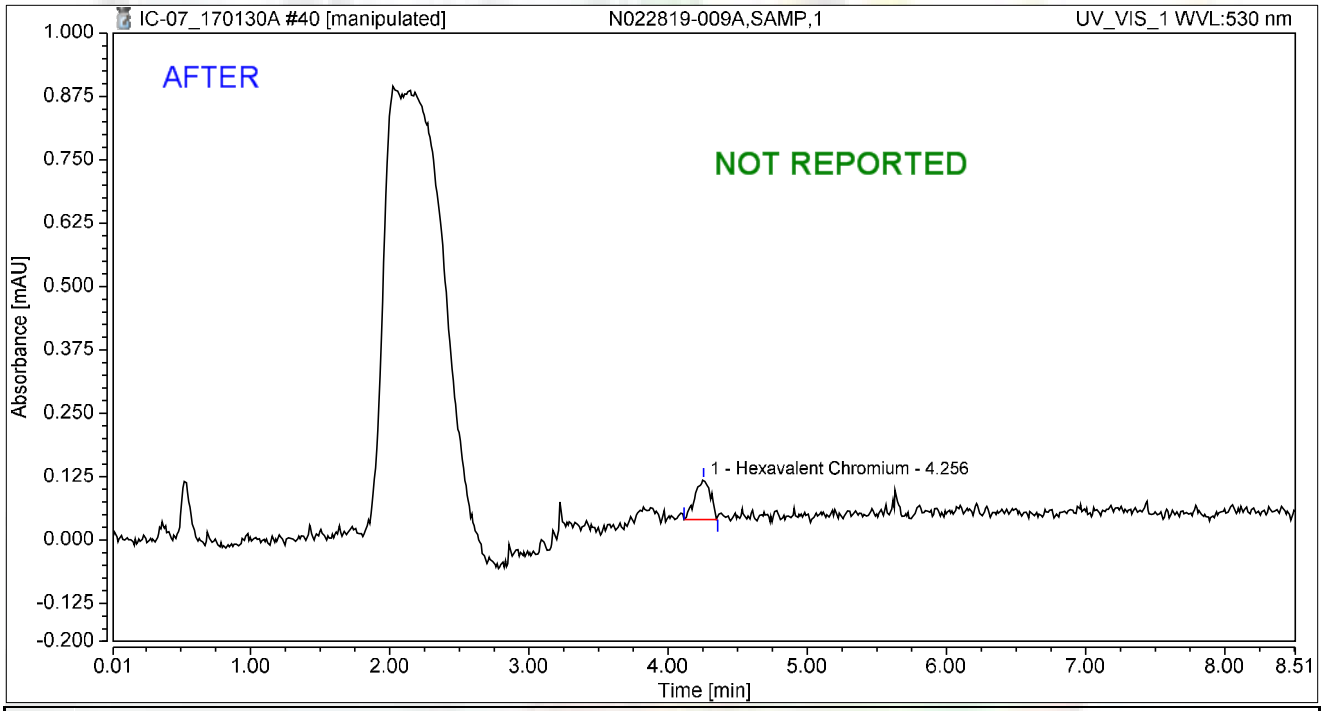
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.010	0.078	100.00	100.00	0.0392
Total:			**0.010**	**0.078**	**100.00**	**100.00**	

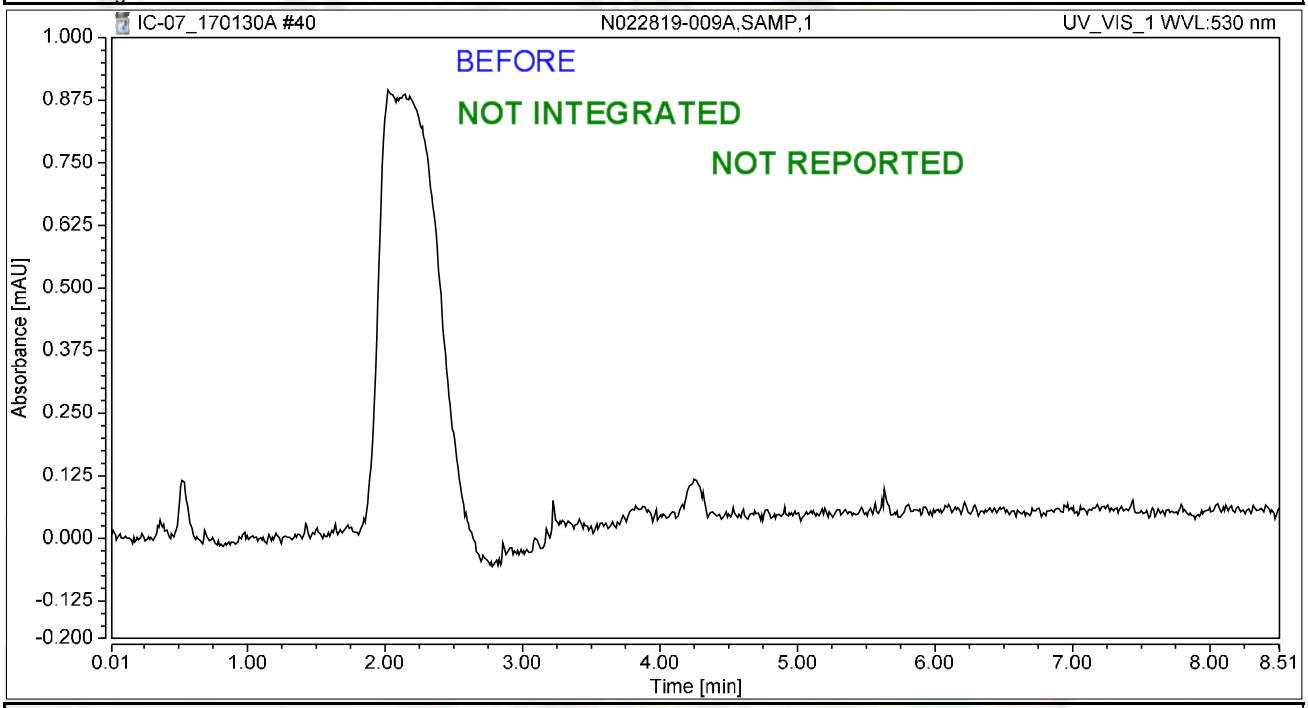
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

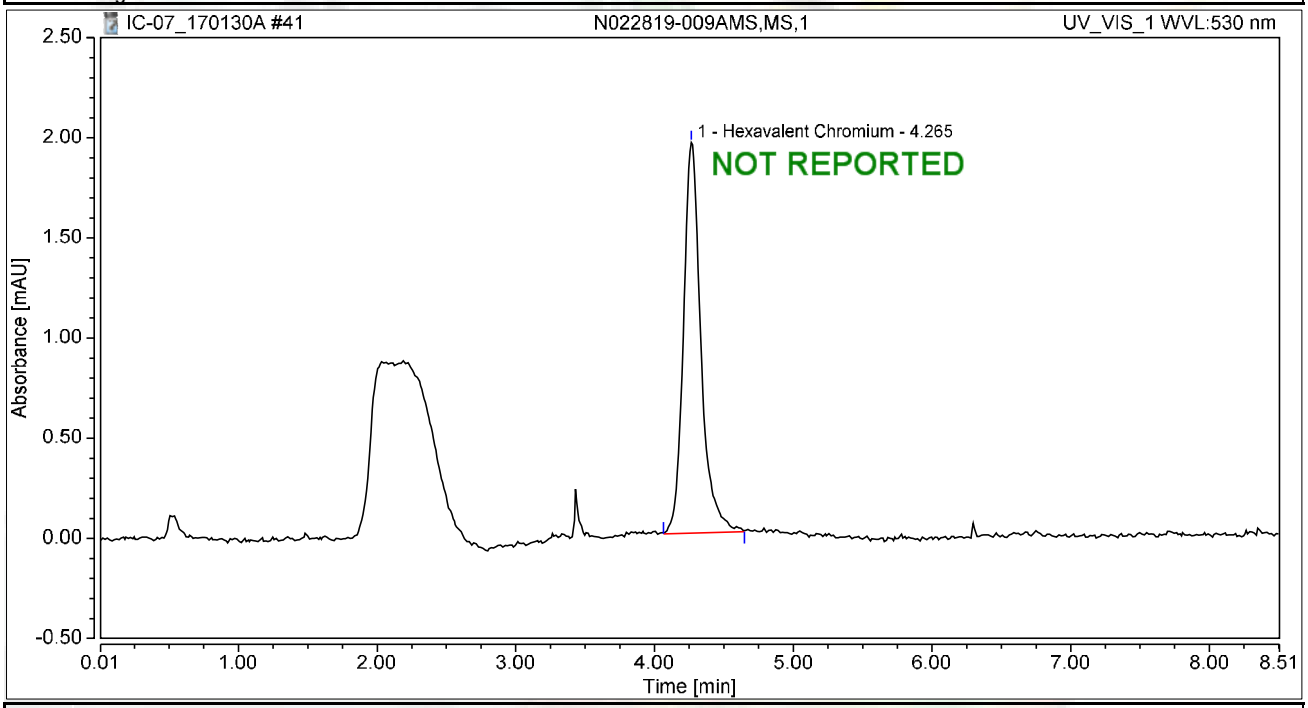
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

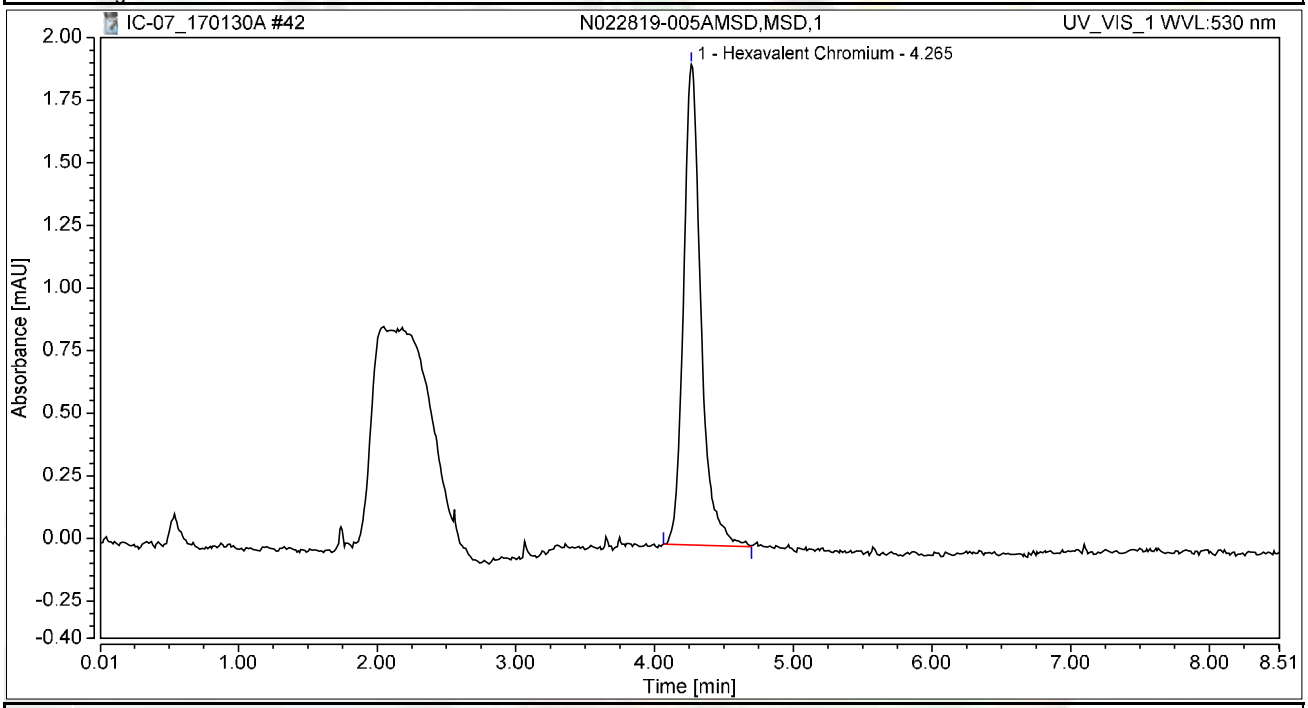
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.286	1.950	100.00	100.00	1.1175
Total:			**0.286**	**1.950**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

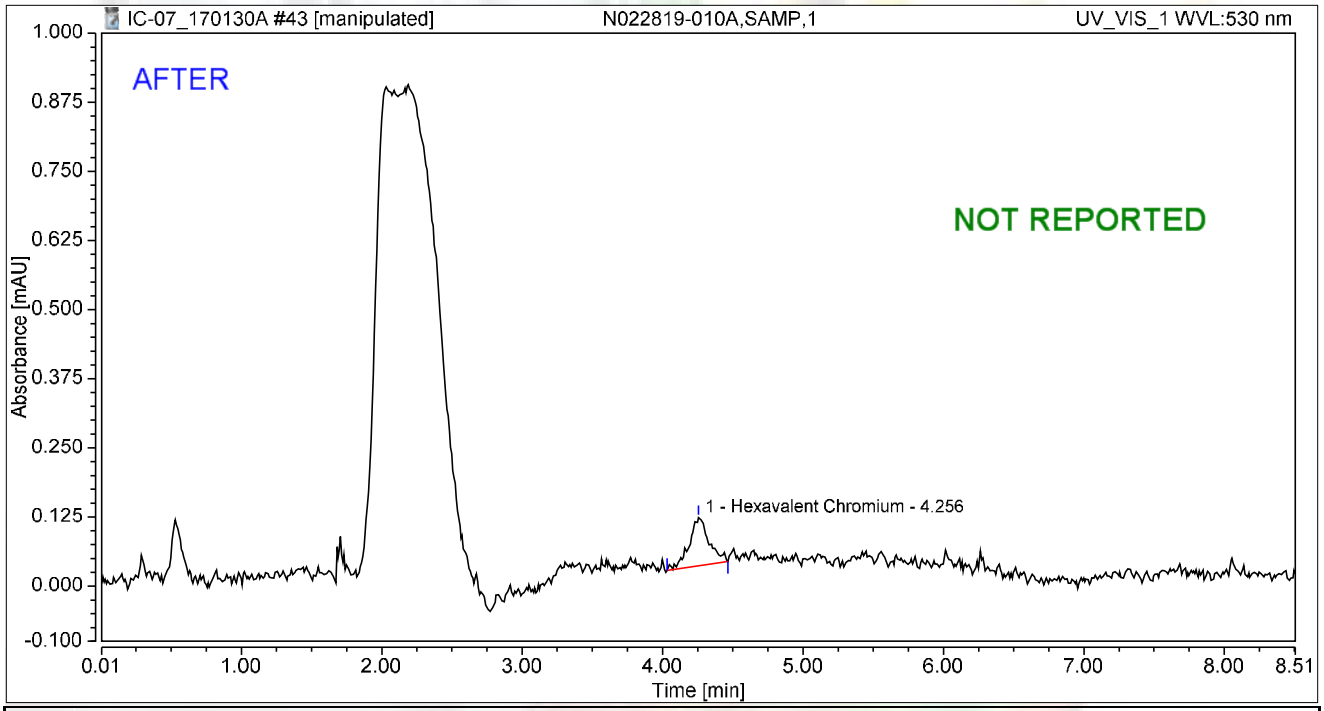
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.280	1.920	100.00	100.00	1.0938
Total:			**0.280**	**1.920**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.015	0.087	100.00	100.00	0.0568
Total:			**0.015**	**0.087**	**100.00**	**100.00**	

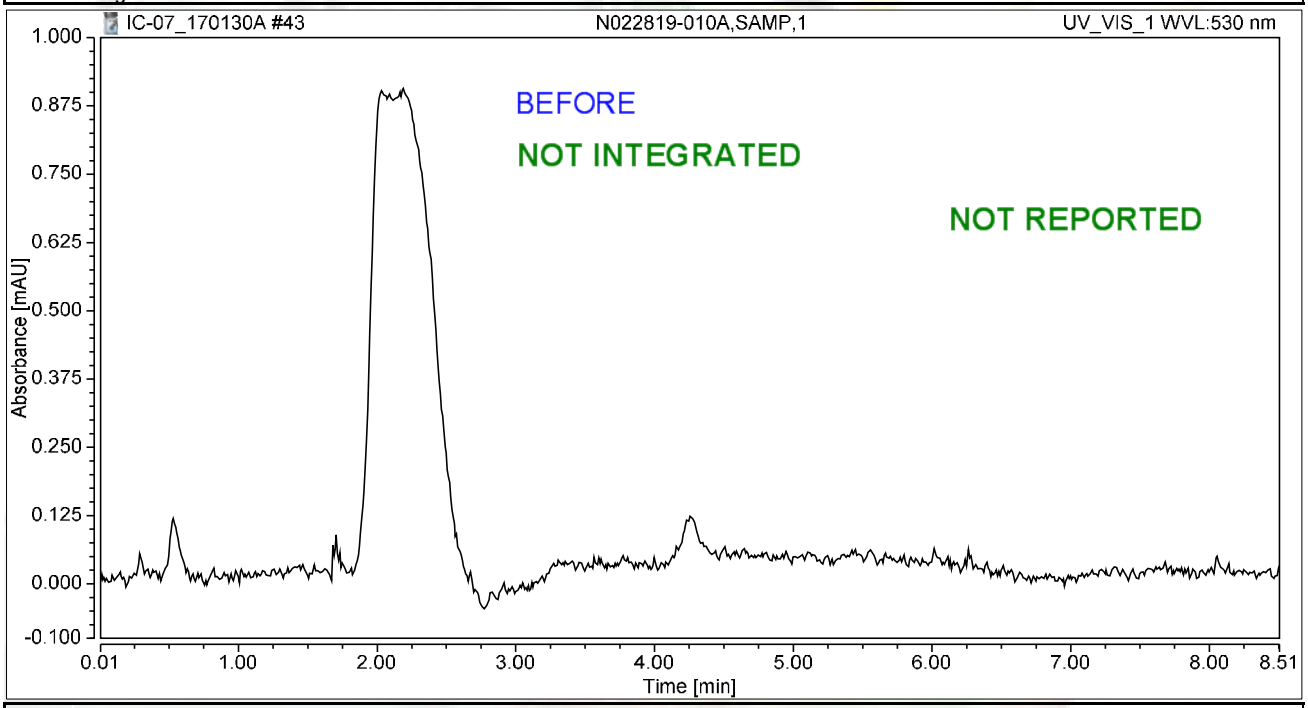
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

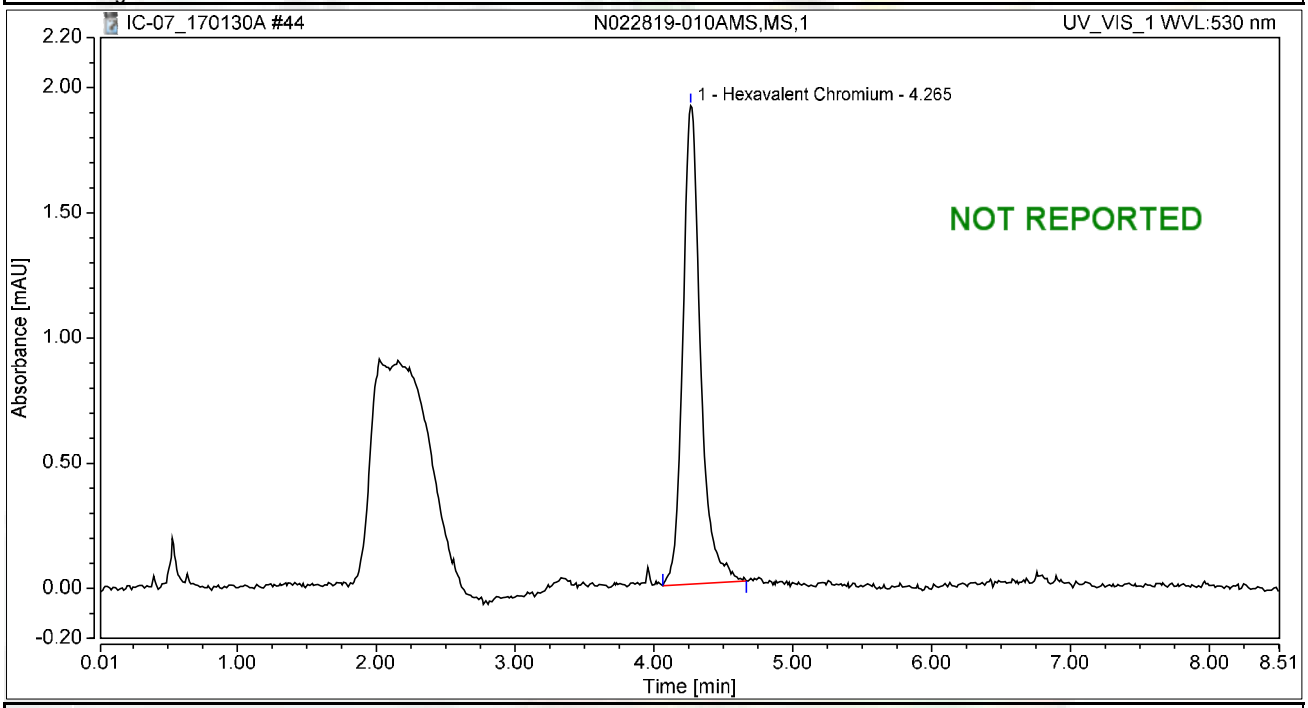
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

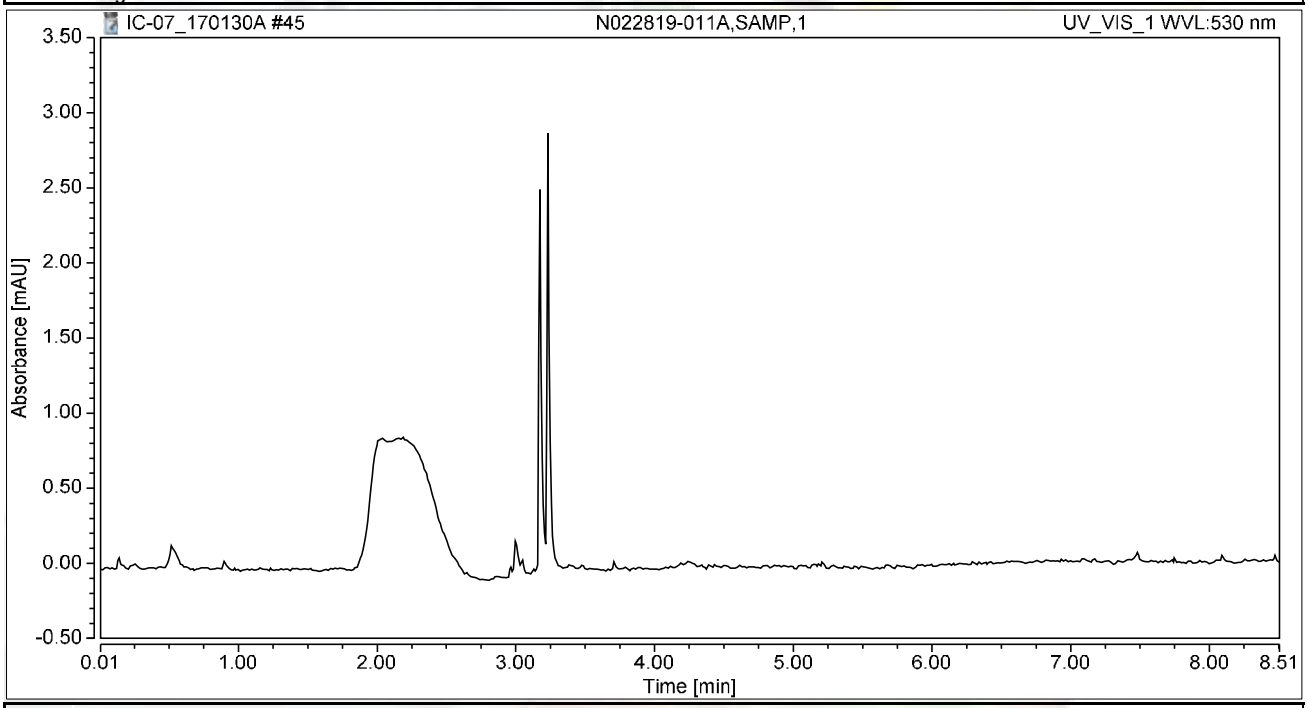
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.283	1.912	100.00	100.00	1.1055
Total:			**0.283**	**1.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

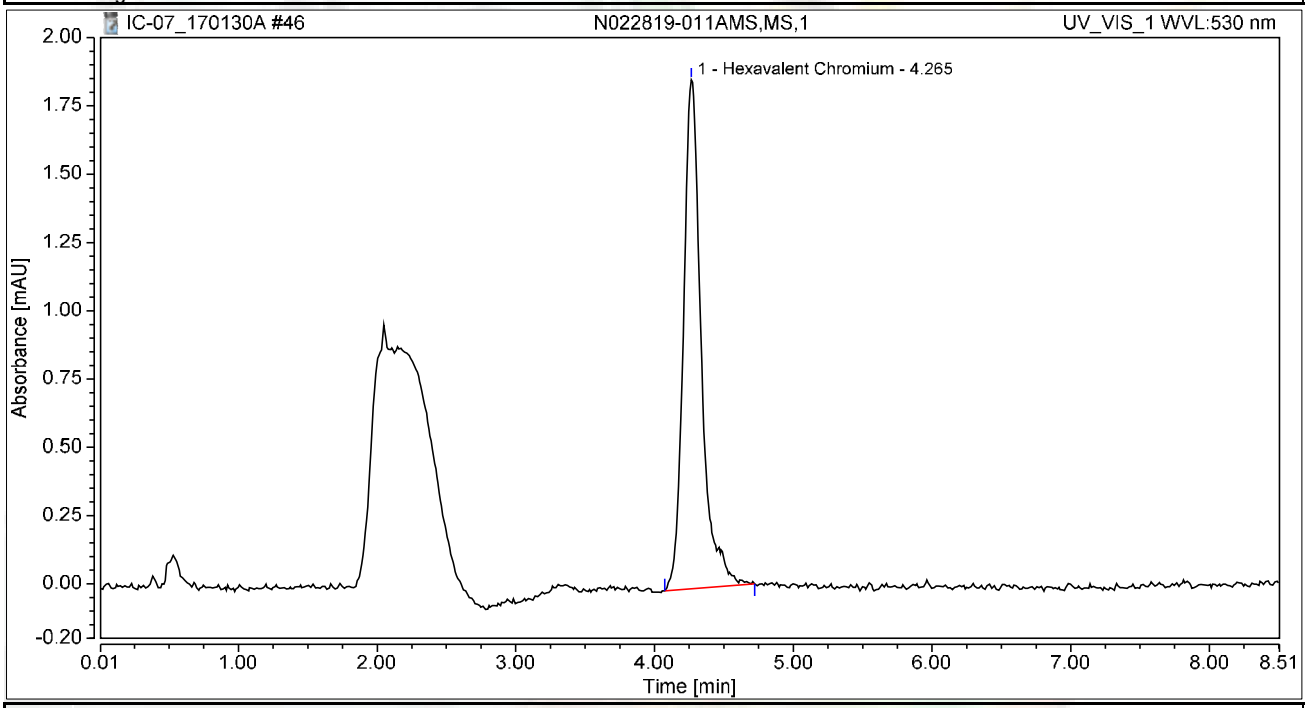
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

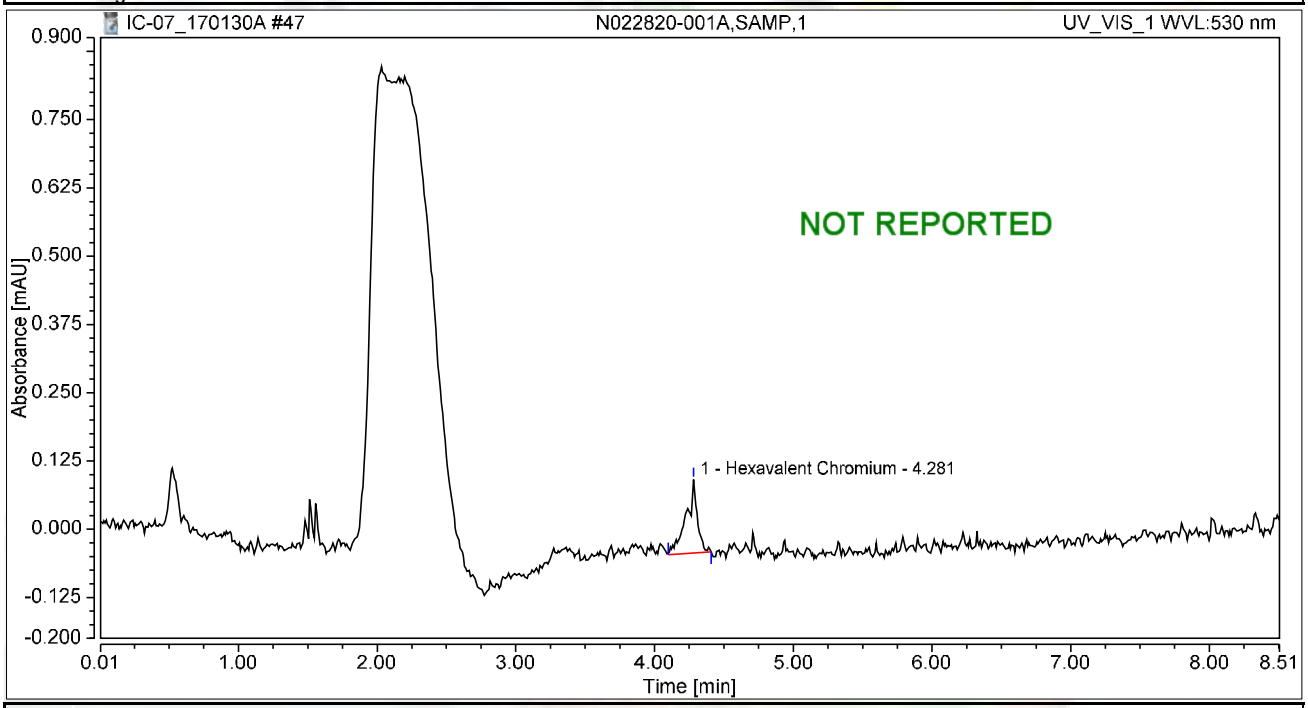
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.277	1.863	100.00	100.00	1.0842
Total:			**0.277**	**1.863**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

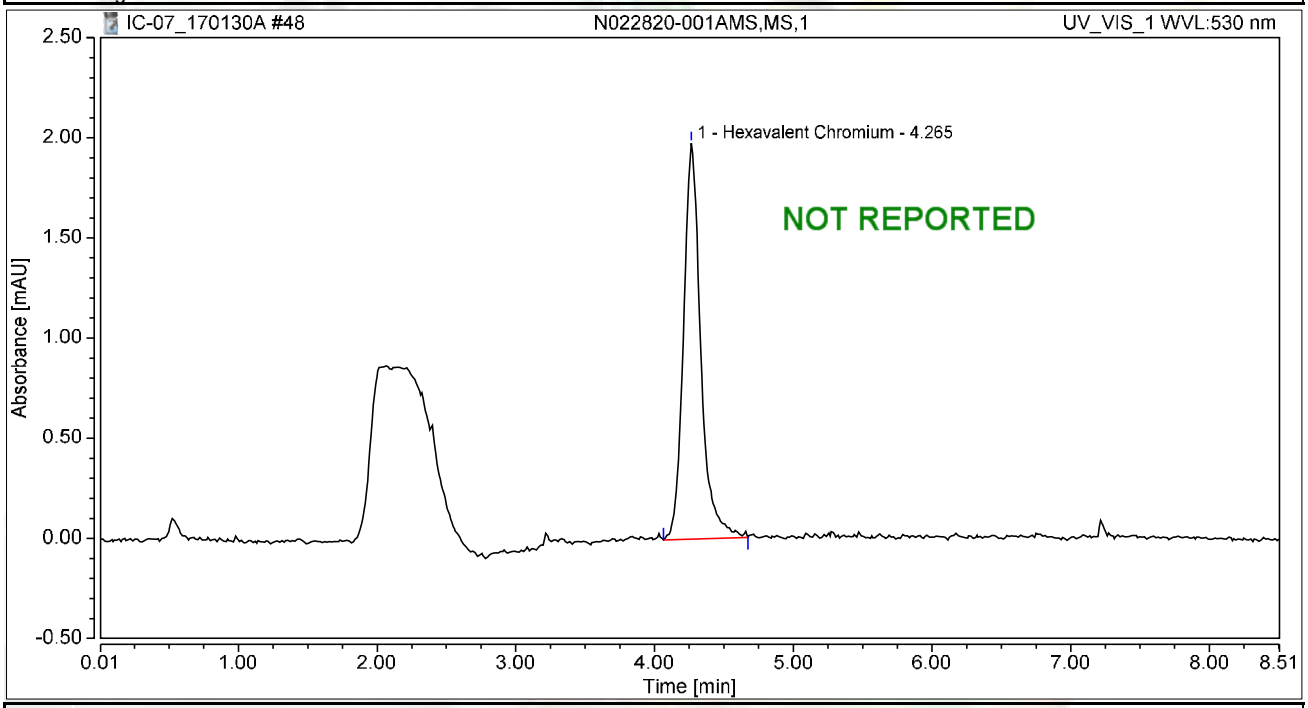
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.281	0.012	0.135	100.00	100.00	0.0489
Total:			**0.012**	**0.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

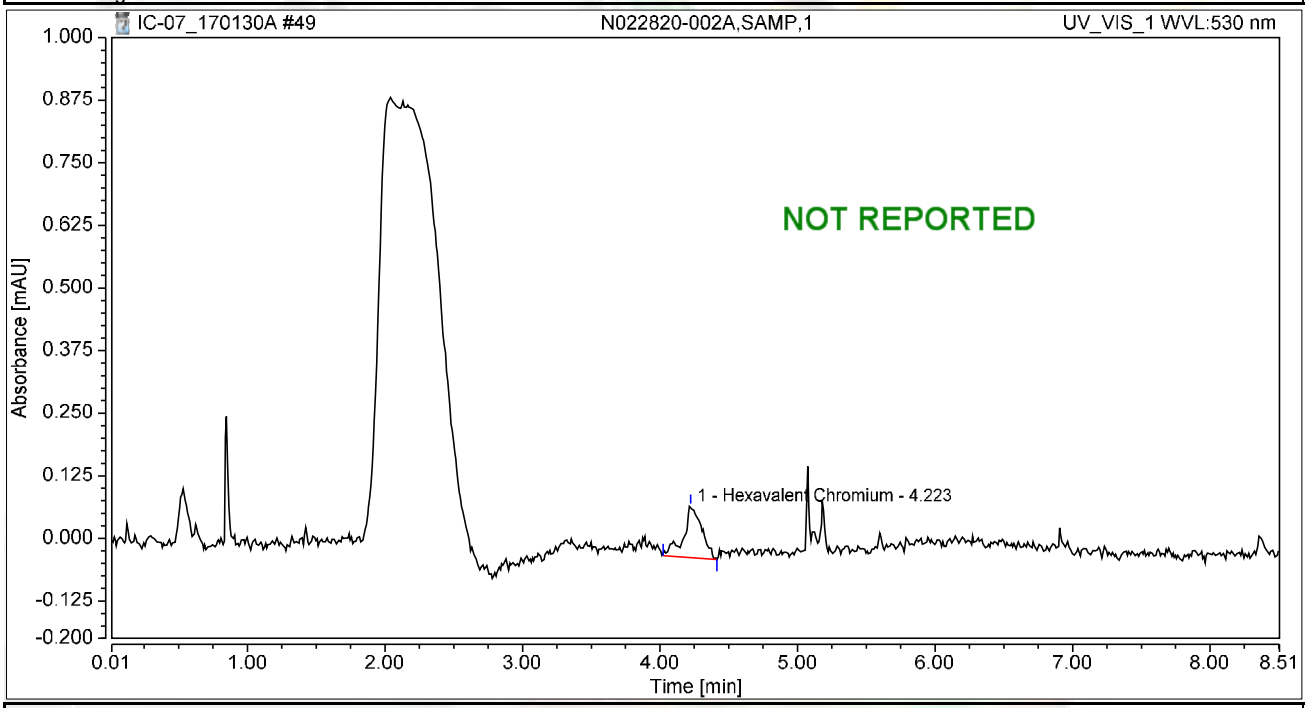
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.285	1.976	100.00	100.00	1.1146
Total:			**0.285**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

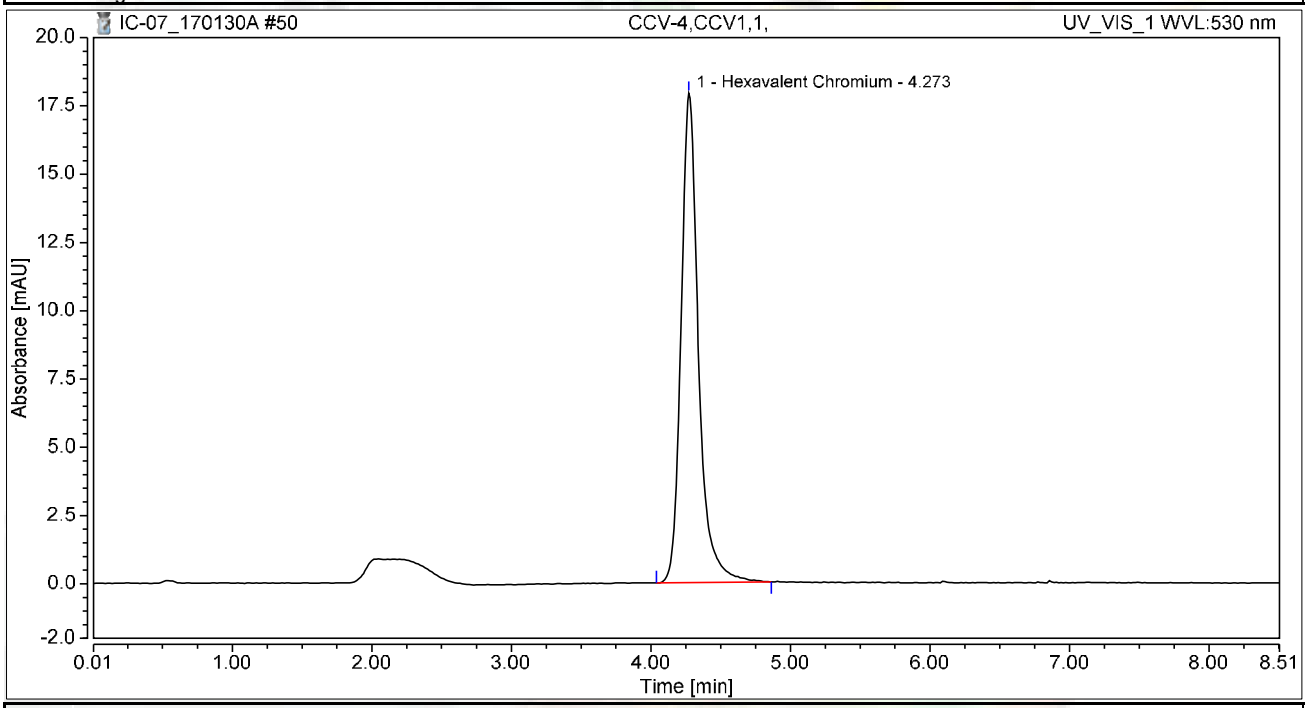
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.016	0.102	100.00	100.00	0.0623
Total:			**0.016**	**0.102**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

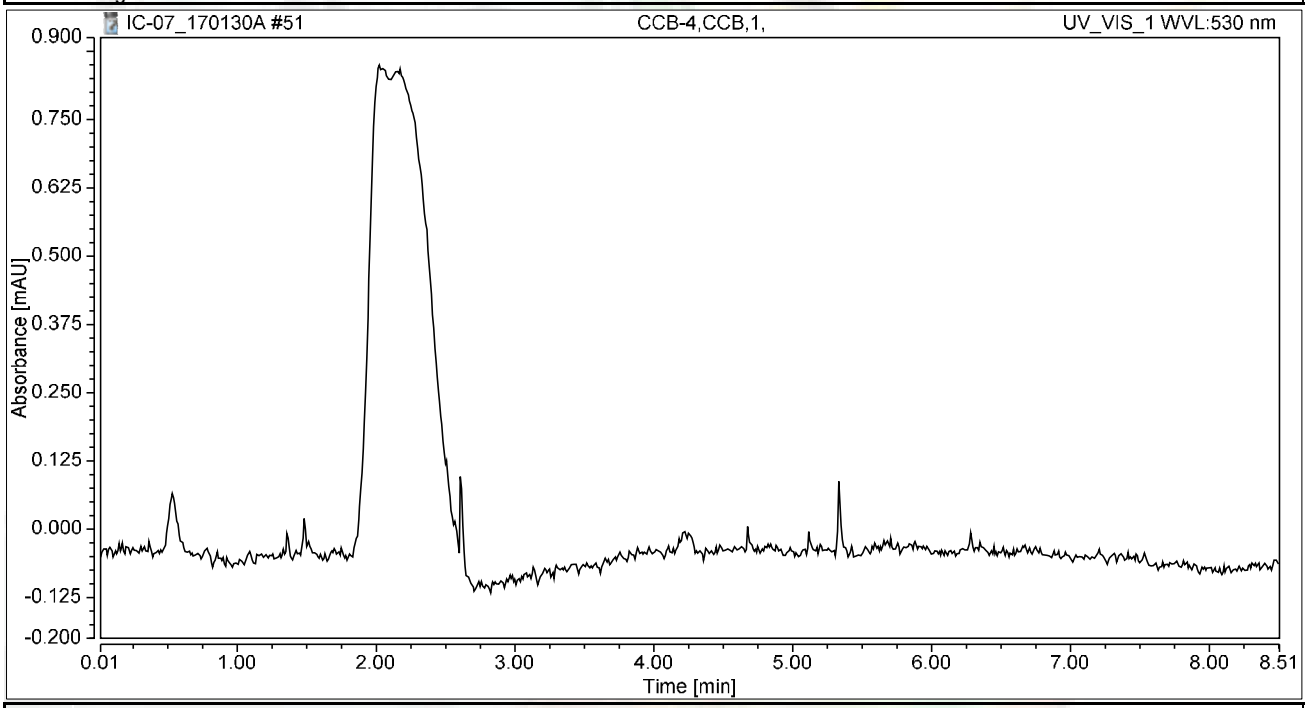
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.586	17.917	100.00	100.00	10.1152
Total:			**2.586**	**17.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

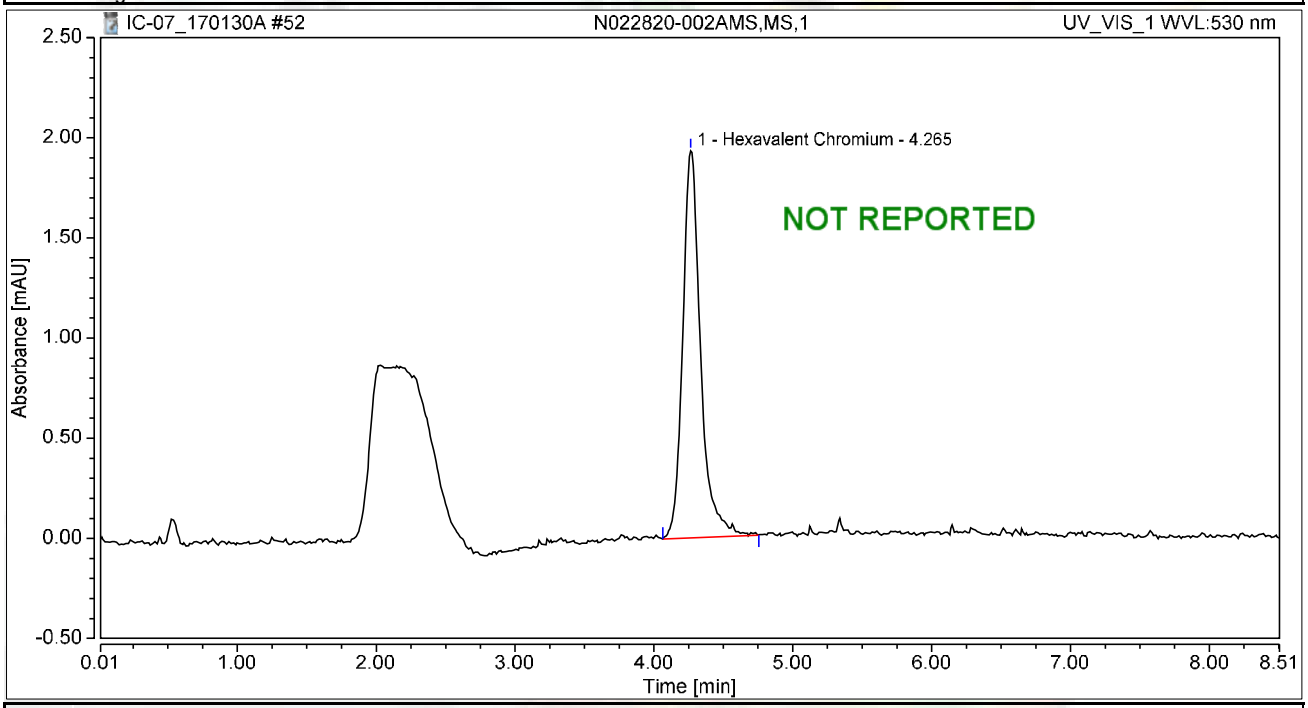
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

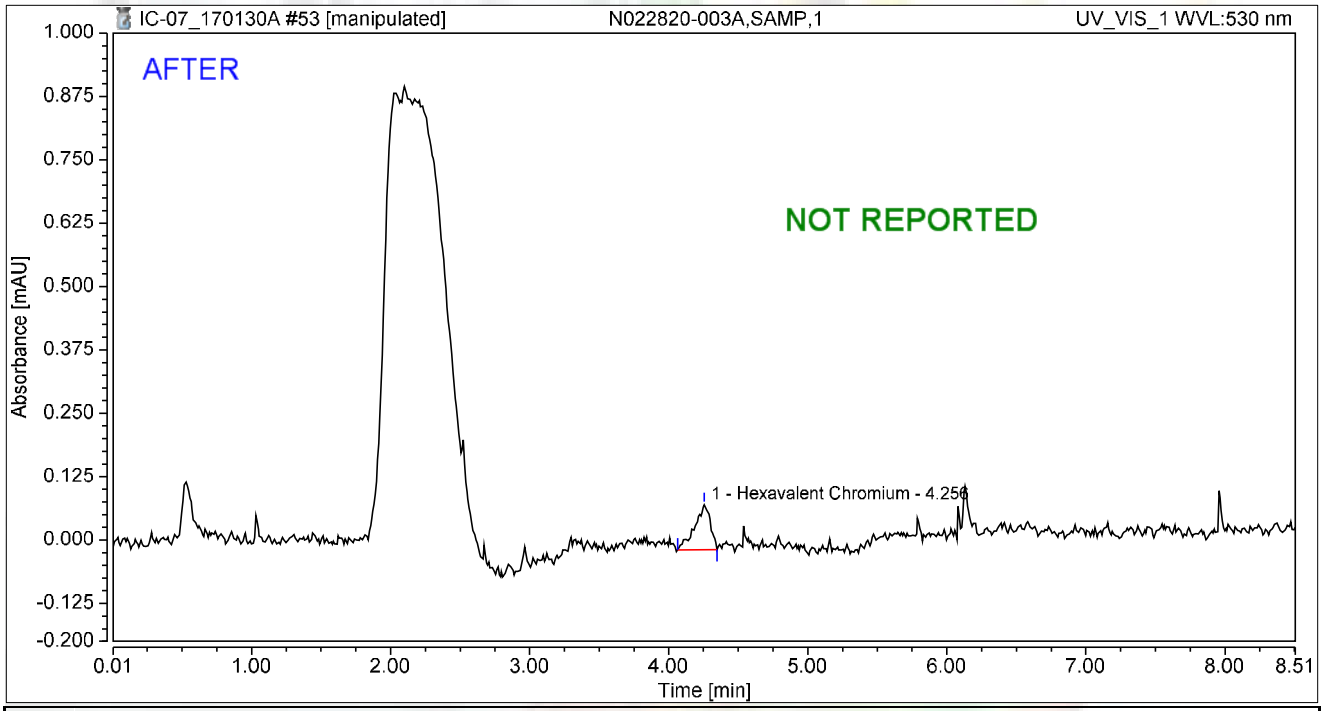
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.289	1.934	100.00	100.00	1.1292
Total:			**0.289**	**1.934**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.012	0.089	100.00	100.00	0.0457
Total:			**0.012**	**0.089**	**100.00**	**100.00**	

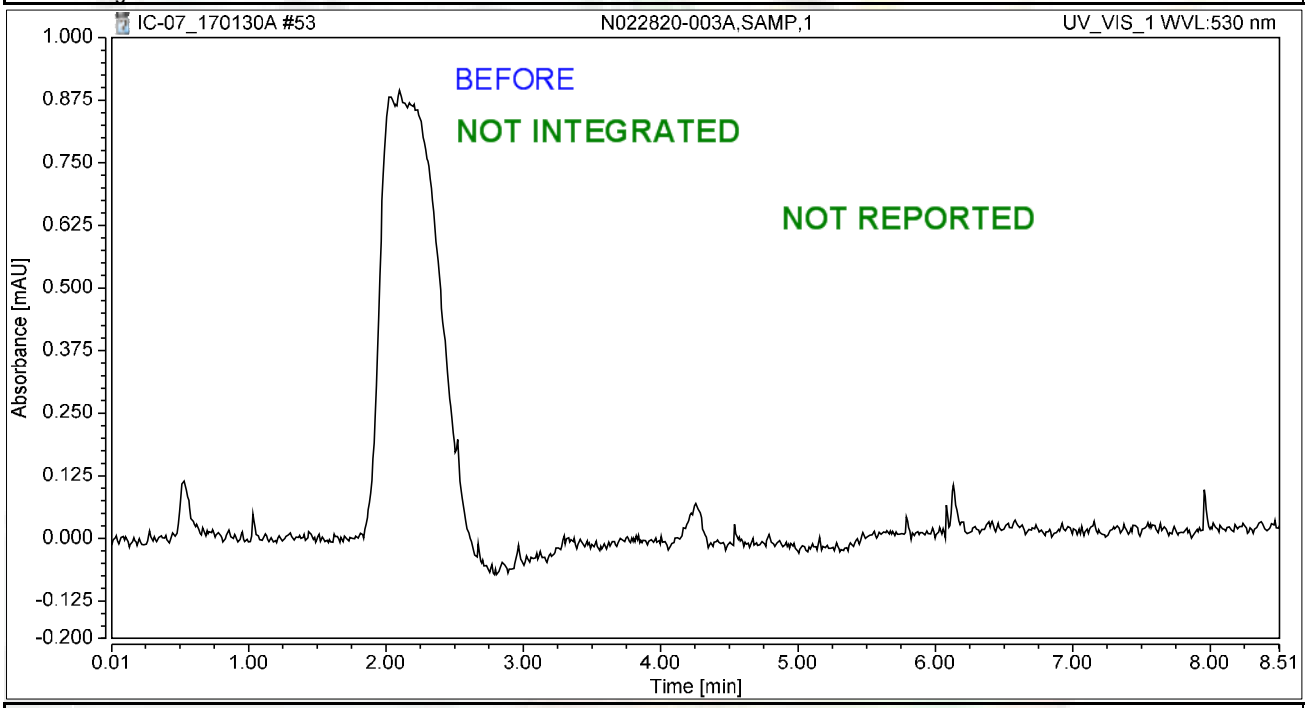
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

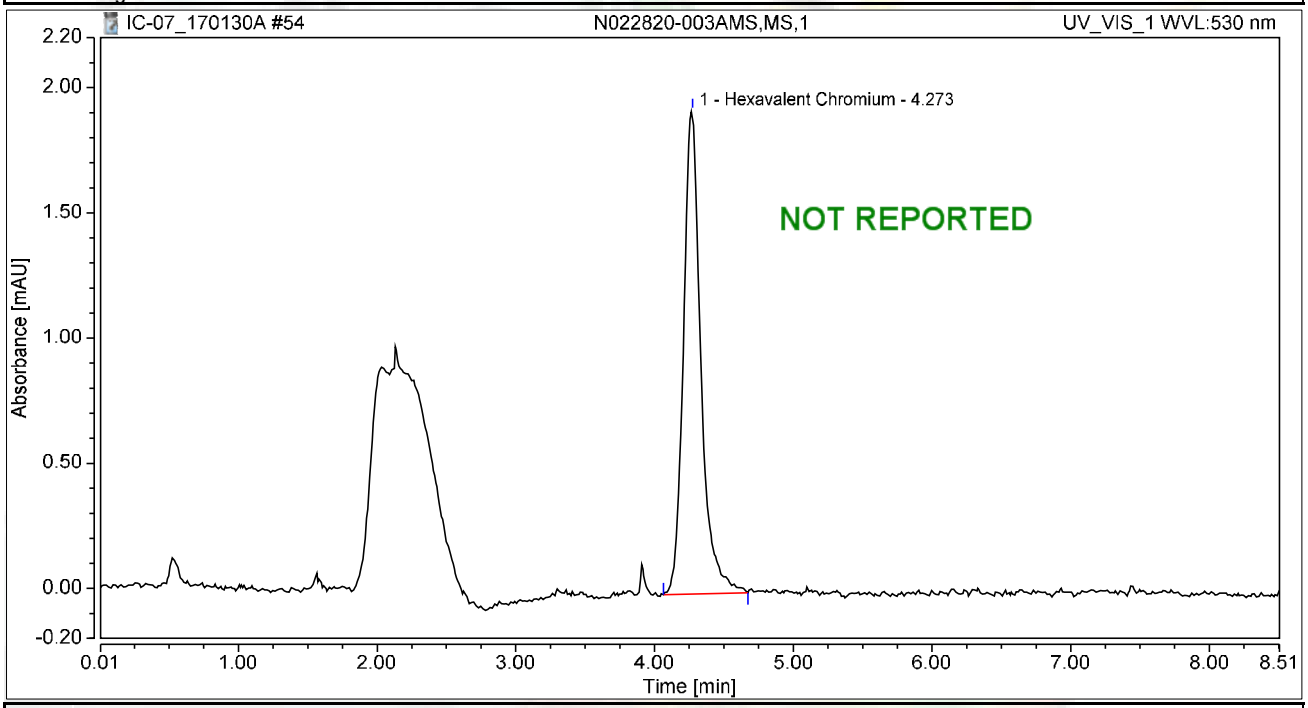
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

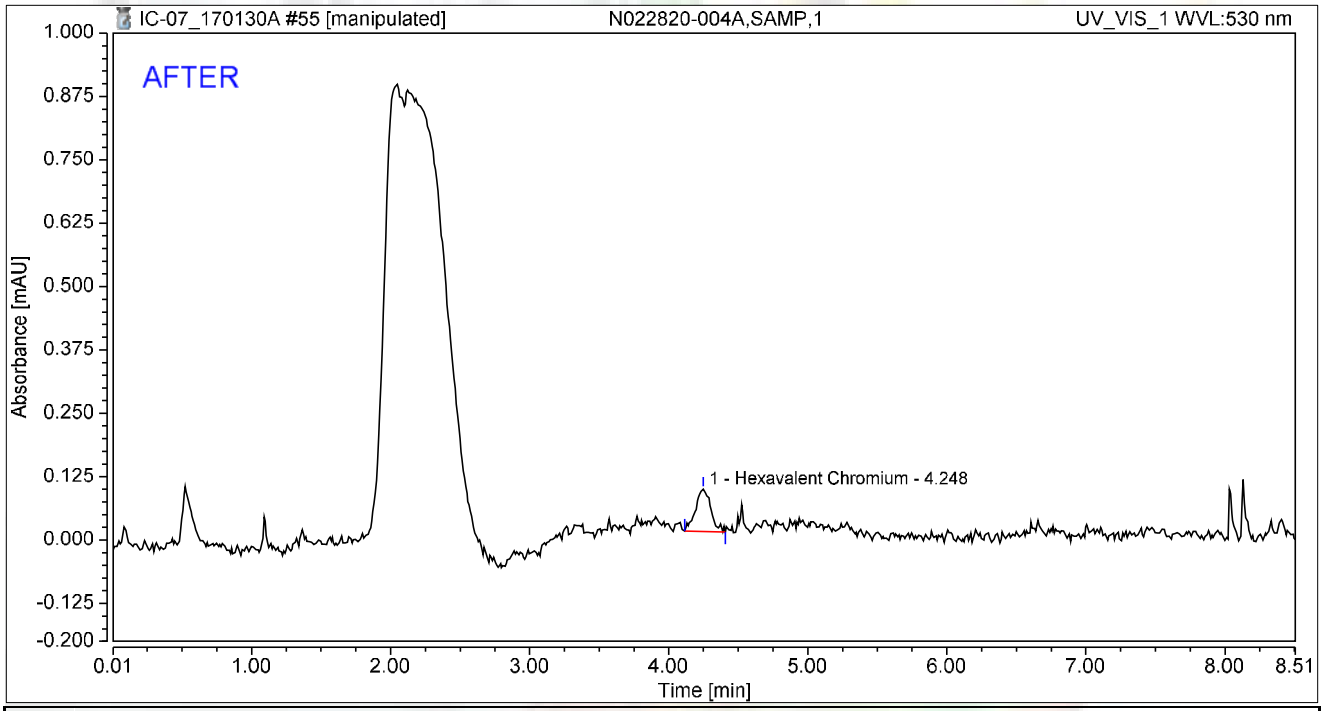
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.282	1.930	100.00	100.00	1.1020
Total:			**0.282**	**1.930**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.011	0.083	100.00	100.00	0.0412
Total:			**0.011**	**0.083**	**100.00**	**100.00**	

rba 2/4/2017

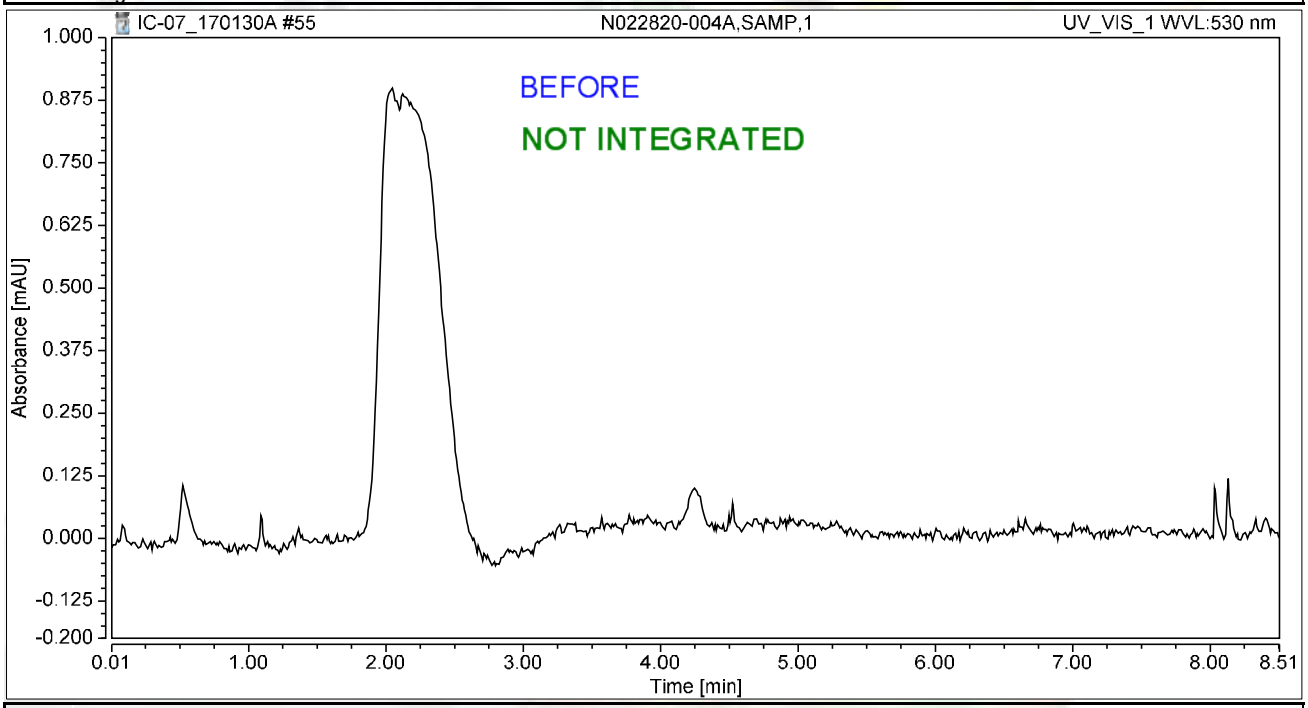
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

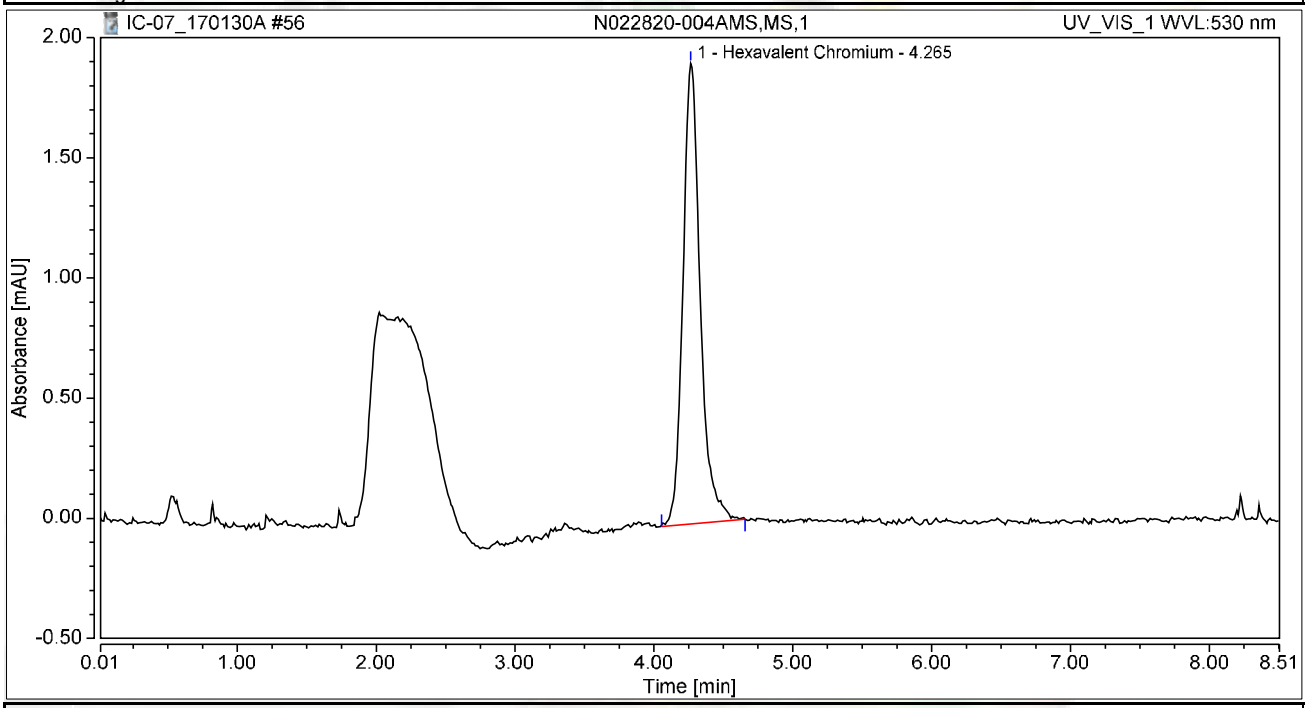
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

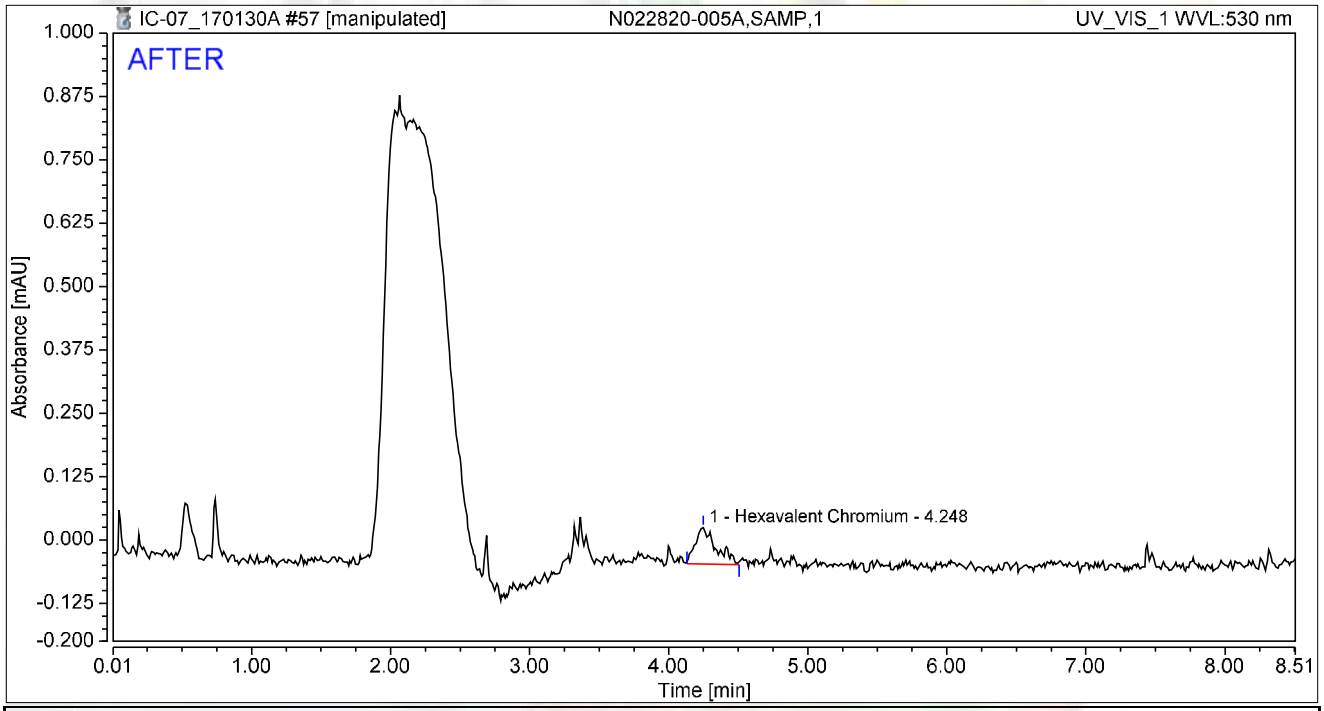
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.276	1.916	100.00	100.00	1.0812
Total:			**0.276**	**1.916**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.013	0.072	100.00	100.00	0.0493
Total:			**0.013**	**0.072**	**100.00**	**100.00**	

rba 2/4/2017

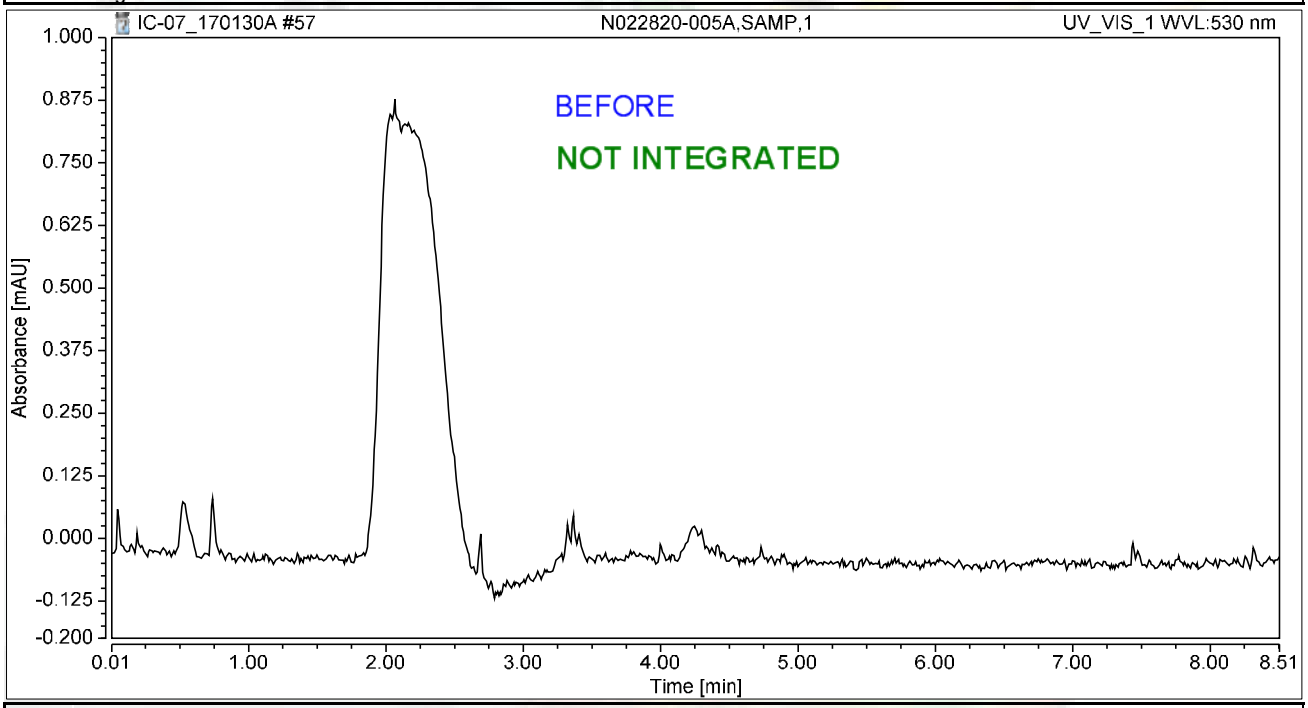
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

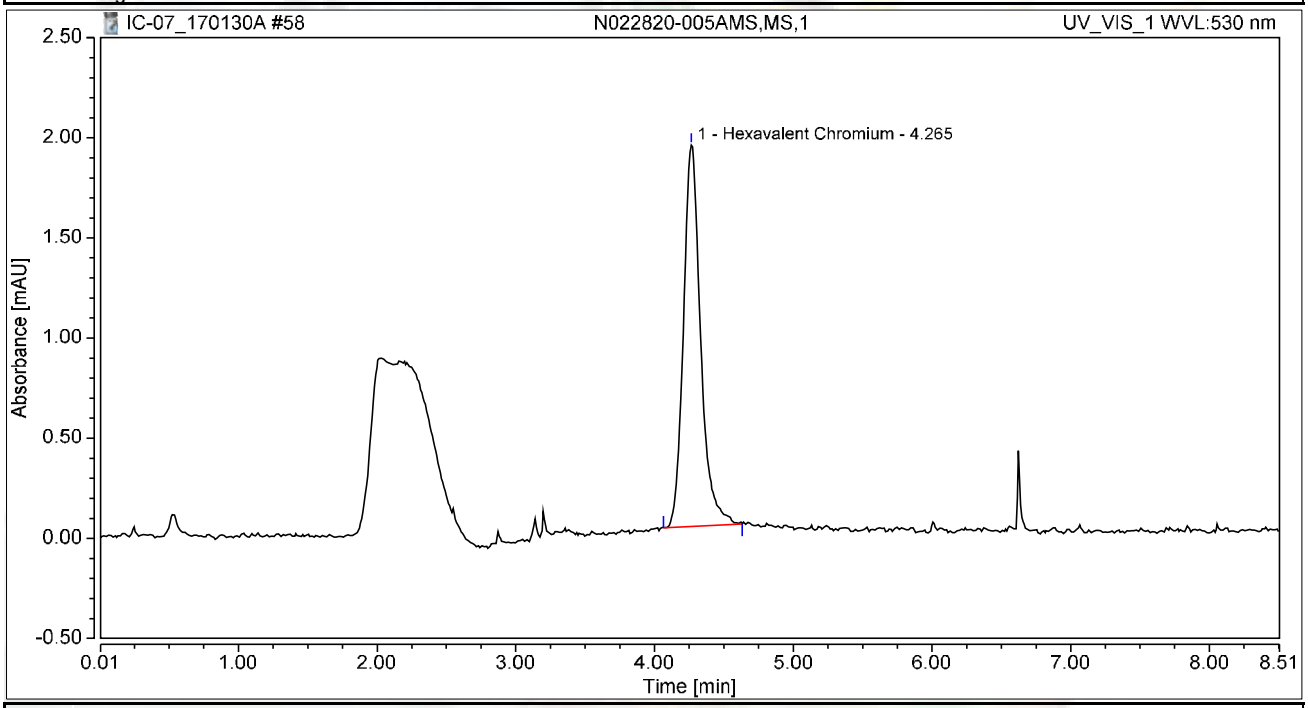
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

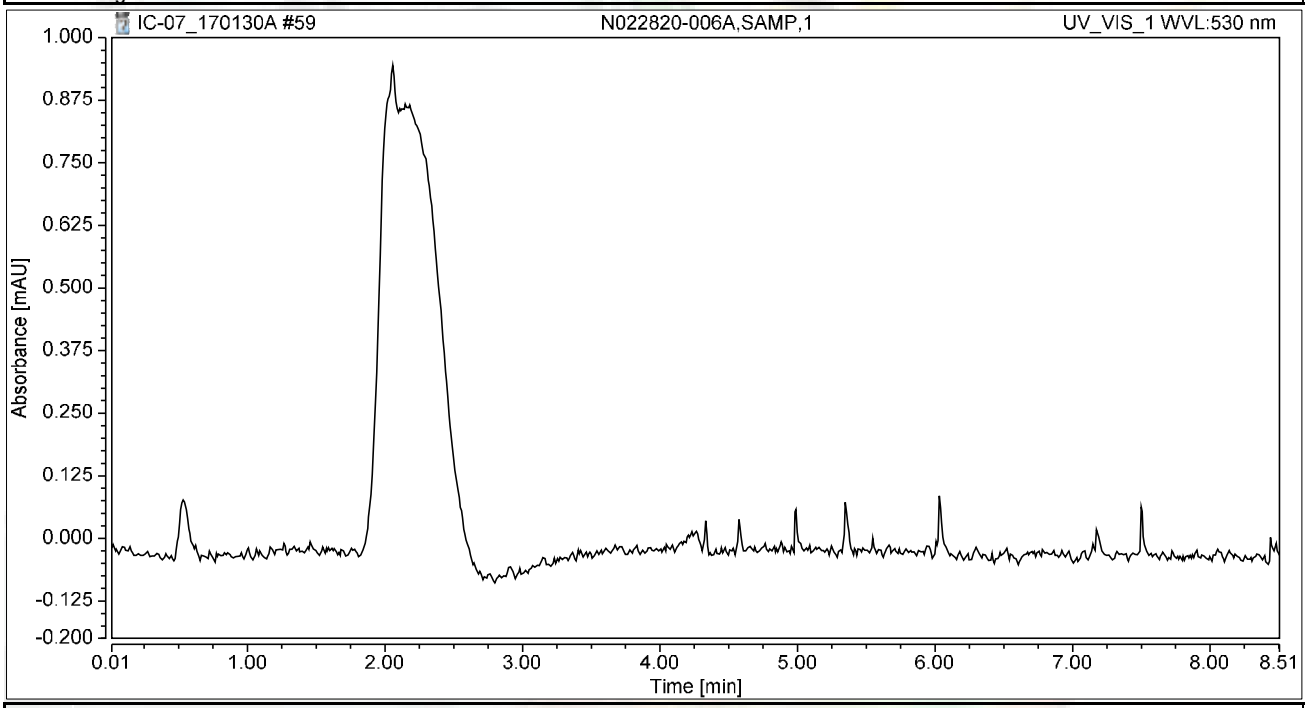
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.273	1.905	100.00	100.00	1.0690
Total:			**0.273**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

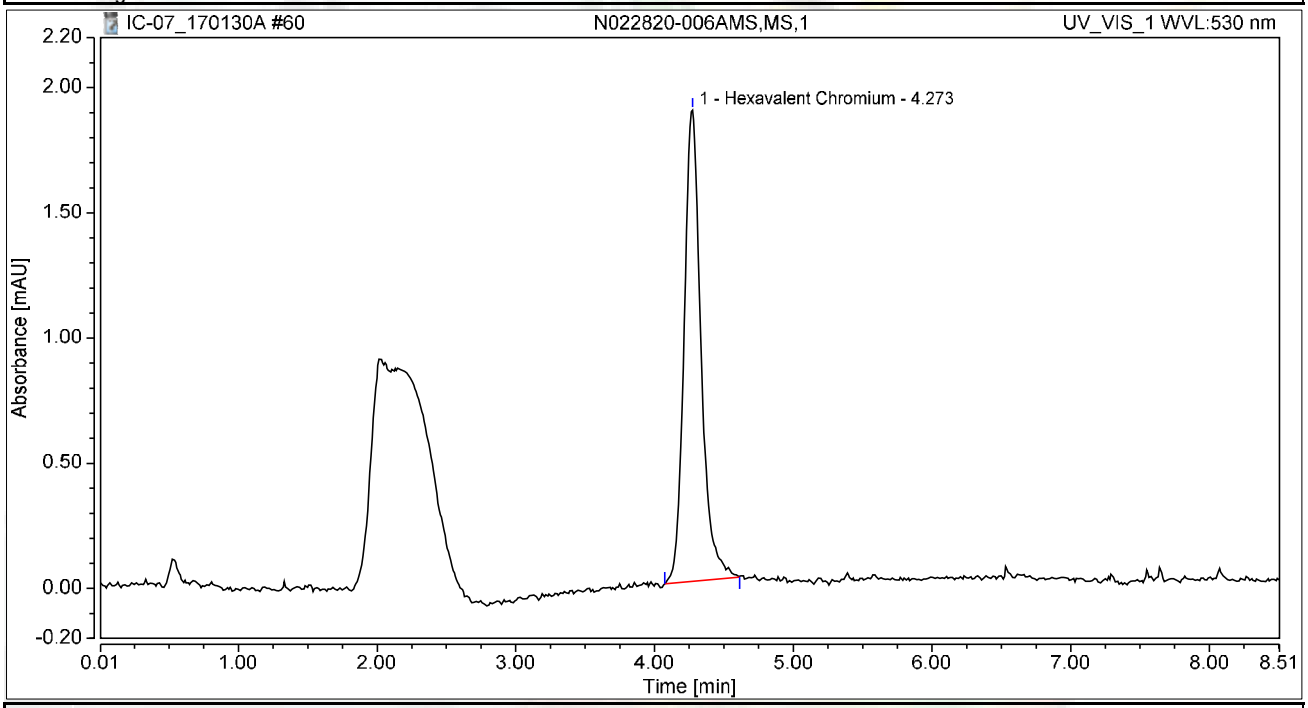
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

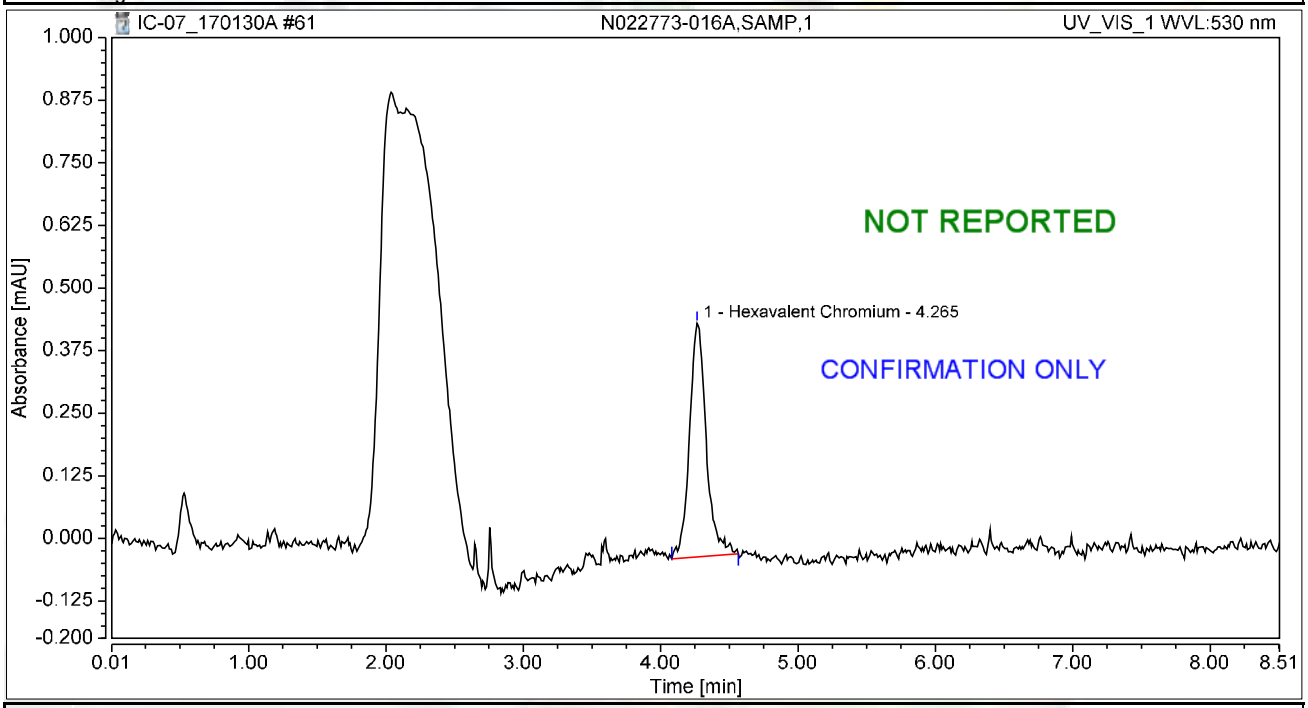
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.266	1.883	100.00	100.00	1.0423
Total:			**0.266**	**1.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022773-016A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

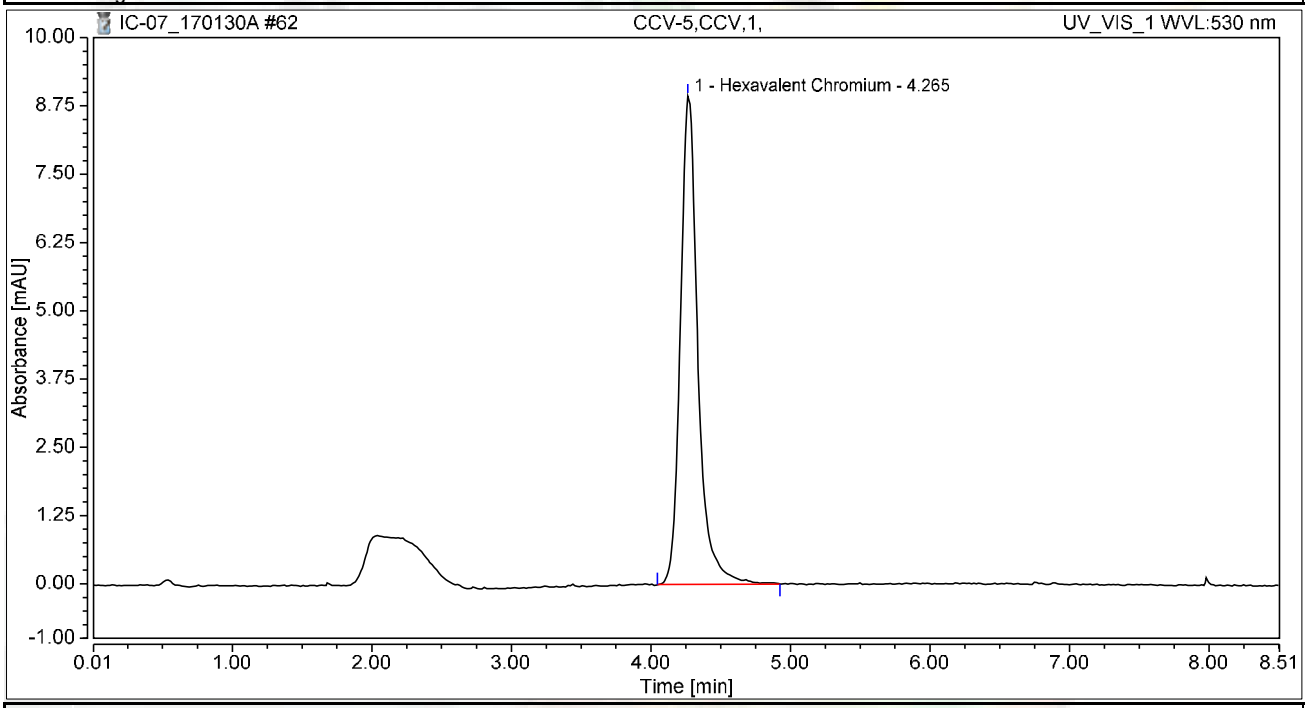
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.066	0.466	100.00	100.00	0.2579
Total:			**0.066**	**0.466**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

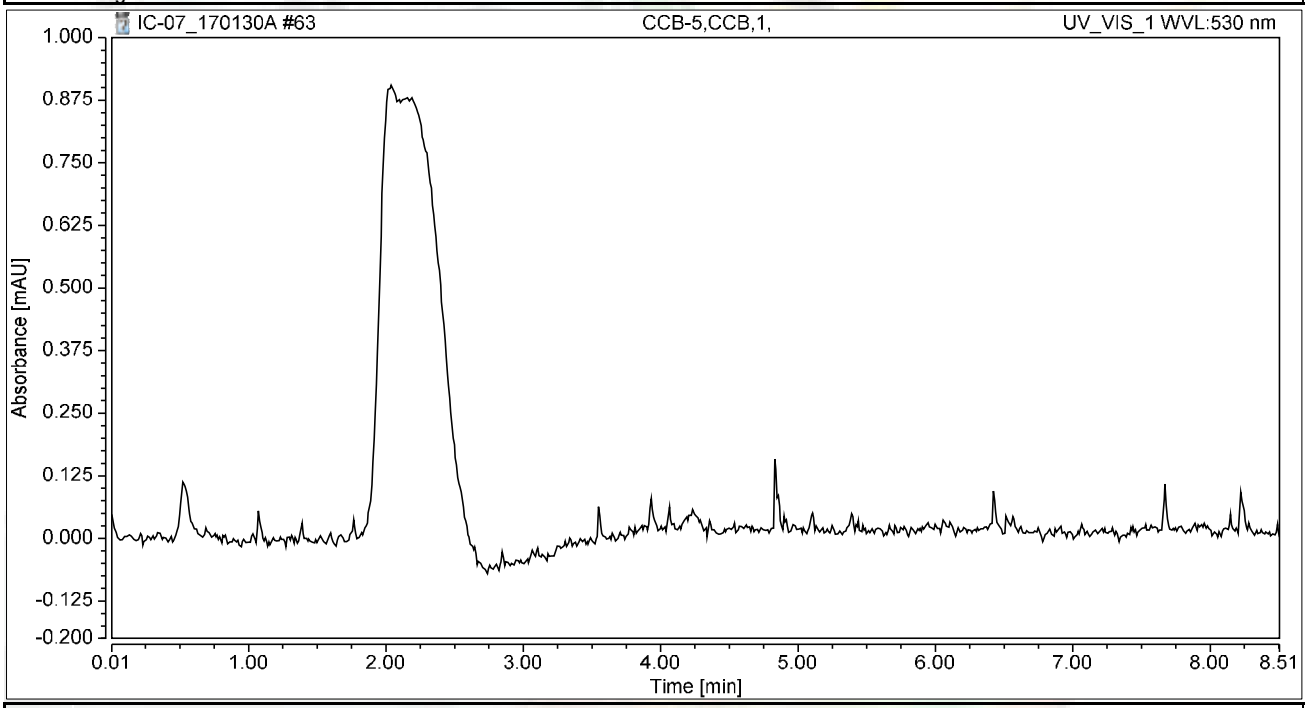
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.304	8.942	100.00	100.00	5.1020
Total:			**1.304**	**8.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

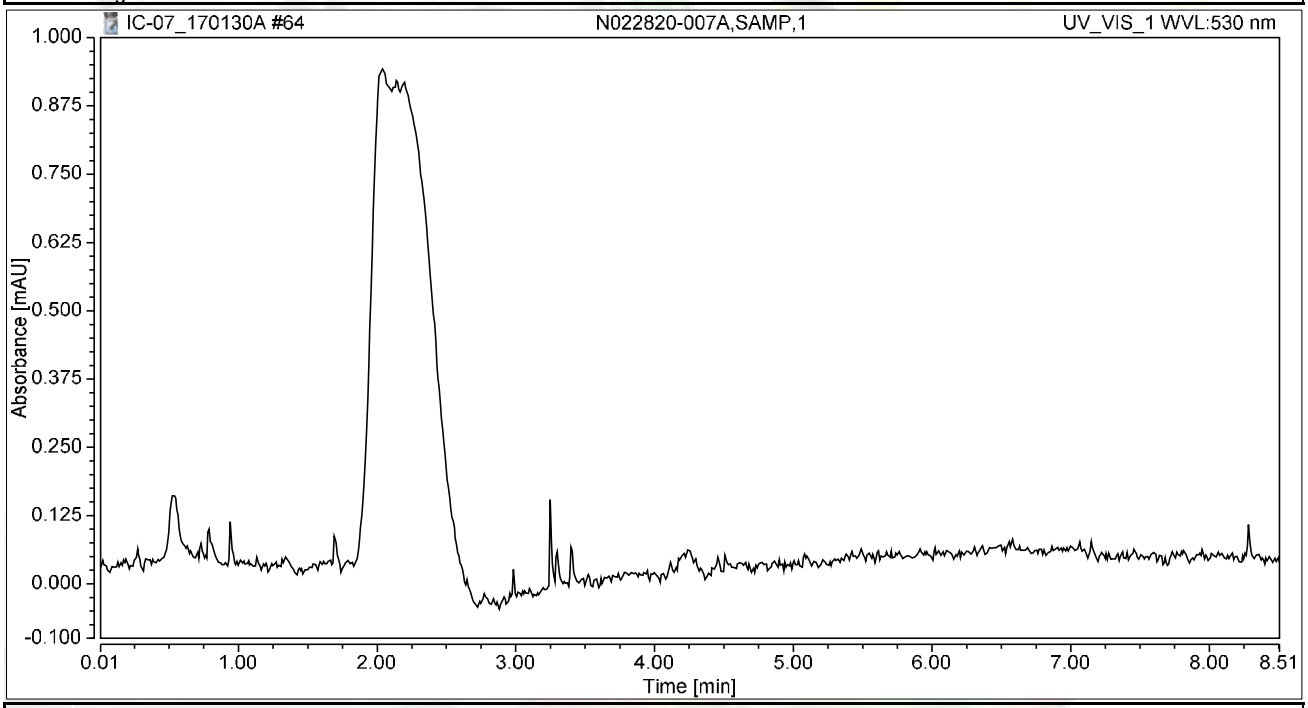
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

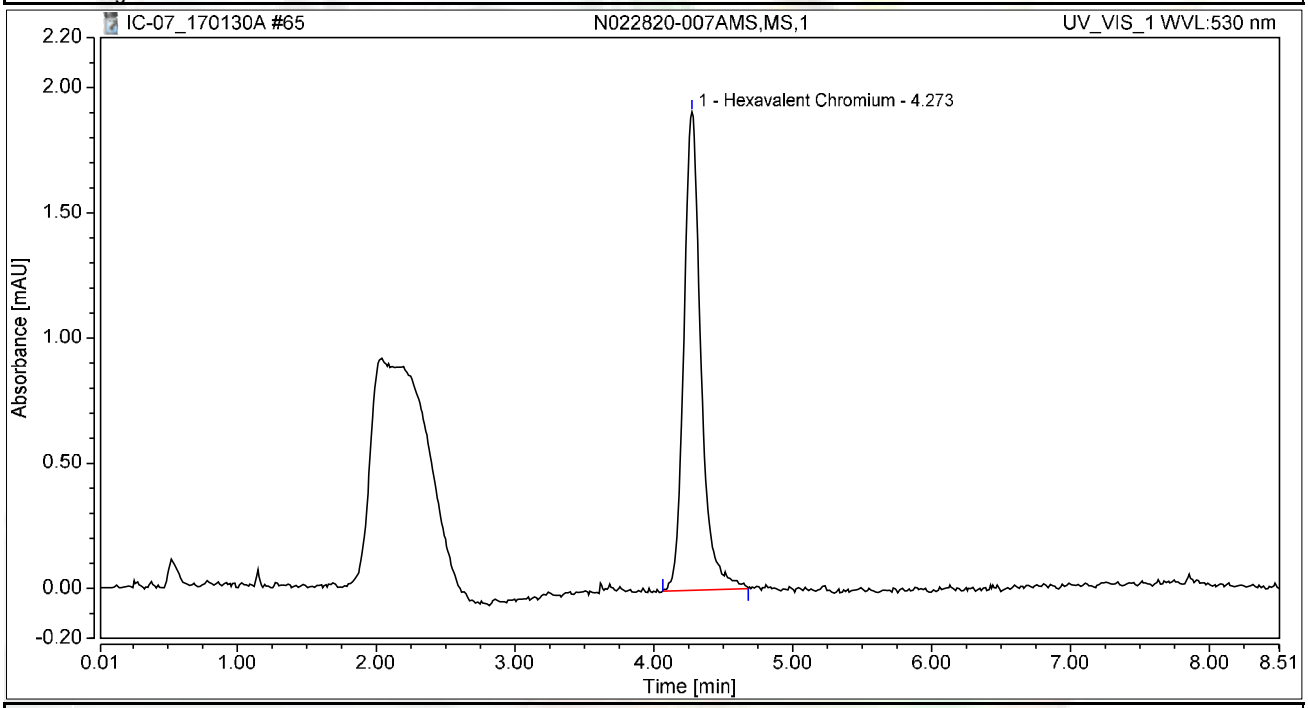
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

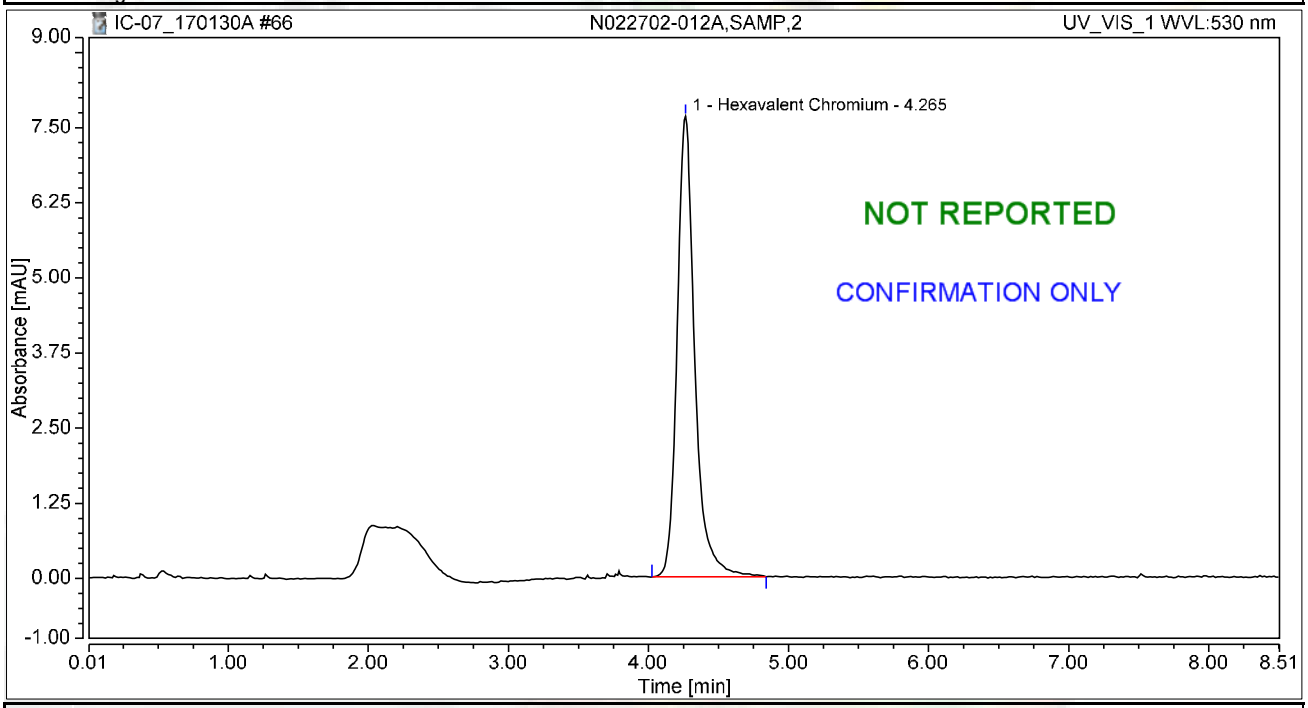
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.274	1.911	100.00	100.00	1.0700
Total:			**0.274**	**1.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022702-012A,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.117	7.664	100.00	100.00	4.3683
Total:			**1.117**	**7.664**	**100.00**	**100.00**	

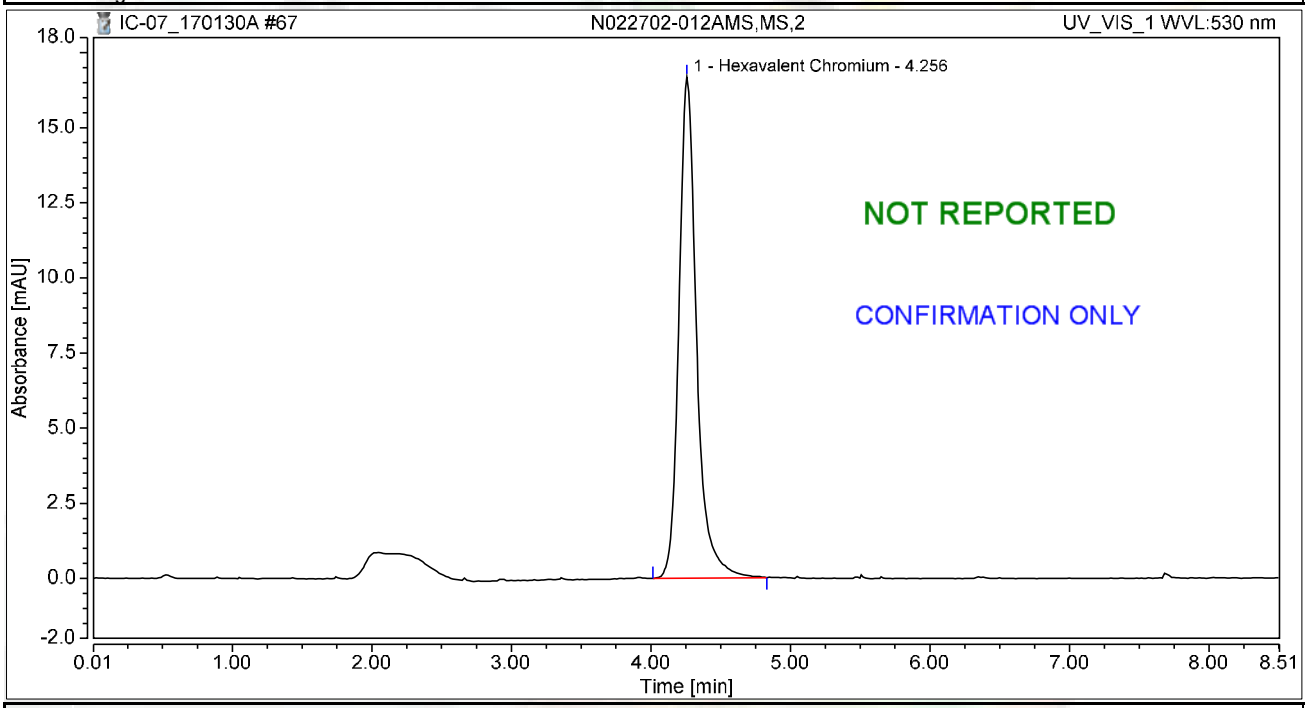
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022702-012AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.447	16.686	100.00	100.00	9.5721
Total:			**2.447**	**16.686**	**100.00**	**100.00**	

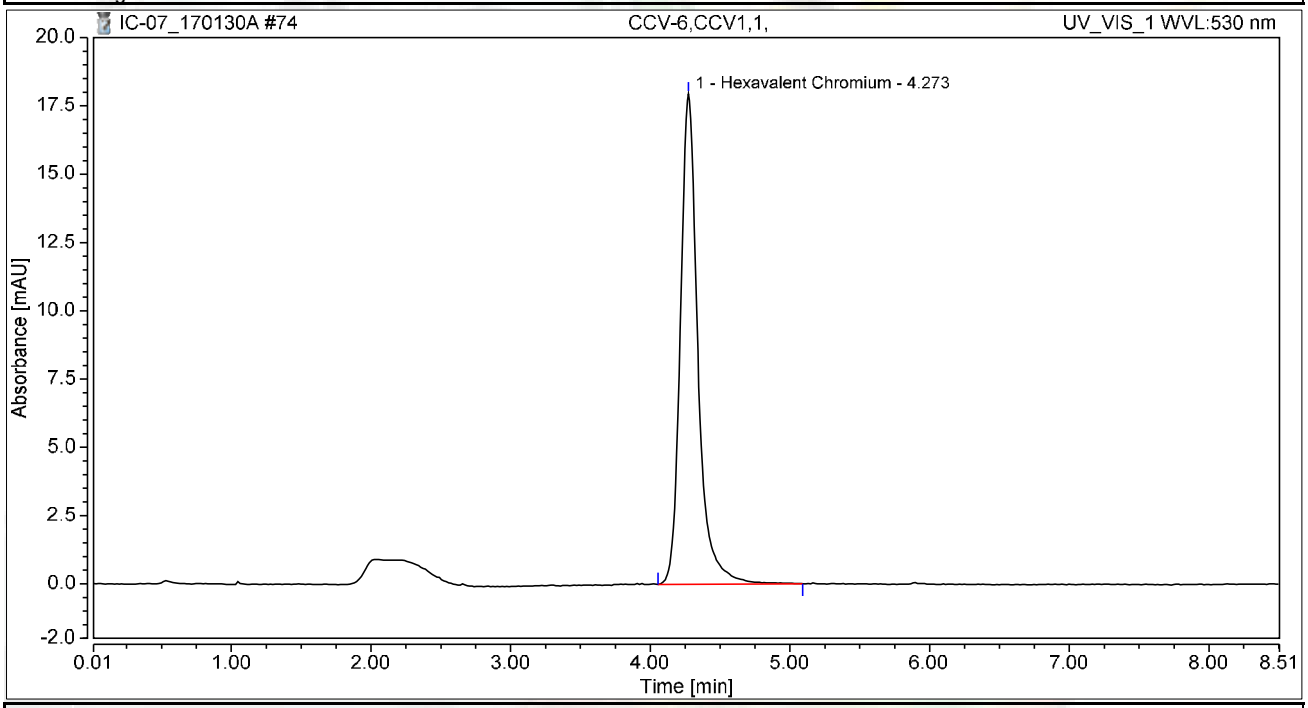
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

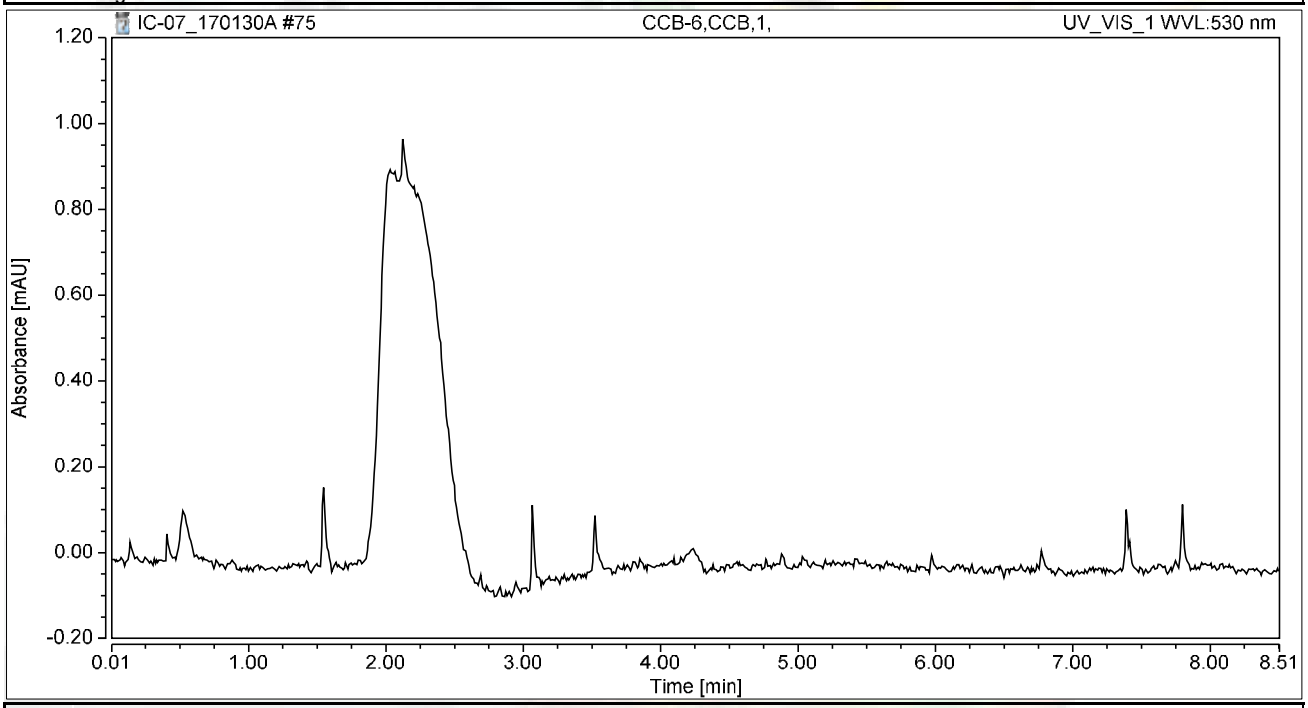
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.613	17.960	100.00	100.00	10.2193
Total:			**2.613**	**17.960**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Not Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

rba 2/6/2017

IC7 RBA 2/6/2017 1:22 PM

Nancy 2/7/2017

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMF	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMF	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMF	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMF	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMF	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMF	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMF	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMF	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMF	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMF	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMF	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMF	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMF	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMF	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMF	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMF	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMF	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMF	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMF	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMF	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

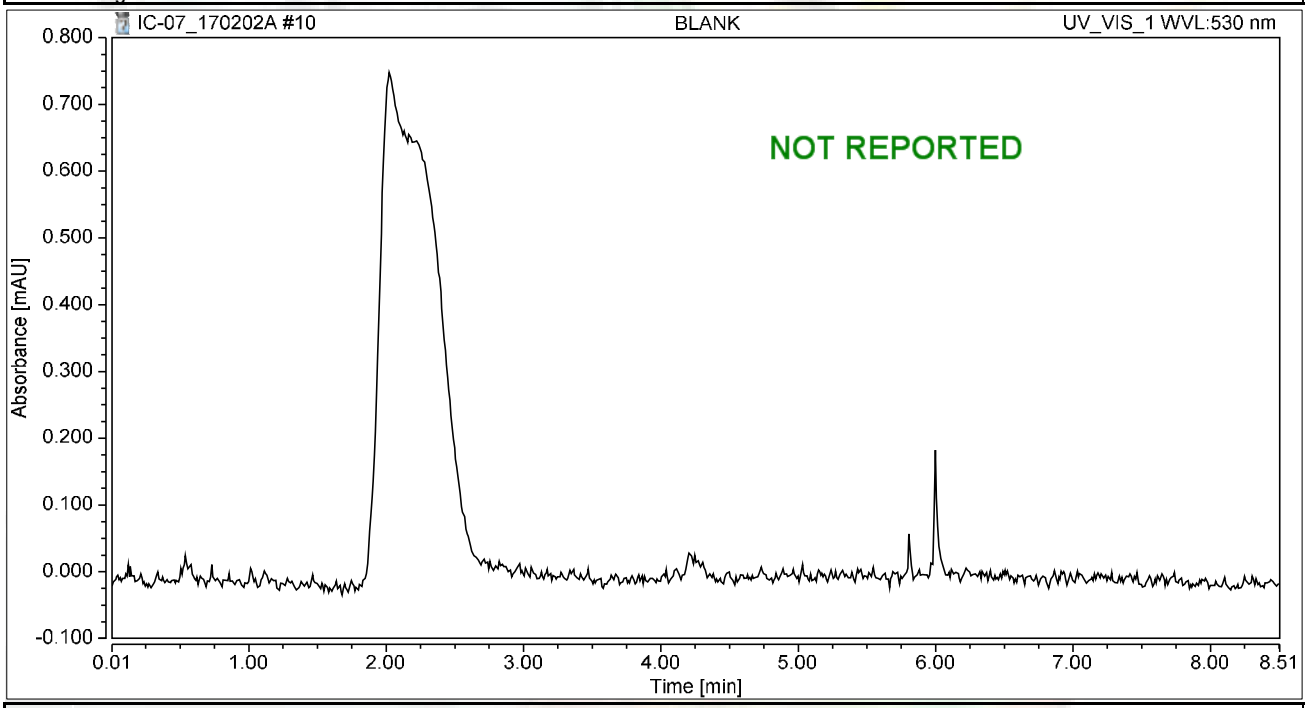
61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

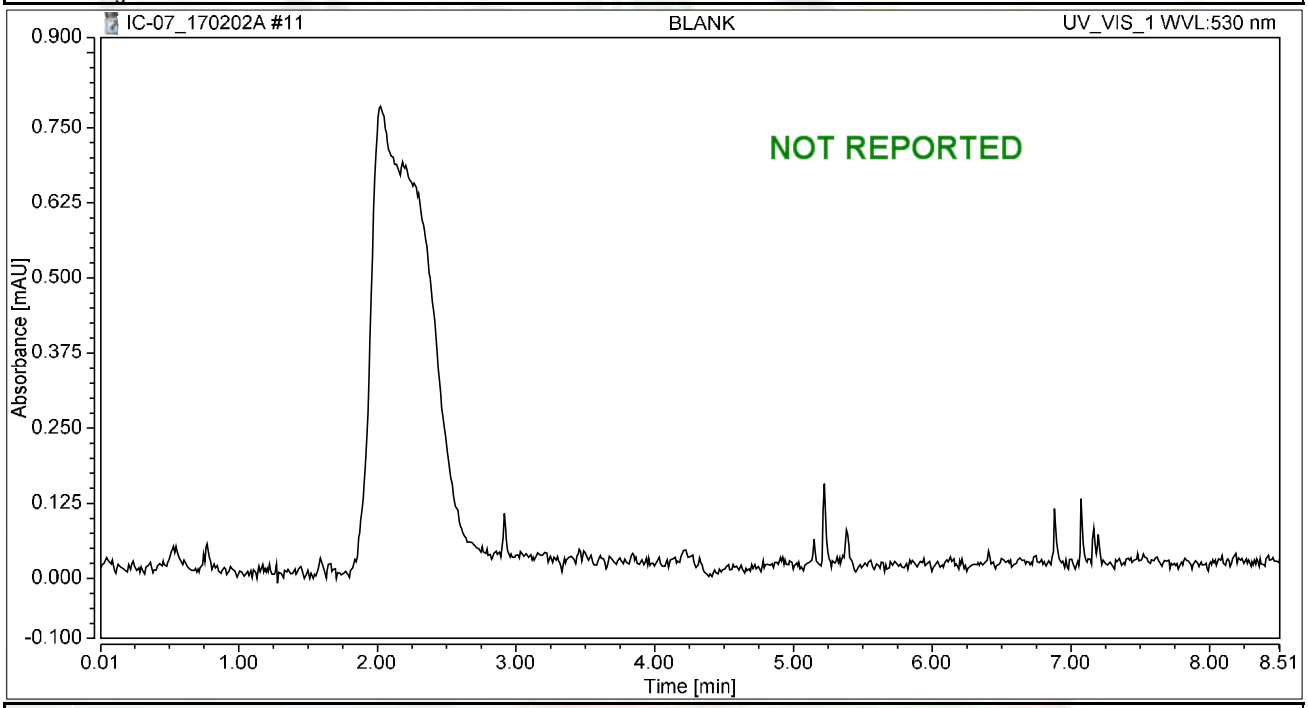
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

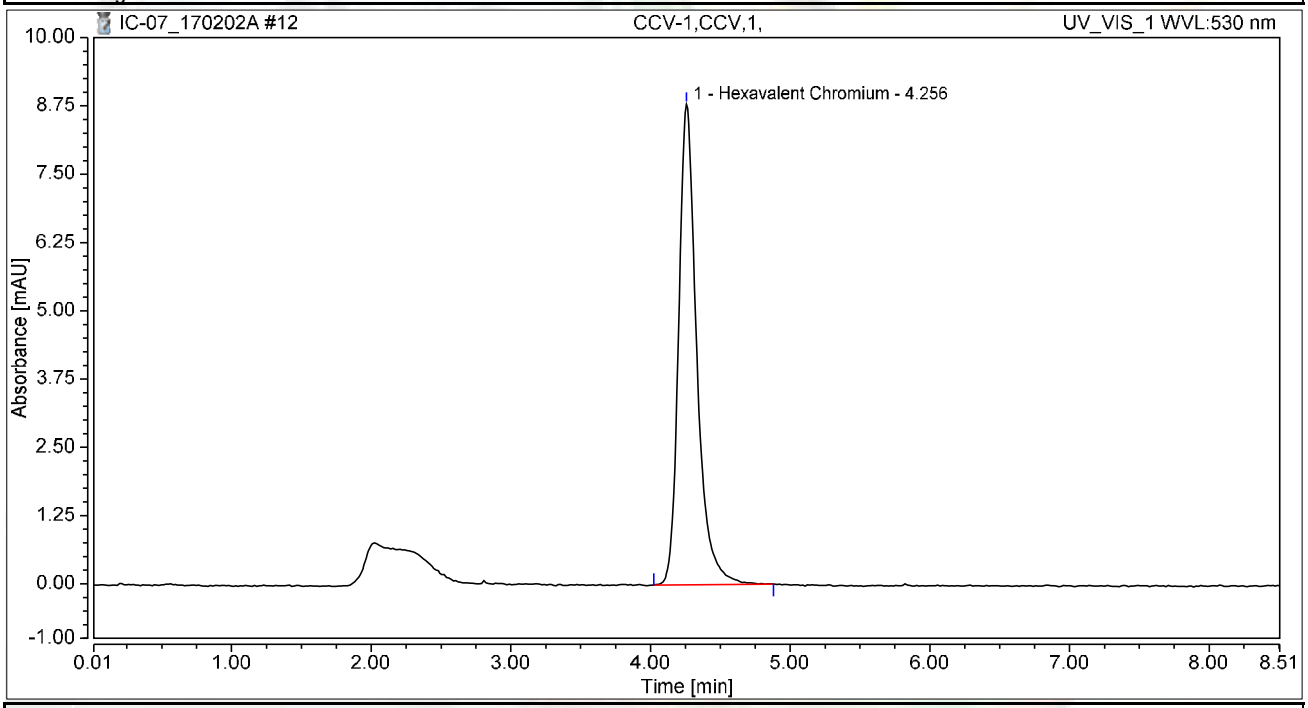
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

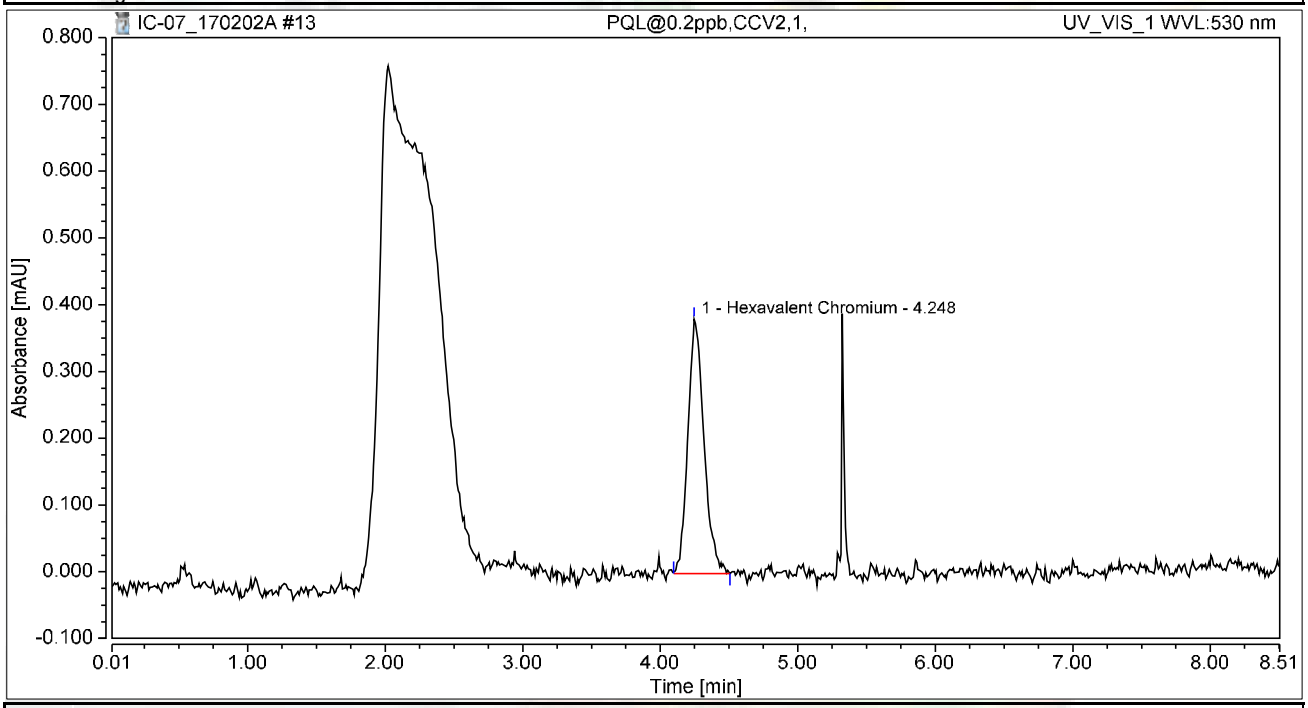
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.324	8.800	100.00	100.00	5.1780
Total:			**1.324**	**8.800**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

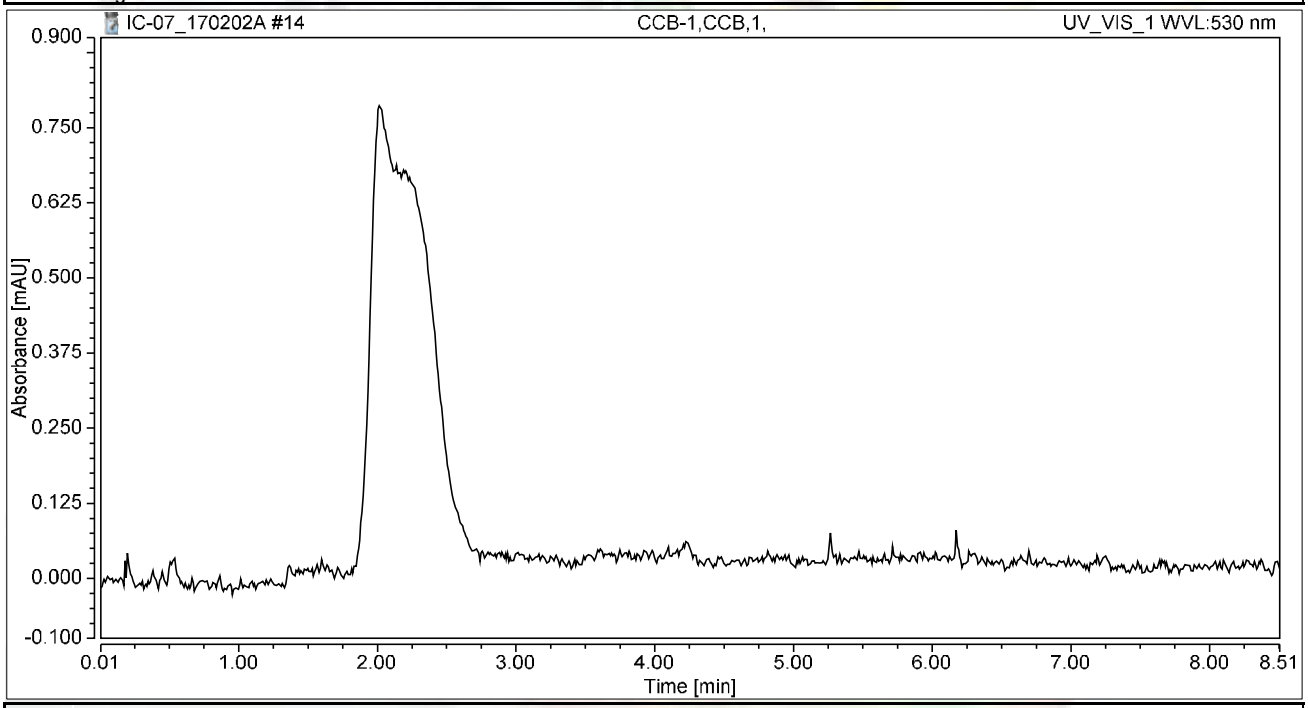
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.052	0.381	100.00	100.00	0.2032
Total:			**0.052**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

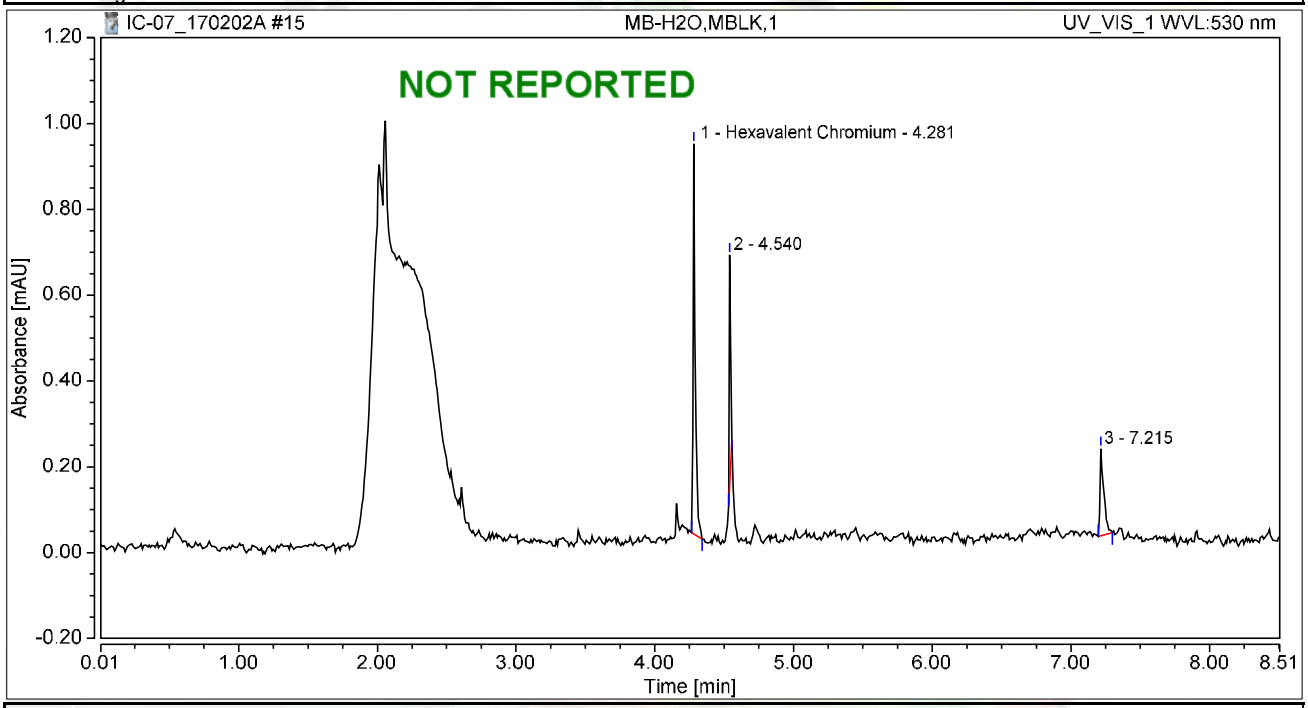
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

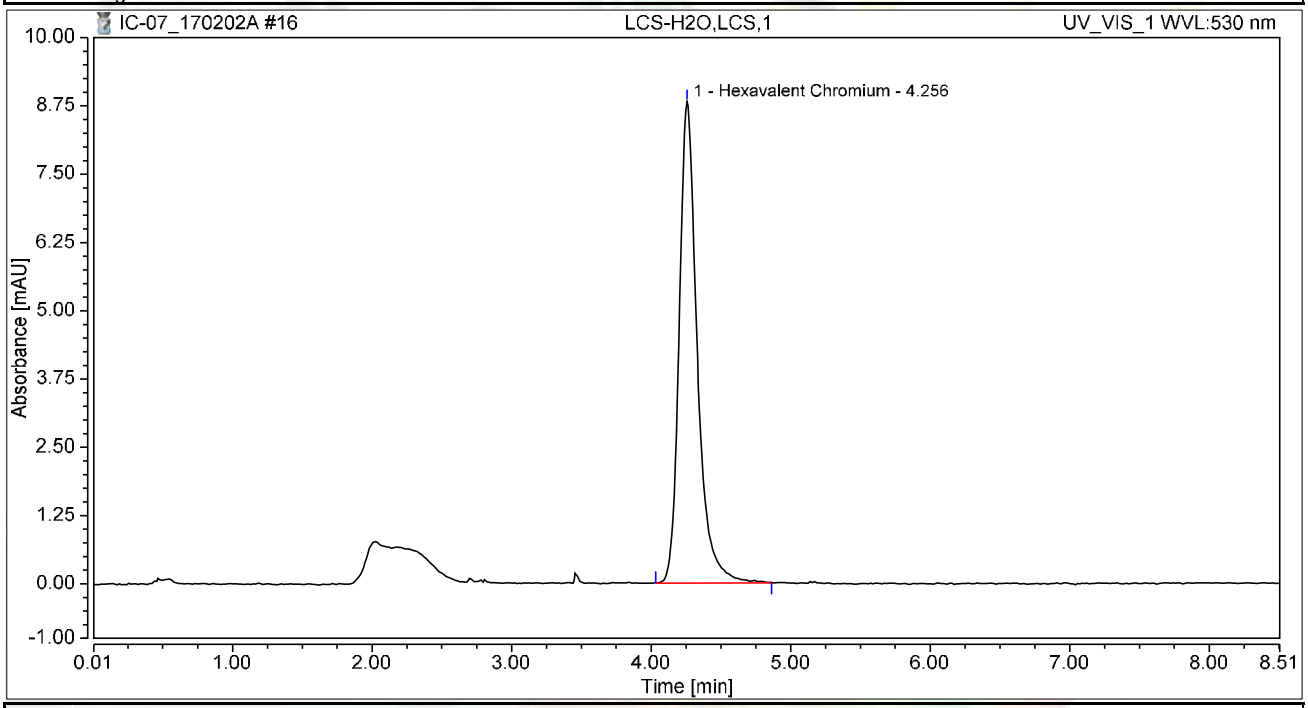
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.281	0.017	0.910	57.22	55.28	0.0681
2		4.540	0.007	0.533	21.97	32.38	n.a.
3		7.215	0.006	0.203	20.81	12.34	n.a.
Total:			**0.030**	**1.645**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

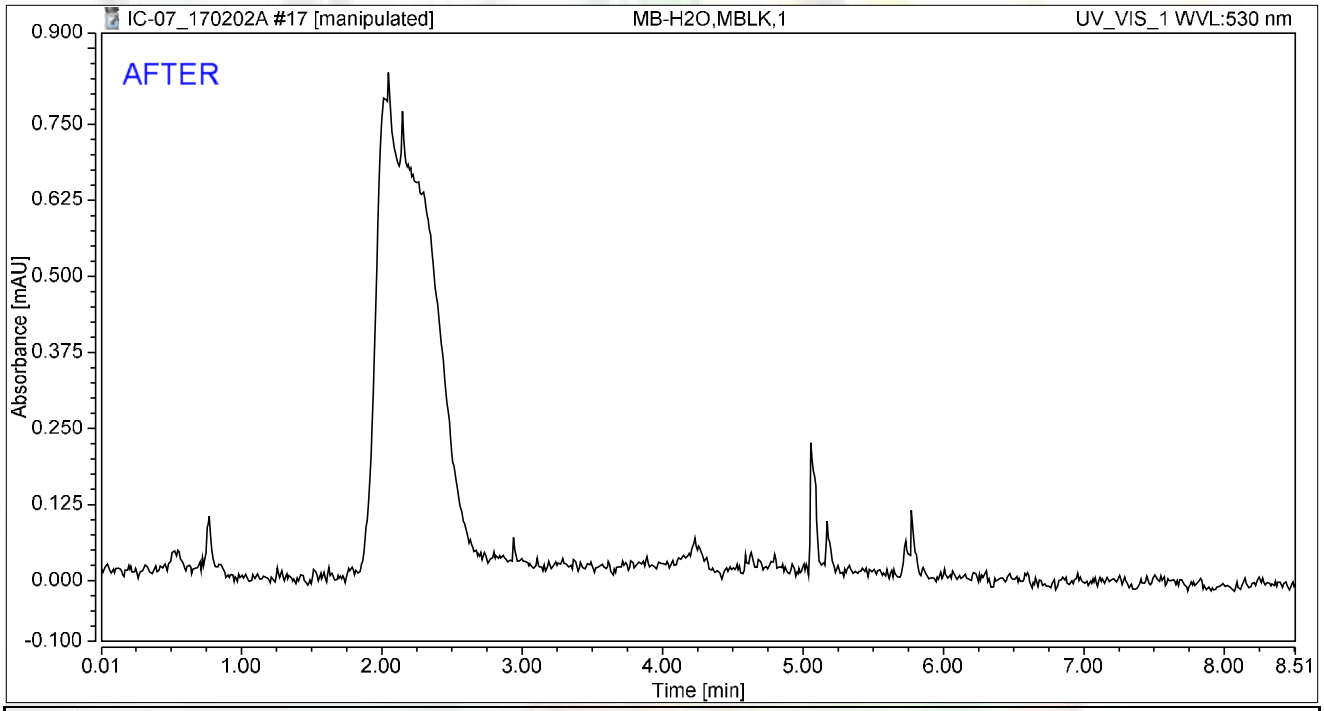
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.317	8.811	100.00	100.00	5.1510
Total:			**1.317**	**8.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

rba 2/6/2017

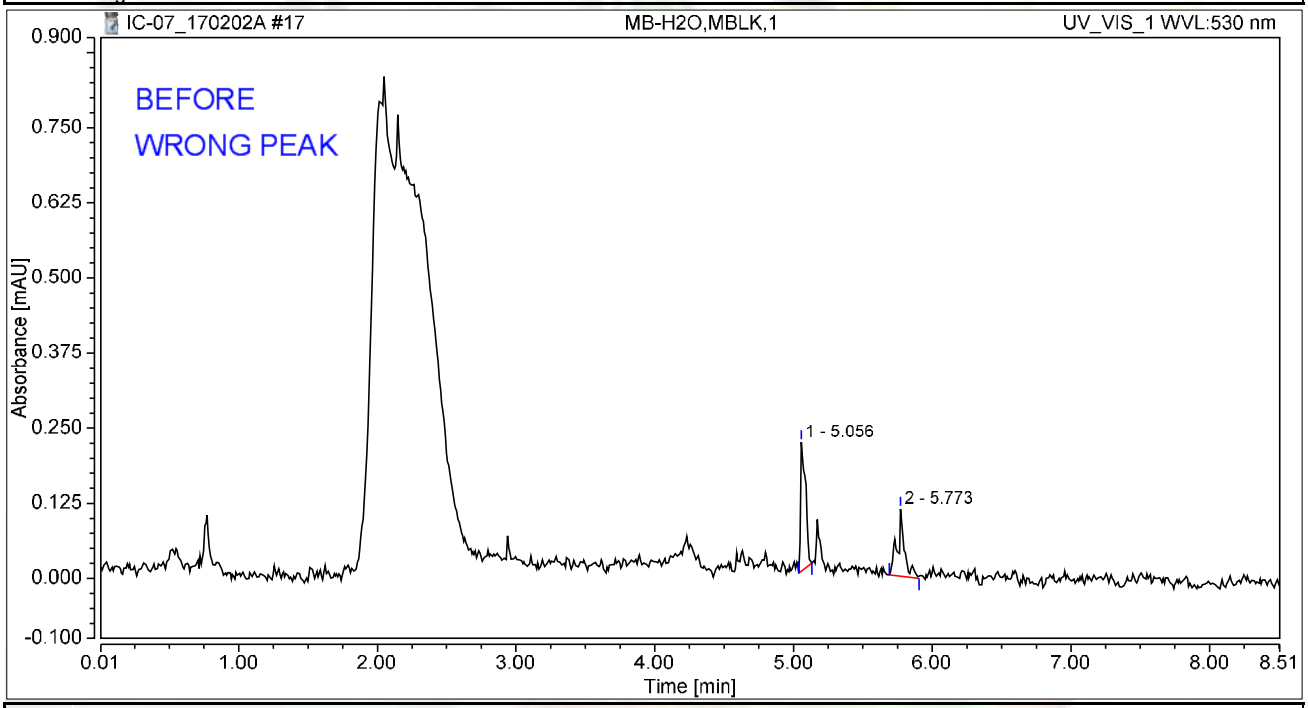
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.056	0.009	0.215	56.37	65.76	n.a.
2		5.773	0.007	0.112	43.63	34.24	n.a.
Total:			**0.015**	**0.327**	**100.00**	**100.00**	

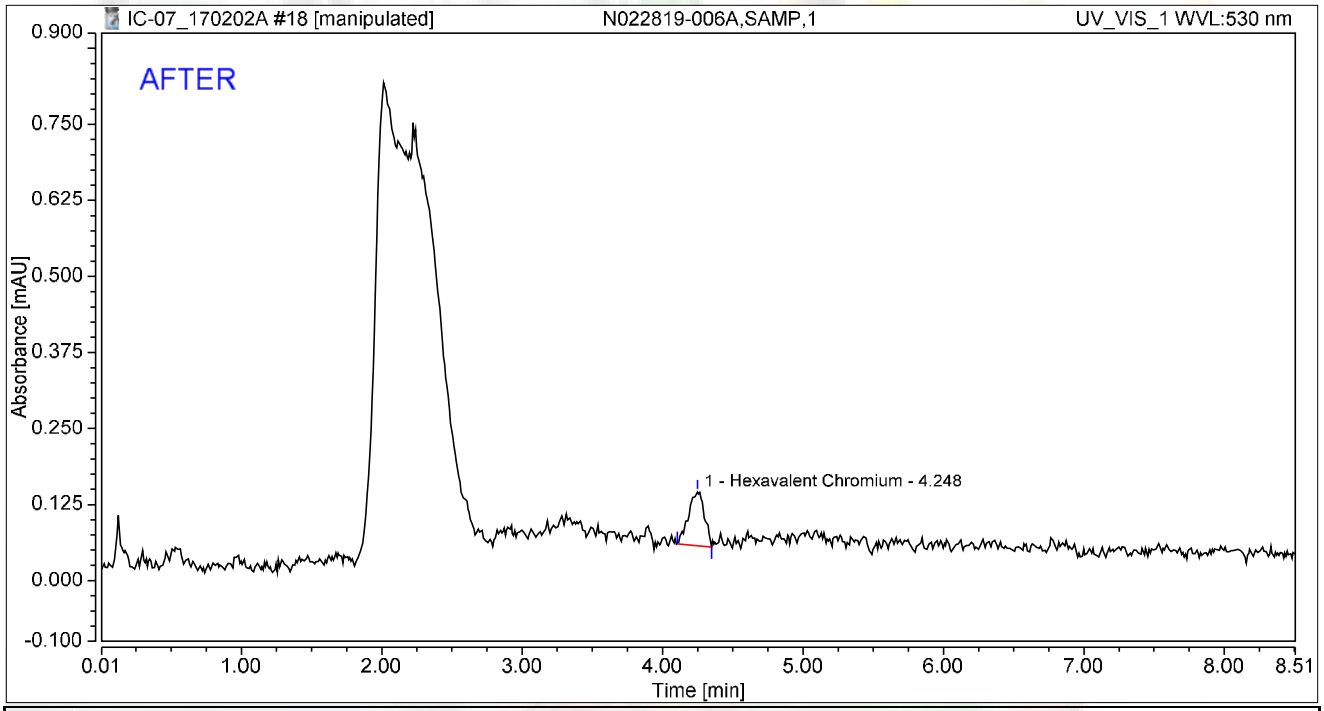
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.088	100.00	100.00	0.0454
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

rba 2/6/2017

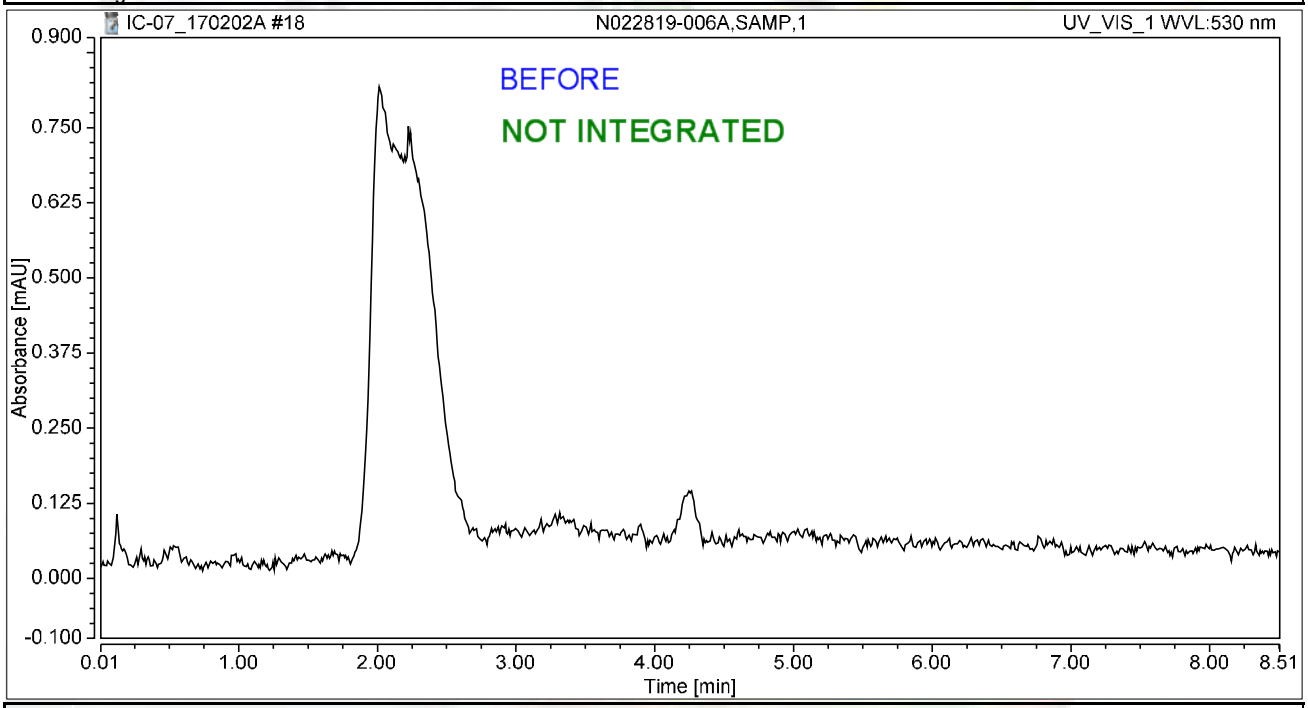
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

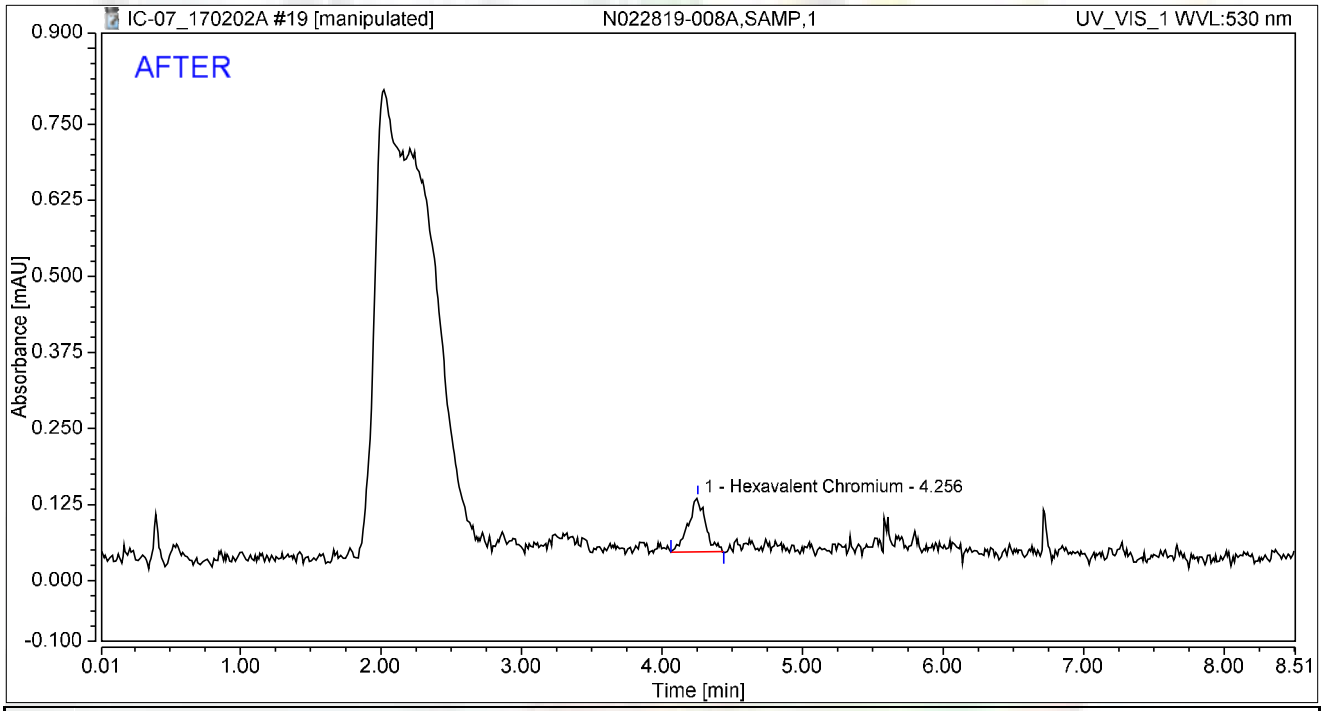
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.013	0.089	100.00	100.00	0.0492
Total:			**0.013**	**0.089**	**100.00**	**100.00**	

rba 2/6/2017

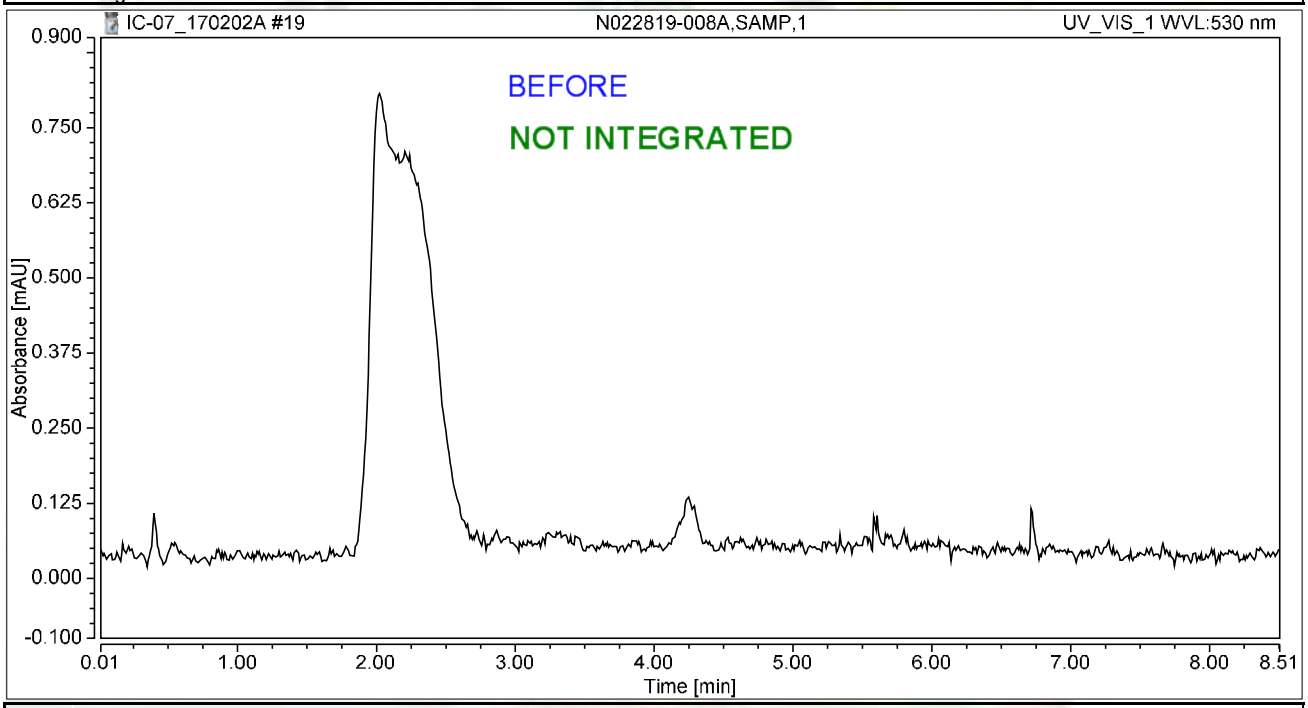
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

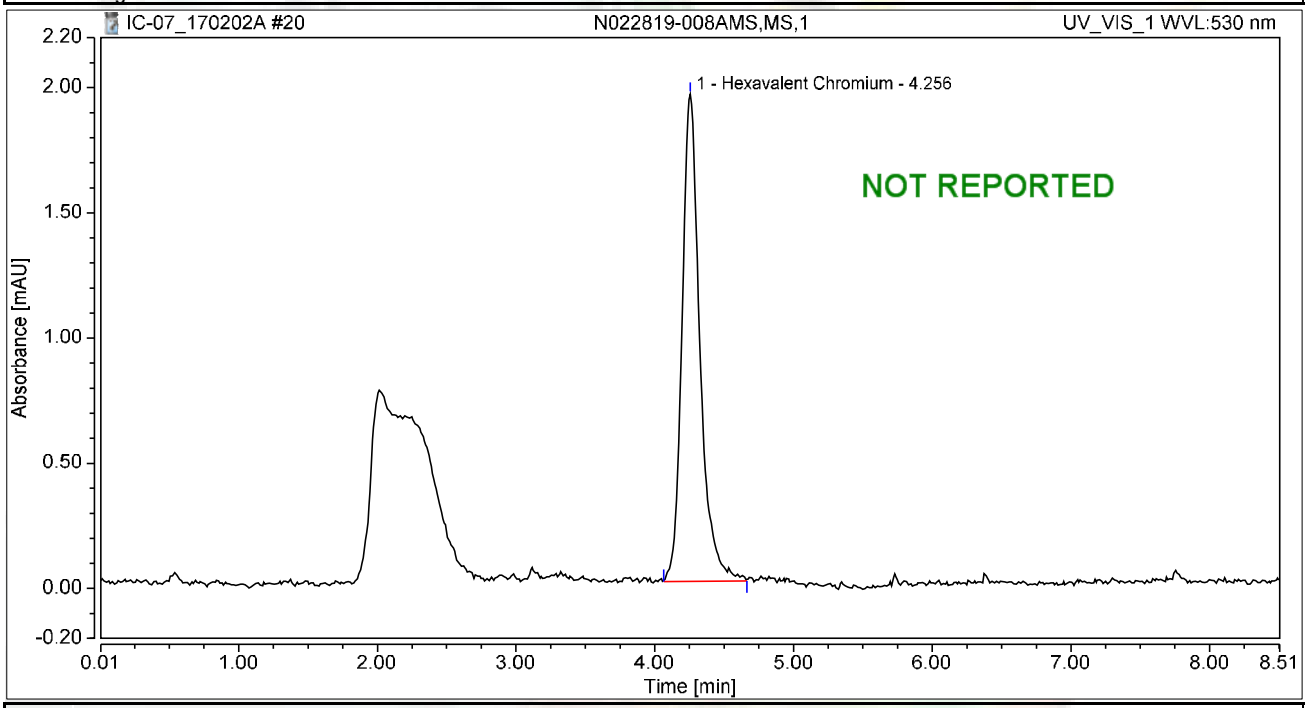
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

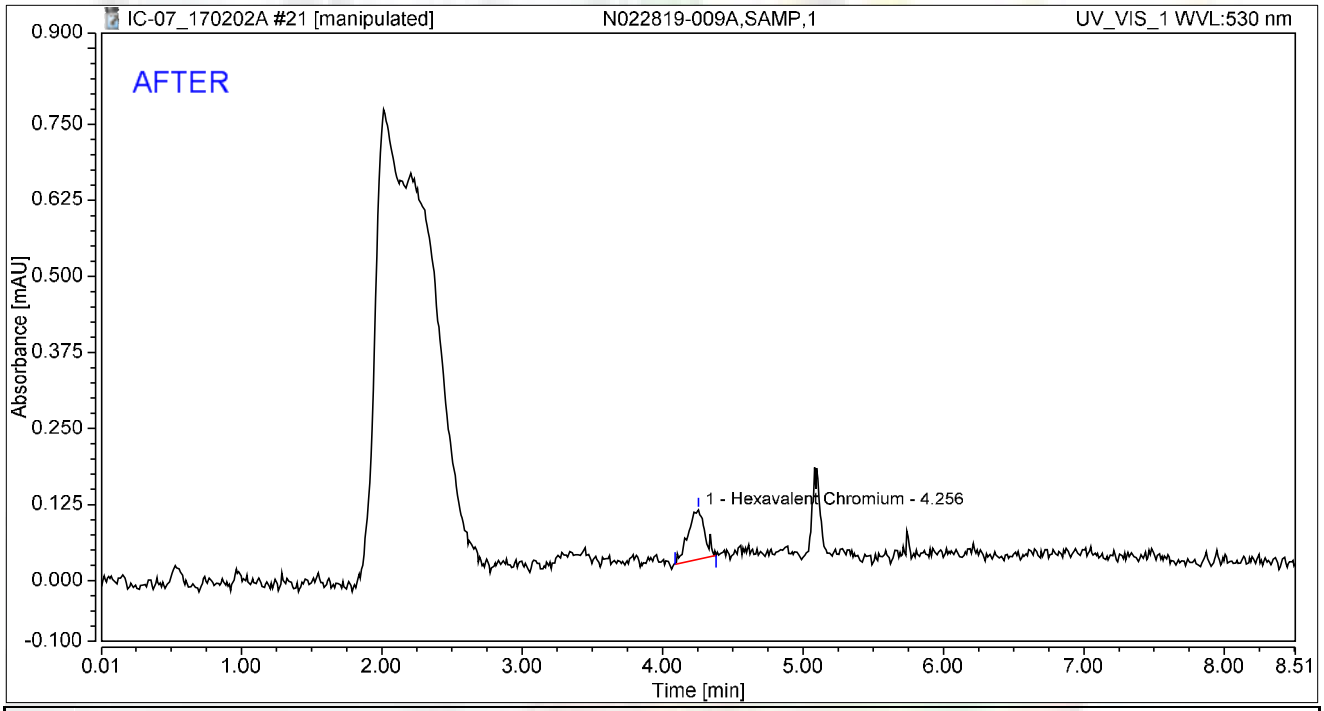
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.290	1.946	100.00	100.00	1.1356
Total:			**0.290**	**1.946**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0437
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

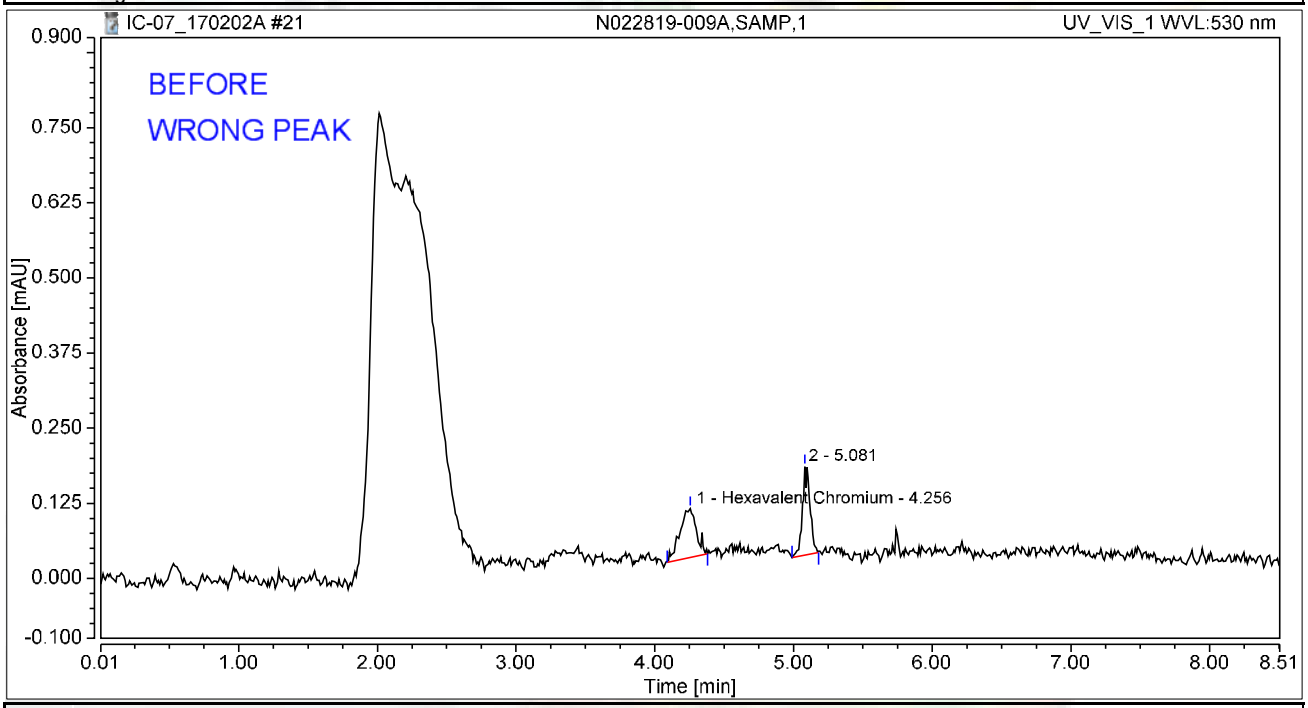
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	54.59	35.48	0.0437
2		5.081	0.009	0.147	45.41	64.52	n.a.
Total:			**0.020**	**0.228**	**100.00**	**100.00**	

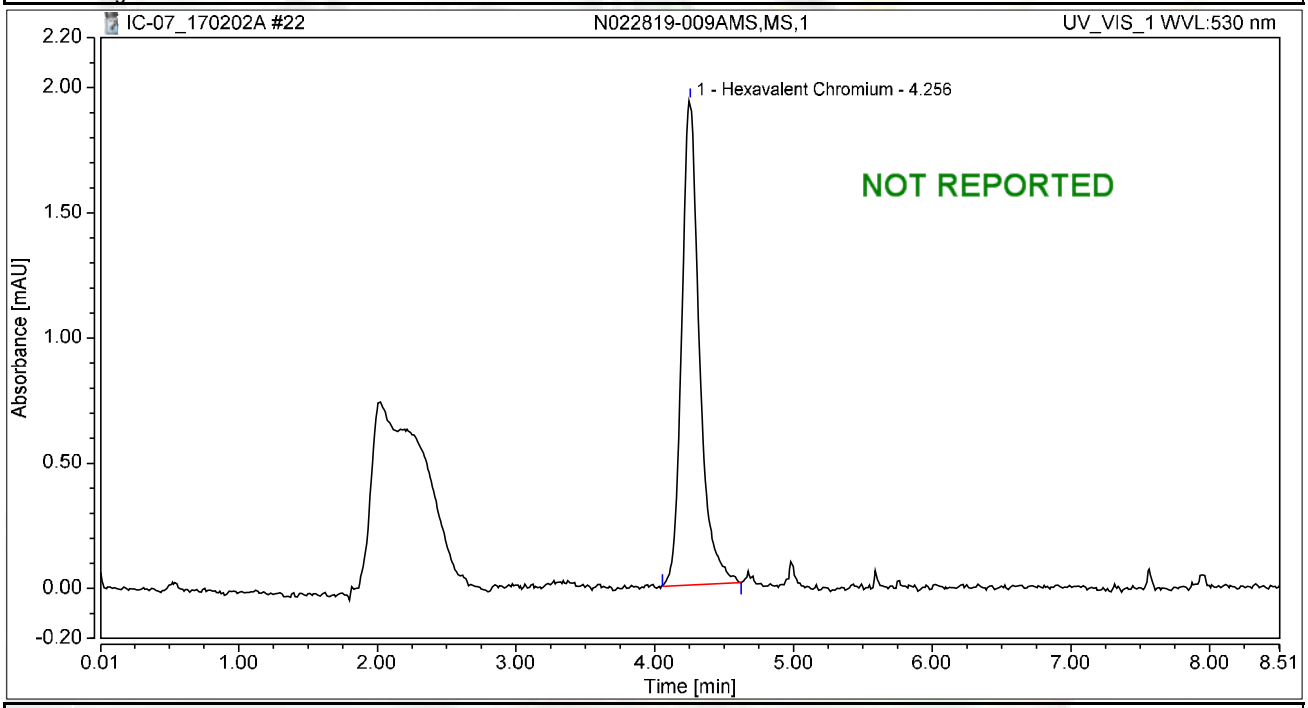
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.287	1.935	100.00	100.00	1.1231
Total:			**0.287**	**1.935**	**100.00**	**100.00**	

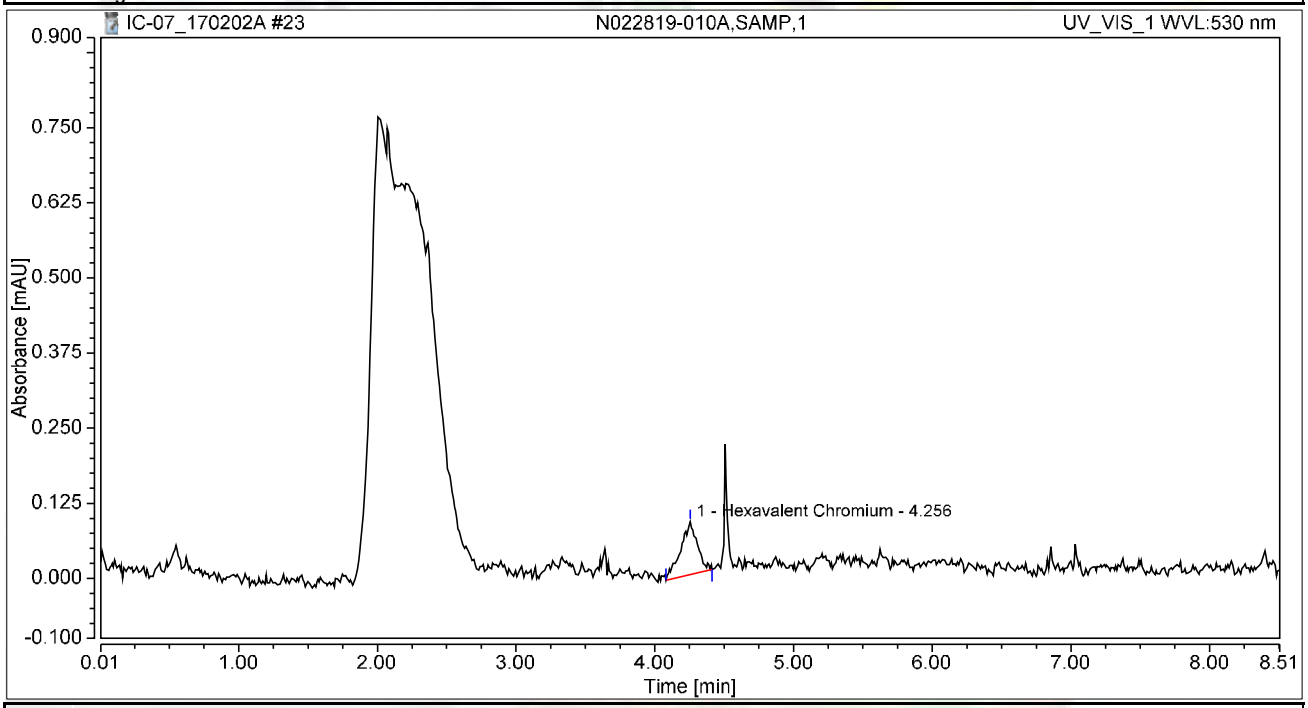
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

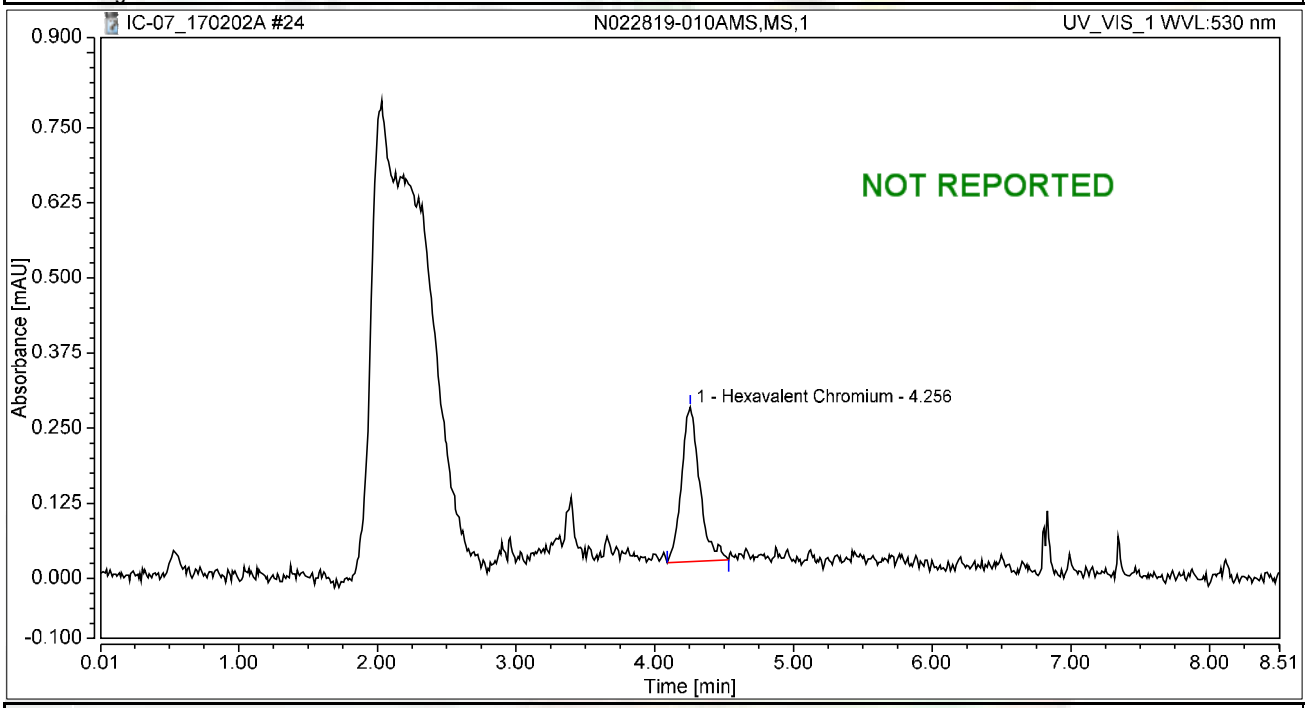
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.012	0.088	100.00	100.00	0.0477
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.039	0.257	100.00	100.00	0.1524
Total:			**0.039**	**0.257**	**100.00**	**100.00**	

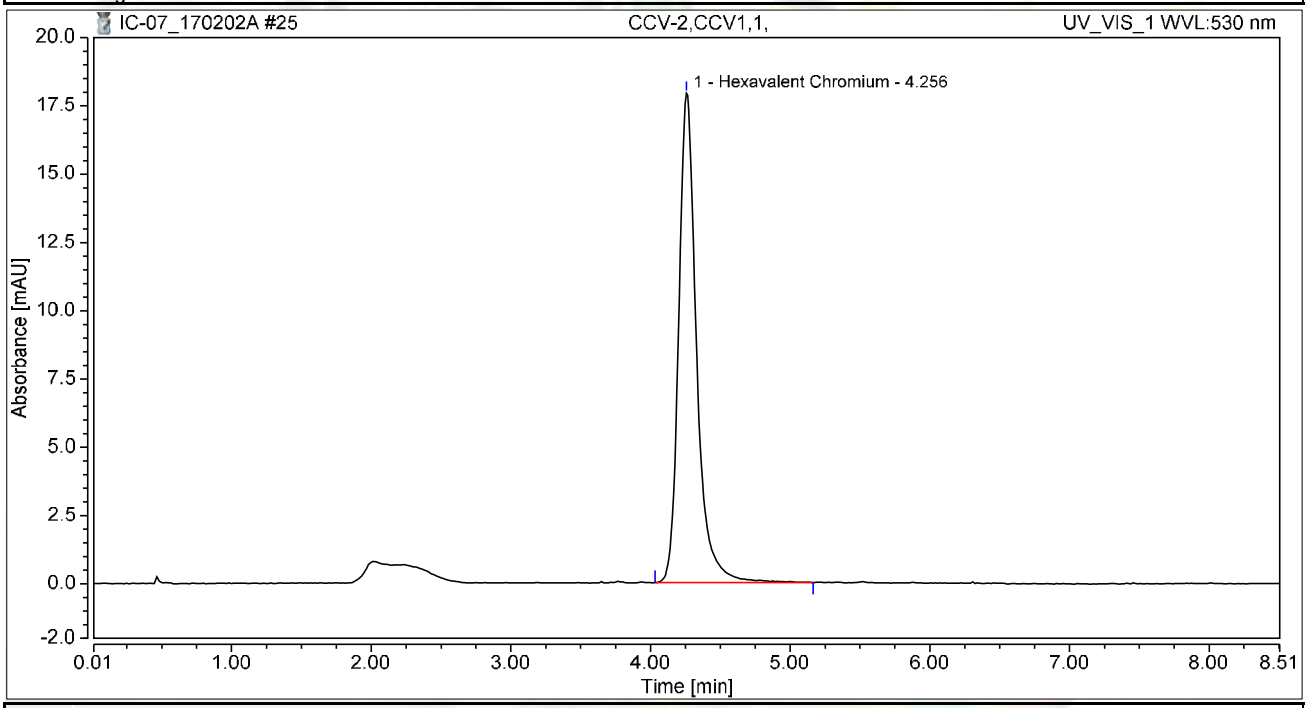
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

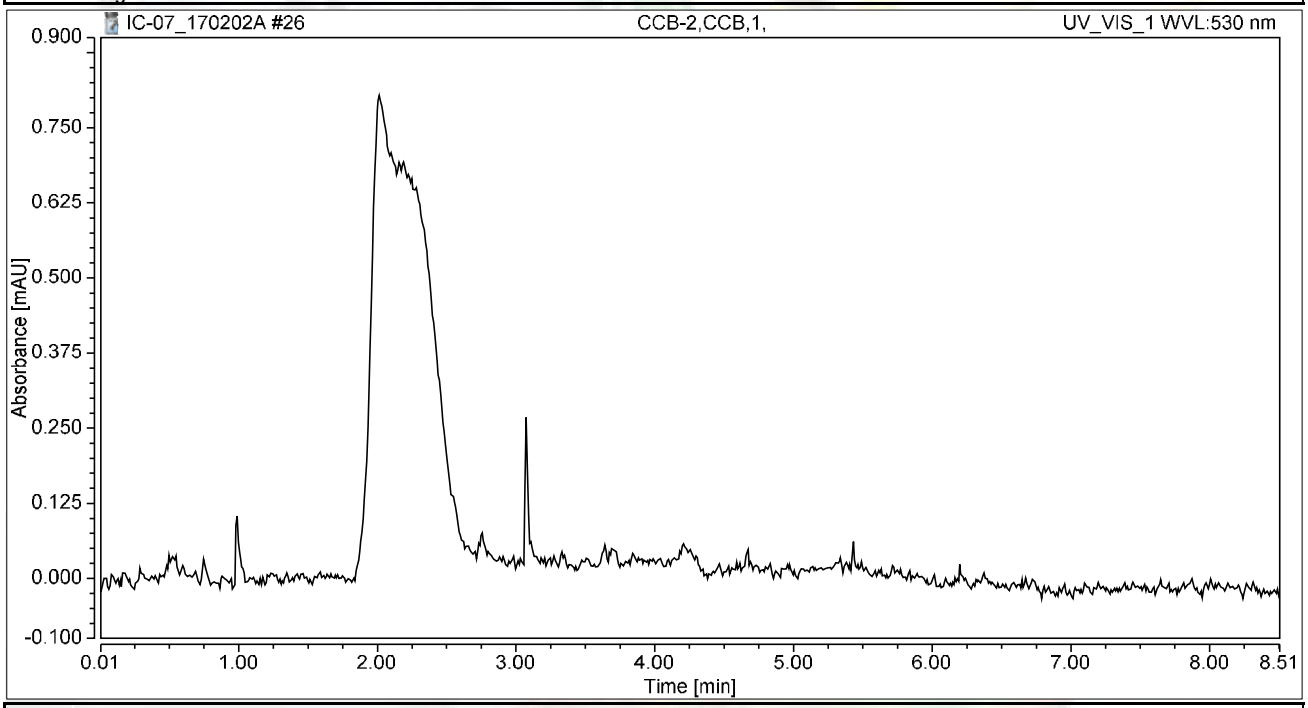
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.651	17.908	100.00	100.00	10.3680
Total:			**2.651**	**17.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

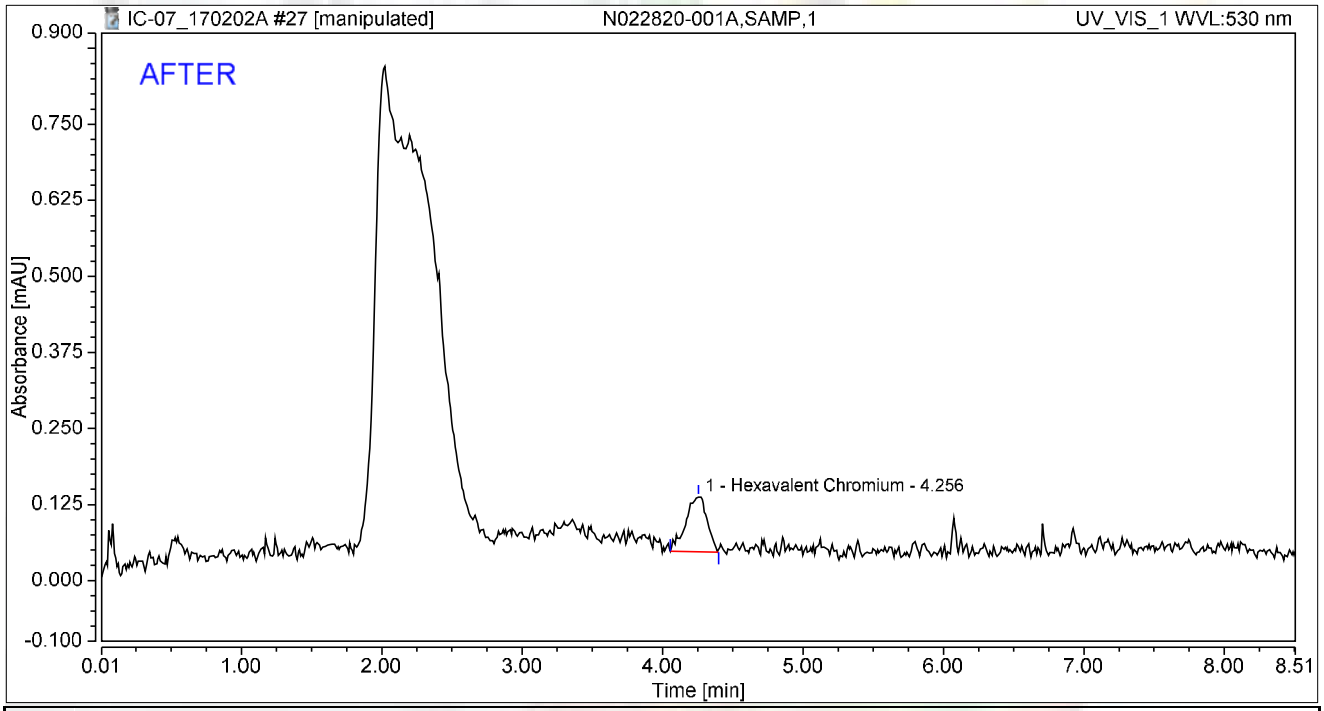
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.016	0.090	100.00	100.00	0.0620
Total:			**0.016**	**0.090**	**100.00**	**100.00**	

rba 2/6/2017

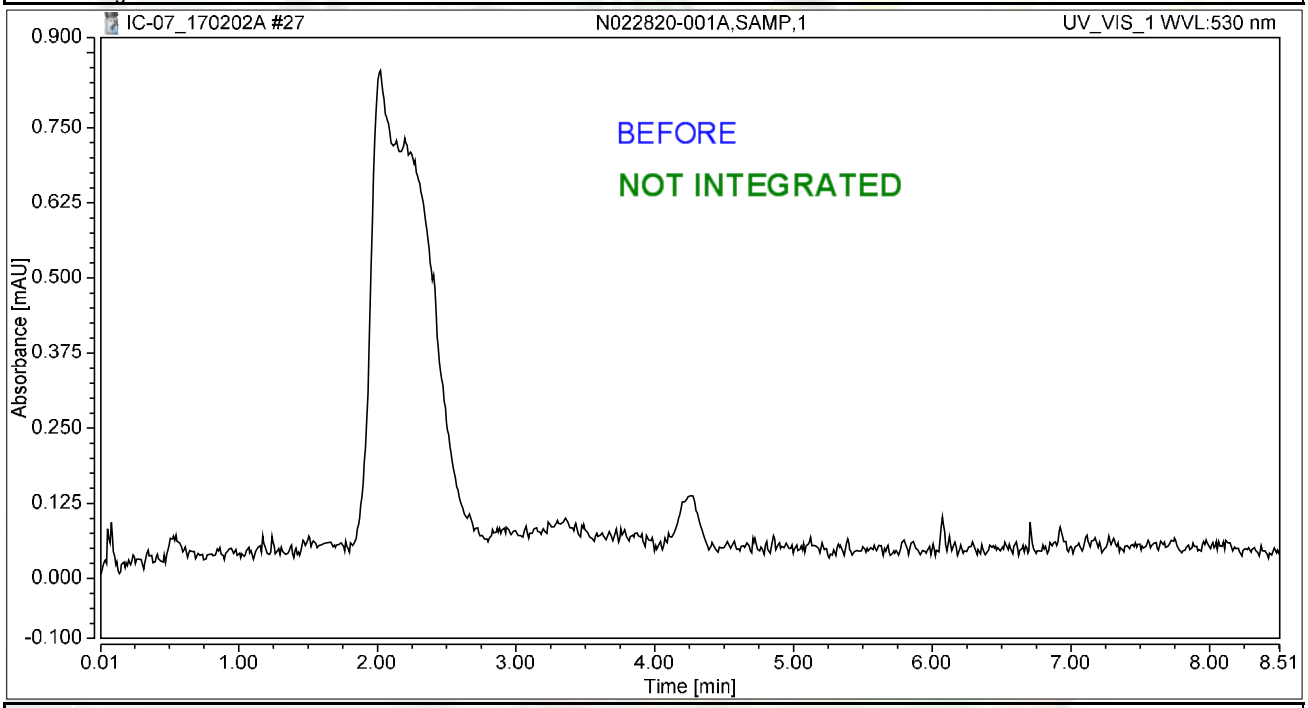
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

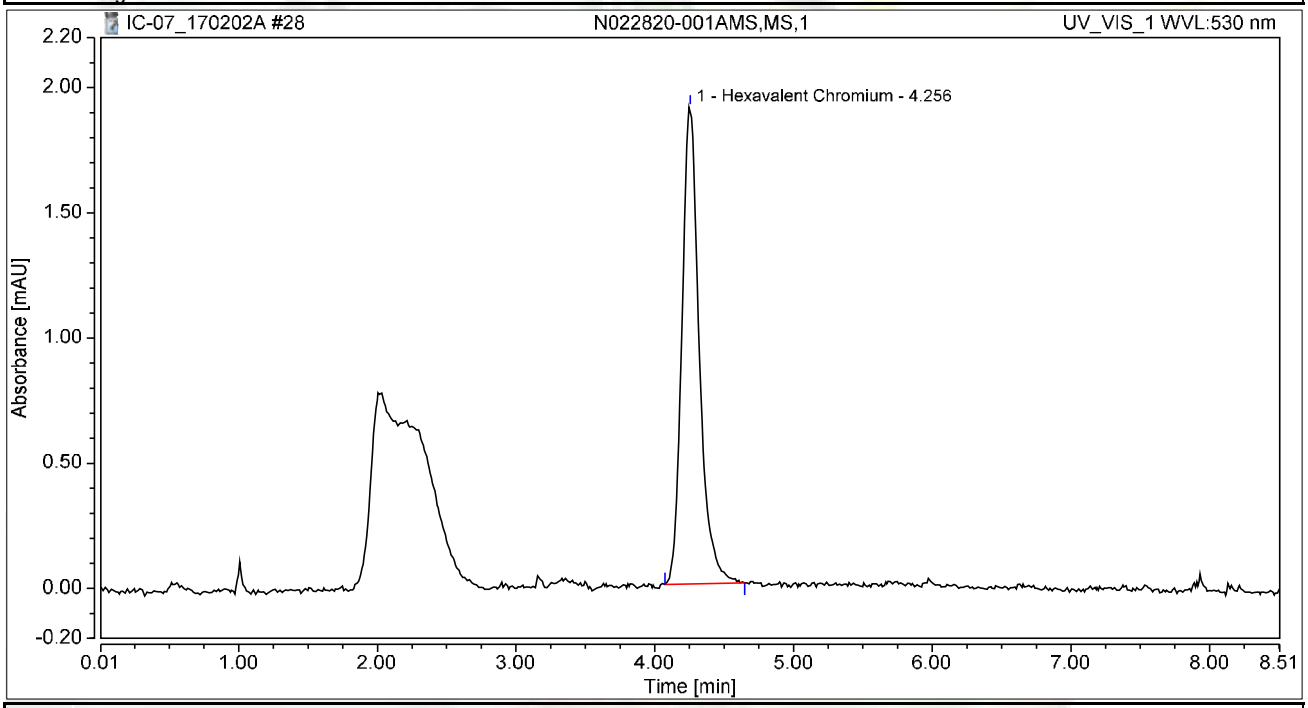
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

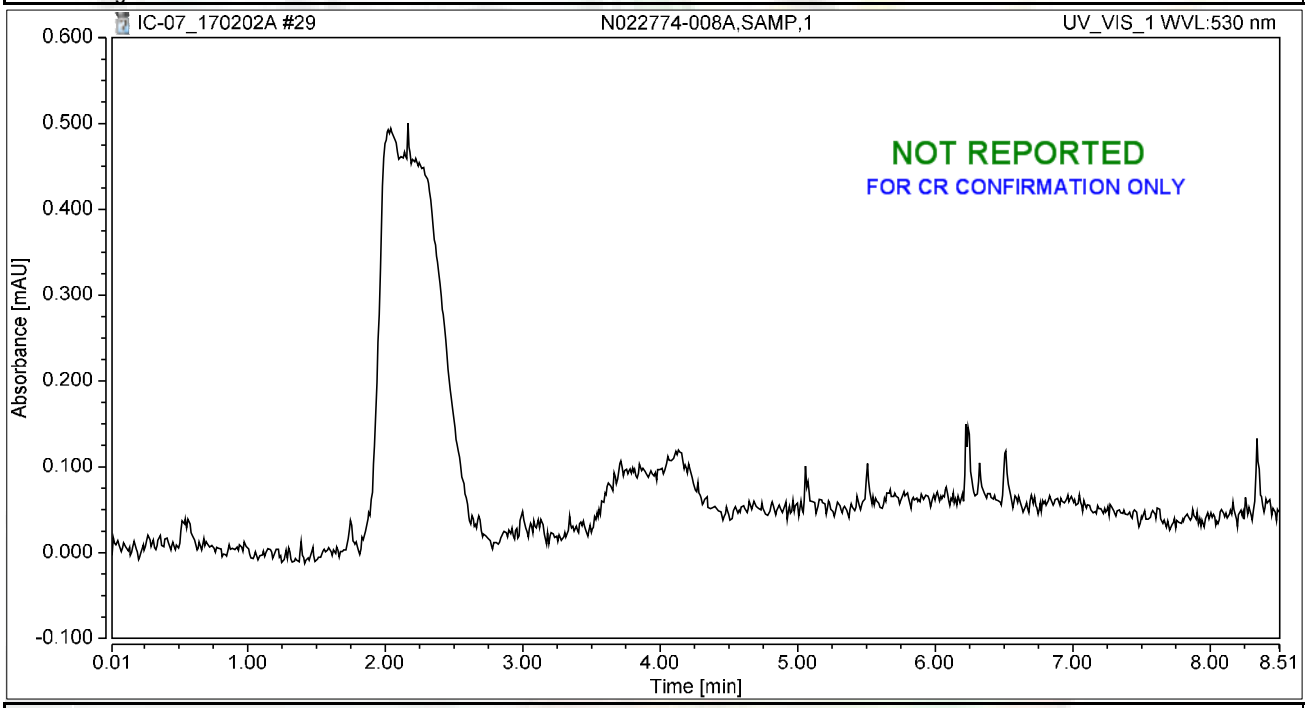
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.277	1.905	100.00	100.00	1.0833
Total:			**0.277**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

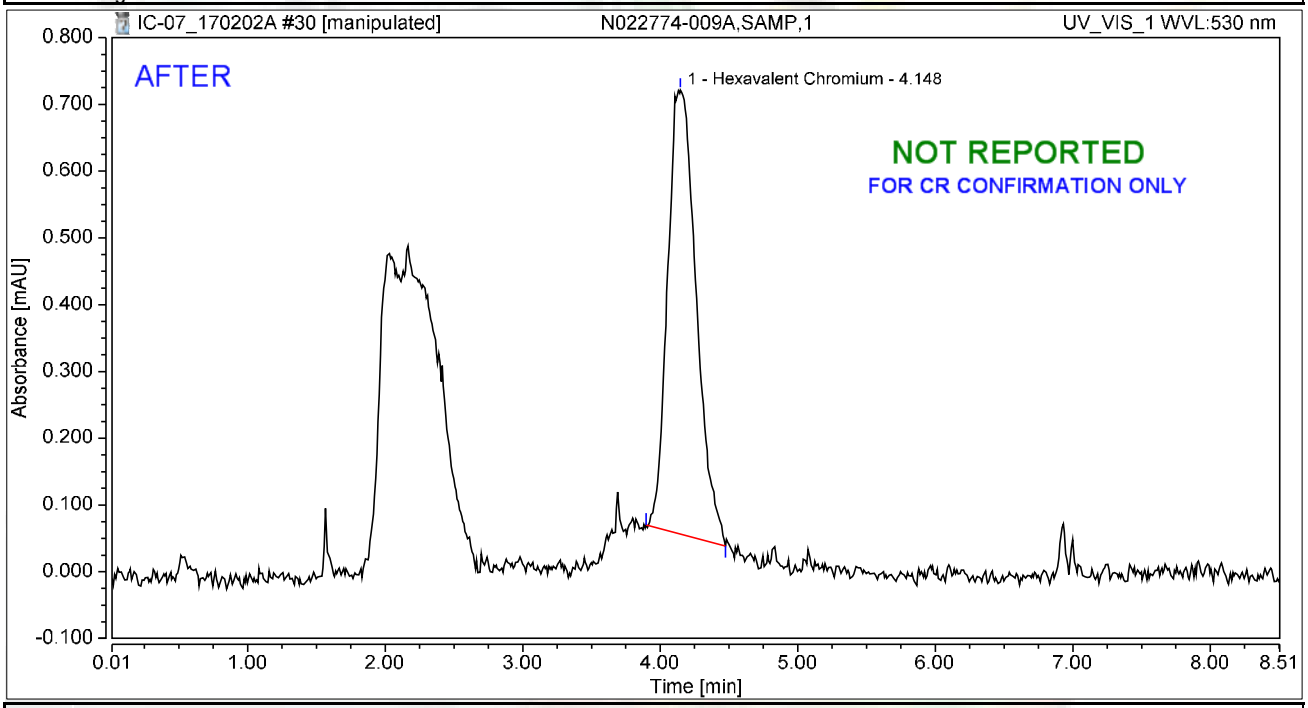
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.160	0.665	100.00	100.00	0.6270
Total:			**0.160**	**0.665**	**100.00**	**100.00**	

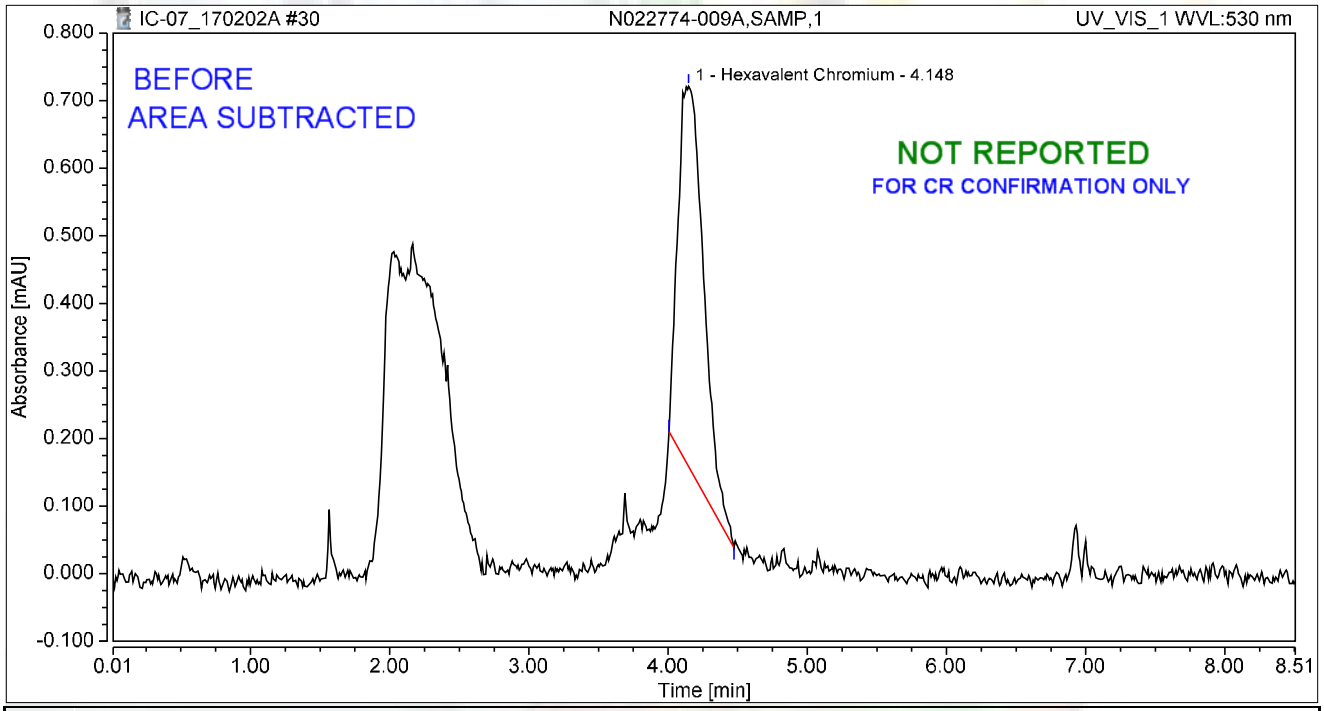
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.122	0.563	100.00	100.00	0.4757
Total:			**0.122**	**0.563**	**100.00**	**100.00**	

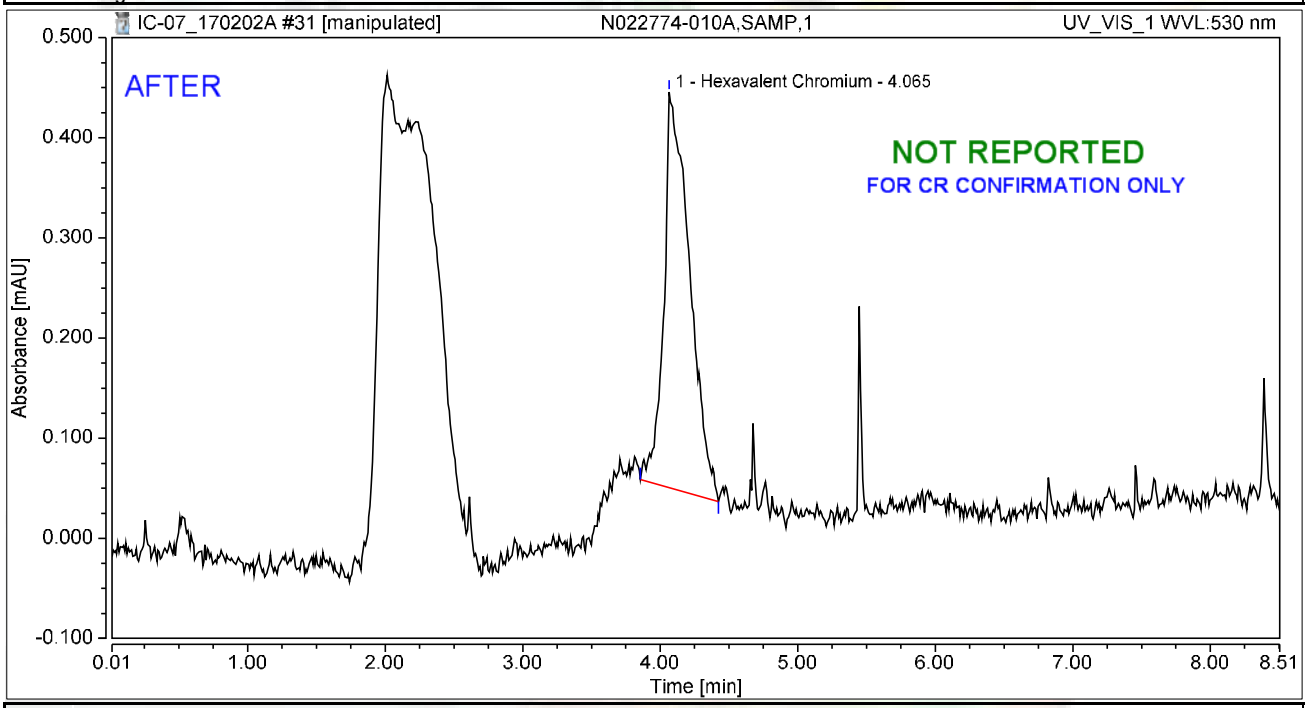
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.086	0.395	100.00	100.00	0.3373
Total:			**0.086**	**0.395**	**100.00**	**100.00**	

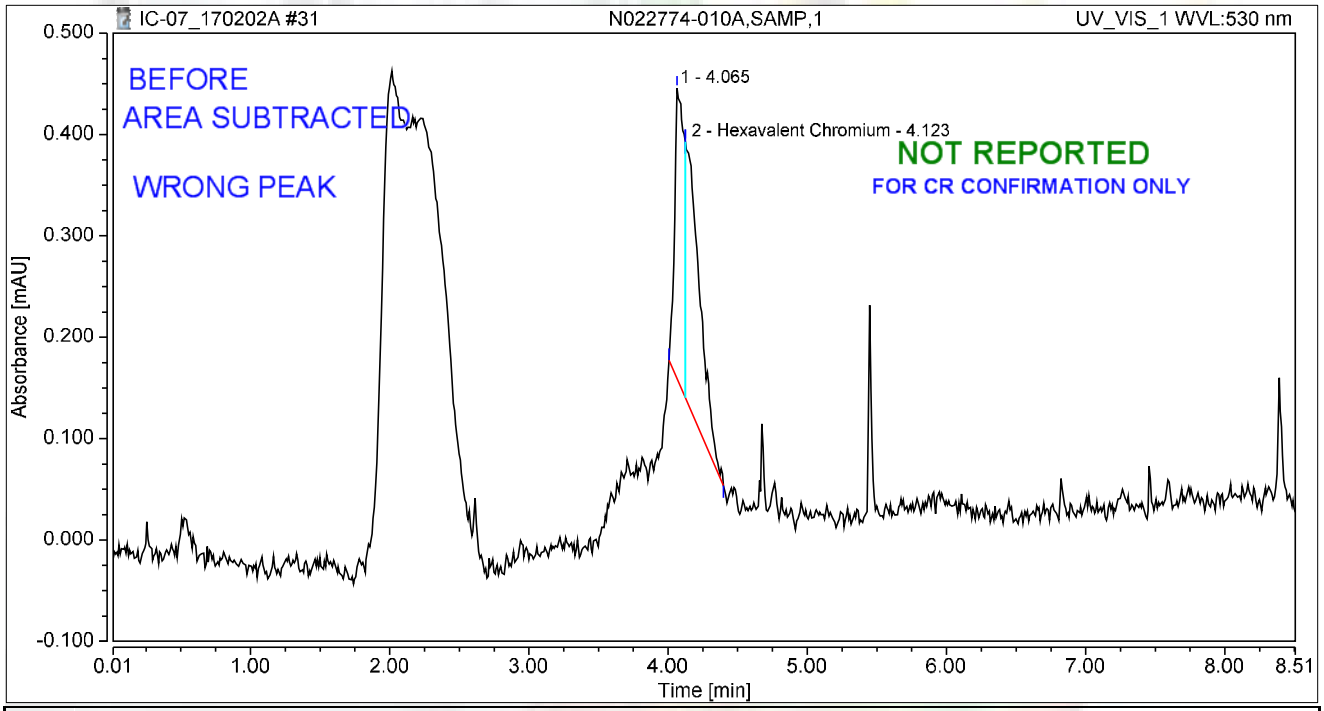
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.065	0.022	0.287	42.13	53.16	n.a.
2	Hexavalent Chromium	4.123	0.030	0.253	57.87	46.84	0.1188
Total:			**0.052**	**0.539**	**100.00**	**100.00**	

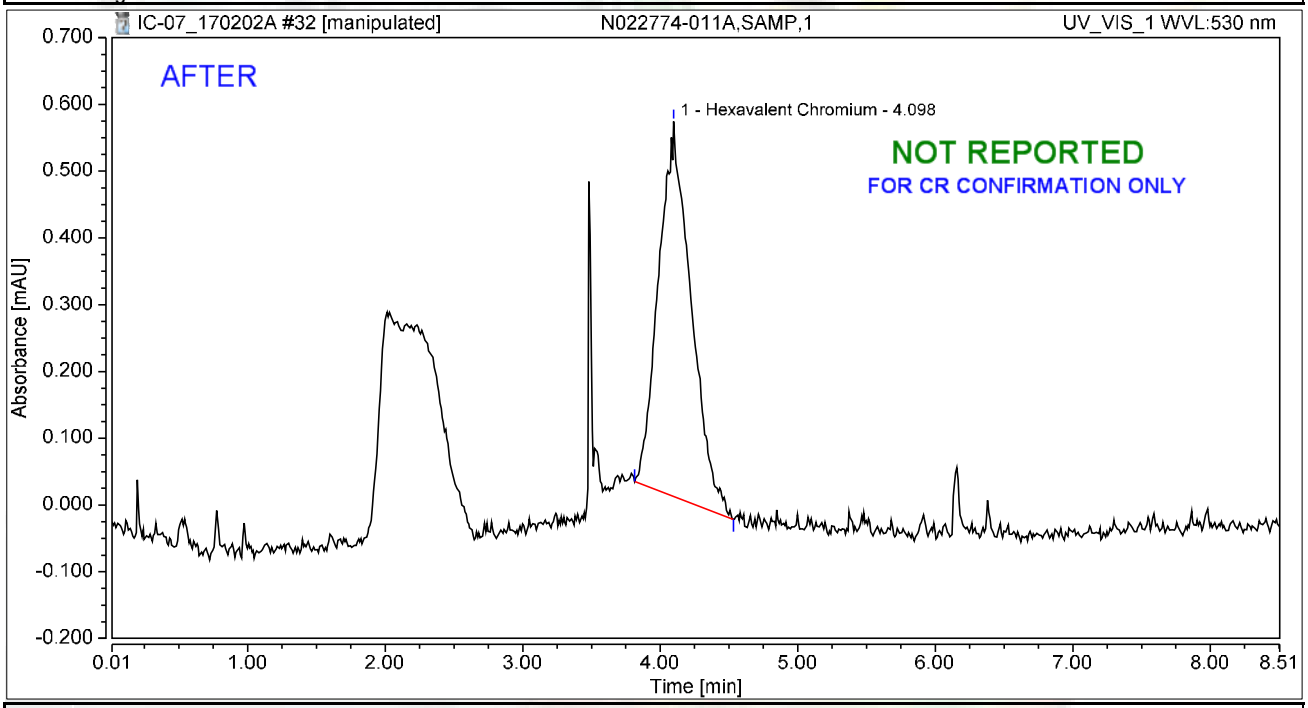
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.153	0.562	100.00	100.00	0.5998
Total:			**0.153**	**0.562**	**100.00**	**100.00**	

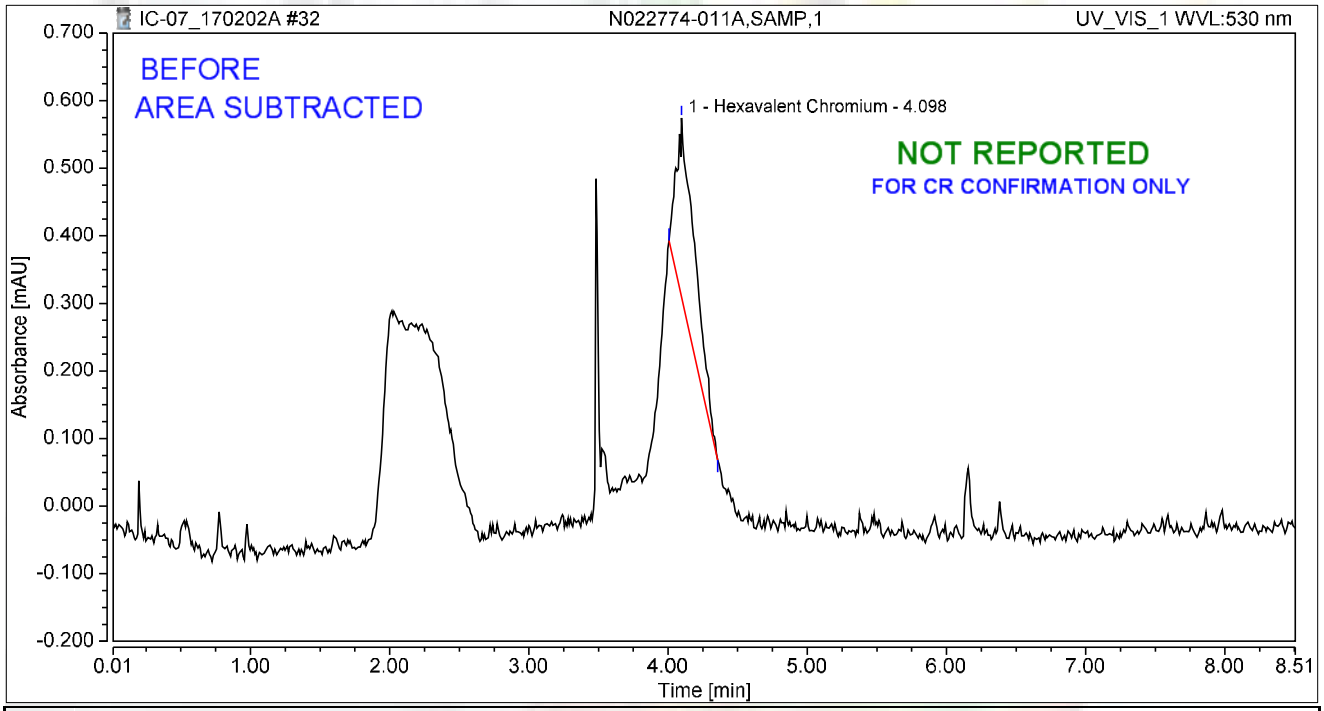
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.042	0.267	100.00	100.00	0.1646
Total:			**0.042**	**0.267**	**100.00**	**100.00**	

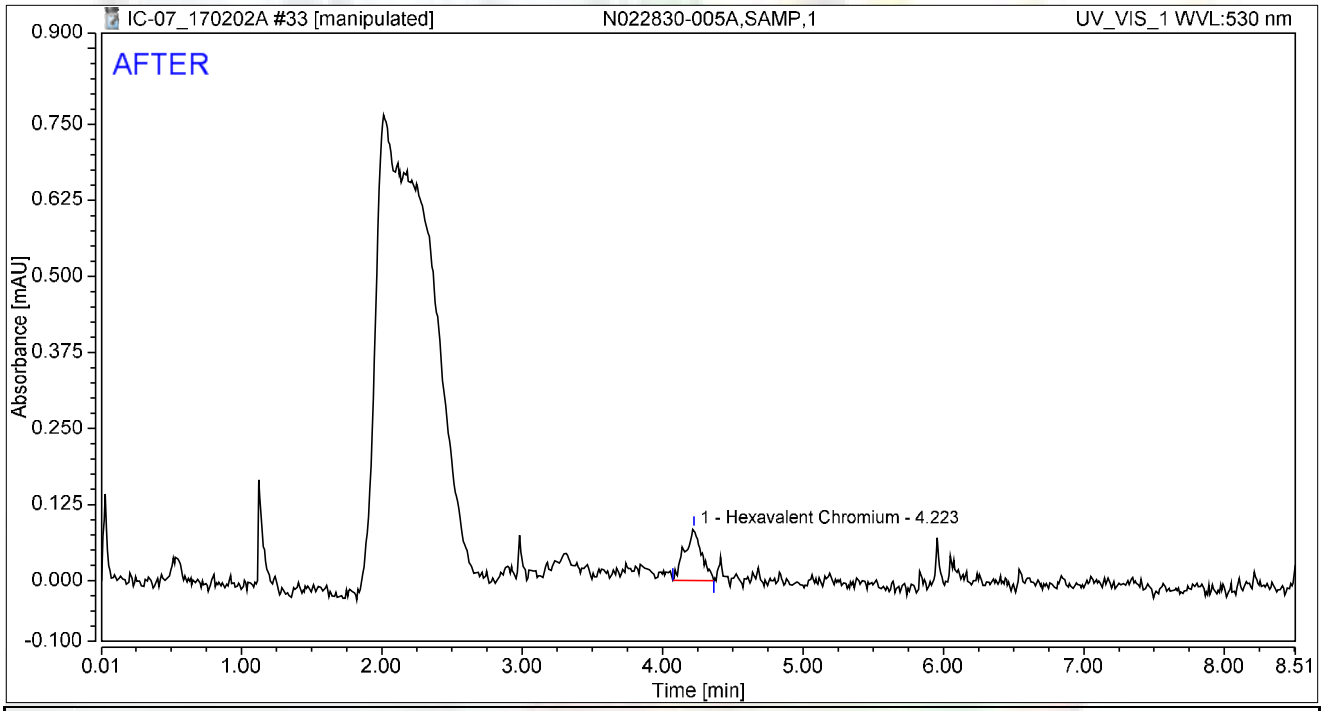
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.012	0.085	100.00	100.00	0.0460
Total:			**0.012**	**0.085**	**100.00**	**100.00**	

rba 2/6/2017

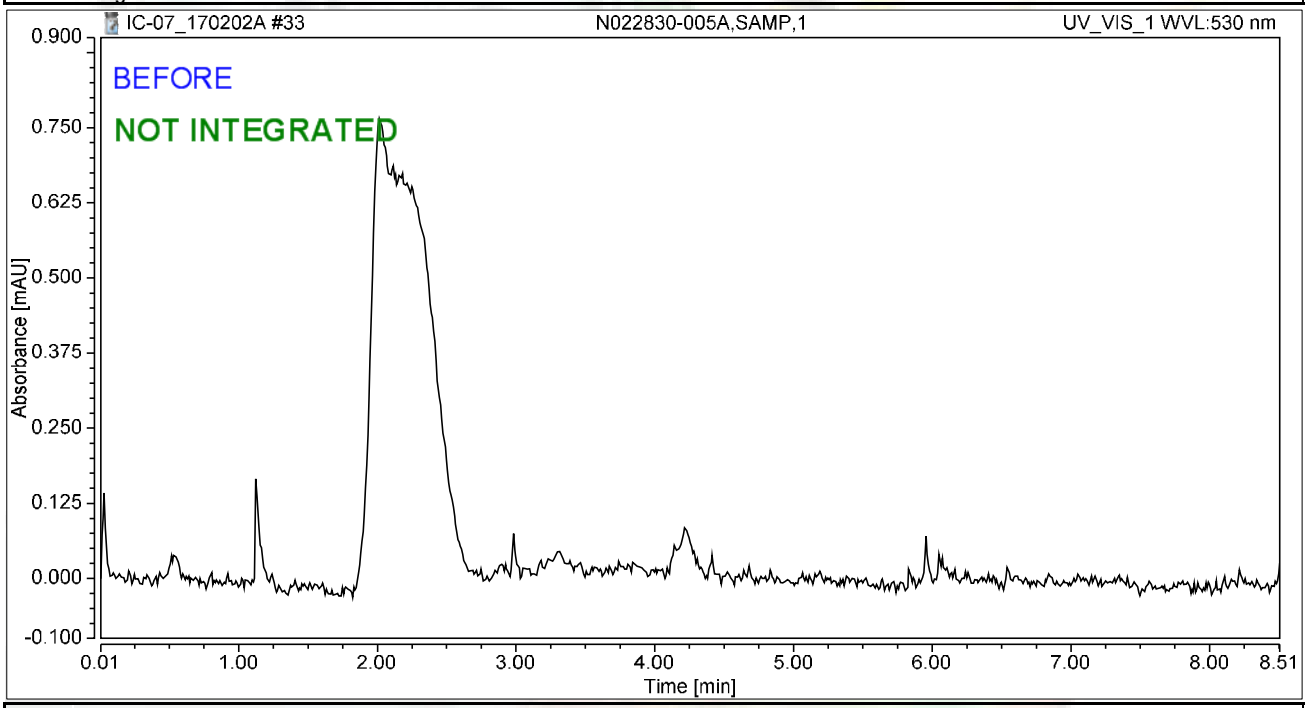
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

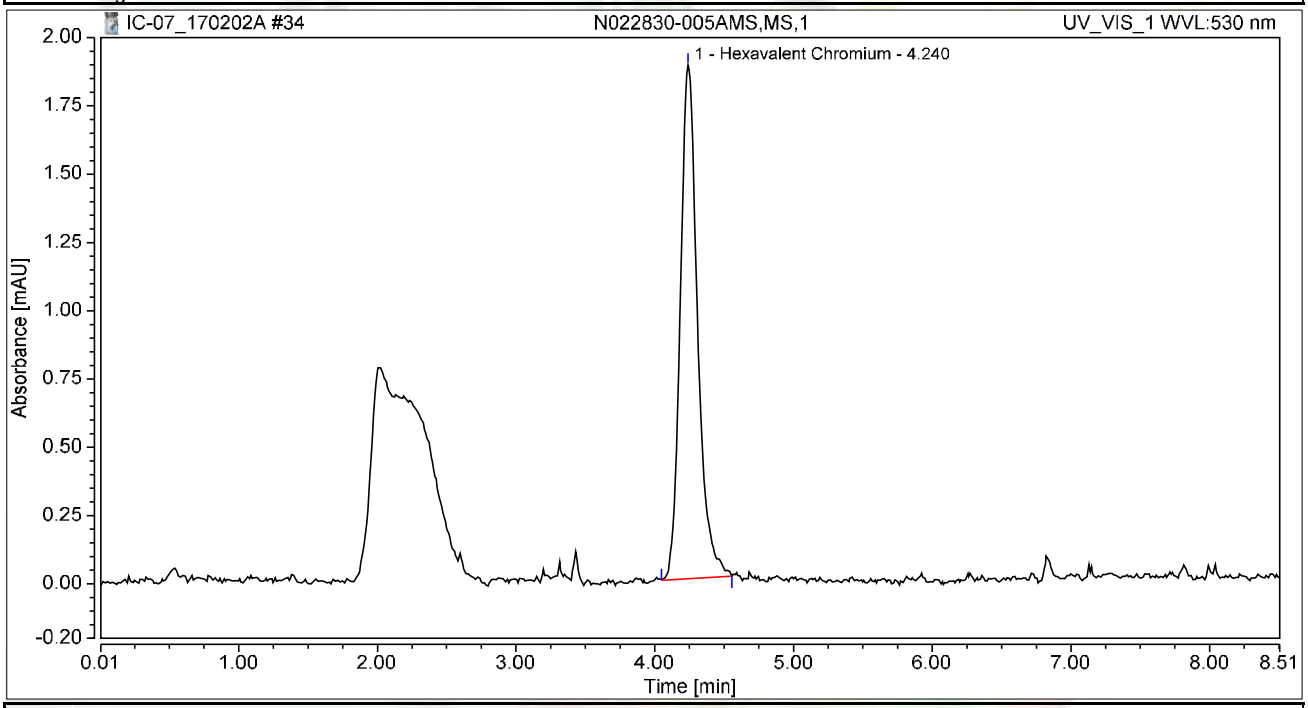
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

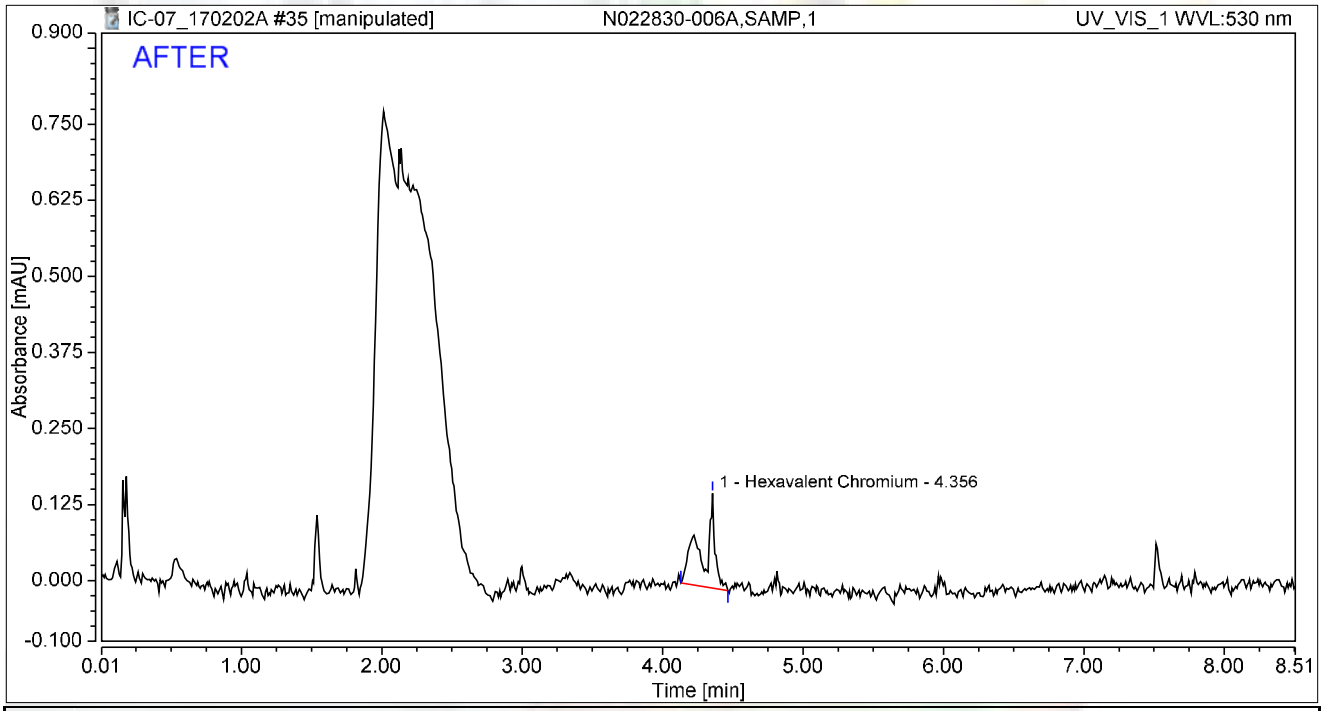
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.880	100.00	100.00	1.0603
Total:			**0.271**	**1.880**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.356	0.016	0.156	100.00	100.00	0.0609
Total:			**0.016**	**0.156**	**100.00**	**100.00**	

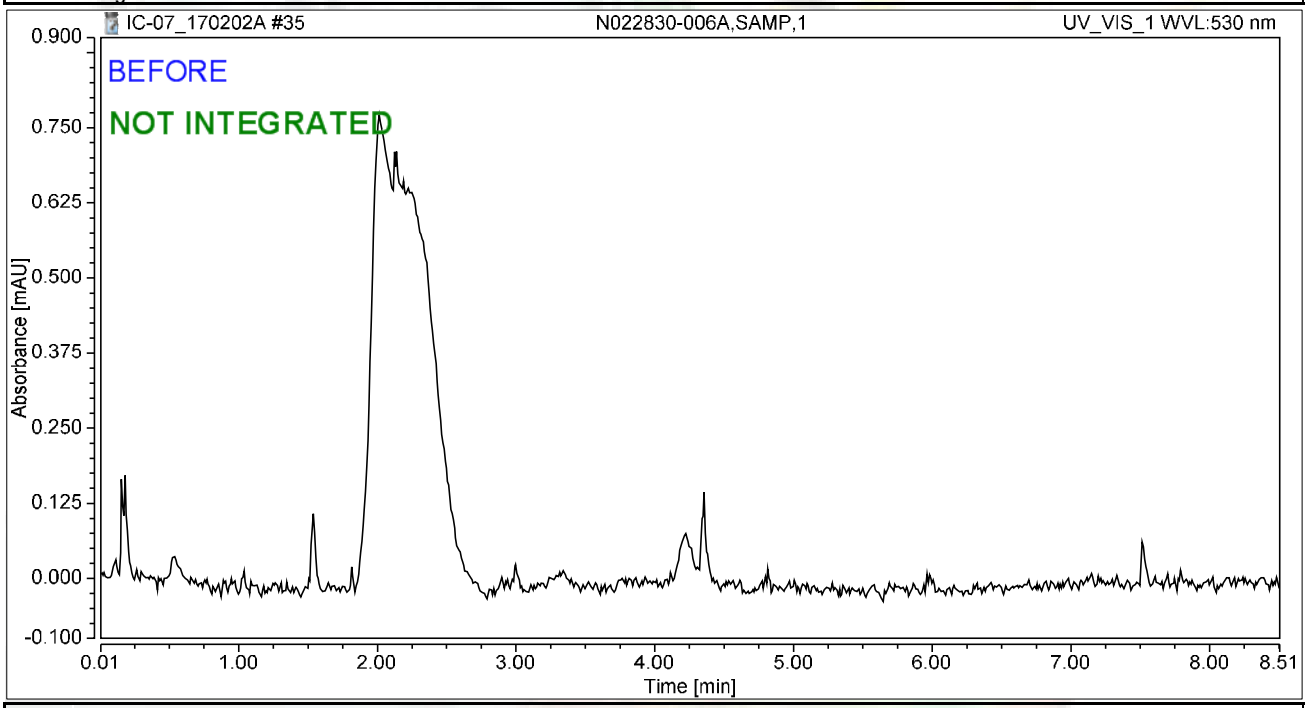
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

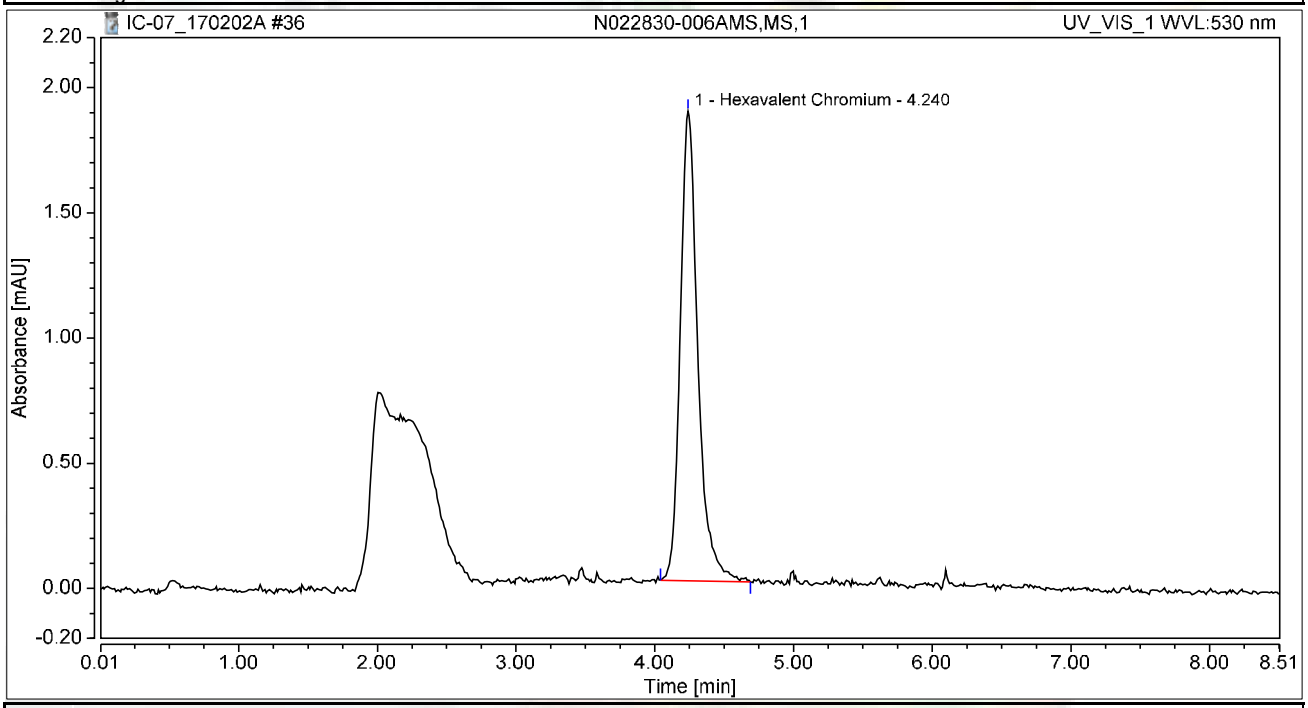
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

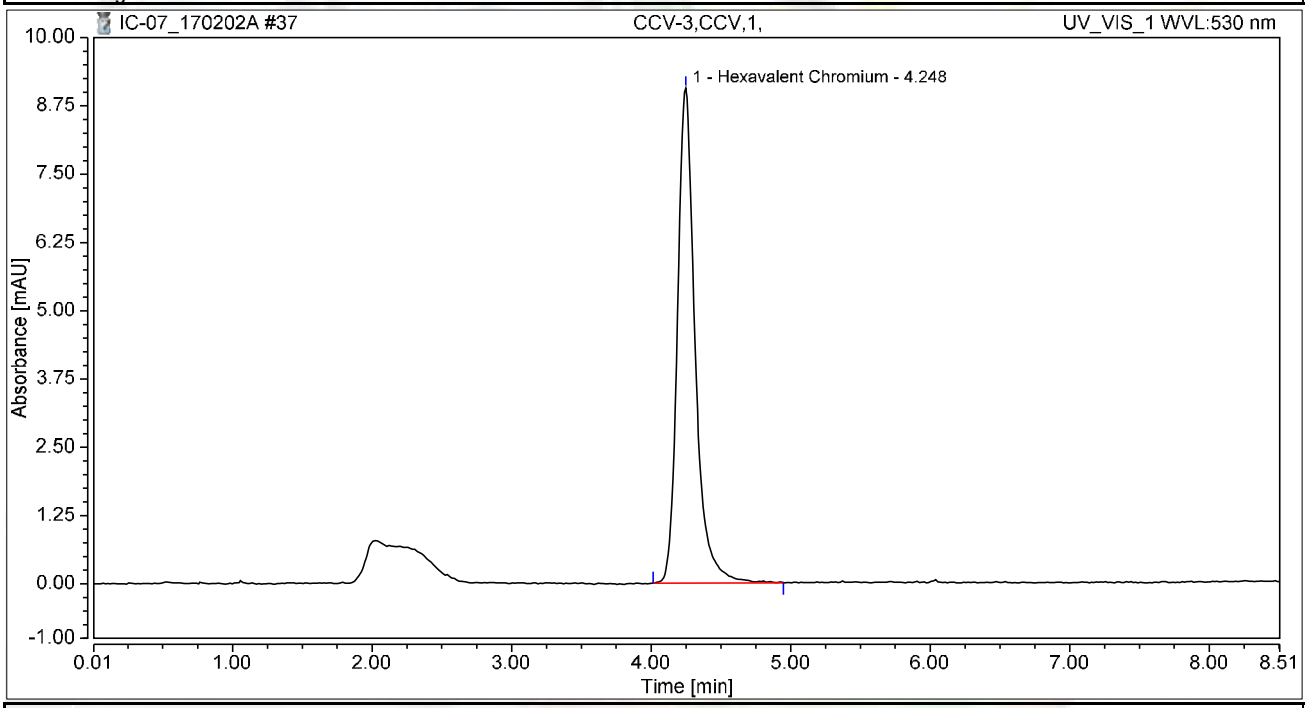
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.275	1.875	100.00	100.00	1.0772
Total:			**0.275**	**1.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

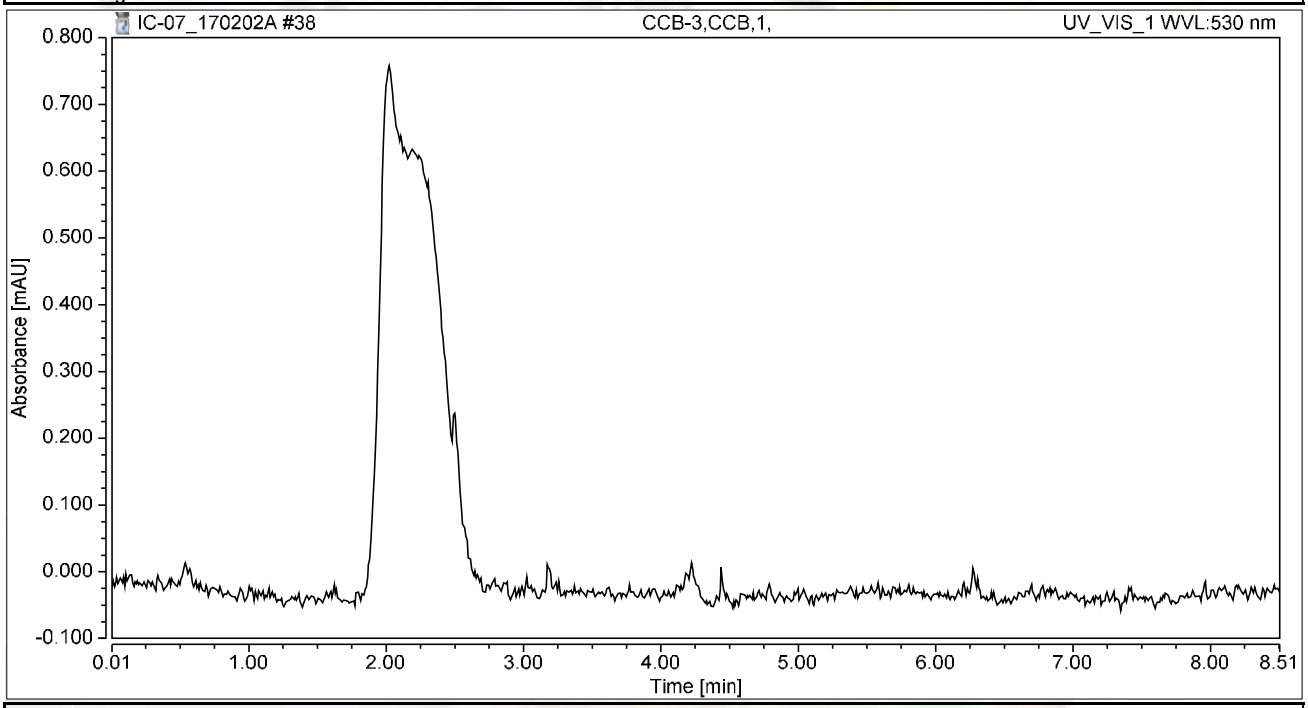
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.331	9.066	100.00	100.00	5.2052
Total:			**1.331**	**9.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

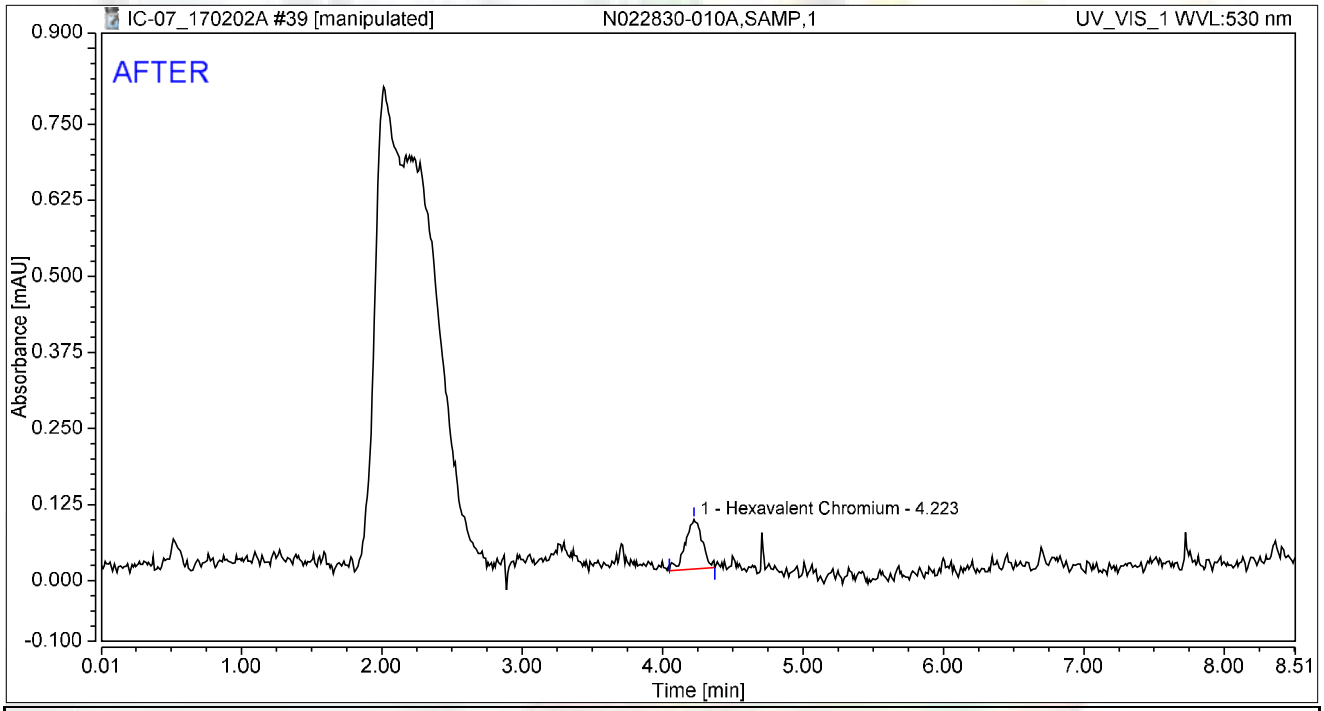
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.011	0.081	100.00	100.00	0.0443
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

Reviewed by: Nancy 2/7/2017

My first report/Integration

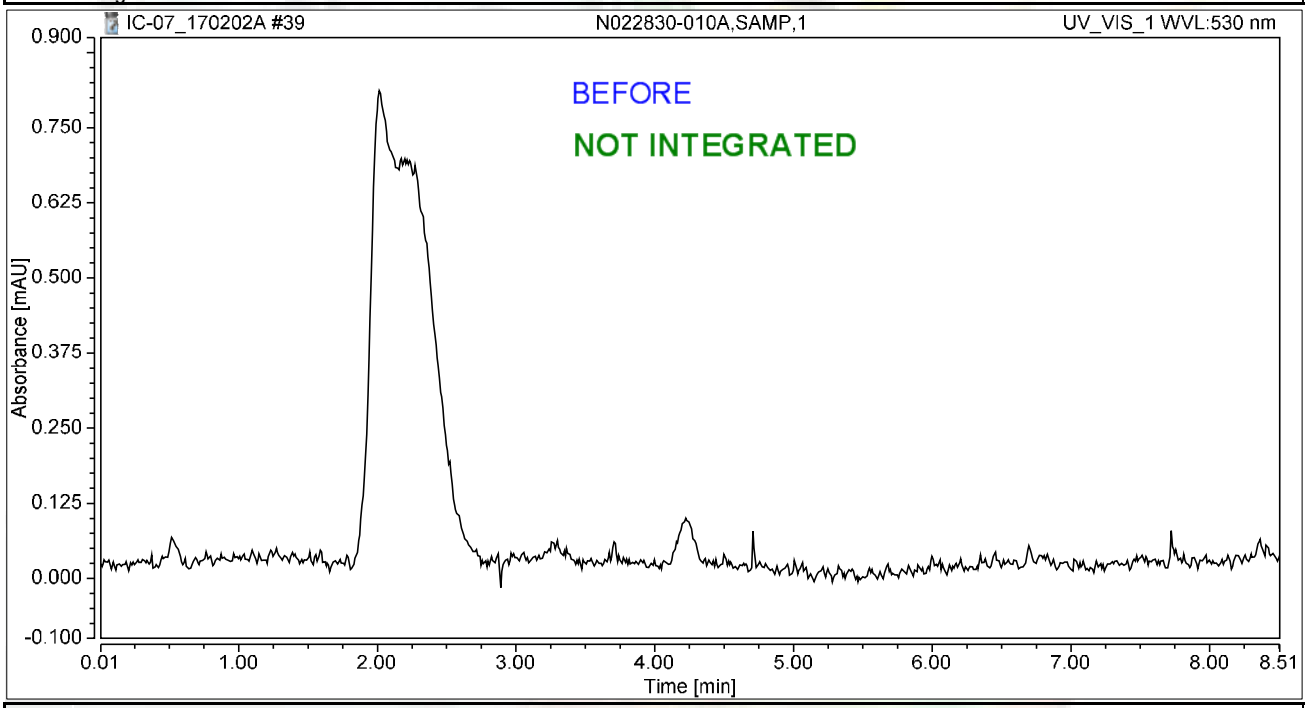
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

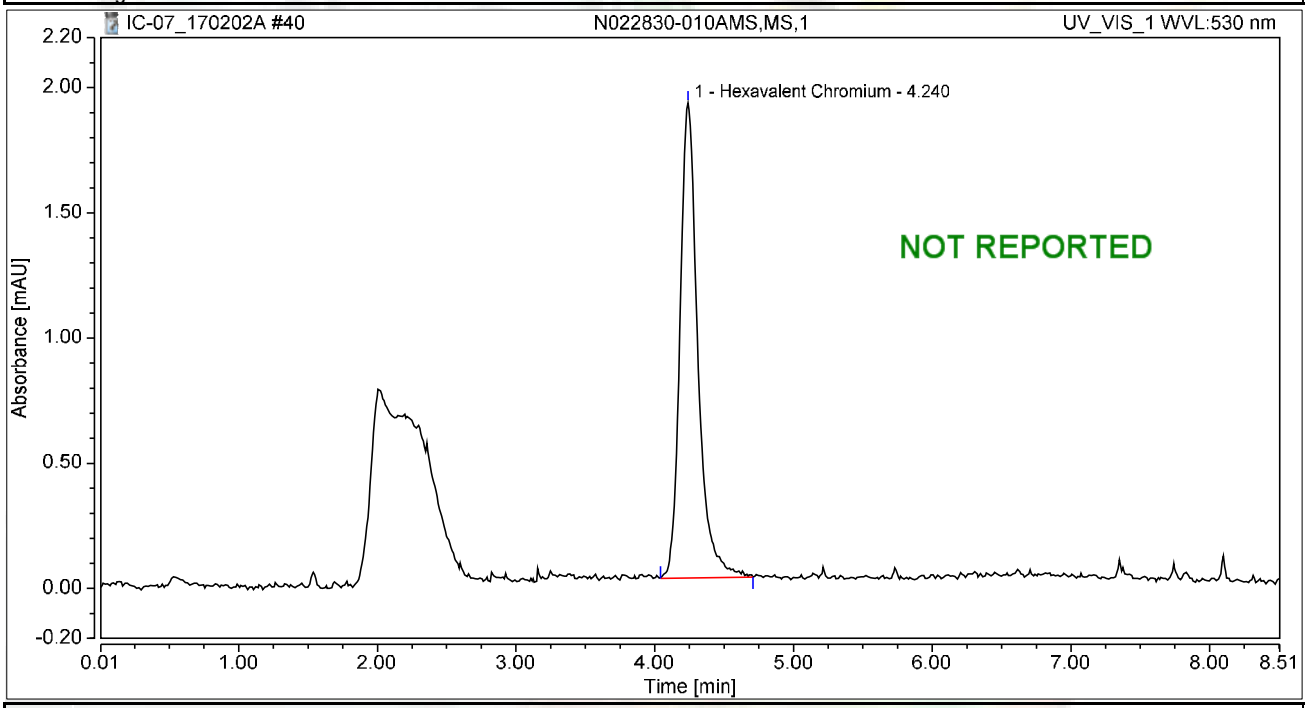
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

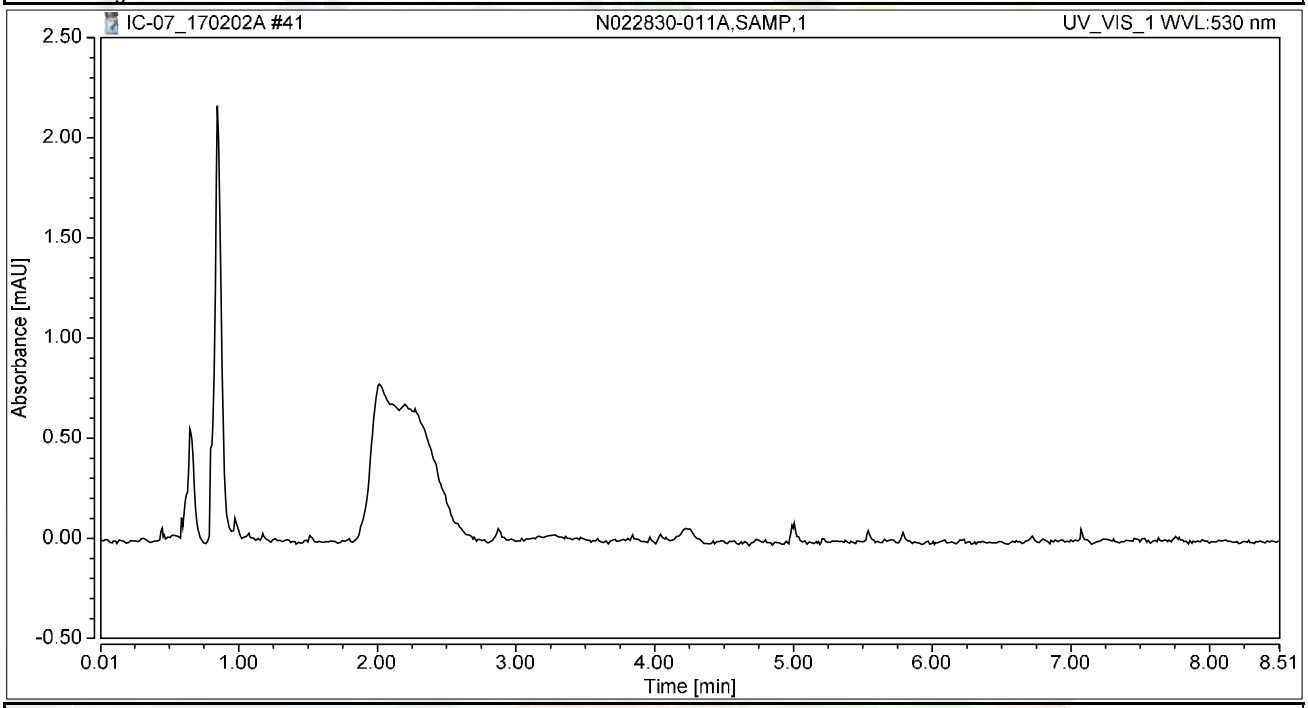
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.898	100.00	100.00	1.1031
Total:			**0.282**	**1.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

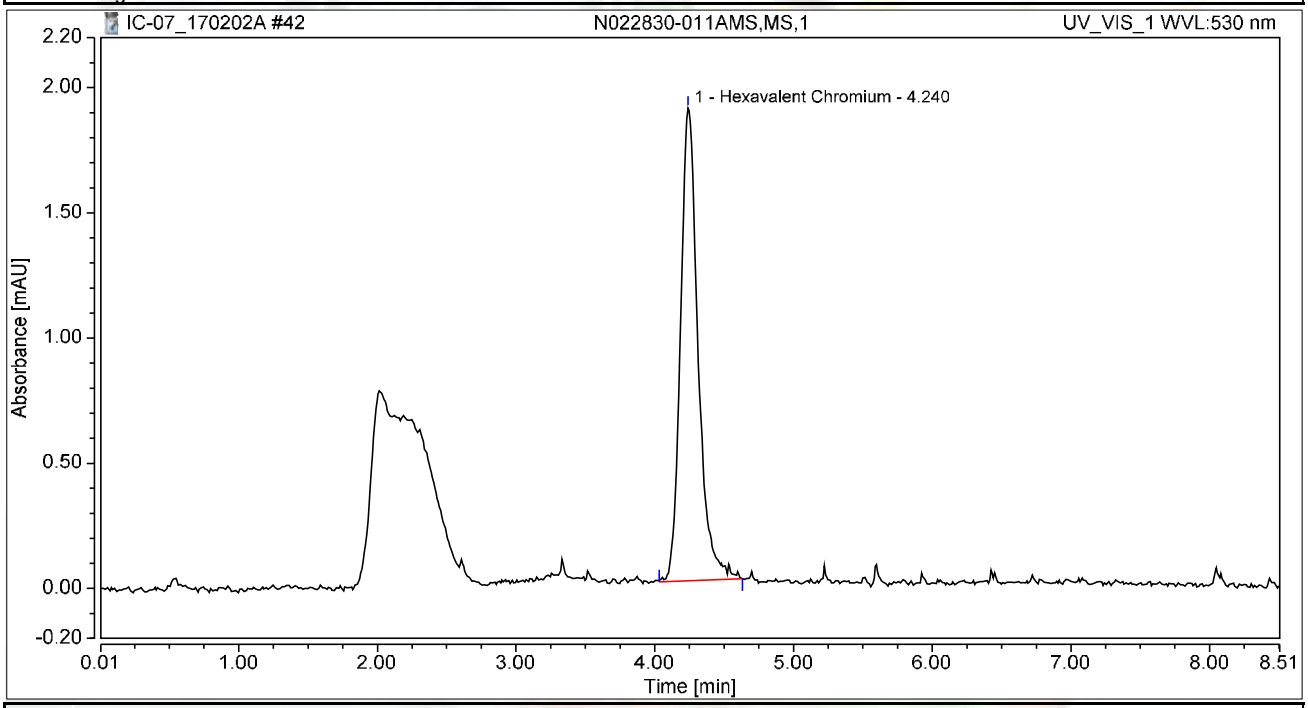
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

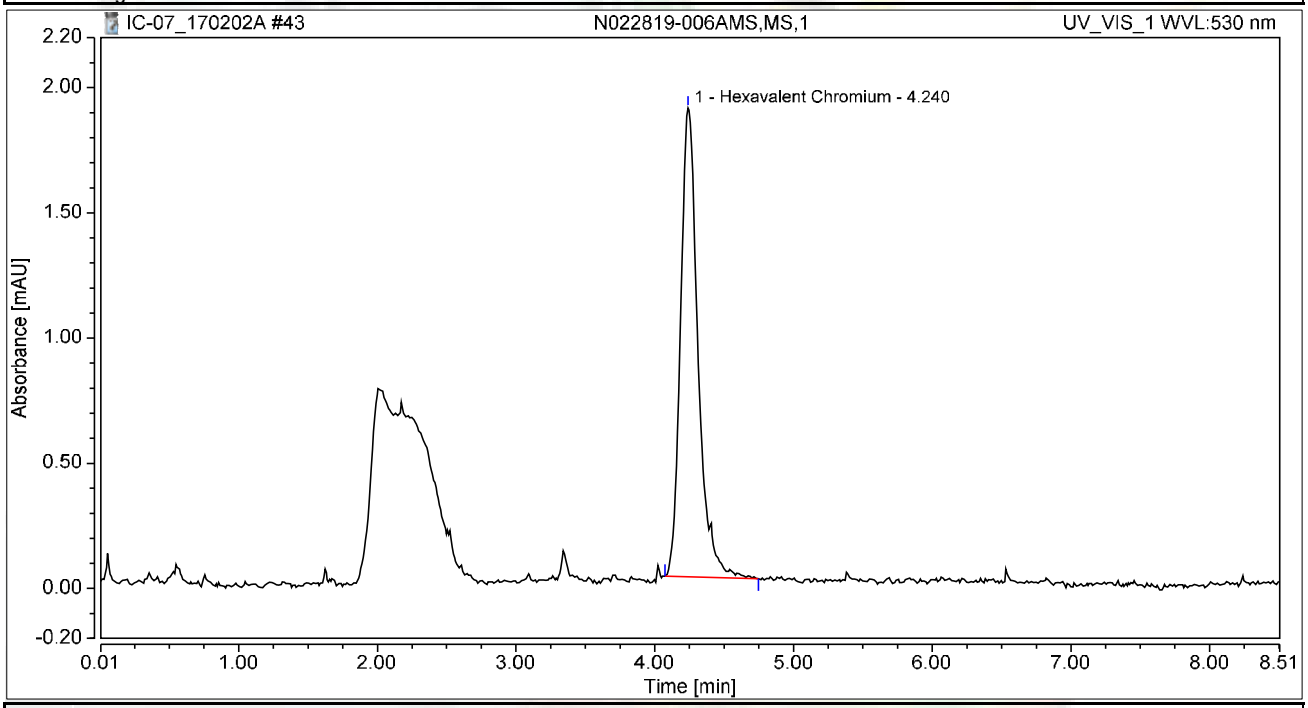
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.277	1.888	100.00	100.00	1.0848
Total:			**0.277**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

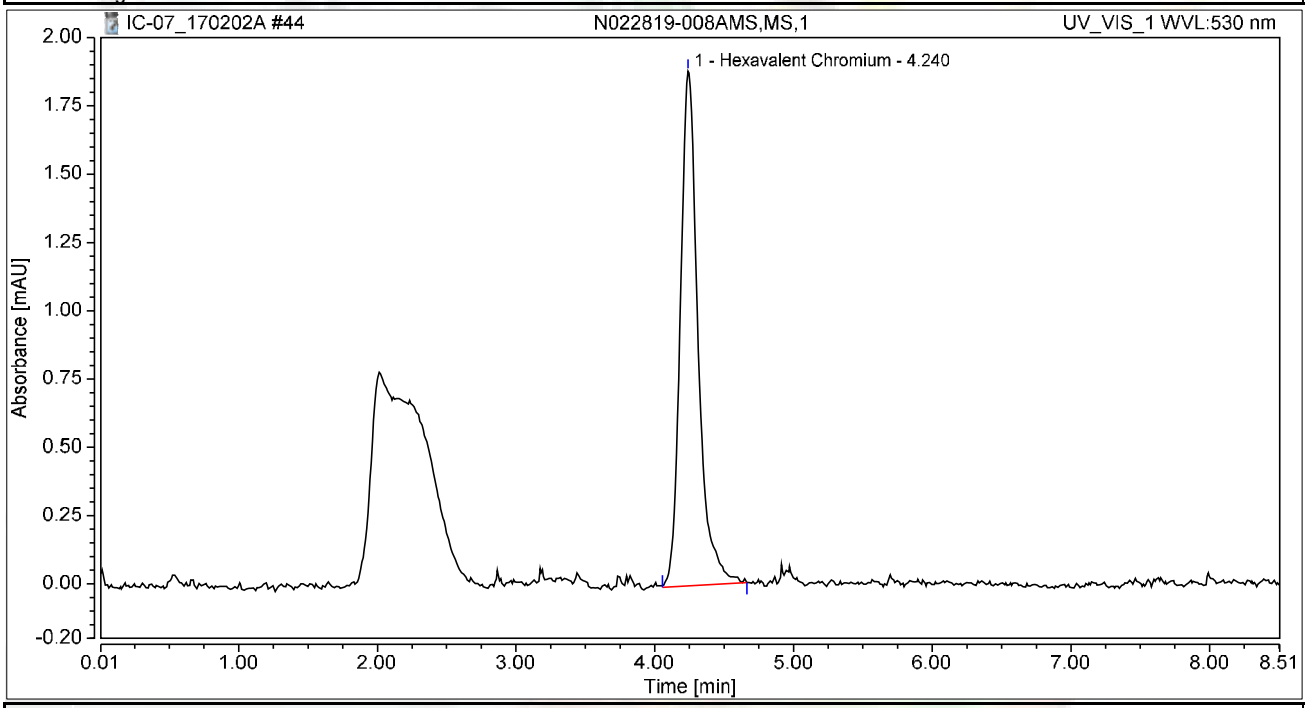
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.274	1.873	100.00	100.00	1.0705
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

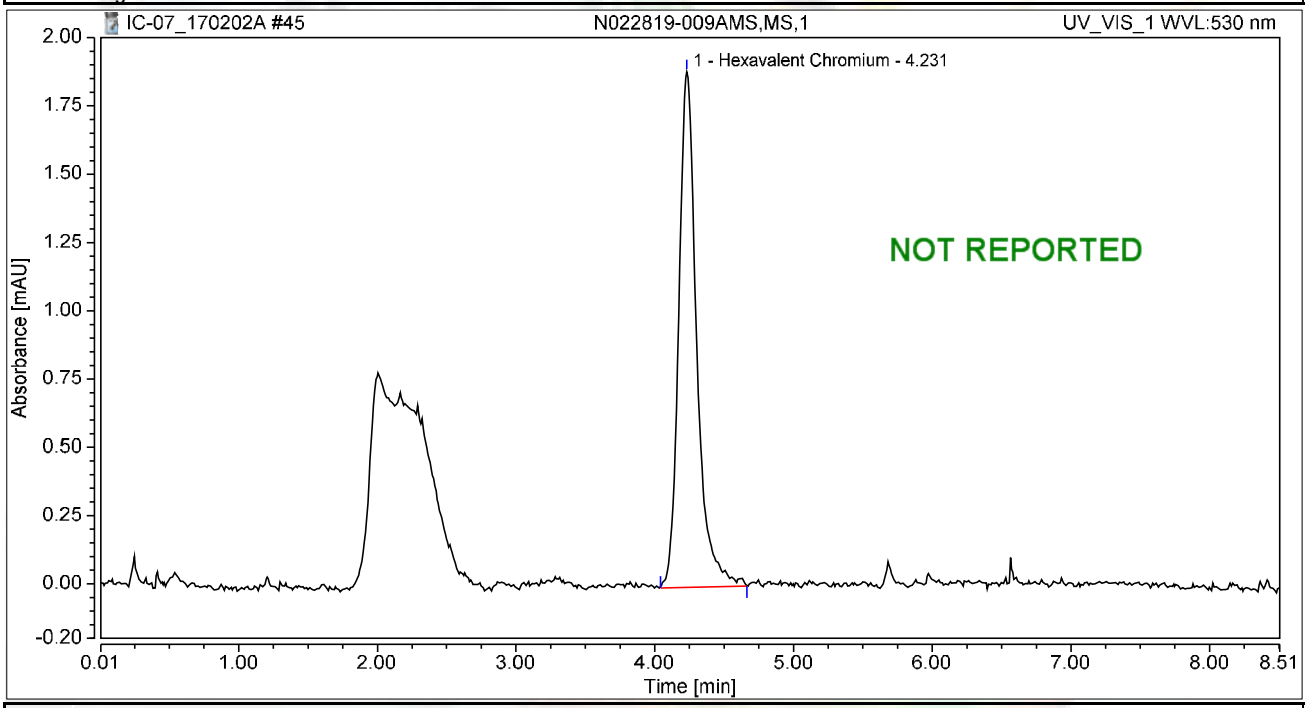
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.279	1.884	100.00	100.00	1.0899
Total:			**0.279**	**1.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

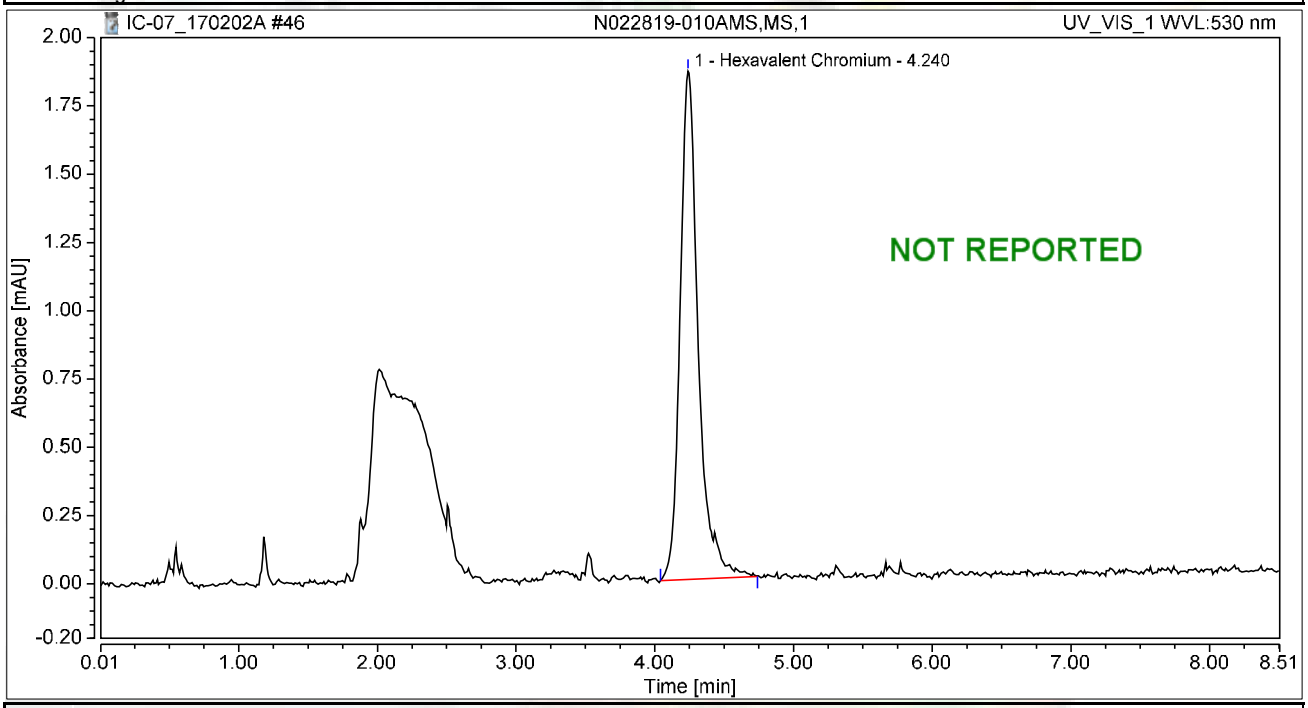
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.283	1.888	100.00	100.00	1.1067
Total:			**0.283**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

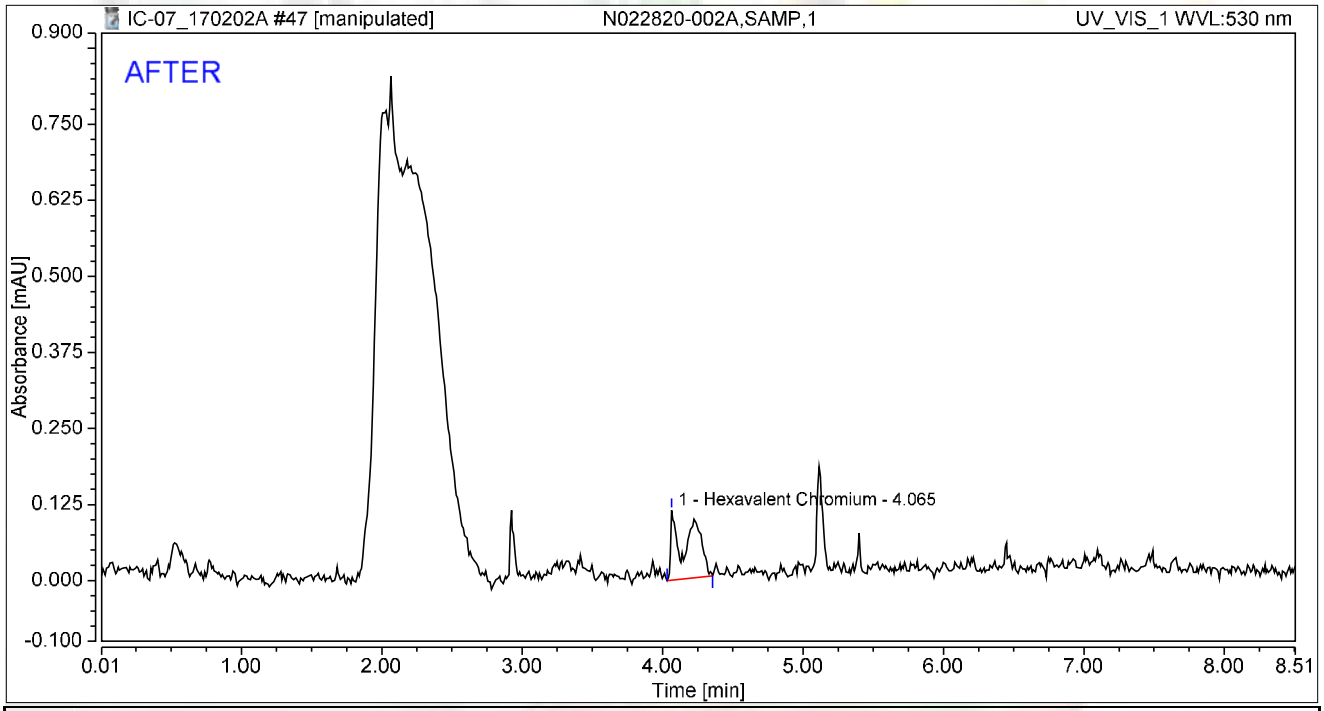
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.861	100.00	100.00	1.1013
Total:			**0.282**	**1.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.017	0.115	100.00	100.00	0.0674
Total:			**0.017**	**0.115**	**100.00**	**100.00**	

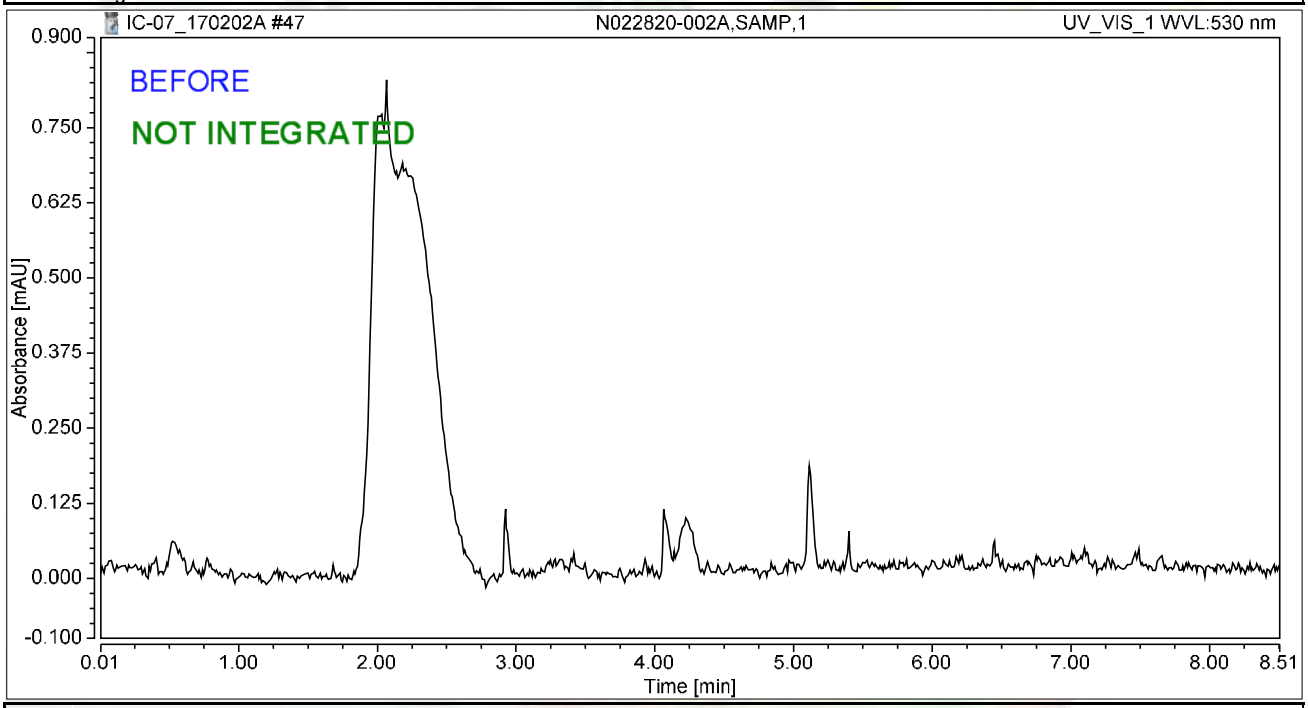
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

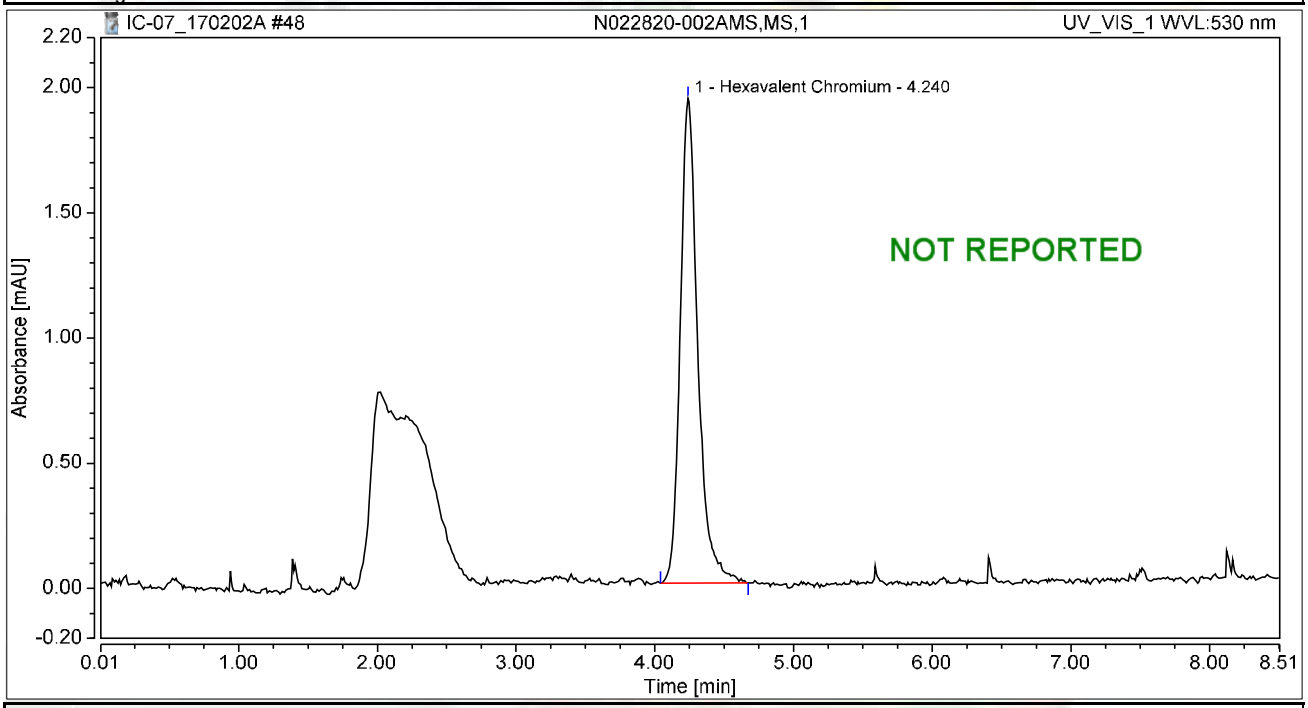
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

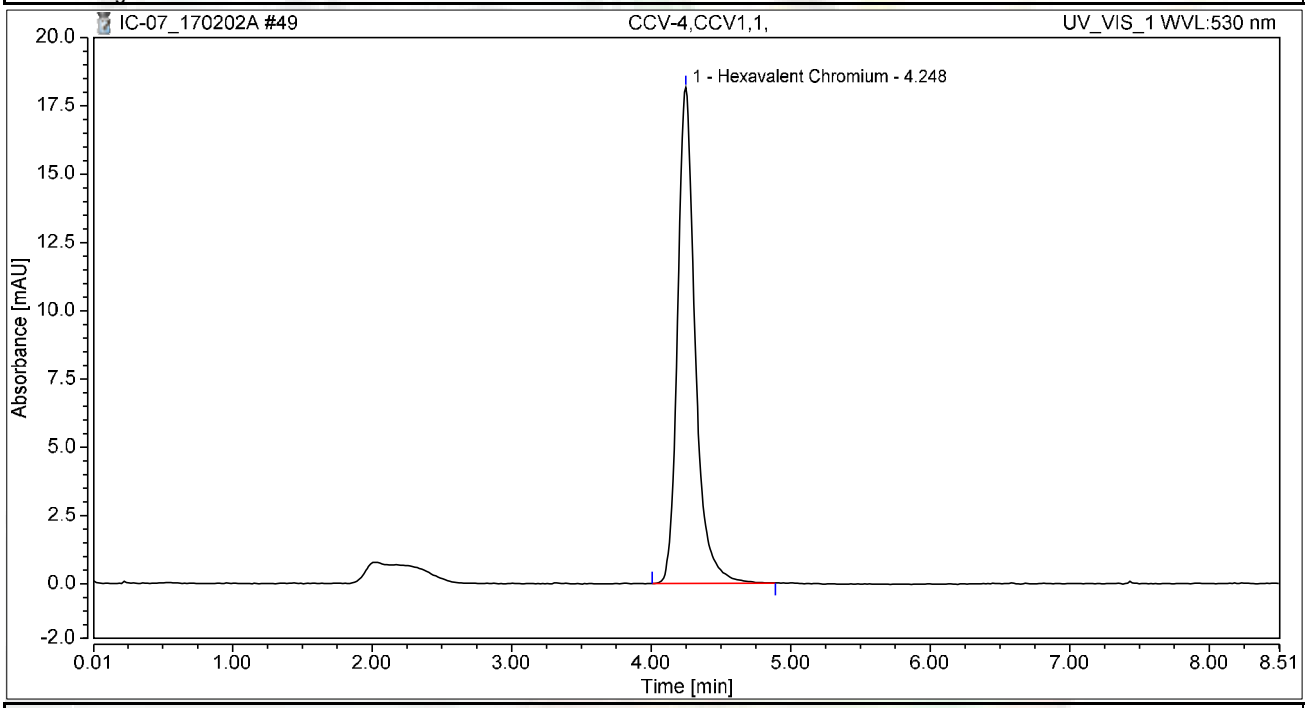
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.284	1.937	100.00	100.00	1.1103
Total:			**0.284**	**1.937**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

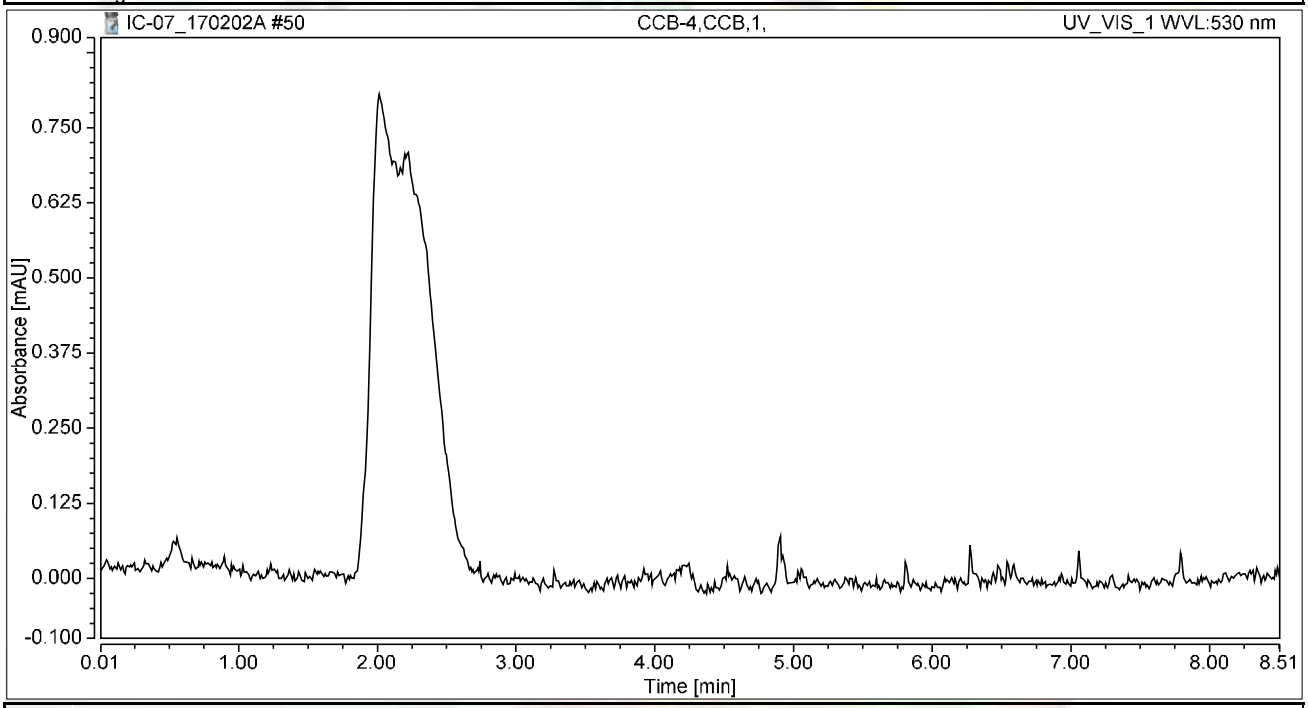
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.658	18.158	100.00	100.00	10.3972
Total:			**2.658**	**18.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

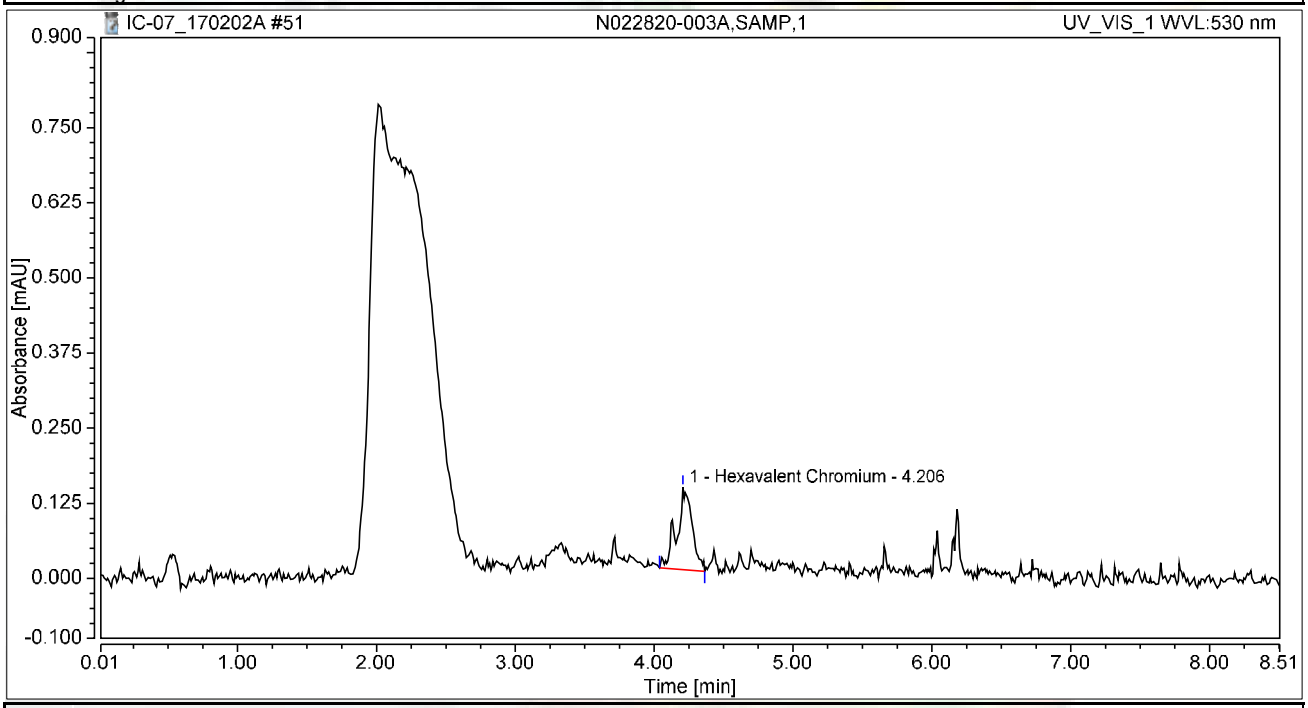
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

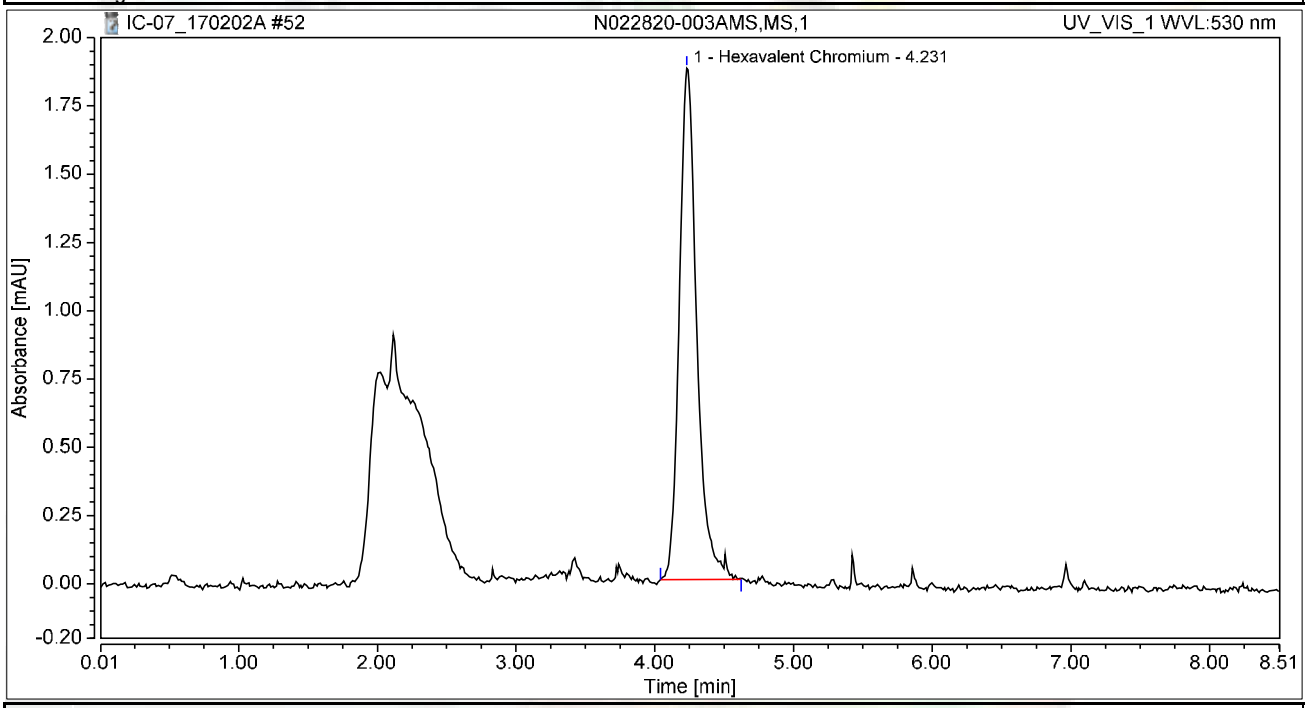
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.017	0.137	100.00	100.00	0.0683
Total:			**0.017**	**0.137**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

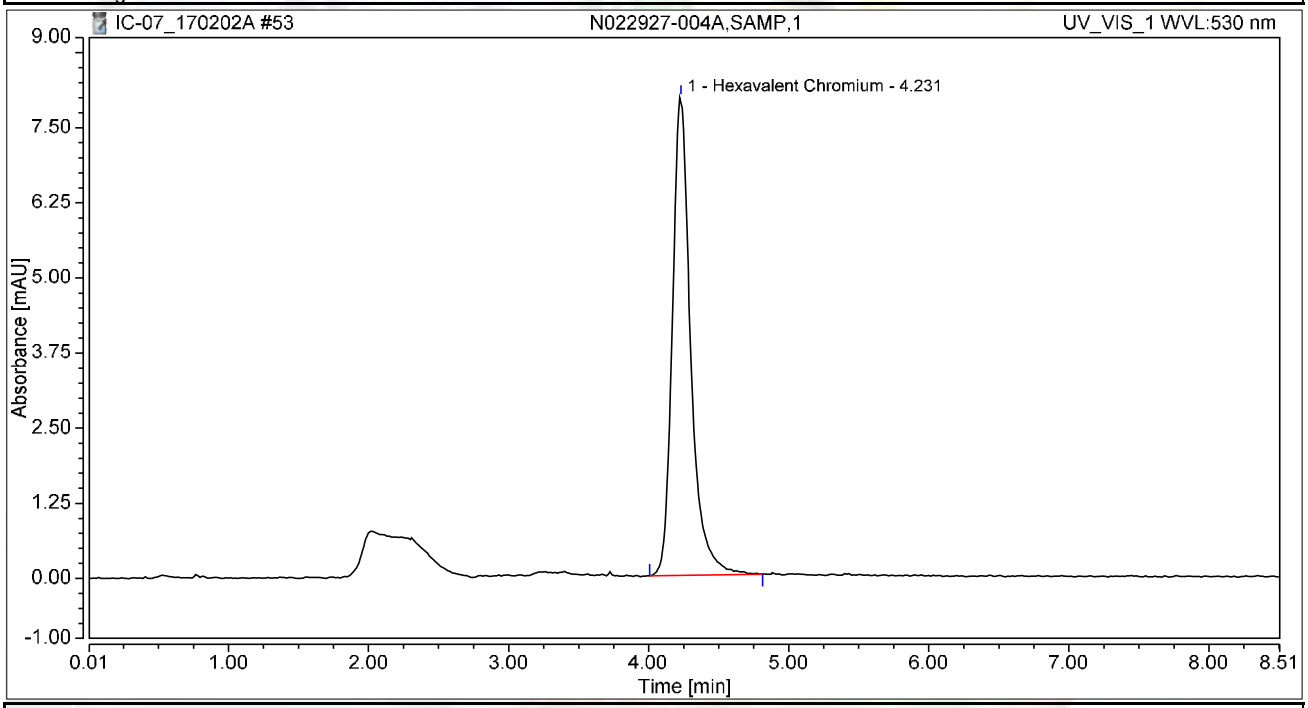
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.274	1.873	100.00	100.00	1.0706
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

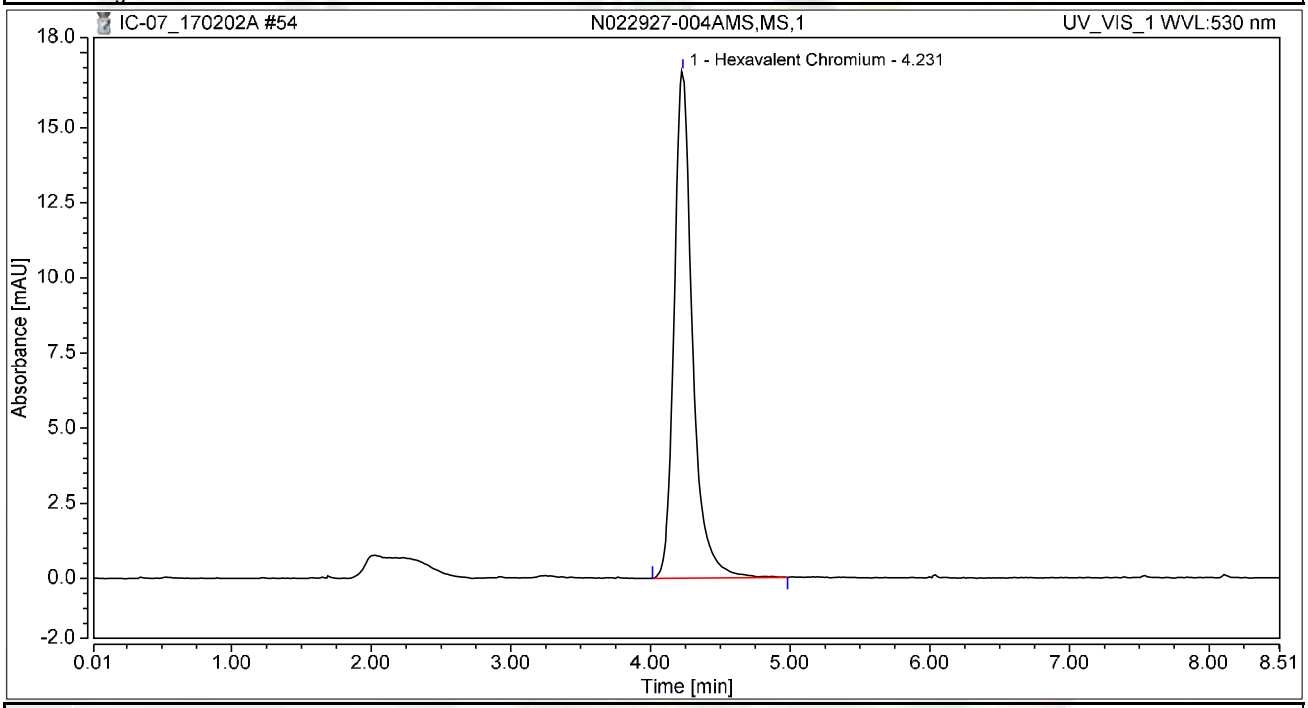
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.209	7.958	100.00	100.00	4.7282
Total:			**1.209**	**7.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

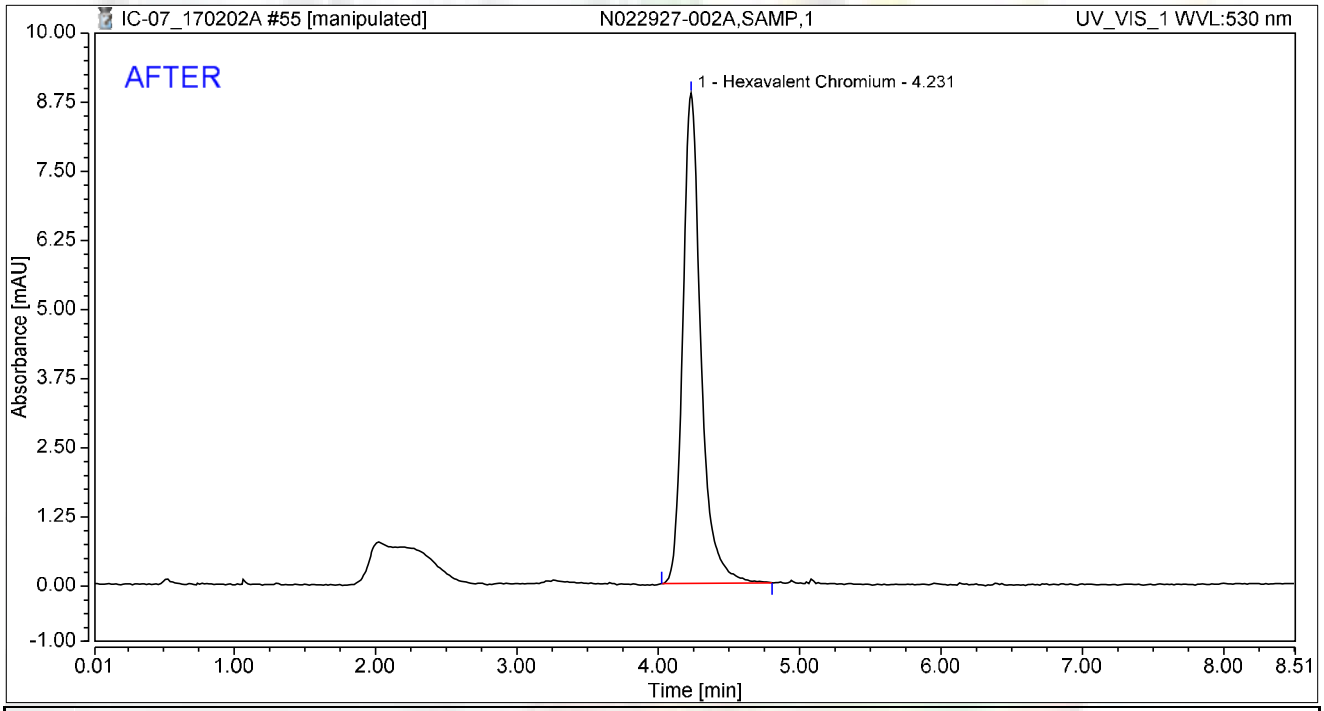
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.569	16.873	100.00	100.00	10.0495
Total:			**2.569**	**16.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.317	8.864	100.00	100.00	5.1516
Total:			**1.317**	**8.864**	**100.00**	**100.00**	

rba 2/6/2017

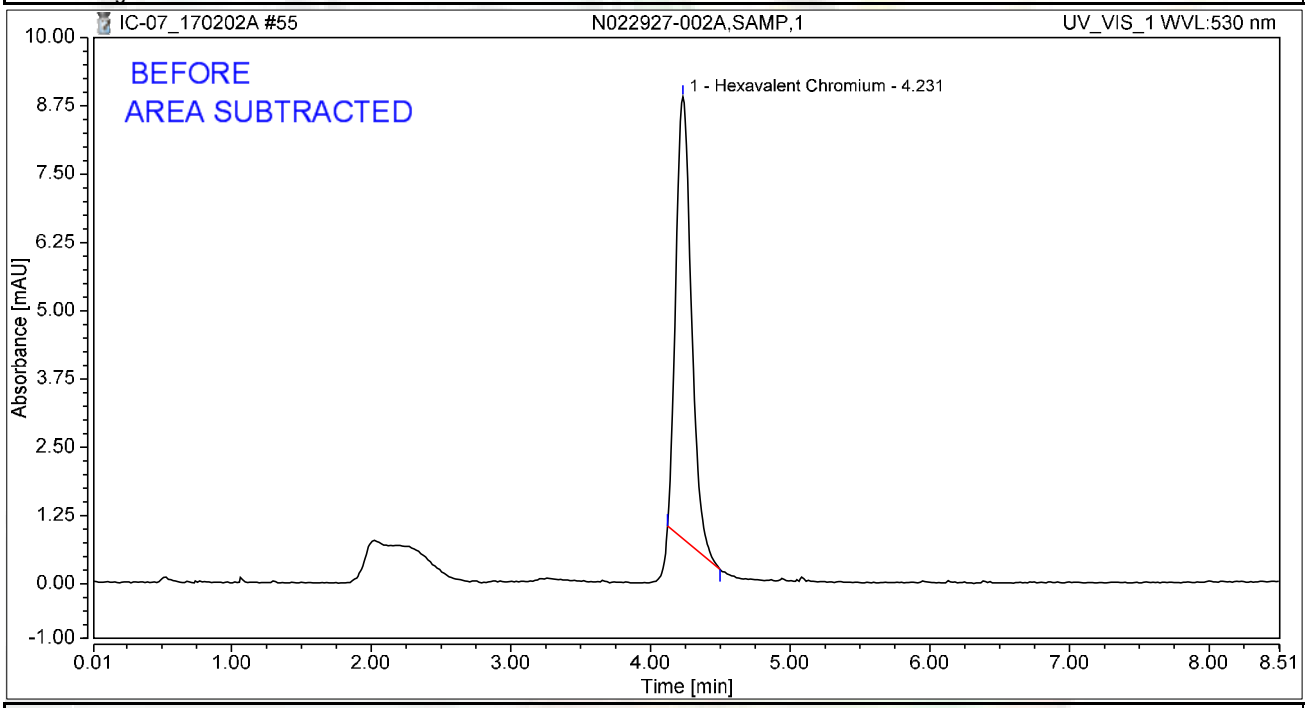
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.046	8.082	100.00	100.00	4.0910
Total:			**1.046**	**8.082**	**100.00**	**100.00**	

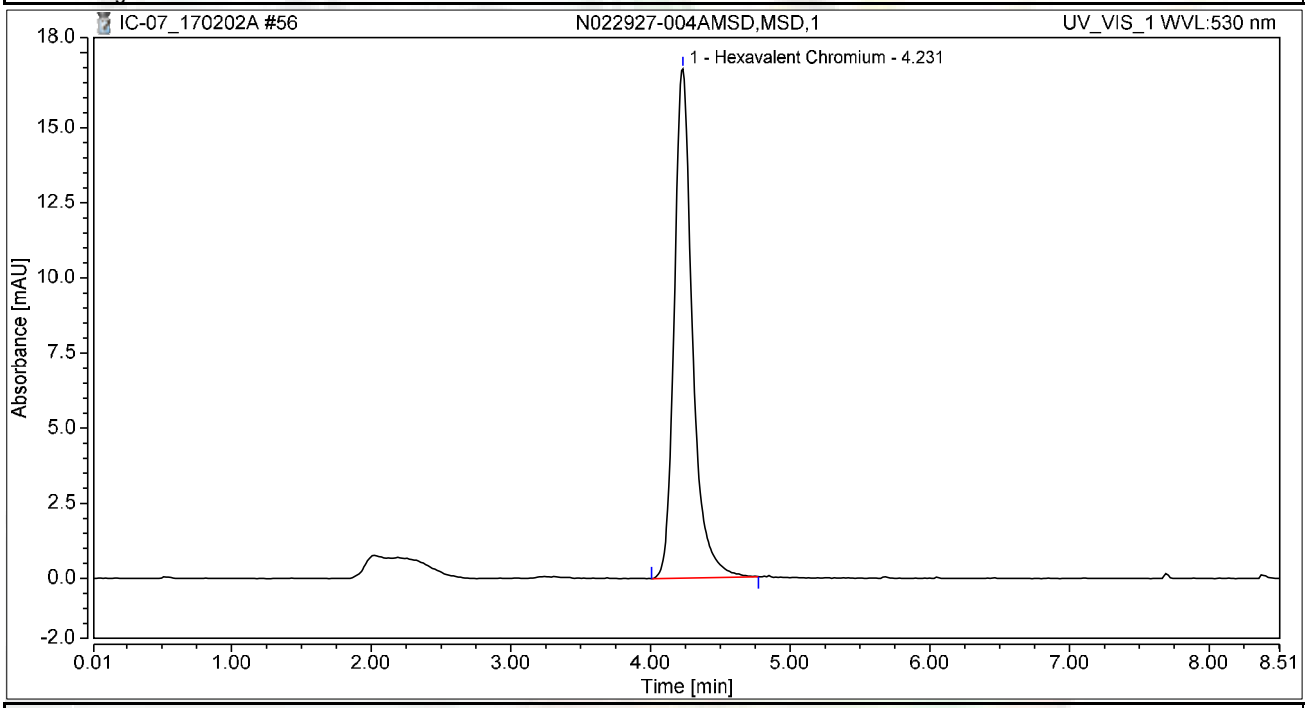
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

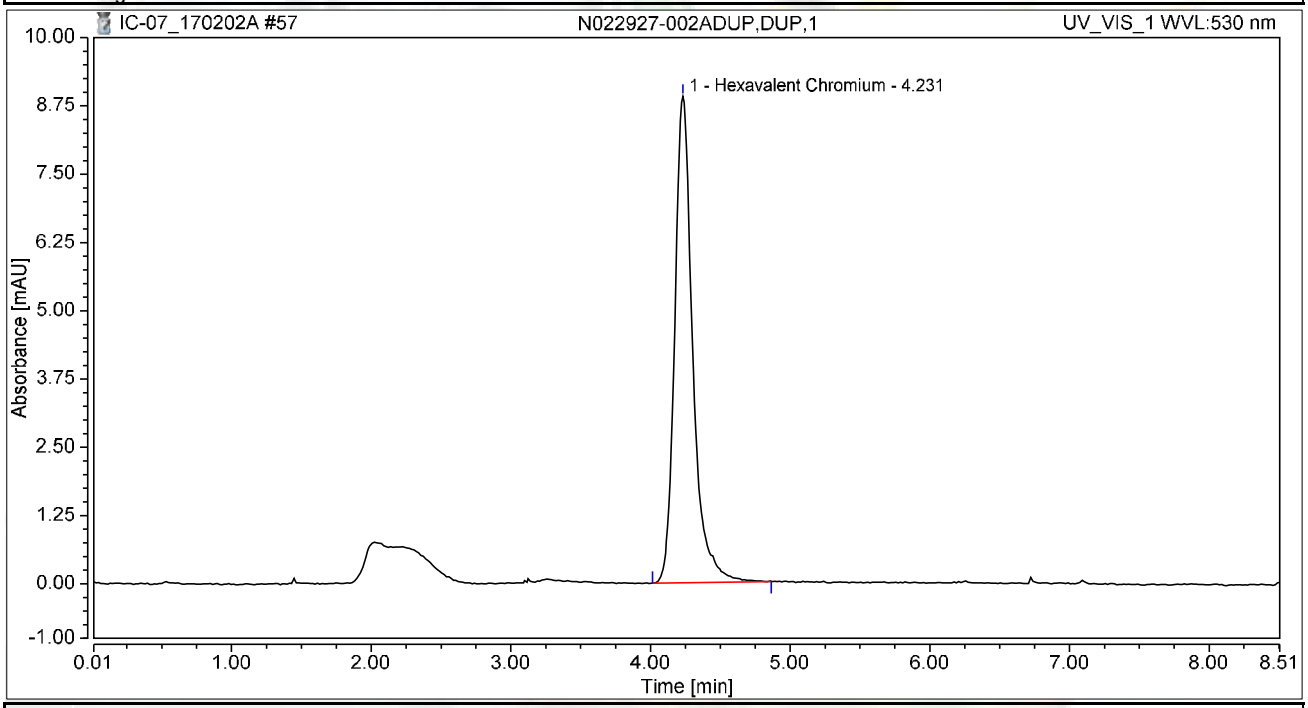
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.566	16.959	100.00	100.00	10.0366
Total:			**2.566**	**16.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

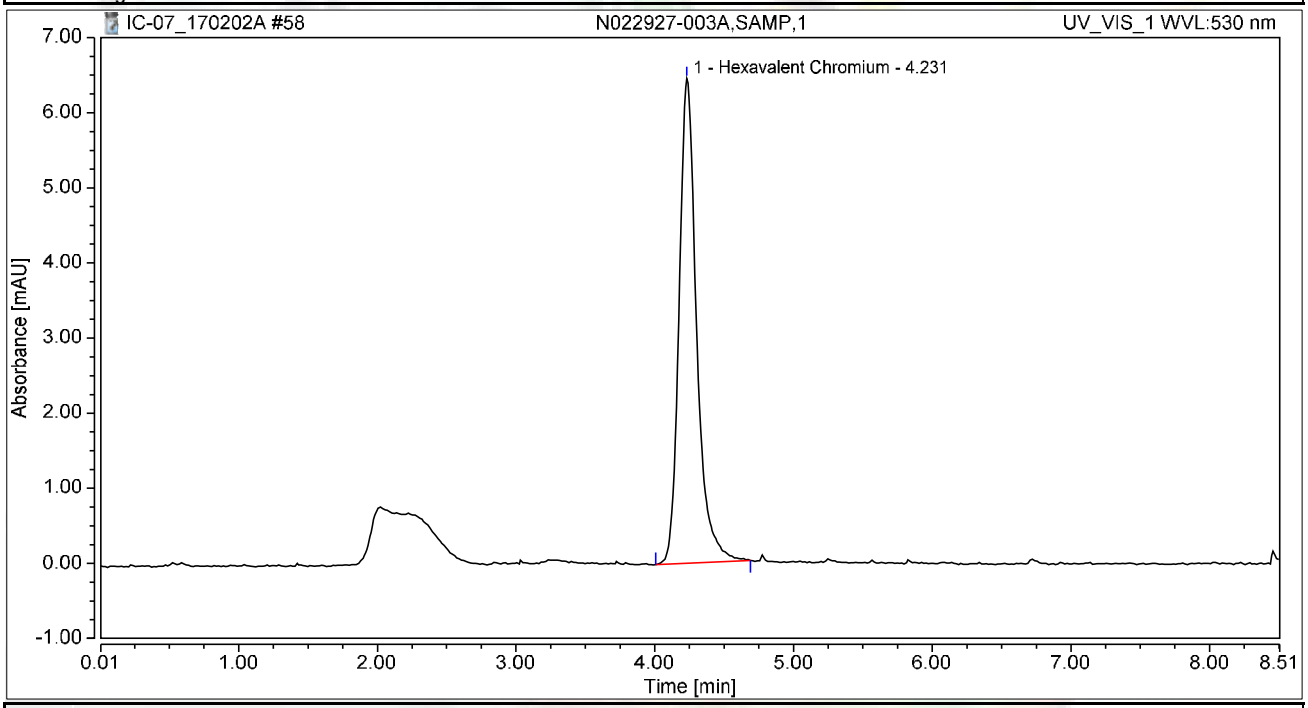
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.329	8.908	100.00	100.00	5.1999
Total:			**1.329**	**8.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

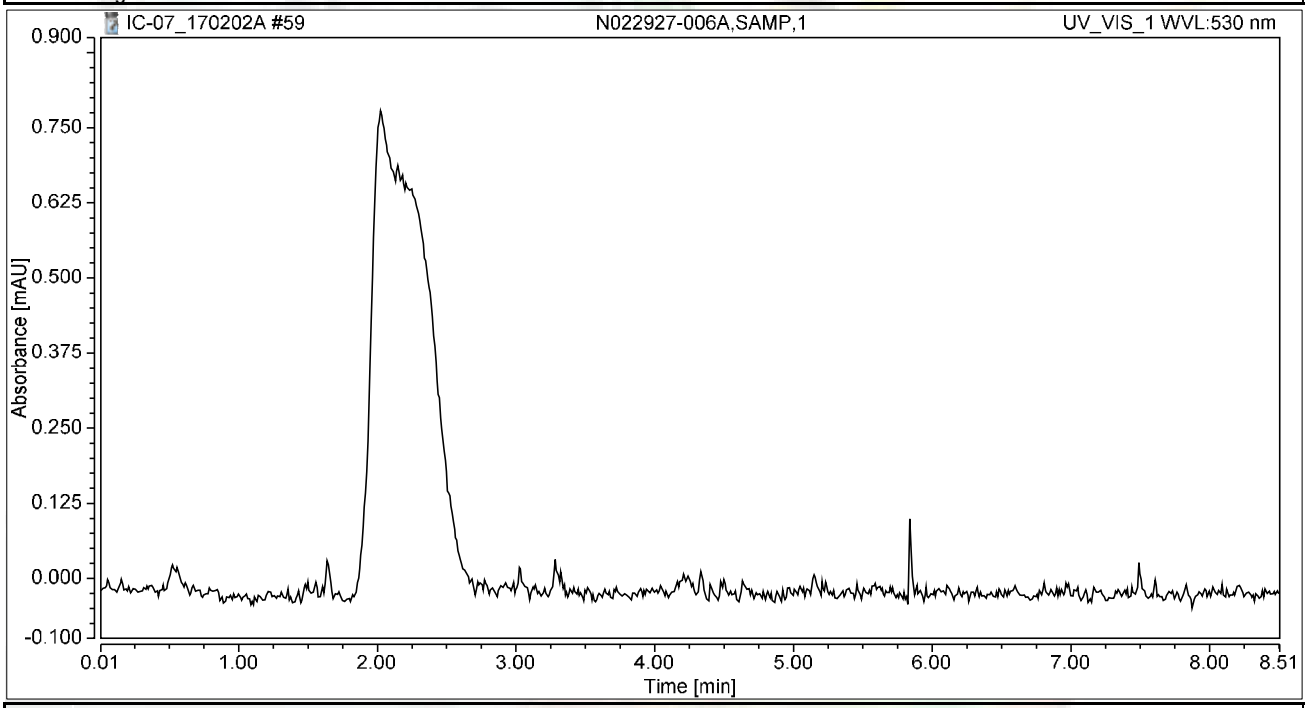
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.942	6.451	100.00	100.00	3.6856
Total:			**0.942**	**6.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

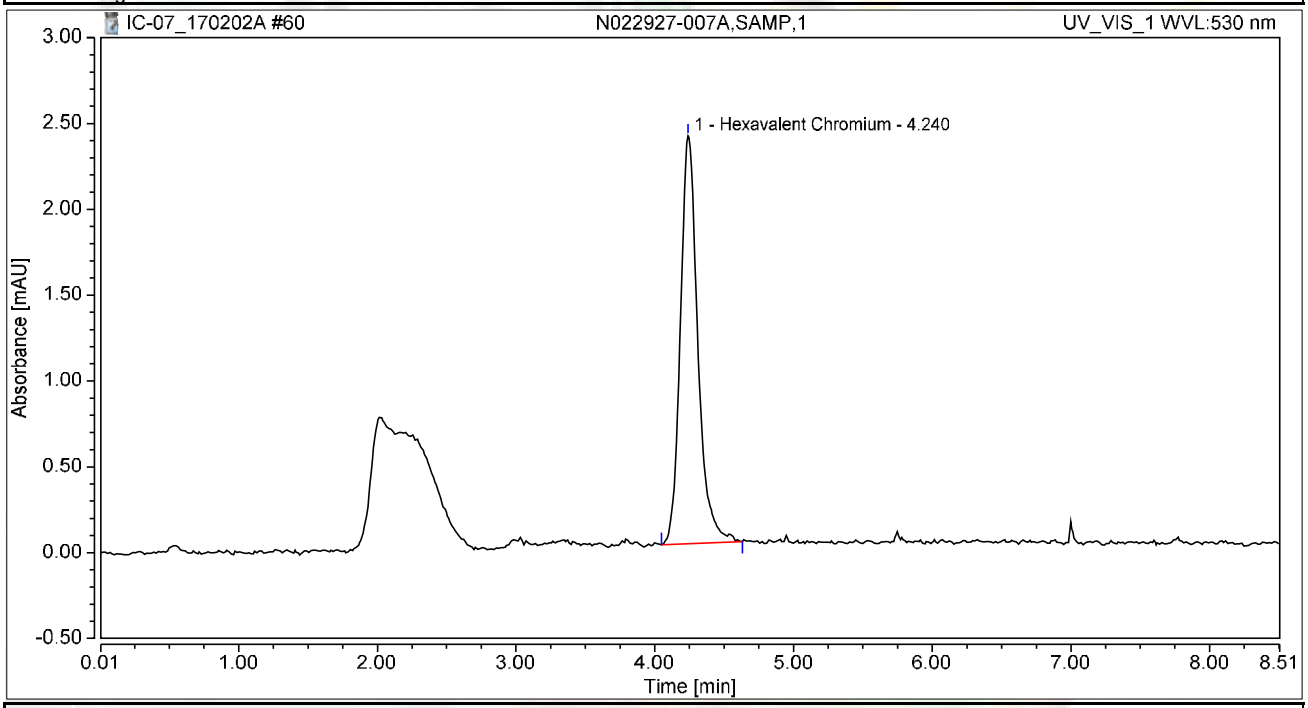
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

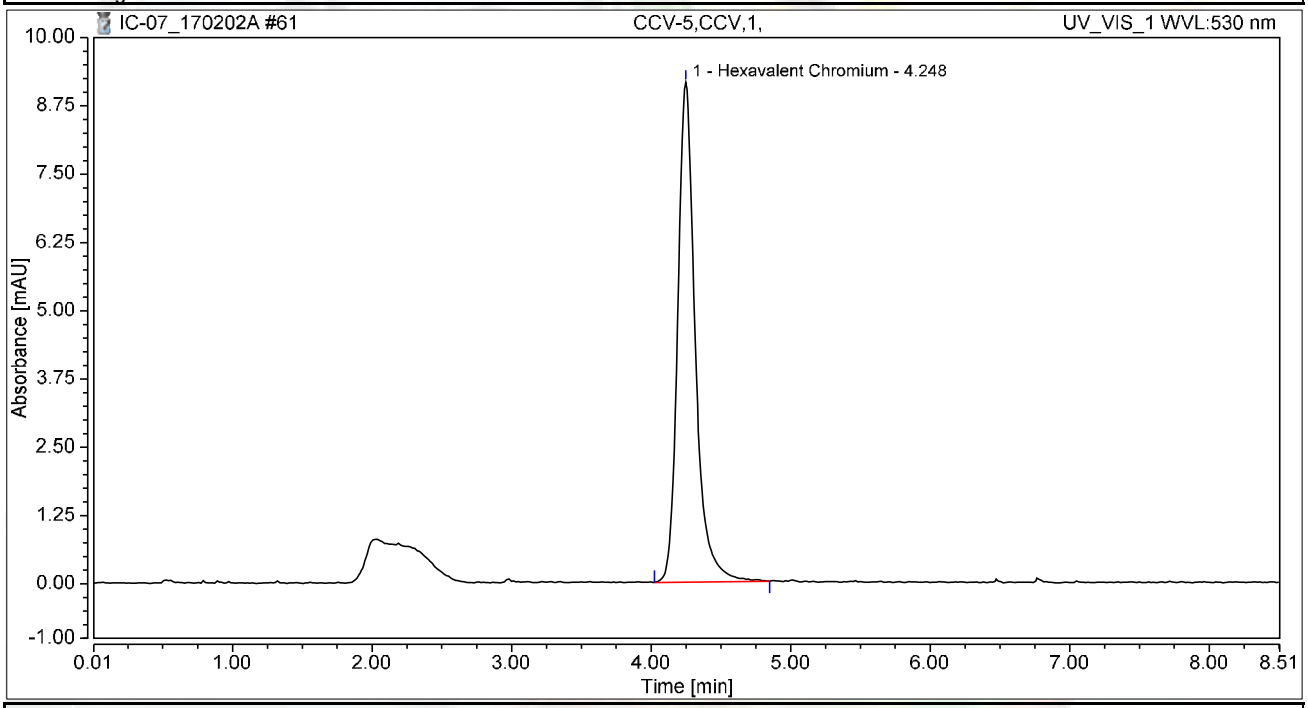
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.346	2.377	100.00	100.00	1.3553
Total:			**0.346**	**2.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

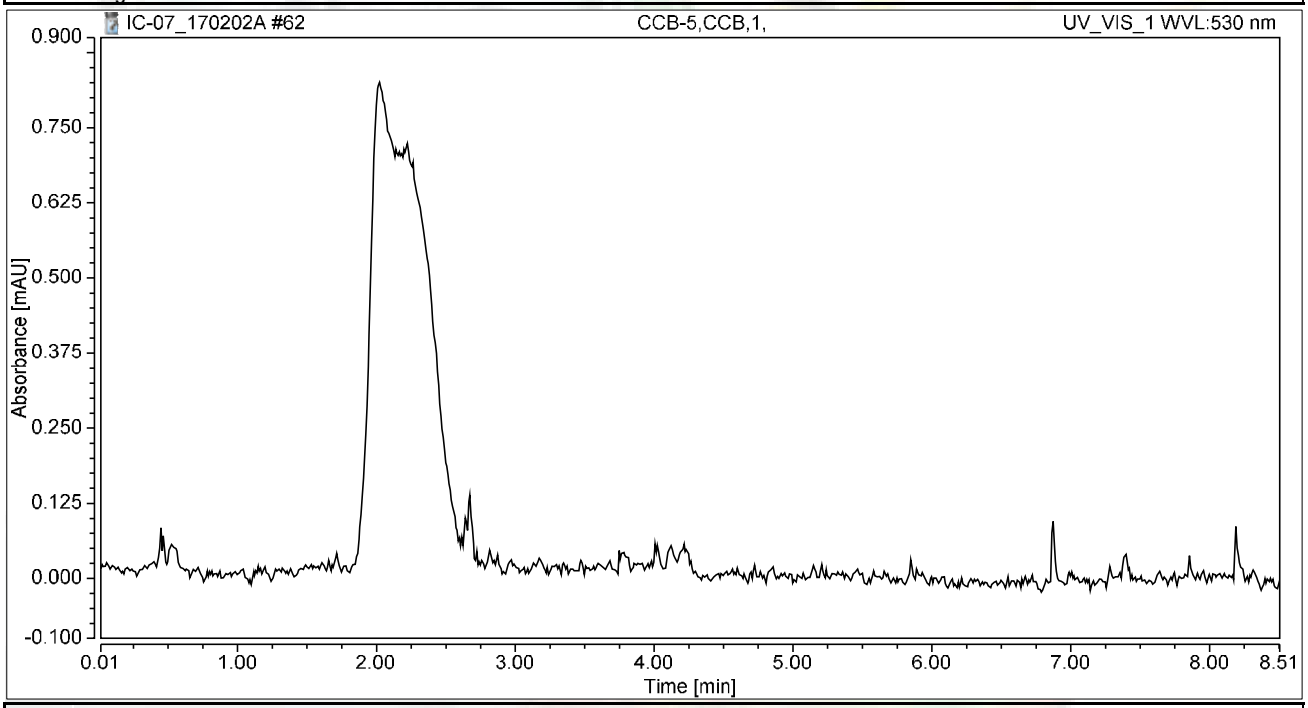
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	9.154	100.00	100.00	5.2123
Total:			**1.333**	**9.154**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

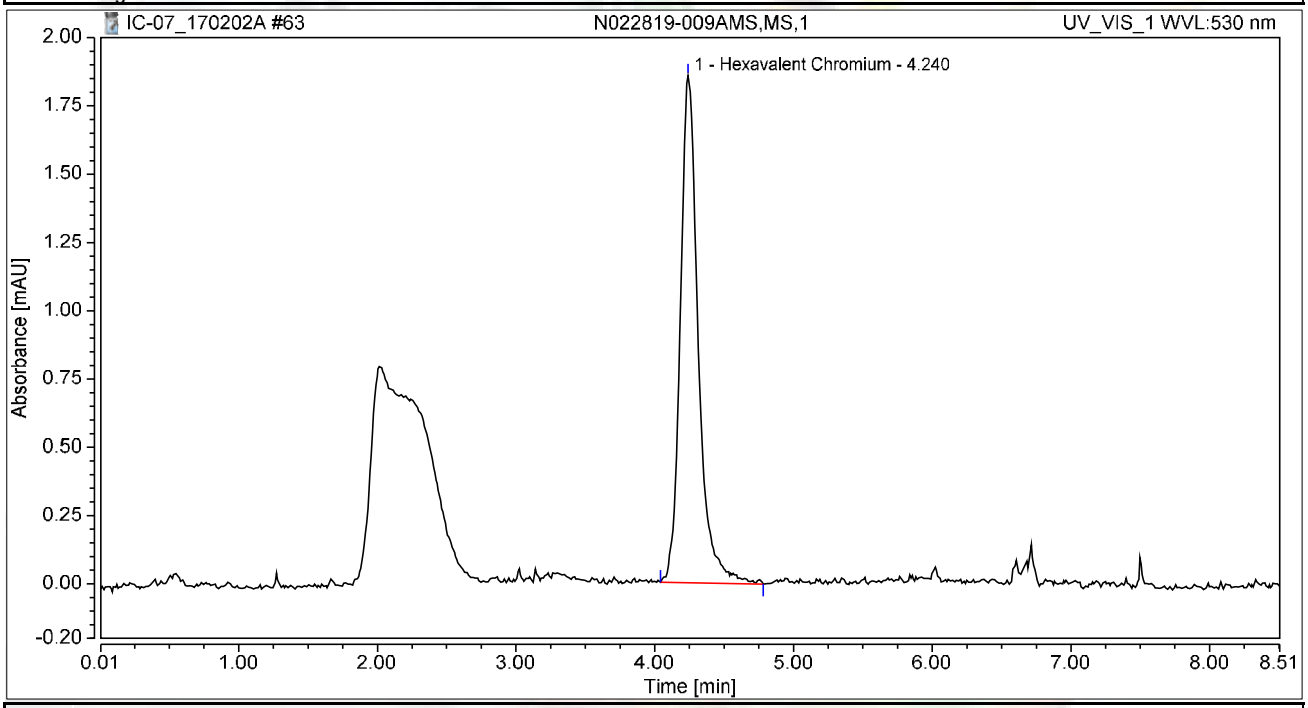
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

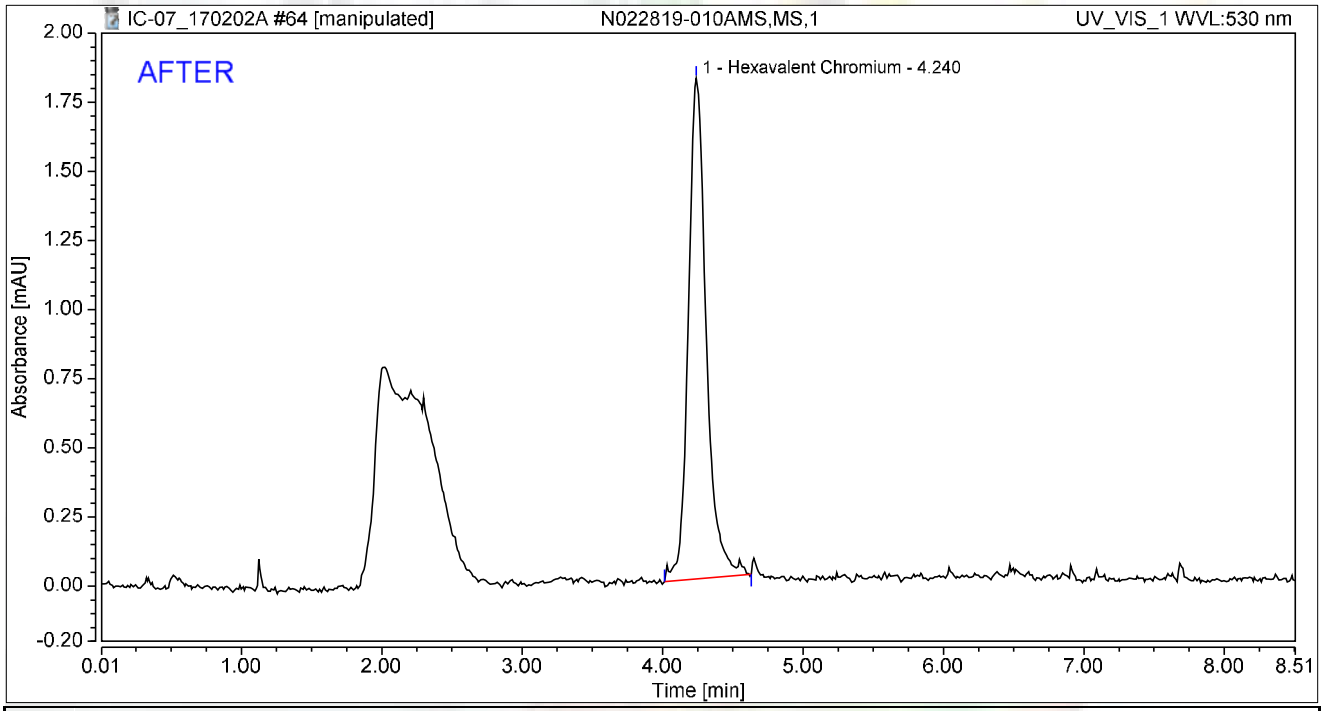
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.278	1.857	100.00	100.00	1.0888
Total:			**0.278**	**1.857**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.269	1.810	100.00	100.00	1.0514
Total:			**0.269**	**1.810**	**100.00**	**100.00**	

rba 2/6/2017

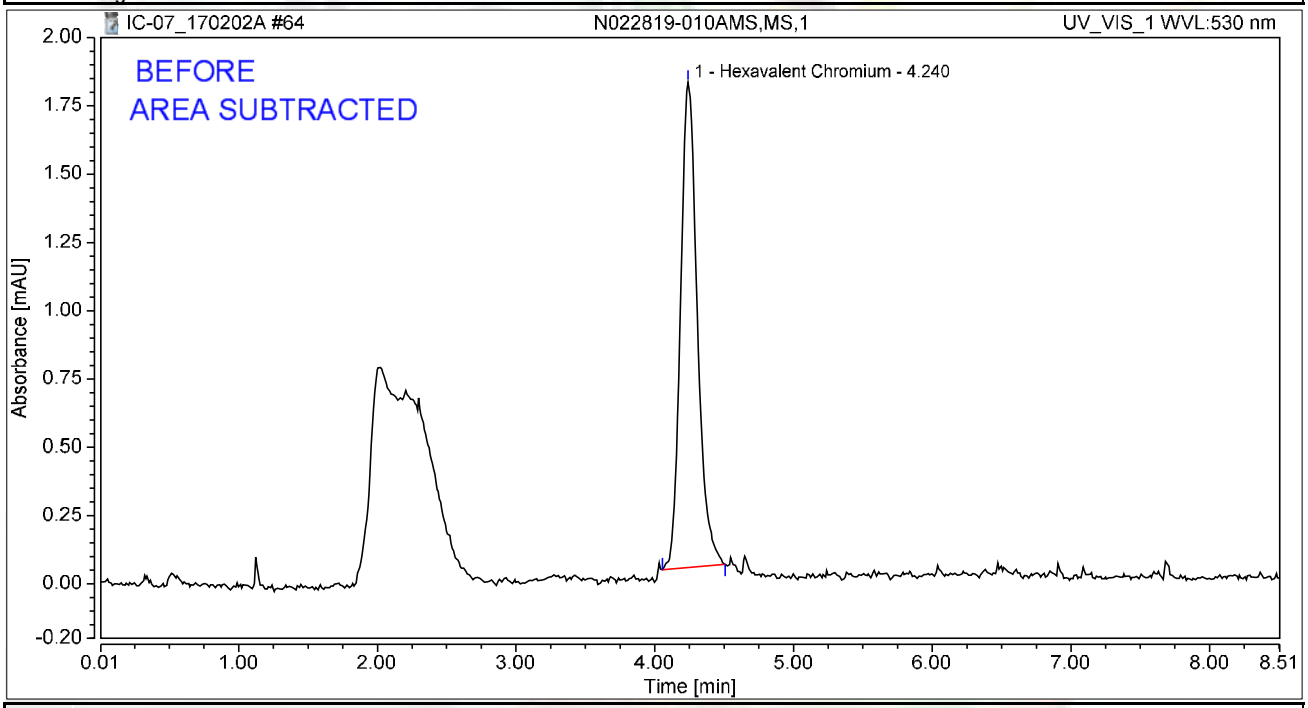
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.250	1.776	100.00	100.00	0.9760
Total:			**0.250**	**1.776**	**100.00**	**100.00**	

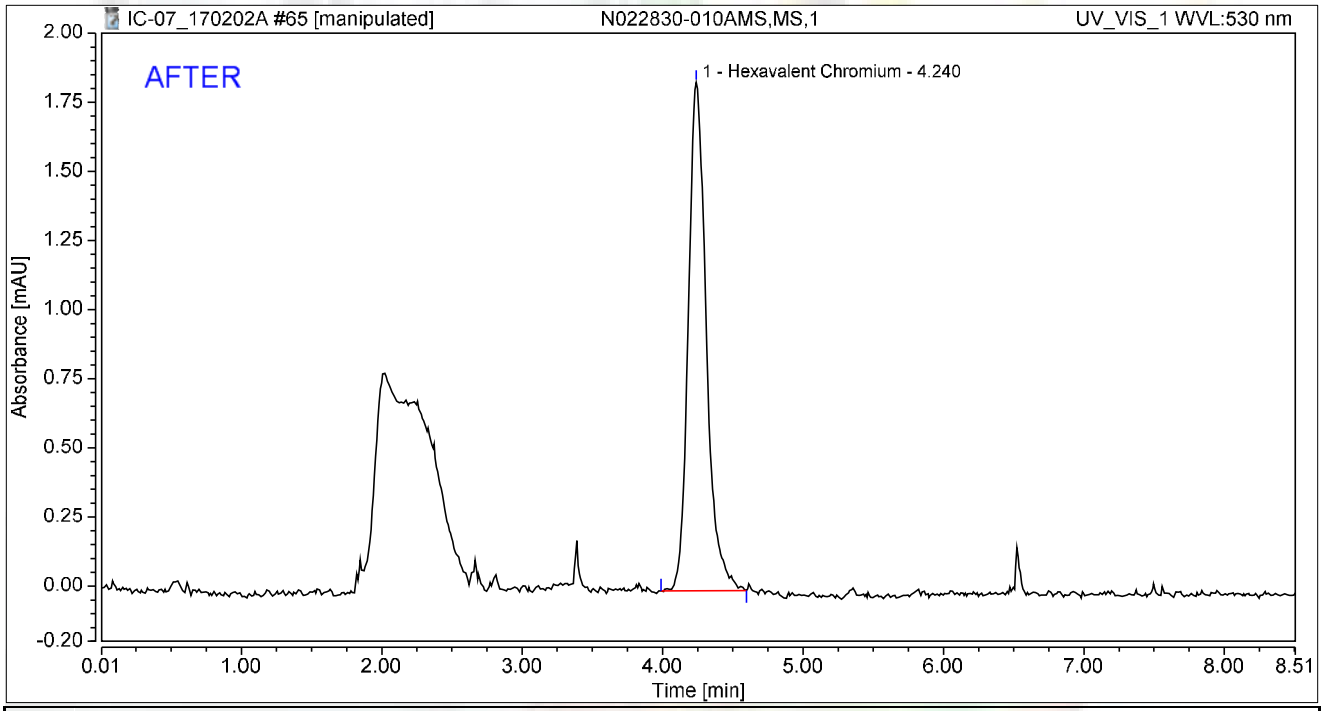
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.273	1.838	100.00	100.00	1.0692
Total:			**0.273**	**1.838**	**100.00**	**100.00**	

rba 2/6/2017

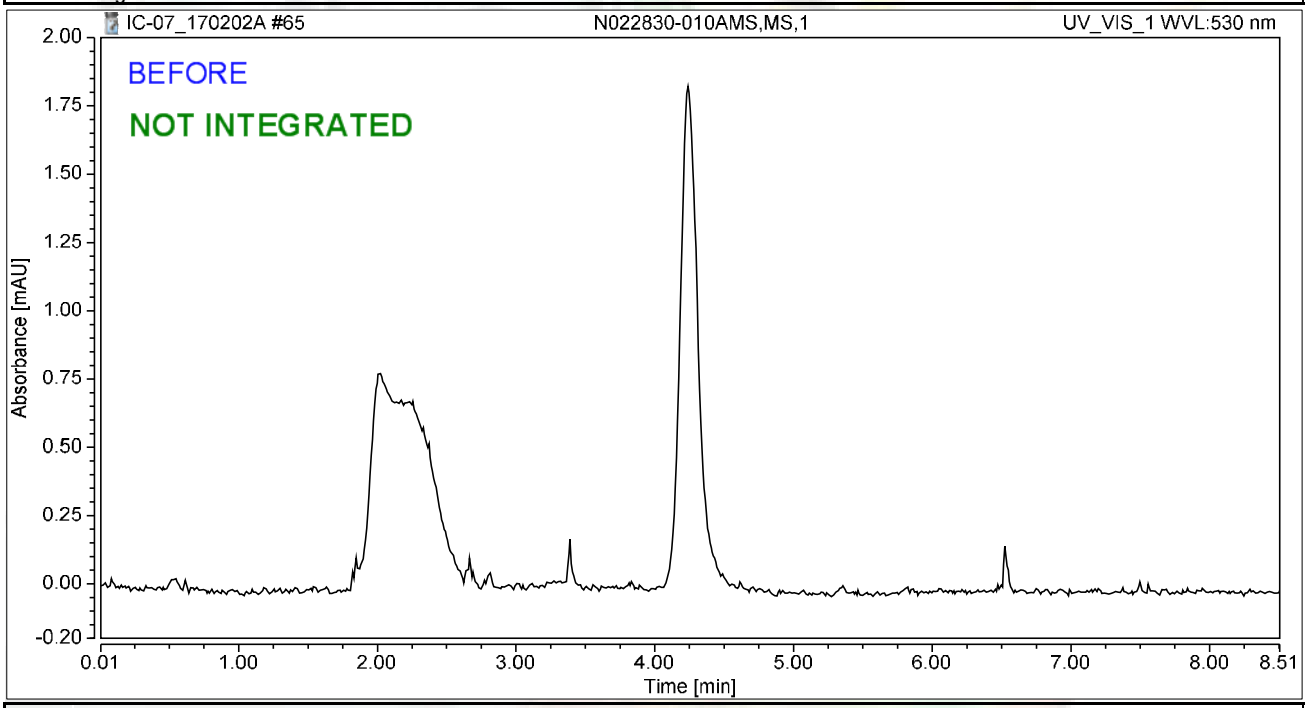
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

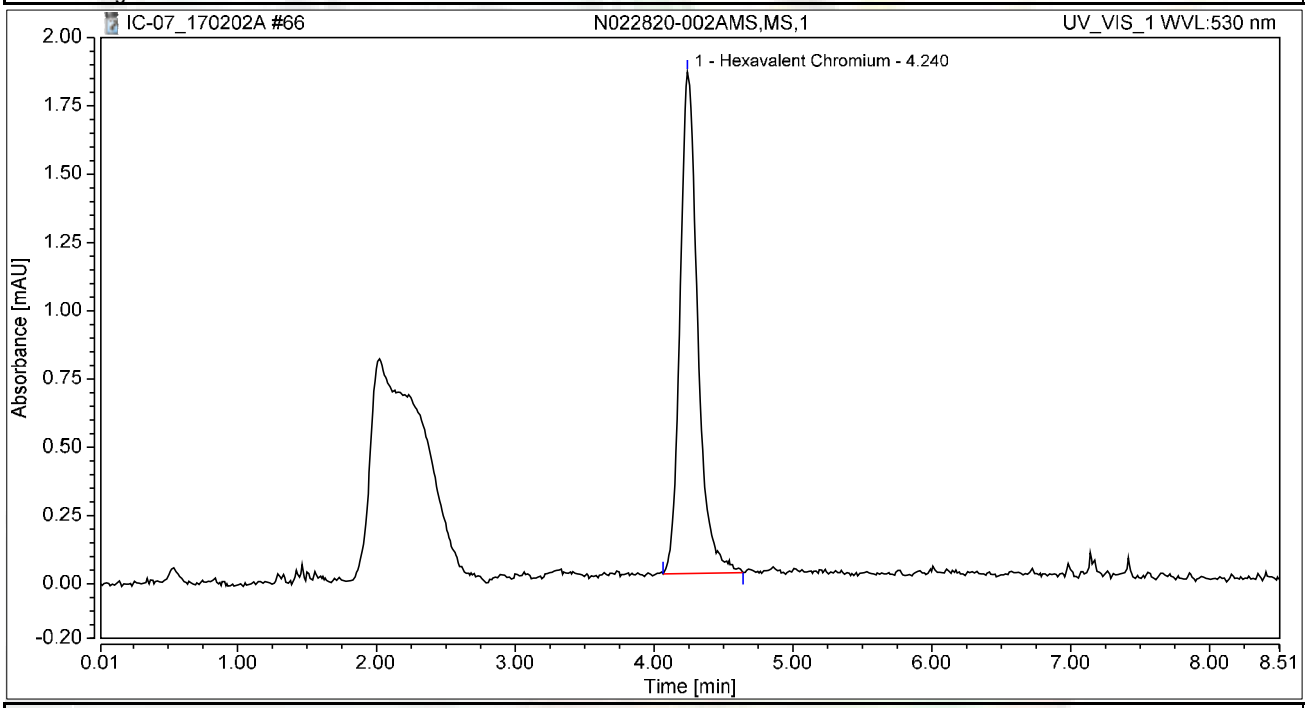
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

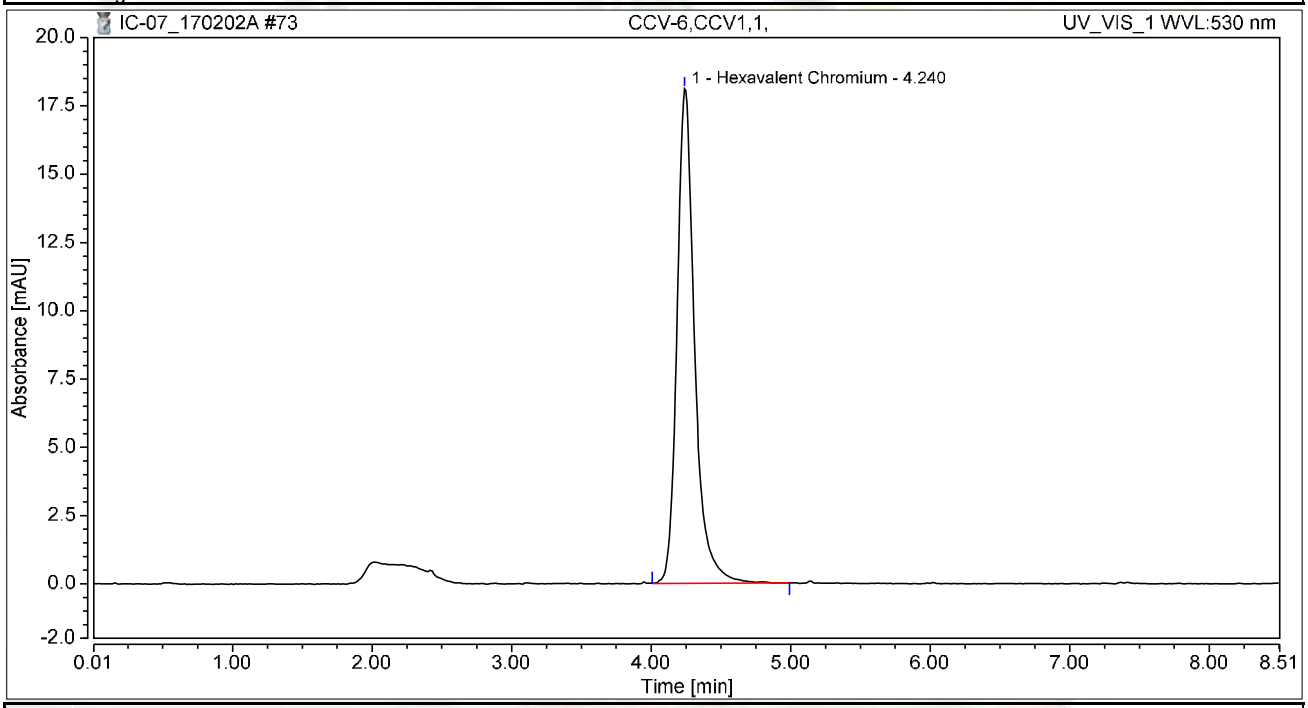
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.836	100.00	100.00	1.0603
Total:			**0.271**	**1.836**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

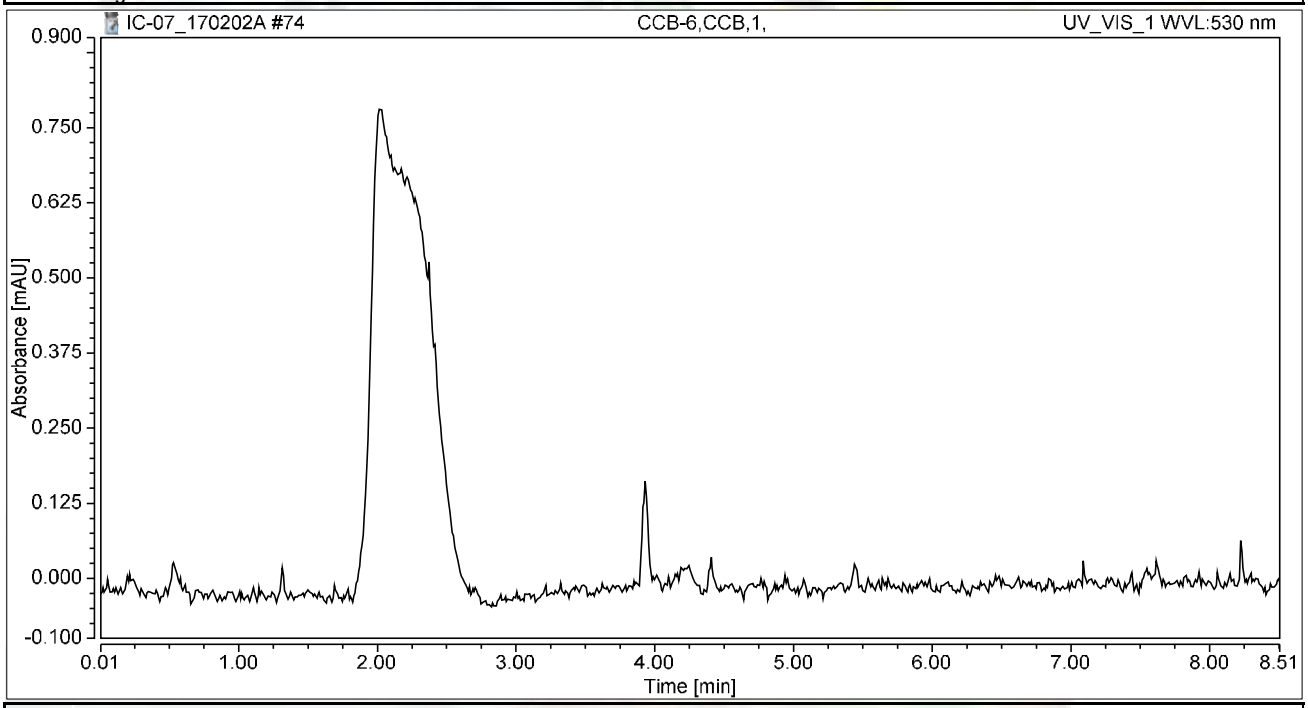
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.648	18.104	100.00	100.00	10.3586
Total:			**2.648**	**18.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113095 **Analyst:** REB

ASSET #: N022819 **Date Analyzed:** 1/25/2017

Method: 4500_NO3

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer RB 02/03/17 Date:

2nd Level Reviewer Nancy 2/7/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022819-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4063*1

= 0.4063 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.41

RB 02/03/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

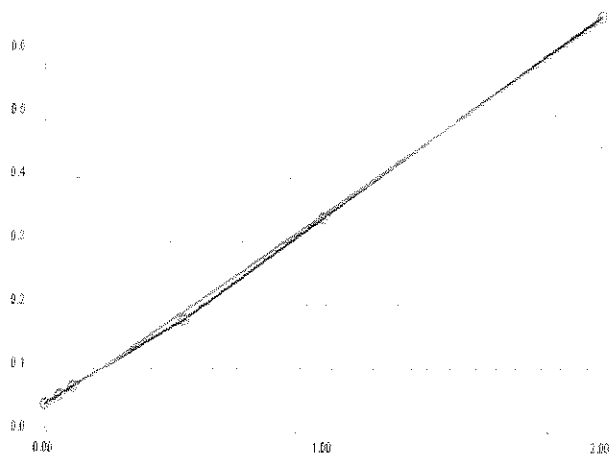
QC

N.	Value	Tolerance
1	1.	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3049x + 0.0378
Correlation	.999391



Calibrant	Energy	Set	Conc
1	0.0434	0.0000	0.0184
2	0.0579	0.0500	0.0659
3	0.0718	0.1000	0.1115
4	0.1769	0.5000	0.4562
5	0.3354	1.0000	0.9759
6	0.6544	2.0000	2.0220

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/03/17 357

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ICV** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCV** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	97.1	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCV** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	96.1	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCV** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.3	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **ICB** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.030	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCB** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.044	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCB** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545221**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113095**
Client ID: **CCB** Batch ID: **R113095** TestNo: **SM4500-NO3** Analysis Date: **1/25/2017** SeqNo: **2545231**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-25-2017 17:16
Time end: 01-25-2017 20:11

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	19:30:31	0.0240		0.0451
2	<BLANK>	19:31:24	0.0204		0.0440
3	<CAL1>	19:32:25	0.0184	[0]	0.0434
4	<CAL2>	19:33:21	0.0659	[0.05]	0.0579
5	<CAL3>	19:34:16	0.1115	[0.1]	0.0718
6	<CAL4>	19:35:16	0.4562	[0.5]	0.1769
7	<CAL5>	19:36:12	0.9759	[1]	0.3354
8	<CAL6>	19:37:07	2.0220	[2]	0.6544
9	,BLANK,BLANK,1,	19:38:07	0.0545		0.0544
10	,ICV,ICV,1,	19:39:03	0.4739		0.1823
11	,ICB,ICB,1,	19:39:58	0.0302		0.0470
12	,MB-H2O,MBLK,1,	19:41:00	0.0420		0.0506
13	,LCS-H2O,LCS,1,	19:41:54	0.5001		0.1903
14	,N022778-001D,SAMP,1,	19:42:49	0.2542		0.1153
15	,N022778-001DDUP,DUP,1,	19:43:51	0.2525		0.1148
16	,N022778-001DMS,MS,1,	19:44:45	0.7398		0.2634
17	,N022778-001DMSD,MSD,1,	19:45:41	0.7411		0.2638
18	,N022801-001D,SAMP,2,	19:46:42	0.9543		0.3288
19	,N022801-002D,SAMP,1,	19:47:38	1.0937		0.3713
20	,N022801-003D,SAMP,1,	19:48:32	1.1215		0.3798
21	,BLANK,BLANK,1	19:49:34	0.0430		0.0509
22	,CCV-1,CCV,1,	19:50:29	0.4854		0.1858
23	,CCB-1,CCB,1,	19:51:31	0.0436		0.0511
24	,N022801-004D,SAMP,1,	19:52:25	0.1610		0.0869
25	,N022802-001D,SAMP,1,	19:53:21	0.1292		0.0772
26	,N022802-002D,SAMP,1,	19:54:22	0.1506		0.0837

RB 02/03/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022805-001D,SAMP,1,	19:55:16	0.0686		0.0587
28	,N022805-002D,SAMP,1,	19:56:06	1.8997		0.6171
29	,N022805-003D,SAMP,1,	19:56:49	1.1881		0.4001
30	,N022805-004D,SAMP,1,	19:57:37	1.0920		0.3708
31	,N022819-001E,SAMP,1,	19:58:21	0.4063		0.1617
32	,N022819-002E,SAMP,1,	19:59:03	0.4050		0.1613
33	,BLANK,BLANK,1	19:59:52	0.0243		0.0452
34	,CCV-2,CCV,1,	20:00:34	0.4804		0.1843
35	,CCB-2,CCB,1,	20:01:17	0.0197		0.0438
36	,N022819-003E,SAMP,1,	20:02:07	0.4014		0.1602
37	,N022819-004E,SAMP,1,	20:02:49	0.3801		0.1537
38	,N022819-005E,SAMP,1,	20:03:32	0.4093		0.1626
39	,N022819-006E,SAMP,1,	20:04:20	0.3945		0.1581
40	,N022819-007E,SAMP,1,	20:05:03	0.3860		0.1555
41	,N022819-008E,SAMP,1,	20:05:52	0.3830		0.1546
42	,N022819-009E,SAMP,1,	20:06:35	0.3824		0.1544
43	,BLANK,BLANK,1	20:07:17	0.0164		0.0428
44	,CCV-3,CCV,1,	20:08:06	0.4916		0.1877
45	,CCV-3,CCV,1,	20:08:50	0.5195		0.1962
46	,CCB-3,CCB,1,	20:09:32	0.0135		0.0419

RB 02/03/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 01/25/17
Time Analyzed: 05:16 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022778-001D		8.98						
2)	N022801-001D		7.90						
3)	N022801-002D		8.17						
4)	N022801-003D		8.65						
5)	N022801-004D		8.11						
6)	N022802-001D		8.80						
7)	N022802-002D		7.96						
8)	N022805-001D		8.22						
9)	N022805-002D		8.13						
10)	N022805-003D		8.65						
11)	N022805-004D		8.77						
12)	N022819-001E		7.48						
13)	N022819-002E		7.98						
14)	N022819-003E		7.71						
15)	N022819-004E		7.94						
16)	N022819-005E		7.53						
17)	N022819-006E		8.24						
18)	N022819-007E		7.49						
19)	N022819-008E		8.06						
20)	N022819-009E		6.14						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/03/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61046
ASSET #: N022819

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/3/2017

Method:
[X] EPA 6010B / 200.7 Dissolved
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

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

1st Level Reviewer _____ 2/7/17 Date: _____
2nd Level Reviewer _____ 2/7/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022819-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.06236 * 1 * (25/25) * 1000

Iron , ug/L = 62.36

Reporting results in two significant figures,

Iron , ug/L = 62

% RSD SUMMARY

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	15.2	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.99	15	PASS
Standard3	ICAL	1	Fe	2	0.83	15	PASS
Standard4	ICAL	1	Fe	5	0.38	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.075	15	PASS
Standard7	ICAL	1	Fe	20	0.063	15	PASS
ICV	ICV	1	Fe	10.26	0.83	15	PASS
ICB	ICB	1	Fe	0.00038	151.043	15	<PQL
LLICV	CCV1	1	Fe	0.023	1.52	20	PASS
ICSA1	ICSA	1	Fe	2.034	0.53	15	PASS
ICB	ICB	1	Fe	-0.00017	109.48	15	<PQL
LLICV	CCV1	1	Fe	0.023	4.11	20	PASS
ICSA1	ICSA	1	Fe	193.58	0.22	15	PASS
ICSAB1	ICSAB	1	Fe	184.44	0.4	15	PASS
CCV1	CCV	1	Fe	10.039	0.0051	15	PASS
CCB1	CCB	1	Fe	-0.00009	616.8	15	<PQL
CCV2	CCV	1	Fe	9.97	0.13	15	PASS
CCB2	CCB	1	Fe	0.0052	14.6	15	PASS
CCV3	CCV	1	Fe	9.99	0.1	15	PASS
CCB3	CCB	1	Fe	0.0032	17.81	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.04	20	PASS
ICSA2	ICSA	1	Fe	197.71	0.16	15	PASS
ICSAB2	ICSAB	1	Fe	191.76	0.098	15	PASS
ICSAB2	ICSAB	1	Fe	188	0.051	15	PASS
MB-61046	MBLK	1	Fe	0.0051	21.6	15	<PQL
CCV4	CCV	1	Fe	9.92	0.11	15	PASS
CCB4	CCB	1	Fe	0.0033	19.83	15	<PQL
LCS-61046	LCS	1	Fe	0.11	0.7	15	PASS
N022819-001B	SAMP	1	Fe	0.062	3.5	15	PASS
N022819-001B	SAMP	5	Fe	0.013	3.27	15	PASS
N022819-001B-PS	PS	1	Fe	0.15	1.44	15	PASS
N022819-001B-MS	MS	1	Fe	0.15	1.98	15	PASS
N022819-001B-MSD	MSD	1	Fe	0.15	4.82	15	PASS
N022819-002B	SAMP	1	Fe	0.018	9.84	15	PASS
N022819-003B	SAMP	1	Fe	0.068	5.3	15	PASS
N022819-004B	SAMP	1	Fe	0.0058	5.14	15	PASS
CCV5	CCV	1	Fe	9.97	0.039	15	PASS
CCB5	CCB	1	Fe	0.00046	90.64	15	<PQL
N022819-005B	SAMP	1	Fe	0.0072	4.47	15	PASS
N022819-006B	SAMP	1	Fe	0.0062	4.26	15	PASS

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022819-007B	SAMP	1	Fe	0.0032	7.75	15	PASS
N022819-008B	SAMP	1	Fe	0.0055	5.21	15	PASS
N022819-009B	SAMP	1	Fe	0.017	5.52	15	PASS
N022820-001B	SAMP	1	Fe	0.0076	3.99	15	PASS
N022820-002B	SAMP	1	Fe	0.02	3.78	15	PASS
N022820-003B	SAMP	1	Fe	0.05	0.6	15	PASS
N022819-004B	SAMP	1	Fe	0.033	0.82	15	PASS
CCV6	CCV	1	Fe	9.84	0.053	15	PASS
CCB6	CCB	1	Fe	0.00022	194.78	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.58	20	PASS
ICSA3	ICSA	1	Fe	193.88	0.64	15	PASS
ICSAB3	ICSAB	1	Fe	178.07	0.59	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/03/2017	09:36:11 AM
2	Standard1	ICAL	1	02/03/2017	09:40:34 AM
3	Standard2	ICAL	1	02/03/2017	09:45:24 AM
4	Standard3	ICAL	1	02/03/2017	09:50:13 AM
5	Standard4	ICAL	1	02/03/2017	09:55:05 AM
6	Standard5	ICAL	1	02/03/2017	10:00:58 AM
7	Standard6	ICAL	1	02/03/2017	10:06:50 AM
8	Standard7	ICAL	1	02/03/2017	10:12:15 AM
9	ICV	ICV	1	02/03/2017	10:16:32 AM
1	ICB	ICB	1	02/03/2017	10:22:25 AM
2	LLICV	CCV1	1	02/03/2017	10:27:13 AM
4	ICSA1	ICSA	1	02/03/2017	10:32:03 AM
1	ICB	ICB	1	02/03/2017	10:52:50 AM
2	LLICV	CCV1	1	02/03/2017	10:57:39 AM
4	ICSA1	ICSA	1	02/03/2017	11:02:28 AM
5	ICSAB1	ICSAB	1	02/03/2017	11:08:30 AM
38	MB-61125	MBLK	1	02/03/2017	11:14:33 AM
39	LCS-61125	LCS	1	02/03/2017	11:19:23 AM
40	N022931-002E	SAMP	1	02/03/2017	11:25:14 AM
41	N022931-002E	SAMP	5	02/03/2017	11:31:05 AM
42	N022931-002E-PS	PS	1	02/03/2017	11:35:56 AM
43	N022931-002E-MS	MS	1	02/03/2017	11:41:48 AM
44	N022931-002E-MSD	MSD	1	02/03/2017	11:47:40 AM
45	MB-61083	MBLK	1	02/03/2017	11:53:33 AM
46	LCS1-61083	LCS	1	02/03/2017	11:58:24 AM
45	MB-61083	MBLK	1	02/03/2017	12:10:02 PM
7	CCV1	CCV	1	02/03/2017	12:14:51 PM
1	CCB1	CCB	1	02/03/2017	12:20:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
46	LCS1-61083	LCS	1	02/03/2017	12:25:05 PM
47	N022822-011B	SAMP	1	02/03/2017	12:30:58 PM
48	N022822-011B	SAMP	5	02/03/2017	12:35:49 PM
49	N022822-011B-PS	PS	1	02/03/2017	12:40:41 PM
50	N022822-011B-MS1	MS	1	02/03/2017	12:46:34 PM
51	N022822-011B-MSD1	MSD	1	02/03/2017	12:52:25 PM
52	N022822-014B	SAMP	1	02/03/2017	12:58:17 PM
53	N022846-011A	SAMP	1	02/03/2017	01:03:08 PM
54	N022829-001E	SAMP	1	02/03/2017	01:07:58 PM
55	N022829-002E	SAMP	1	02/03/2017	01:13:50 PM
7	CCV2	CCV	1	02/03/2017	01:19:51 PM
1	CCB2	CCB	1	02/03/2017	01:25:15 PM
56	N022829-003E	SAMP	1	02/03/2017	01:34:46 PM
57	N022829-004E	SAMP	1	02/03/2017	01:40:10 PM
58	N022829-005C	SAMP	1	02/03/2017	01:45:33 PM
59	N022829-006E	SAMP	1	02/03/2017	01:50:57 PM
60	N022829-007E	SAMP	1	02/03/2017	01:55:49 PM
61	N022829-004E	SAMP	5	02/03/2017	02:01:42 PM
62	MB-1	MBLK	1	02/03/2017	02:07:34 PM
63	MB-61119 STLC	MBLK	5	02/03/2017	02:12:26 PM
64	LCS-1	LCS	1	02/03/2017	02:17:17 PM
65	N022646-015A	SAMP	5	02/03/2017	02:22:44 PM
7	CCV3	CCV	1	02/03/2017	02:28:37 PM
1	CCB3	CCB	1	02/03/2017	02:34:02 PM
2	LLCCV1	CCV2	1	02/03/2017	02:42:04 PM
4	ICSA2	ICSA	1	02/03/2017	02:56:52 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:03:22 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:08:33 PM
66	N022646-016A	SAMP	5	02/03/2017	03:14:30 PM
67	N022646-017A	SAMP	5	02/03/2017	03:20:22 PM
68	N022873-001A	SAMP	5	02/03/2017	03:26:16 PM
69	N022873-002A	SAMP	5	02/03/2017	03:32:08 PM
70	N022873-003A	SAMP	5	02/03/2017	03:38:01 PM
97	N022873-003A-DUP	DUP	5	02/03/2017	03:43:54 PM
71	N022873-003A	SAMP	25	02/03/2017	03:49:47 PM
72	N022873-003A-MS	MS	5	02/03/2017	03:54:39 PM
73	N022873-003A-MSD	MSD	5	02/03/2017	04:00:32 PM
98	MB-61046	MBLK	1	02/03/2017	04:06:27 PM
7	CCV4	CCV	1	02/03/2017	04:11:18 PM
1	CCB4	CCB	1	02/03/2017	04:16:43 PM
99	LCS-61046	LCS	1	02/03/2017	04:21:32 PM
100	N022819-001B	SAMP	1	02/03/2017	04:27:25 PM
101	N022819-001B	SAMP	5	02/03/2017	04:32:18 PM
102	N022819-001B-PS	PS	1	02/03/2017	04:37:10 PM
103	N022819-001B-MS	MS	1	02/03/2017	04:43:04 PM
104	N022819-001B-MSD	MSD	1	02/03/2017	04:48:58 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N022819-002B	SAMP	1	02/03/2017	04:54:51 PM
106	N022819-003B	SAMP	1	02/03/2017	04:59:43 PM
118	LCS-61045	LCS	1	02/03/2017	05:04:02 PM
107	N022819-004B	SAMP	1	02/03/2017	05:12:24 PM
7	CCV5	CCV	1	02/03/2017	05:17:16 PM
1	CCB5	CCB	1	02/03/2017	05:22:40 PM
108	N022819-005B	SAMP	1	02/03/2017	05:27:28 PM
109	N022819-006B	SAMP	1	02/03/2017	05:32:21 PM
110	N022819-007B	SAMP	1	02/03/2017	05:37:14 PM
111	N022819-008B	SAMP	1	02/03/2017	05:42:06 PM
112	N022819-009B	SAMP	1	02/03/2017	05:46:58 PM
113	N022820-001B	SAMP	1	02/03/2017	05:52:17 PM
114	N022820-002B	SAMP	1	02/03/2017	05:57:10 PM
115	N022820-003B	SAMP	1	02/03/2017	06:02:03 PM
116	N022819-004B	SAMP	1	02/03/2017	06:06:57 PM
117	MB-61045	MBLK	1	02/03/2017	06:11:49 PM
7	CCV6	CCV	1	02/03/2017	06:16:41 PM
1	CCB6	CCB	1	02/03/2017	06:22:06 PM
2	LLCCV2	CCV2	1	02/03/2017	06:26:54 PM
4	ICSA3	ICSA	1	02/03/2017	06:31:43 PM
5	ICSAB3	ICSAB	1	02/03/2017	06:37:44 PM
118	LCS-61045	LCS	1	02/03/2017	06:43:48 PM
119	N022819-001C	SAMP	1	02/03/2017	06:49:42 PM
120	N022819-001C	SAMP	5	02/03/2017	06:54:36 PM
121	N022819-001C-PS	PS	1	02/03/2017	06:59:27 PM
122	N022819-001C-MS	MS	1	02/03/2017	07:05:21 PM
123	N022819-001C-MSD	MSD	1	02/03/2017	07:11:16 PM
124	N022819-002C	SAMP	1	02/03/2017	07:17:09 PM
125	N022819-003C	SAMP	1	02/03/2017	07:22:02 PM
126	N022819-004C	SAMP	1	02/03/2017	07:26:55 PM
127	N022819-005C	SAMP	1	02/03/2017	07:31:47 PM
7	CCV7	CCV	1	02/03/2017	07:36:41 PM
1	CCB7	CCB	1	02/03/2017	07:42:05 PM
128	N022819-006C	SAMP	1	02/03/2017	07:46:53 PM
129	N022819-007C	SAMP	1	02/03/2017	07:51:46 PM
130	N022819-008C	SAMP	1	02/03/2017	07:56:39 PM
131	N022819-009C	SAMP	1	02/03/2017	08:01:31 PM
132	N022820-001C	SAMP	1	02/03/2017	08:06:25 PM
133	N022820-002C	SAMP	1	02/03/2017	08:11:18 PM
134	N022820-003C	SAMP	1	02/03/2017	08:16:11 PM
135	N022819-004C	SAMP	1	02/03/2017	08:21:05 PM
38	MB-61084	MBLK	1	02/03/2017	08:25:59 PM
39	LCS-61084	LCS	1	02/03/2017	08:30:49 PM
7	CCV8	CCV	1	02/03/2017	08:36:42 PM
1	CCB8	CCB	1	02/03/2017	08:42:06 PM
40	N022830-001C	SAMP	1	02/03/2017	08:46:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N022830-001C	SAMP	5	02/03/2017	08:51:45 PM
42	N022830-001C-PS	PS	1	02/03/2017	08:56:36 PM
43	N022830-001C-MS	MS	1	02/03/2017	09:02:29 PM
44	N022830-001C-MSD	MSD	1	02/03/2017	09:08:20 PM
45	N022830-002C	SAMP	1	02/03/2017	09:14:12 PM
46	N022830-003C	SAMP	1	02/03/2017	09:19:03 PM
47	N022830-004C	SAMP	1	02/03/2017	09:23:56 PM
48	N022830-005C	SAMP	1	02/03/2017	09:28:48 PM
49	N022830-006C	SAMP	1	02/03/2017	09:33:41 PM
7	CCV9	CCV	1	02/03/2017	09:38:34 PM
1	CCB9	CCB	1	02/03/2017	09:43:59 PM
2	LLCCV3	CCV2	1	02/03/2017	09:48:47 PM
4	ICSA4	ICSA	1	02/03/2017	09:53:36 PM
5	ICSAB4	ICSAB	1	02/03/2017	09:59:38 PM
50	N022830-007C	SAMP	1	02/03/2017	10:05:42 PM
51	N022830-008C	SAMP	1	02/03/2017	10:10:33 PM
52	N022830-009C	SAMP	1	02/03/2017	10:15:24 PM
53	N022830-010C	SAMP	1	02/03/2017	10:20:15 PM
54	N022830-011C	SAMP	1	02/03/2017	10:25:06 PM
55	N022830-012C	SAMP	1	02/03/2017	10:30:09 PM
56	N022830-013C	SAMP	1	02/03/2017	10:35:02 PM
7	CCV10	CCV	1	02/03/2017	10:39:53 PM
1	CCB10	CCB	1	02/03/2017	10:45:18 PM
2	LLCCV4	CCV2	1	02/03/2017	10:50:06 PM
4	ICSA5	ICSA	1	02/03/2017	10:54:56 PM
5	ICSAB5	ICSAB	1	02/03/2017	11:00:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:57:50 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61046** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61046	Aqueous		25	☐	0	0	25	1.000		
MB-61046	Aqueous		25	☐	0	0	25	1.000		
N022819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:57:50 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/17

Prep Batch **61046** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022820-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170203A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/03/2017	09:36:11 AM	Fe	273.953	-115	0.00	mg/L	
Standard1	02/03/2017	09:40:34 AM	Fe	273.953	638	0.0200	mg/L	
Standard2	02/03/2017	09:45:24 AM	Fe	273.953	1611	0.050	mg/L	
Standard3	02/03/2017	09:50:13 AM	Fe	273.953	55940	2.000	mg/L	
Standard4	02/03/2017	09:55:05 AM	Fe	273.953	139157	5.000	mg/L	
Standard5	02/03/2017	10:00:58 AM	Fe	273.953	213525	7.500	mg/L	
Standard6	02/03/2017	10:06:50 AM	Fe	273.953	275662	10.000	mg/L	
Standard7	02/03/2017	10:12:15 AM	Fe	273.953	546752	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10263.962	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.713	20	20.00	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10038.799	20	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9974.098	20	10000	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9990.814	20	10000	0	99.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.319	20	20.00	0	107	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9920.896	20	10000	0	99.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.432	20	10000	0	99.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9839.474	20	10000	0	98.4	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.618	20	20.00	0	93.1	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.174296	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.088133	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.224	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.179	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.311	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113277
Client ID:	CCB	Batch ID:	R113277	TestNo:	EPA 6010B			Analysis Date:	2/3/2017	SeqNo:	2554582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.460	20									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113277
Client ID:	CCB	Batch ID:	R113277	TestNo:	EPA 6010B			Analysis Date:	2/3/2017	SeqNo:	2554594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.220	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460033.480	50	500000	0	92.0	80	120				
Calcium	459446.095	500	500000	0	91.9	80	120				
Iron	193578.155	20	200000	0	96.8	80	120				
Magnesium	485934.752	100	500000	0	97.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553675.376	50	500000	0	111	80	120				
Calcium	545836.870	500	500000	0	109	80	120				
Iron	184443.233	20	200000	0	92.2	80	120				
Magnesium	493866.675	100	500000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479168.987	50	500000	0	95.8	80	120				
Calcium	459494.936	500	500000	0	91.9	80	120				
Iron	197710.808	20	200000	0	98.9	80	120				
Magnesium	465996.866	100	500000	0	93.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546002.338	50	500000	0	109	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	532681.050	500	500000	0	107	80	120				
Iron	188002.655	20	200000	0	94.0	80	120				
Magnesium	503028.516	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	475680.154	50	500000	0	95.1	80	120				
Calcium	456809.811	500	500000	0	91.4	80	120				
Iron	193880.663	20	200000	0	96.9	80	120				
Magnesium	456210.447	100	500000	0	91.2	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535909.119	50	500000	0	107	80	120				
Calcium	511085.094	500	500000	0	102	80	120				
Iron	178068.387	20	200000	0	89.0	80	120				
Magnesium	471025.199	100	500000	0	94.2	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.019	101.94	65-125	PASS
Standard2	ICAL	1	1.013	101.33	65-125	PASS
Standard3	ICAL	1	1.016	101.65	65-125	PASS
Standard4	ICAL	1	1.0013	100.13	65-125	PASS
Standard5	ICAL	1	1	99.54	65-125	PASS
Standard6	ICAL	1	0.99	98.97	65-125	PASS
Standard7	ICAL	1	0.96	96.38	65-125	PASS
ICV	ICV	1	1	99.92	65-125	PASS
ICB	ICB	1	1.025	102.5	65-125	PASS
LLICV	CCV1	1	1.014	101.44	65-125	PASS
ICSA1	ICSA	1	1.021	102.06	65-125	PASS
ICB	ICB	1	1.024	102.37	65-125	PASS
LLICV	CCV1	1	1.026	102.62	65-125	PASS
ICSA1	ICSA	1	1.1	109.96	65-125	PASS
ICSAB1	ICSAB	1	0.83	82.82	65-125	PASS
CCV1	CCV	1	1.0056	100.56	65-125	PASS
CCB1	CCB	1	1.034	103.37	65-125	PASS
CCV2	CCV	1	1.02	102.01	65-125	PASS
CCB2	CCB	1	1.047	104.66	65-125	PASS
CCV3	CCV	1	0.99	98.77	65-125	PASS
CCB3	CCB	1	1.027	102.7	65-125	PASS
LLCCV1	CCV2	1	1.044	104.36	65-125	PASS
ICSA2	ICSA	1	1.095	109.48	65-125	PASS
ICSAB2	ICSAB	1	0.83	83.49	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.66	65-125	PASS
MB-61046	MBLK	1	1	99.92	65-125	PASS
CCV4	CCV	1	0.99	98.68	65-125	PASS
CCB4	CCB	1	1.009	100.9	65-125	PASS
LCS-61046	LCS	1	1.0007	100.07	65-125	PASS
N022819-001B	SAMP	1	0.96	96.27	65-125	PASS
N022819-001B	SAMP	5	0.97	96.73	65-125	PASS
N022819-001B-PS	PS	1	0.88	88.029	65-125	PASS
N022819-001B-MS	MS	1	0.82	82.42	65-125	PASS
N022819-001B-MSD	MSD	1	0.76	75.66	65-125	PASS
N022819-002B	SAMP	1	0.78	77.97	65-125	PASS
N022819-003B	SAMP	1	0.72	71.72	65-125	PASS
N022819-004B	SAMP	1	1.017	101.67	65-125	PASS
CCV5	CCV	1	1.04	103.99	65-125	PASS
CCB5	CCB	1	1.05	105.05	65-125	PASS
N022819-005B	SAMP	1	1.011	101.13	65-125	PASS

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022819-006B	SAMP	1	1.018	101.81	65-125	PASS
N022819-007B	SAMP	1	1.0068	100.68	65-125	PASS
N022819-008B	SAMP	1	1.027	102.66	65-125	PASS
N022819-009B	SAMP	1	1.027	102.68	65-125	PASS
N022820-001B	SAMP	1	1.013	101.27	65-125	PASS
N022820-002B	SAMP	1	1.018	101.75	65-125	PASS
N022820-003B	SAMP	1	1.018	101.83	65-125	PASS
N022819-004B	SAMP	1	1.019	101.9	65-125	PASS
CCV6	CCV	1	1.031	103.11	65-125	PASS
CCB6	CCB	1	1.042	104.23	65-125	PASS
LLCCV2	CCV2	1	1.062	106.18	65-125	PASS
ICSA3	ICSA	1	1.12	112.08	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.24	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022819
Test Method: EPA 6010B
Analysis Date: 2/3/2017

Matrix: Groundwater
Batch No.: 61046

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001B DT 5X	Iron	ug/L	67.3678	NA	62.35856	8.03%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N022819-001B-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**113277**
Client ID:	**ZZZZZZ**	Batch ID:	**61046**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/3/2017**	SeqNo:	**2554574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	149.085	20	100.0	62.36	86.7	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61045
ASSET #: N022819

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/3/2017

Method:
[X] EPA 6010B / 200.7 Total
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

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

1st Level Reviewer 2/7/17 Date:
2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022819-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.15173 * 1 * (25/25) * 1000

Iron , ug/L = 151.73

Reporting results in two significant figures,

Iron , ug/L = 150

% RSD SUMMARY

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	15.2	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.99	15	PASS
Standard3	ICAL	1	Fe	2	0.83	15	PASS
Standard4	ICAL	1	Fe	5	0.38	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.075	15	PASS
Standard7	ICAL	1	Fe	20	0.063	15	PASS
ICV	ICV	1	Fe	10.26	0.83	15	PASS
ICB	ICB	1	Fe	0.00038	151.043	15	<PQL
LLICV	CCV1	1	Fe	0.023	1.52	20	PASS
ICSA1	ICSA	1	Fe	2.034	0.53	15	PASS
ICB	ICB	1	Fe	-0.00017	109.48	15	<PQL
LLICV	CCV1	1	Fe	0.023	4.11	20	PASS
ICSA1	ICSA	1	Fe	193.58	0.22	15	PASS
ICSAB1	ICSAB	1	Fe	184.44	0.4	15	PASS
CCV1	CCV	1	Fe	10.039	0.0051	15	PASS
CCB1	CCB	1	Fe	-0.00009	616.8	15	<PQL
CCV2	CCV	1	Fe	9.97	0.13	15	PASS
CCB2	CCB	1	Fe	0.0052	14.6	15	PASS
CCV3	CCV	1	Fe	9.99	0.1	15	PASS
CCB3	CCB	1	Fe	0.0032	17.81	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.04	20	PASS
ICSA2	ICSA	1	Fe	197.71	0.16	15	PASS
ICSAB2	ICSAB	1	Fe	191.76	0.098	15	PASS
ICSAB2	ICSAB	1	Fe	188	0.051	15	PASS
CCV4	CCV	1	Fe	9.92	0.11	15	PASS
CCB4	CCB	1	Fe	0.0033	19.83	15	<PQL
CCV5	CCV	1	Fe	9.97	0.039	15	PASS
CCB5	CCB	1	Fe	0.00046	90.64	15	<PQL
MB-61045	MBLK	1	Fe	-0.00052	100.098	15	<PQL
CCV6	CCV	1	Fe	9.84	0.053	15	PASS
CCB6	CCB	1	Fe	0.00022	194.78	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.58	20	PASS
ICSA3	ICSA	1	Fe	193.88	0.64	15	PASS
ICSAB3	ICSAB	1	Fe	178.07	0.59	15	PASS
LCS-61045	LCS	1	Fe	0.11	2.13	15	PASS
N022819-001C	SAMP	1	Fe	0.15	0.42	15	PASS
N022819-001C	SAMP	5	Fe	0.034	2.071	15	PASS
N022819-001C-PS	PS	1	Fe	0.25	0.39	15	PASS
N022819-001C-MS	MS	1	Fe	0.24	0.92	15	PASS
N022819-001C-MSD	MSD	1	Fe	0.24	0.98	15	PASS

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022819-002C	SAMP	1	Fe	0.16	0.75	15	PASS
N022819-003C	SAMP	1	Fe	0.25	0.55	15	PASS
N022819-004C	SAMP	1	Fe	0.21	0.73	15	PASS
N022819-005C	SAMP	1	Fe	0.12	1.26	15	PASS
CCV7	CCV	1	Fe	9.78	0.095	15	PASS
CCB7	CCB	1	Fe	0.00065	63.87	15	<PQL
N022819-006C	SAMP	1	Fe	0.1	0.21	15	PASS
N022819-007C	SAMP	1	Fe	0.11	0.77	15	PASS
N022819-008C	SAMP	1	Fe	0.14	0.63	15	PASS
N022819-009C	SAMP	1	Fe	0.12	1.15	15	PASS
N022820-001C	SAMP	1	Fe	0.24	0.23	15	PASS
N022820-002C	SAMP	1	Fe	0.22	1.22	15	PASS
N022820-003C	SAMP	1	Fe	0.26	0.39	15	PASS
N022819-004C	SAMP	1	Fe	0.21	0.81	15	PASS
CCV8	CCV	1	Fe	9.78	0.06	15	PASS
CCB8	CCB	1	Fe	0.00068	75.93	15	<PQL
CCV9	CCV	1	Fe	9.81	0.11	15	PASS
CCB9	CCB	1	Fe	0.0013	32.83	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.0073	20	PASS
ICSA4	ICSA	1	Fe	195.69	0.63	15	PASS
ICSAB4	ICSAB	1	Fe	177.4	0.14	15	PASS
CCV10	CCV	1	Fe	9.81	0.023	15	PASS
CCB10	CCB	1	Fe	0.0014	32.54	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	6.97	20	PASS
ICSA5	ICSA	1	Fe	195.78	0.33	15	PASS
ICSAB5	ICSAB	1	Fe	184.48	0.057	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/03/2017	09:36:11 AM
2	Standard1	ICAL	1	02/03/2017	09:40:34 AM
3	Standard2	ICAL	1	02/03/2017	09:45:24 AM
4	Standard3	ICAL	1	02/03/2017	09:50:13 AM
5	Standard4	ICAL	1	02/03/2017	09:55:05 AM
6	Standard5	ICAL	1	02/03/2017	10:00:58 AM
7	Standard6	ICAL	1	02/03/2017	10:06:50 AM
8	Standard7	ICAL	1	02/03/2017	10:12:15 AM
9	ICV	ICV	1	02/03/2017	10:16:32 AM
1	ICB	ICB	1	02/03/2017	10:22:25 AM
2	LLICV	CCV1	1	02/03/2017	10:27:13 AM
4	ICSA1	ICSA	1	02/03/2017	10:32:03 AM
1	ICB	ICB	1	02/03/2017	10:52:50 AM
2	LLICV	CCV1	1	02/03/2017	10:57:39 AM
4	ICSA1	ICSA	1	02/03/2017	11:02:28 AM
5	ICSAB1	ICSAB	1	02/03/2017	11:08:30 AM
38	MB-61125	MBLK	1	02/03/2017	11:14:33 AM
39	LCS-61125	LCS	1	02/03/2017	11:19:23 AM
40	N022931-002E	SAMP	1	02/03/2017	11:25:14 AM
41	N022931-002E	SAMP	5	02/03/2017	11:31:05 AM
42	N022931-002E-PS	PS	1	02/03/2017	11:35:56 AM
43	N022931-002E-MS	MS	1	02/03/2017	11:41:48 AM
44	N022931-002E-MSD	MSD	1	02/03/2017	11:47:40 AM
45	MB-61083	MBLK	1	02/03/2017	11:53:33 AM
46	LCS1-61083	LCS	1	02/03/2017	11:58:24 AM
45	MB-61083	MBLK	1	02/03/2017	12:10:02 PM
7	CCV1	CCV	1	02/03/2017	12:14:51 PM
1	CCB1	CCB	1	02/03/2017	12:20:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
46	LCS1-61083	LCS	1	02/03/2017	12:25:05 PM
47	N022822-011B	SAMP	1	02/03/2017	12:30:58 PM
48	N022822-011B	SAMP	5	02/03/2017	12:35:49 PM
49	N022822-011B-PS	PS	1	02/03/2017	12:40:41 PM
50	N022822-011B-MS1	MS	1	02/03/2017	12:46:34 PM
51	N022822-011B-MSD1	MSD	1	02/03/2017	12:52:25 PM
52	N022822-014B	SAMP	1	02/03/2017	12:58:17 PM
53	N022846-011A	SAMP	1	02/03/2017	01:03:08 PM
54	N022829-001E	SAMP	1	02/03/2017	01:07:58 PM
55	N022829-002E	SAMP	1	02/03/2017	01:13:50 PM
7	CCV2	CCV	1	02/03/2017	01:19:51 PM
1	CCB2	CCB	1	02/03/2017	01:25:15 PM
56	N022829-003E	SAMP	1	02/03/2017	01:34:46 PM
57	N022829-004E	SAMP	1	02/03/2017	01:40:10 PM
58	N022829-005C	SAMP	1	02/03/2017	01:45:33 PM
59	N022829-006E	SAMP	1	02/03/2017	01:50:57 PM
60	N022829-007E	SAMP	1	02/03/2017	01:55:49 PM
61	N022829-004E	SAMP	5	02/03/2017	02:01:42 PM
62	MB-1	MBLK	1	02/03/2017	02:07:34 PM
63	MB-61119 STLC	MBLK	5	02/03/2017	02:12:26 PM
64	LCS-1	LCS	1	02/03/2017	02:17:17 PM
65	N022646-015A	SAMP	5	02/03/2017	02:22:44 PM
7	CCV3	CCV	1	02/03/2017	02:28:37 PM
1	CCB3	CCB	1	02/03/2017	02:34:02 PM
2	LLCCV1	CCV2	1	02/03/2017	02:42:04 PM
4	ICSA2	ICSA	1	02/03/2017	02:56:52 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:03:22 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:08:33 PM
66	N022646-016A	SAMP	5	02/03/2017	03:14:30 PM
67	N022646-017A	SAMP	5	02/03/2017	03:20:22 PM
68	N022873-001A	SAMP	5	02/03/2017	03:26:16 PM
69	N022873-002A	SAMP	5	02/03/2017	03:32:08 PM
70	N022873-003A	SAMP	5	02/03/2017	03:38:01 PM
97	N022873-003A-DUP	DUP	5	02/03/2017	03:43:54 PM
71	N022873-003A	SAMP	25	02/03/2017	03:49:47 PM
72	N022873-003A-MS	MS	5	02/03/2017	03:54:39 PM
73	N022873-003A-MSD	MSD	5	02/03/2017	04:00:32 PM
98	MB-61046	MBLK	1	02/03/2017	04:06:27 PM
7	CCV4	CCV	1	02/03/2017	04:11:18 PM
1	CCB4	CCB	1	02/03/2017	04:16:43 PM
99	LCS-61046	LCS	1	02/03/2017	04:21:32 PM
100	N022819-001B	SAMP	1	02/03/2017	04:27:25 PM
101	N022819-001B	SAMP	5	02/03/2017	04:32:18 PM
102	N022819-001B-PS	PS	1	02/03/2017	04:37:10 PM
103	N022819-001B-MS	MS	1	02/03/2017	04:43:04 PM
104	N022819-001B-MSD	MSD	1	02/03/2017	04:48:58 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N022819-002B	SAMP	1	02/03/2017	04:54:51 PM
106	N022819-003B	SAMP	1	02/03/2017	04:59:43 PM
118	LCS-61045	LCS	1	02/03/2017	05:04:02 PM
107	N022819-004B	SAMP	1	02/03/2017	05:12:24 PM
7	CCV5	CCV	1	02/03/2017	05:17:16 PM
1	CCB5	CCB	1	02/03/2017	05:22:40 PM
108	N022819-005B	SAMP	1	02/03/2017	05:27:28 PM
109	N022819-006B	SAMP	1	02/03/2017	05:32:21 PM
110	N022819-007B	SAMP	1	02/03/2017	05:37:14 PM
111	N022819-008B	SAMP	1	02/03/2017	05:42:06 PM
112	N022819-009B	SAMP	1	02/03/2017	05:46:58 PM
113	N022820-001B	SAMP	1	02/03/2017	05:52:17 PM
114	N022820-002B	SAMP	1	02/03/2017	05:57:10 PM
115	N022820-003B	SAMP	1	02/03/2017	06:02:03 PM
116	N022819-004B	SAMP	1	02/03/2017	06:06:57 PM
117	MB-61045	MBLK	1	02/03/2017	06:11:49 PM
7	CCV6	CCV	1	02/03/2017	06:16:41 PM
1	CCB6	CCB	1	02/03/2017	06:22:06 PM
2	LLCCV2	CCV2	1	02/03/2017	06:26:54 PM
4	ICSA3	ICSA	1	02/03/2017	06:31:43 PM
5	ICSAB3	ICSAB	1	02/03/2017	06:37:44 PM
118	LCS-61045	LCS	1	02/03/2017	06:43:48 PM
119	N022819-001C	SAMP	1	02/03/2017	06:49:42 PM
120	N022819-001C	SAMP	5	02/03/2017	06:54:36 PM
121	N022819-001C-PS	PS	1	02/03/2017	06:59:27 PM
122	N022819-001C-MS	MS	1	02/03/2017	07:05:21 PM
123	N022819-001C-MSD	MSD	1	02/03/2017	07:11:16 PM
124	N022819-002C	SAMP	1	02/03/2017	07:17:09 PM
125	N022819-003C	SAMP	1	02/03/2017	07:22:02 PM
126	N022819-004C	SAMP	1	02/03/2017	07:26:55 PM
127	N022819-005C	SAMP	1	02/03/2017	07:31:47 PM
7	CCV7	CCV	1	02/03/2017	07:36:41 PM
1	CCB7	CCB	1	02/03/2017	07:42:05 PM
128	N022819-006C	SAMP	1	02/03/2017	07:46:53 PM
129	N022819-007C	SAMP	1	02/03/2017	07:51:46 PM
130	N022819-008C	SAMP	1	02/03/2017	07:56:39 PM
131	N022819-009C	SAMP	1	02/03/2017	08:01:31 PM
132	N022820-001C	SAMP	1	02/03/2017	08:06:25 PM
133	N022820-002C	SAMP	1	02/03/2017	08:11:18 PM
134	N022820-003C	SAMP	1	02/03/2017	08:16:11 PM
135	N022819-004C	SAMP	1	02/03/2017	08:21:05 PM
38	MB-61084	MBLK	1	02/03/2017	08:25:59 PM
39	LCS-61084	LCS	1	02/03/2017	08:30:49 PM
7	CCV8	CCV	1	02/03/2017	08:36:42 PM
1	CCB8	CCB	1	02/03/2017	08:42:06 PM
40	N022830-001C	SAMP	1	02/03/2017	08:46:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N022830-001C	SAMP	5	02/03/2017	08:51:45 PM
42	N022830-001C-PS	PS	1	02/03/2017	08:56:36 PM
43	N022830-001C-MS	MS	1	02/03/2017	09:02:29 PM
44	N022830-001C-MSD	MSD	1	02/03/2017	09:08:20 PM
45	N022830-002C	SAMP	1	02/03/2017	09:14:12 PM
46	N022830-003C	SAMP	1	02/03/2017	09:19:03 PM
47	N022830-004C	SAMP	1	02/03/2017	09:23:56 PM
48	N022830-005C	SAMP	1	02/03/2017	09:28:48 PM
49	N022830-006C	SAMP	1	02/03/2017	09:33:41 PM
7	CCV9	CCV	1	02/03/2017	09:38:34 PM
1	CCB9	CCB	1	02/03/2017	09:43:59 PM
2	LLCCV3	CCV2	1	02/03/2017	09:48:47 PM
4	ICSA4	ICSA	1	02/03/2017	09:53:36 PM
5	ICSAB4	ICSAB	1	02/03/2017	09:59:38 PM
50	N022830-007C	SAMP	1	02/03/2017	10:05:42 PM
51	N022830-008C	SAMP	1	02/03/2017	10:10:33 PM
52	N022830-009C	SAMP	1	02/03/2017	10:15:24 PM
53	N022830-010C	SAMP	1	02/03/2017	10:20:15 PM
54	N022830-011C	SAMP	1	02/03/2017	10:25:06 PM
55	N022830-012C	SAMP	1	02/03/2017	10:30:09 PM
56	N022830-013C	SAMP	1	02/03/2017	10:35:02 PM
7	CCV10	CCV	1	02/03/2017	10:39:53 PM
1	CCB10	CCB	1	02/03/2017	10:45:18 PM
2	LLCCV4	CCV2	1	02/03/2017	10:50:06 PM
4	ICSA5	ICSA	1	02/03/2017	10:54:56 PM
5	ICSAB5	ICSAB	1	02/03/2017	11:00:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:54:06 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61045** Prep Code: **3010_W**

Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61045	Aqueous		25	☐	0	0	25	1.000		
MB-61045	Aqueous		25	☐	0	0	25	1.000		
N022819-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001C	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:54:06 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61045** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022820-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004C	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170203A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/03/2017	09:36:11 AM	Fe	273.953	-115	0.00	mg/L	
Standard1	02/03/2017	09:40:34 AM	Fe	273.953	638	0.0200	mg/L	
Standard2	02/03/2017	09:45:24 AM	Fe	273.953	1611	0.050	mg/L	
Standard3	02/03/2017	09:50:13 AM	Fe	273.953	55940	2.000	mg/L	
Standard4	02/03/2017	09:55:05 AM	Fe	273.953	139157	5.000	mg/L	
Standard5	02/03/2017	10:00:58 AM	Fe	273.953	213525	7.500	mg/L	
Standard6	02/03/2017	10:06:50 AM	Fe	273.953	275662	10.000	mg/L	
Standard7	02/03/2017	10:12:15 AM	Fe	273.953	546752	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10263.962	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.713	20	20.00	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10038.799	20	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9974.098	20	10000	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9990.814	20	10000	0	99.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.319	20	20.00	0	107	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9920.896	20	10000	0	99.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.432	20	10000	0	99.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9839.474	20	10000	0	98.4	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.618	20	20.00	0	93.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9777.080	20	10000	0	97.8	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9780.883	20	10000	0	97.8	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9807.103	20	10000	0	98.1	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.263	20	20.00	0	96.3	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9812.023	20	10000	0	98.1	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV4** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.011	20	20.00	0	95.1	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.174296	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.088133	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.224	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.179	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.311	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.460	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.220	20									

Sample ID **CCB7** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.650	20									

Sample ID **CCB8** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.682	20									

Sample ID **CCB9** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.336	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**CCB10**	SampType:	**CCB**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**113277**
Client ID:	**CCB**	Batch ID:	**R113277**	TestNo:	**EPA 6010B**			Analysis Date:	**2/3/2017**		SeqNo:	**2554800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.398	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460033.480	50	500000	0	92.0	80	120				
Calcium	459446.095	500	500000	0	91.9	80	120				
Iron	193578.155	20	200000	0	96.8	80	120				
Magnesium	485934.752	100	500000	0	97.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553675.376	50	500000	0	111	80	120				
Calcium	545836.870	500	500000	0	109	80	120				
Iron	184443.233	20	200000	0	92.2	80	120				
Magnesium	493866.675	100	500000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479168.987	50	500000	0	95.8	80	120				
Calcium	459494.936	500	500000	0	91.9	80	120				
Iron	197710.808	20	200000	0	98.9	80	120				
Magnesium	465996.866	100	500000	0	93.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546002.338	50	500000	0	109	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	532681.050	500	500000	0	107	80	120				
Iron	188002.655	20	200000	0	94.0	80	120				
Magnesium	503028.516	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	475680.154	50	500000	0	95.1	80	120				
Calcium	456809.811	500	500000	0	91.4	80	120				
Iron	193880.663	20	200000	0	96.9	80	120				
Magnesium	456210.447	100	500000	0	91.2	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535909.119	50	500000	0	107	80	120				
Calcium	511085.094	500	500000	0	102	80	120				
Iron	178068.387	20	200000	0	89.0	80	120				
Magnesium	471025.199	100	500000	0	94.2	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473457.689	50	500000	0	94.7	80	120				
Calcium	461054.232	500	500000	0	92.2	80	120				
Iron	195691.460	20	200000	0	97.8	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	477579.044	100	500000	0	95.5	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533737.355	50	500000	0	107	80	120				
Calcium	515514.967	500	500000	0	103	80	120				
Iron	177397.487	20	200000	0	88.7	80	120				
Magnesium	485007.402	100	500000	0	97.0	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	472931.070	50	500000	0	94.6	80	120				
Calcium	460970.478	500	500000	0	92.2	80	120				
Iron	195776.193	20	200000	0	97.9	80	120				
Magnesium	480369.987	100	500000	0	96.1	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533549.111	50	500000	0	107	80	120				
Calcium	515394.609	500	500000	0	103	80	120				
Iron	184484.035	20	200000	0	92.2	80	120				
Magnesium	489540.184	100	500000	0	97.9	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.019	101.94	65-125	PASS
Standard2	ICAL	1	1.013	101.33	65-125	PASS
Standard3	ICAL	1	1.016	101.65	65-125	PASS
Standard4	ICAL	1	1.0013	100.13	65-125	PASS
Standard5	ICAL	1	1	99.54	65-125	PASS
Standard6	ICAL	1	0.99	98.97	65-125	PASS
Standard7	ICAL	1	0.96	96.38	65-125	PASS
ICV	ICV	1	1	99.92	65-125	PASS
ICB	ICB	1	1.025	102.5	65-125	PASS
LLICV	CCV1	1	1.014	101.44	65-125	PASS
ICSA1	ICSA	1	1.021	102.06	65-125	PASS
ICB	ICB	1	1.024	102.37	65-125	PASS
LLICV	CCV1	1	1.026	102.62	65-125	PASS
ICSA1	ICSA	1	1.1	109.96	65-125	PASS
ICSAB1	ICSAB	1	0.83	82.82	65-125	PASS
CCV1	CCV	1	1.0056	100.56	65-125	PASS
CCB1	CCB	1	1.034	103.37	65-125	PASS
CCV2	CCV	1	1.02	102.01	65-125	PASS
CCB2	CCB	1	1.047	104.66	65-125	PASS
CCV3	CCV	1	0.99	98.77	65-125	PASS
CCB3	CCB	1	1.027	102.7	65-125	PASS
LLCCV1	CCV2	1	1.044	104.36	65-125	PASS
ICSA2	ICSA	1	1.095	109.48	65-125	PASS
ICSAB2	ICSAB	1	0.83	83.49	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.66	65-125	PASS
CCV4	CCV	1	0.99	98.68	65-125	PASS
CCB4	CCB	1	1.009	100.9	65-125	PASS
CCV5	CCV	1	1.04	103.99	65-125	PASS
CCB5	CCB	1	1.05	105.05	65-125	PASS
MB-61045	MBLK	1	1.05	104.98	65-125	PASS
CCV6	CCV	1	1.031	103.11	65-125	PASS
CCB6	CCB	1	1.042	104.23	65-125	PASS
LLCCV2	CCV2	1	1.062	106.18	65-125	PASS
ICSA3	ICSA	1	1.12	112.08	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.24	65-125	PASS
LCS-61045	LCS	1	1.023	102.33	65-125	PASS
N022819-001C	SAMP	1	1.0006	100.06	65-125	PASS
N022819-001C	SAMP	5	1.035	103.47	65-125	PASS
N022819-001C-PS	PS	1	1.0035	100.35	65-125	PASS
N022819-001C-MS	MS	1	1.022	102.19	65-125	PASS

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022819-001C-MSD	MSD	1	1.016	101.59	65-125	PASS
N022819-002C	SAMP	1	1.011	101.06	65-125	PASS
N022819-003C	SAMP	1	1.0099	100.99	65-125	PASS
N022819-004C	SAMP	1	1.022	102.25	65-125	PASS
N022819-005C	SAMP	1	1.013	101.34	65-125	PASS
CCV7	CCV	1	1.036	103.64	65-125	PASS
CCB7	CCB	1	1.059	105.86	65-125	PASS
N022819-006C	SAMP	1	1.0078	100.78	65-125	PASS
N022819-007C	SAMP	1	1.032	103.25	65-125	PASS
N022819-008C	SAMP	1	1.035	103.53	65-125	PASS
N022819-009C	SAMP	1	1.0099	100.99	65-125	PASS
N022820-001C	SAMP	1	1.0022	100.22	65-125	PASS
N022820-002C	SAMP	1	1.033	103.3	65-125	PASS
N022820-003C	SAMP	1	0.99	99.4	65-125	PASS
N022819-004C	SAMP	1	1.022	102.17	65-125	PASS
CCV8	CCV	1	1.036	103.57	65-125	PASS
CCB8	CCB	1	1.059	105.9	65-125	PASS
CCV9	CCV	1	1.033	103.32	65-125	PASS
CCB9	CCB	1	1.052	105.17	65-125	PASS
LLCCV3	CCV2	1	1.056	105.56	65-125	PASS
ICSA4	ICSA	1	1.11	111.04	65-125	PASS
ICSAB4	ICSAB	1	0.86	85.83	65-125	PASS
CCV10	CCV	1	1.036	103.62	65-125	PASS
CCB10	CCB	1	1.052	105.16	65-125	PASS
LLCCV4	CCV2	1	1.058	105.76	65-125	PASS
ICSA5	ICSA	1	1.11	111.2	65-125	PASS
ICSAB5	ICSAB	1	0.86	85.93	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022819
Test Method: EPA 6010B
Analysis Date: 2/3/2017

Matrix: Groundwater
Batch No.: 61045

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001C DT 5X	Iron	ug/L	171.8944	NA	151.7342	13.29%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N022819-001C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**113277**
Client ID:	**ZZZZZZ**	Batch ID:	**61045**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/3/2017**	SeqNo:	**2554756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	245.994	20	100.0	151.7	94.3	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61090 **Instrument ID:** ICPMS-02
ASSET #: N022819 **Analyst:** CEI
Method: **Date Analyzed:** 1/31/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in STD 1 & LLCCV2 failed > 15 & 20%. However %RSD of LLICV & %Rec of LLCCV2 passed criteria.

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

1st Level Reviewer 2/7/17 Date: —

2nd Level Reviewer 2/7/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022819-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.13153 * 1 * (25/25)

Arsenic , ug/L = 2.13153

Reporting results in two significant figures,

Arsenic , ug/L = 2.1

% RSD SUMMARY

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.09	15	PASS	0.097	9.58	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	1.84	15	PASS	0.52	6.49	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	0.79	15	PASS	5.23	1.42	15	PASS
Std4-10/100 ppb	ICAL	1	10.065	1.057	15	PASS	10.19	0.17	15	PASS
Std5-20/200 ppb	ICAL	1	20.16	0.68	15	PASS	20.36	1.11	15	PASS
Std6-40/400 ppb	ICAL	1	39.89	0.52	15	PASS	40.36	0.7	15	PASS
Std7-100/1000 ppb	ICAL	1	101.37	0.88	15	PASS	99.76	1.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.32	0.8	15	PASS	200	0.81	15	PASS
ICV	ICV	1	106.17	1.28	15	PASS	10.21	0.76	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0039	173.74	15	<PQL
LLICV	CCV1	1	1.1	3.14	20	PASS	0.99	1.12	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.16	8.37	15	PASS
ICSAB1	ICSAB	1	19	0.68	15	PASS	19.58	0.68	15	PASS
CCV1	CCV	1	20.13	0.29	15	PASS	20.36	1.65	15	PASS
CCB1	CCB	1	0.0067	74.71	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.99	0.76	15	PASS	20.37	1.64	15	PASS
CCB2	CCB	1	0.0032	54.24	15	<PQL	0.0035	155.95	15	<PQL
LLCCV1	CCV2	1	1.12	0.37	20	PASS	1.049	2.18	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.16	5.98	15	PASS
ICSAB2	ICSAB	1	19.027	0.24	15	PASS	19.47	0.36	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	0.0034	99.58	15	<PQL
LCS-61090	LCS	1	106.58	0.34	15	PASS	10.56	1.75	15	PASS
N022819-001B	SAMP	1	120.93	0.53	15	PASS	0.011	50.28	15	<PQL
N022819-002B	SAMP	1	118.94	1.13	15	PASS	<0.000	N/A	15	<PQL
N022819-003B	SAMP	1	124.69	0.5	15	PASS	0.13	9.86	15	PASS
N022819-004B	SAMP	1	127.21	0.28	15	PASS	<0.000	N/A	15	<PQL
N022819-005B	SAMP	1	129.43	0.49	15	PASS	<0.000	N/A	15	<PQL
N022819-006B	SAMP	1	128.22	0.86	15	PASS	<0.000	N/A	15	<PQL
N022819-007B	SAMP	1	124.94	0.32	15	PASS	<0.000	N/A	15	<PQL
N022819-008B	SAMP	1	128.039	0.87	15	PASS	0.0088	41.32	15	<PQL
CCV3	CCV	1	20.61	0.63	15	PASS	21.044	1.42	15	PASS
CCB3	CCB	1	0.0074	29.56	15	<PQL	0.011	43.76	15	<PQL
N022819-009B	SAMP	1	124.66	0.7	15	PASS	<0.000	N/A	15	<PQL
N022819-010B	SAMP	1	98.87	0.6	15	PASS	<0.000	N/A	15	<PQL
N022819-011B	SAMP	1	128.48	1.13	15	PASS	0.97	1.48	15	PASS
N022820-001B	SAMP	1	125.81	0.26	15	PASS	<0.000	N/A	15	<PQL
N022820-002B	SAMP	1	120.67	1.45	15	PASS	0.0051	44.3	15	<PQL
N022820-003B	SAMP	1	118.7	0.29	15	PASS	<0.000	N/A	15	<PQL
N022820-004B	SAMP	1	121.82	0.57	15	PASS	<0.000	N/A	15	<PQL
N022820-005B	SAMP	1	130.26	0.33	15	PASS	0.035	24.6	15	<PQL

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	130.97	0.37	15	PASS	2.067	1.81	15	PASS
CCV4	CCV	1	20.69	0.45	15	PASS	20.8	2.083	15	PASS
CCB4	CCB	1	0.017	22.15	15	<PQL	0.0003	2049.41	15	<PQL
N022828-002B	SAMP	1	130.24	0.35	15	PASS	0.81	3.31	15	PASS
N022819-001B	SAMP	5	24.62	0.35	15	PASS	0.0031	75.65	15	<PQL
N022819-001B	SAMP	25	4.98	1.09	15	PASS	<0.000	N/A	15	<PQL
N022819-001B-PS	PS	1	216.98	0.65	15	PASS	9.53	0.49	15	PASS
N022819-001B-PS	PS	5	45.01	0.8	15	PASS	1.98	3.25	15	PASS
N022819-001B-MS	MS	1	218.4	0.65	15	PASS	9.39	2.24	15	PASS
N022819-001B-MS	MS	5	46.17	0.38	15	PASS	2.0059	1.84	15	PASS
N022819-001B-MSD	MSD	1	220.65	0.32	15	PASS	9.46	0.87	15	PASS
N022819-001B-MSD	MSD	5	46.079	0.54	15	PASS	2	1.31	15	PASS
N022828-001B	SAMP	10	13.74	0.28	15	PASS	0.27	7.89	15	PASS
CCV5	CCV	1	21.16	0.31	15	PASS	20.62	0.81	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.12	1.42	20	PASS	0.99	2.87	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.15	14.62	15	PASS
ICSAB3	ICSAB	1	19.97	0.11	15	PASS	19.47	0.43	15	PASS
N022828-002B	SAMP	10	13.78	0.36	15	PASS	0.067	4.46	15	PASS
CCV6	CCV	1	20.94	1.0051	15	PASS	20.58	1	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV7	CCV	1	21.26	0.77	15	PASS	20.78	1.9	15	PASS
CCB7	CCB	1	0.000015	11366.74	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	21.42	0.76	15	PASS	20.38	0.61	15	PASS
CCB8	CCB	1	0.012	29.75	15	<PQL	0.012	57.47	15	<PQL
LLCCV3	CCV2	1	1.2	0.9	20	PASS	0.98	2.36	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.16	10.61	15	PASS
ICSAB4	ICSAB	1	20.59	0.52	15	PASS	19.61	0.44	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.0071	15	PASS	0.1	25.73	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.53	3.086	15	PASS	0.54	7.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	1.38	15	PASS	5.11	4.75	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	1.01	15	PASS	9.94	1.53	15	PASS
Std5-20/200 ppb	ICAL	1	20.48	0.55	15	PASS	20.23	0.8	15	PASS
Std6-40/400 ppb	ICAL	1	40.67	1.45	15	PASS	39.97	0.77	15	PASS
Std7-100/1000 ppb	ICAL	1	100.42	1.37	15	PASS	99.98	1.22	15	PASS
Std8-200/2000 ppb	ICAL	1	199.59	0.49	15	PASS	199.99	1.51	15	PASS
ICV	ICV	1	103.65	1.73	15	PASS	10.29	0.96	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.024	27.68	15	<PQL
LLICV	CCV1	1	0.58	4.19	20	PASS	0.1	6.97	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.43	0.2	15	PASS	19.91	0.65	15	PASS
CCV1	CCV	1	20.45	1.58	15	PASS	20.21	2.17	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.014	61.009	15	<PQL
CCV2	CCV	1	20.51	0.76	15	PASS	20.021	0.83	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0085	86.81	15	<PQL
LLCCV1	CCV2	1	0.62	0.49	20	PASS	0.11	11.15	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.36	1.028	15	PASS	19.54	1.44	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	0.0032	468.064	15	<PQL
LCS-61090	LCS	1	105.58	0.84	15	PASS	10.49	2.089	15	PASS
N022819-001B	SAMP	1	1.69	3.15	15	PASS	2.13	4.87	15	PASS
N022819-002B	SAMP	1	0.79	7.94	15	PASS	2.084	1.8	15	PASS
N022819-003B	SAMP	1	2.24	1.62	15	PASS	2.22	3.36	15	PASS
N022819-004B	SAMP	1	0.35	5.28	15	PASS	2.1	0.38	15	PASS
N022819-005B	SAMP	1	0.56	1.1	15	PASS	2.22	4.38	15	PASS
N022819-006B	SAMP	1	0.49	13.0028	15	PASS	2.19	2.019	15	PASS
N022819-007B	SAMP	1	0.47	14.75	15	PASS	2.15	2.43	15	PASS
N022819-008B	SAMP	1	0.78	4.43	15	PASS	2.2	3.041	15	PASS
CCV3	CCV	1	20.92	1.74	15	PASS	20.035	2.12	15	PASS
CCB3	CCB	1	0.0016	316.89	15	<PQL	0.0057	172.31	15	<PQL
N022819-009B	SAMP	1	1.4	3.91	15	PASS	2.14	3.73	15	PASS
N022819-010B	SAMP	1	29.012	2.69	15	PASS	2.12	0.82	15	PASS
N022819-011B	SAMP	1	35.39	1.29	15	PASS	1.73	5.33	15	PASS
N022820-001B	SAMP	1	0.35	23.15	15	<PQL	2.21	2.86	15	PASS
N022820-002B	SAMP	1	0.83	6.23	15	PASS	2.22	1.12	15	PASS
N022820-003B	SAMP	1	0.7	7.41	15	PASS	2.19	5.86	15	PASS
N022820-004B	SAMP	1	0.61	14.48	15	PASS	2.19	0.75	15	PASS
N022820-005B	SAMP	1	28.35	2.081	15	PASS	1.62	2.77	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	1186.91	1.1	15	PASS	0.59	6.36	15	PASS
CCV4	CCV	1	20.057	0.93	15	PASS	20.41	0.33	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0093	126.17	15	<PQL
N022828-002B	SAMP	1	1202.19	0.82	15	PASS	0.51	2.1	15	PASS
N022819-001B	SAMP	5	0.37	4.18	15	PASS	0.43	4.69	15	PASS
N022819-001B	SAMP	25	0.08	19.26	15	<PQL	0.097	1.32	15	PASS
N022819-001B-PS	PS	1	95.63	0.55	15	PASS	12.055	1.37	15	PASS
N022819-001B-PS	PS	5	20.07	2.41	15	PASS	2.44	0.8	15	PASS
N022819-001B-MS	MS	1	93.65	0.55	15	PASS	11.86	2.088	15	PASS
N022819-001B-MS	MS	5	20.043	0.77	15	PASS	2.48	4.69	15	PASS
N022819-001B-MSD	MSD	1	93.71	0.33	15	PASS	12.02	0.8	15	PASS
N022819-001B-MSD	MSD	5	20.087	0.52	15	PASS	2.54	2.31	15	PASS
N022828-001B	SAMP	10	125.66	0.95	15	PASS	0.071	16.52	15	<PQL
CCV5	CCV	1	20.78	2.18	15	PASS	20.32	1.49	15	PASS
CCB5	CCB	1	0.019	35.83	15	<PQL	0.0072	62.93	15	<PQL
LLCCV2	CCV2	1	0.64	3.41	20	PASS	0.11	20.51	20	FAILED
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.18	0.42	15	PASS	20.092	0.52	15	PASS
N022828-002B	SAMP	10	127.98	1.35	15	PASS	0.063	20.31	15	<PQL
CCV6	CCV	1	20.7	0.86	15	PASS	20.3	2.31	15	PASS
CCB6	CCB	1	0.0011	364.016	15	<PQL	0.026	51.49	15	<PQL
CCV7	CCV	1	20.34	1.68	15	PASS	20.38	1.051	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0085	69.49	15	<PQL
CCV8	CCV	1	20.39	0.7	15	PASS	20.62	1.14	15	PASS
CCB8	CCB	1	0.13	13.74	15	PASS	0.0066	76.2	15	<PQL
LLCCV3	CCV2	1	0.62	7.38	20	PASS	0.099	22.06	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.43	0.6	15	PASS	19.7	1.11	15	PASS

%RSD of As of LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.081	33.12	15	<PQL	0.076	14.89	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.43	1.93	15	PASS	0.45	6.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.16	3.52	15	PASS	4.73	2.96	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	2.022	15	PASS	9.63	0.74	15	PASS
Std5-20/200 ppb	ICAL	1	20.097	2.78	15	PASS	19.37	1.49	15	PASS
Std6-40/400 ppb	ICAL	1	39.87	1.32	15	PASS	39.51	1.084	15	PASS
Std7-100/1000 ppb	ICAL	1	100.35	1.38	15	PASS	100.38	2.13	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.49	15	PASS	199.29	1.14	15	PASS
ICV	ICV	1	10.43	2.27	15	PASS	10.99	0.68	15	PASS
ICB	ICB	1	0.031	109.058	15	<PQL	0.22	3.91	15	PASS
LLICV	CCV1	1	0.47	14.4	20	PASS	0.5	4.2	20	PASS
ICSA1	ICSA	1	0.017	98.94	15	<PQL	0.065	21.41	15	<PQL
ICSAB1	ICSAB	1	18.26	4.59	15	PASS	22.87	1.15	15	PASS
CCV1	CCV	1	20.65	0.48	15	PASS	19.61	1.63	15	PASS
CCB1	CCB	1	0.034	52.43	15	<PQL	0.11	5.75	15	PASS
CCV2	CCV	1	20.64	2.74	15	PASS	19.45	2.084	15	PASS
CCB2	CCB	1	0.0042	446.91	15	<PQL	0.1	12.28	15	PASS
LLCCV1	CCV2	1	0.57	19.55	20	PASS	0.52	0.71	20	PASS
ICSA2	ICSA	1	0.038	72.95	15	<PQL	0.028	41.89	15	<PQL
ICSAB2	ICSAB	1	18.34	3.082	15	PASS	22.91	0.83	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61090	LCS	1	9.76	1.64	15	PASS	9.9	0.73	15	PASS
N022819-001B	SAMP	1	1.47	9.04	15	PASS	5.035	2.95	15	PASS
N022819-002B	SAMP	1	1.39	11.36	15	PASS	4.96	2.19	15	PASS
N022819-003B	SAMP	1	1.61	8.69	15	PASS	5.17	0.76	15	PASS
N022819-004B	SAMP	1	1.49	9.064	15	PASS	5.48	1.15	15	PASS
N022819-005B	SAMP	1	1.51	10.62	15	PASS	5.31	0.76	15	PASS
N022819-006B	SAMP	1	1.56	10.099	15	PASS	5.41	1.45	15	PASS
N022819-007B	SAMP	1	1.47	2.3	15	PASS	5.11	0.19	15	PASS
N022819-008B	SAMP	1	1.6	10.23	15	PASS	5.38	0.29	15	PASS
CCV3	CCV	1	20.47	3.15	15	PASS	19.051	0.07	15	PASS
CCB3	CCB	1	0.011	34.76	15	<PQL	0.041	21.87	15	<PQL
N022819-009B	SAMP	1	1.66	3.064	15	PASS	5.31	2.28	15	PASS
N022819-010B	SAMP	1	0.38	15.65	15	<PQL	4.021	1.94	15	PASS
N022819-011B	SAMP	1	0.47	23.31	15	<PQL	4.42	1.25	15	PASS
N022820-001B	SAMP	1	1.74	14.44	15	PASS	5.34	2.36	15	PASS
N022820-002B	SAMP	1	1.72	9.22	15	PASS	5.65	1.28	15	PASS
N022820-003B	SAMP	1	1.53	9.33	15	PASS	5.14	0.82	15	PASS
N022820-004B	SAMP	1	1.61	8.71	15	PASS	5.15	1.84	15	PASS
N022820-005B	SAMP	1	0.4	6.19	15	PASS	4.51	1.43	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	<0.000	N/A	15	<PQL	4.27	2.25	15	PASS
CCV4	CCV	1	21.18	0.63	15	PASS	19.65	0.75	15	PASS
CCB4	CCB	1	0.033	57.077	15	<PQL	0.1	15.51	15	<PQL
N022828-002B	SAMP	1	0.0015	1132.19	15	<PQL	4.26	0.71	15	PASS
N022819-001B	SAMP	5	0.35	11.35	15	PASS	0.98	1.3	15	PASS
N022819-001B	SAMP	25	0.043	64.33	15	<PQL	0.17	9.69	15	PASS
N022819-001B-PS	PS	1	10.71	1.52	15	PASS	16.038	1.19	15	PASS
N022819-001B-PS	PS	5	2.39	0.57	15	PASS	3.087	0.26	15	PASS
N022819-001B-MS	MS	1	10.86	2.72	15	PASS	16.36	3.19	15	PASS
N022819-001B-MS	MS	5	2.39	7.96	15	PASS	3.06	2.85	15	PASS
N022819-001B-MSD	MSD	1	10.97	1.17	15	PASS	16.25	0.39	15	PASS
N022819-001B-MSD	MSD	5	2.53	8.31	15	PASS	3.14	0.63	15	PASS
N022828-001B	SAMP	10	0.018	170.93	15	<PQL	0.59	10.19	15	PASS
CCV5	CCV	1	20.67	3.08	15	PASS	20.08	1.44	15	PASS
CCB5	CCB	1	0.024	52.64	15	<PQL	0.083	18.54	15	<PQL
LLCCV2	CCV2	1	0.46	4.29	20	PASS	0.49	4.59	20	PASS
ICSA3	ICSA	1	0.0088	274.25	15	<PQL	0.015	50.38	15	<PQL
ICSAB3	ICSAB	1	18.98	3.4	15	PASS	23.7	1.03	15	PASS
N022828-002B	SAMP	10	0.031	103.28	15	<PQL	0.49	4.15	15	PASS
CCV6	CCV	1	20.5	1.11	15	PASS	19.84	1.67	15	PASS
CCB6	CCB	1	0.02	34.39	15	<PQL	0.1	5.69	15	PASS
CCV7	CCV	1	21.13	3.35	15	PASS	20	0.99	15	PASS
CCB7	CCB	1	0.025	99.26	15	<PQL	0.097	10.41	15	PASS
CCV8	CCV	1	21.7	1.57	15	PASS	19.97	1.52	15	PASS
CCB8	CCB	1	0.03	30.14	15	<PQL	0.1	7.32	15	PASS
LLCCV3	CCV2	1	0.5	14.26	20	PASS	0.43	2.76	20	PASS
ICSA4	ICSA	1	0.018	97.66	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	18.97	2.24	15	PASS	23.67	1.56	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131001.D	RINSE	RINSE	1	01/31/17 11:19 AM
B0131002.D	Cal Blank	IBLK	1	01/31/17 11:25 AM
B0131003.D	Std1-0.1/1 ppb	ICAL	1	01/31/17 11:31 AM
B0131004.D	Std2-0.5/5 ppb	ICAL	1	01/31/17 11:37 AM
B0131005.D	Std3-5/50 ppb	ICAL	1	01/31/17 11:43 AM
B0131006.D	Std4-10/100 ppb	ICAL	1	01/31/17 11:49 AM
B0131007.D	Std5-20/200 ppb	ICAL	1	01/31/17 11:55 AM
B0131008.D	Std6-40/400 ppb	ICAL	1	01/31/17 12:01 PM
B0131009.D	Std7-100/1000 ppb	ICAL	1	01/31/17 12:07 PM
B0131010.D	Std8-200/2000 ppb	ICAL	1	01/31/17 12:14 PM
B0131011.D	ICV	ICV	1	01/31/17 12:20 PM
B0131012.D	ICB	ICB	1	01/31/17 12:26 PM
B0131013.D	LLICV	CCV1	1	01/31/17 12:32 PM
B0131014.D	ICSA1	ICSA	1	01/31/17 12:37 PM
B0131015.D	ICSAB1	ICSAB	1	01/31/17 12:43 PM
B0131016.D	N022702-011B	SAMP	5	01/31/17 12:49 PM
B0131017.D	N022702-012B	SAMP	1	01/31/17 12:55 PM
B0131018.D	N022702-012A	SAMP	1	01/31/17 1:00 PM
B0131019.D	MB-61017	MBLK	1	01/31/17 1:06 PM
B0131020.D	LCS-61017	LCS	1	01/31/17 1:12 PM
B0131021.D	N022713-001B	SAMP	5	01/31/17 1:18 PM
B0131022.D	N022713-001B	SAMP	25	01/31/17 1:23 PM
B0131023.D	N022713-001B-PS	PS	5	01/31/17 1:29 PM
B0131024.D	N022713-001B-MS	MS	5	01/31/17 1:35 PM
B0131025.D	N022713-001B-MSD	MSD	5	01/31/17 1:41 PM
B0131026.D	CCV1	CCV	1	01/31/17 1:47 PM
B0131027.D	CCB1	CCB	1	01/31/17 1:53 PM
B0131028.D	N022713-002B	SAMP	5	01/31/17 1:59 PM
B0131029.D	N022713-003B	SAMP	5	01/31/17 2:06 PM
B0131030.D	N022713-004B	SAMP	5	01/31/17 2:12 PM
B0131031.D	CCV2	CCV	1	01/31/17 2:18 PM
B0131032.D	CCB2	CCB	1	01/31/17 2:24 PM
B0131033.D	LLCCV1	CCV2	1	01/31/17 2:32 PM
B0131034.D	ICSA2	ICSA	1	01/31/17 2:38 PM
B0131035.D	ICSAB2	ICSAB	1	01/31/17 2:44 PM
B0131036.D	MB-61090	MBLK	1	01/31/17 3:09 PM
B0131037.D	LCS-61090	LCS	1	01/31/17 3:15 PM
B0131038.D	N022819-001B	SAMP	1	01/31/17 3:20 PM
B0131039.D	N022819-002B	SAMP	1	01/31/17 3:26 PM
B0131040.D	N022819-003B	SAMP	1	01/31/17 3:31 PM
B0131041.D	N022819-004B	SAMP	1	01/31/17 3:37 PM
B0131042.D	N022819-005B	SAMP	1	01/31/17 3:42 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131043.D	N022819-006B	SAMP	1	01/31/17 3:48 PM
B0131044.D	N022819-007B	SAMP	1	01/31/17 3:53 PM
B0131045.D	N022819-008B	SAMP	1	01/31/17 3:59 PM
B0131046.D	CCV3	CCV	1	01/31/17 4:05 PM
B0131047.D	CCB3	CCB	1	01/31/17 4:11 PM
B0131048.D	N022819-009B	SAMP	1	01/31/17 4:17 PM
B0131049.D	N022819-010B	SAMP	1	01/31/17 4:23 PM
B0131050.D	N022819-011B	SAMP	1	01/31/17 4:29 PM
B0131051.D	N022820-001B	SAMP	1	01/31/17 4:35 PM
B0131052.D	N022765-001A	SAMP	1	01/31/17 4:42 PM
B0131053.D	N022820-002B	SAMP	1	01/31/17 4:48 PM
B0131054.D	N022820-003B	SAMP	1	01/31/17 4:55 PM
B0131055.D	N022820-004B	SAMP	1	01/31/17 5:01 PM
B0131056.D	N022820-005B	SAMP	1	01/31/17 5:07 PM
B0131057.D	N022828-001B	SAMP	1	01/31/17 5:13 PM
B0131058.D	CCV4	CCV	1	01/31/17 5:20 PM
B0131059.D	CCB4	CCB	1	01/31/17 5:26 PM
B0131060.D	N022828-002B	SAMP	1	01/31/17 5:32 PM
B0131061.D	N022819-001B	SAMP	5	01/31/17 5:38 PM
B0131062.D	N022819-001B	SAMP	25	01/31/17 5:44 PM
B0131063.D	N022819-001B-PS	PS	1	01/31/17 5:51 PM
B0131064.D	N022819-001B-PS	PS	5	01/31/17 5:57 PM
B0131065.D	N022819-001B-MS	MS	1	01/31/17 6:03 PM
B0131066.D	N022819-001B-MS	MS	5	01/31/17 6:11 PM
B0131067.D	N022819-001B-MSD	MSD	1	01/31/17 6:17 PM
B0131068.D	N022819-001B-MSD	MSD	5	01/31/17 6:23 PM
B0131069.D	N022828-001B	SAMP	10	01/31/17 6:27 PM
B0131070.D	CCV5	CCV	1	01/31/17 6:33 PM
B0131071.D	CCB5	CCB	1	01/31/17 6:39 PM
B0131072.D	LLCCV2	CCV2	1	01/31/17 6:45 PM
B0131073.D	ICSA3	ICSA	1	01/31/17 6:52 PM
B0131074.D	ICSAB3	ICSAB	1	01/31/17 6:58 PM
B0131075.D	N022828-002B	SAMP	10	01/31/17 7:04 PM
B0131076.D	MB-61101	MBLK	1	01/31/17 7:10 PM
B0131077.D	LCS-61101	LCS	1	01/31/17 7:17 PM
B0131078.D	N022830-001B	SAMP	1	01/31/17 7:23 PM
B0131079.D	N022830-001B	SAMP	5	01/31/17 7:30 PM
B0131080.D	N022830-001B	SAMP	25	01/31/17 7:36 PM
B0131081.D	N022830-001B-PS	PS	1	01/31/17 7:41 PM
B0131082.D	N022830-001B-PS	PS	5	01/31/17 7:47 PM
B0131083.D	N022830-001B-MS	MS	1	01/31/17 7:54 PM
B0131084.D	N022830-001B-MS	MS	5	01/31/17 8:00 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131085.D	CCV6	CCV	1	01/31/17 8:06 PM
B0131086.D	CCB6	CCB	1	01/31/17 8:12 PM
B0131087.D	N022830-001B-MSD	MSD	1	01/31/17 8:19 PM
B0131088.D	N022830-001B-MSD	MSD	5	01/31/17 8:25 PM
B0131089.D	N022830-002B	SAMP	1	01/31/17 8:31 PM
B0131090.D	N022830-003B	SAMP	1	01/31/17 8:37 PM
B0131091.D	N022830-004B	SAMP	1	01/31/17 8:43 PM
B0131092.D	N022830-005B	SAMP	1	01/31/17 8:49 PM
B0131093.D	N022830-006B	SAMP	1	01/31/17 8:56 PM
B0131094.D	N022830-007B	SAMP	1	01/31/17 9:02 PM
B0131095.D	N022830-008B	SAMP	1	01/31/17 9:08 PM
B0131096.D	N022830-009B	SAMP	1	01/31/17 9:14 PM
B0131097.D	CCV7	CCV	1	01/31/17 9:20 PM
B0131098.D	CCB7	CCB	1	01/31/17 9:27 PM
B0131099.D	N022830-010B	SAMP	1	01/31/17 9:33 PM
B0131100.D	N022830-011B	SAMP	1	01/31/17 9:39 PM
B0131101.D	N022830-012B	SAMP	1	01/31/17 9:45 PM
B0131102.D	N022830-013B	SAMP	1	01/31/17 9:51 PM
B0131103.D	N022866-001B	SAMP	1	01/31/17 9:58 PM
B0131104.D	N022866-002B	SAMP	1	01/31/17 10:04 PM
B0131105.D	N022866-003B	SAMP	1	01/31/17 10:10 PM
B0131106.D	N022866-004B	SAMP	1	01/31/17 10:16 PM
B0131107.D	N022866-005B	SAMP	1	01/31/17 10:23 PM
B0131108.D	N022869-001B	SAMP	1	01/31/17 10:29 PM
B0131109.D	CCV8	CCV	1	01/31/17 10:35 PM
B0131110.D	CCB8	CCB	1	01/31/17 10:41 PM
B0131111.D	LLCCV3	CCV2	1	01/31/17 10:46 PM
B0131112.D	ICSA4	ICSA	1	01/31/17 10:52 PM
B0131113.D	ICSAB4	ICSAB	1	01/31/17 10:59 PM
B0131114.D	RINSE	RINSE	1	01/31/17 11:05 PM
B0131115.D	RINSE	RINSE	1	01/31/17 11:11 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 5:37:44 P**
Prep End Date: **1/30/2017 10:00:00**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61090** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61090	Aqueous		25	☐	0	0	25	1.000		
MB-61090	Aqueous		25	☐	0	0	25	1.000		
N022819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-010B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 5:37:44 P**
Prep End Date: **1/30/2017 10:00:00**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/17

Prep Batch **61090** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022819-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022828-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022828-002B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 31 Jan 2017 04:01:54 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	131611.00	0.00	
24 Mg	638961.00	0.00	
25 Mg	85332.30	0.00	
26 Mg	99587.20	0.00	
59 Co	1051940.00	0.00	
115 In	1763610.00	0.00	
206 Pb	408165.00	0.00	
207 Pb	356161.00	0.00	
208 Pb	871166.00	0.00	

RSD (%)

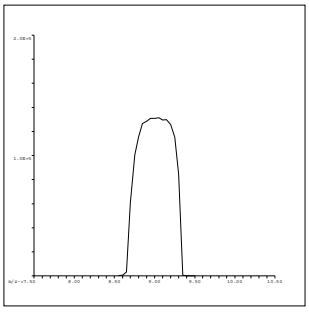
Element	Actual	Required	Flag
9 Be	0.79	5.00	
24 Mg	0.67	5.00	
25 Mg	1.60	5.00	
26 Mg	0.77	5.00	
59 Co	0.26	5.00	
115 In	1.17	5.00	
206 Pb	0.70	5.00	
207 Pb	0.78	5.00	
208 Pb	1.14	5.00	

Ion Ratio

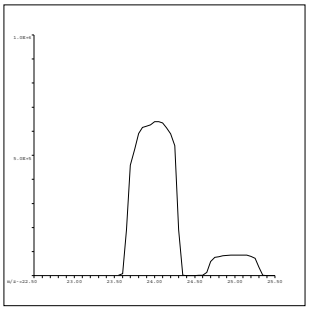
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

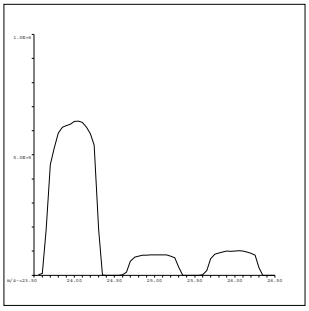
Element	Actual	Required	Flag



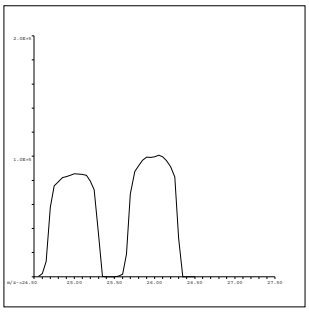
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



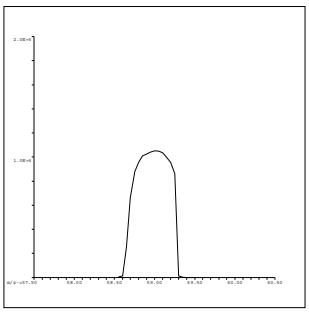
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



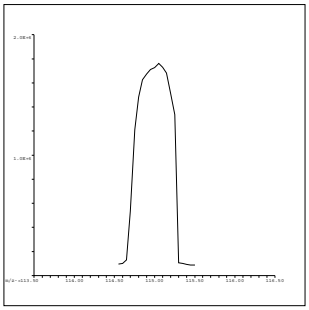
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



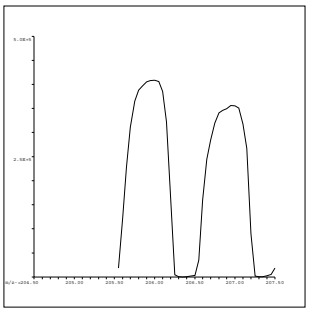
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



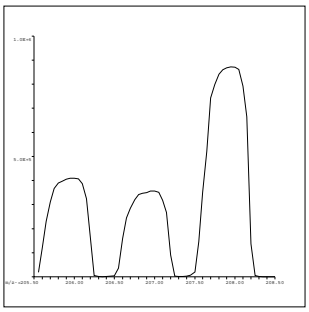
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



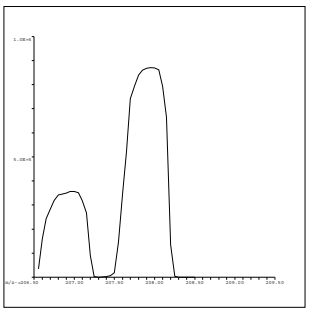
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170131B

Instrument ID: ICPMS-02

Analyte	Data File	B0131002.D	B0131003.D	B0131004.D	B0131005.D	B0131006.D	B0131007.D	B0131008.D	B0131009.D	B0131010.D	
	Acq. Date-Time	01/31/2017 11:25 AM	01/31/2017 11:31 AM	01/31/2017 11:37 AM	01/31/2017 11:43 AM	01/31/2017 11:49 AM	01/31/2017 11:55 AM	01/31/2017 12:01 PM	01/31/2017 12:07 PM	01/31/2017 12:14 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	115641.6		111759.4	109659.2	111454.2	109672.4	110666.9	109640	108137.5	
55 Mn [2]	CPS	192.3		2815	25416.3	51109.5	100548.8	201287.8	492134.9	964700.6	1.0000
52 Cr [2]	CPS	334.4		5067.6	46987	92737.2	182033.3	363831.2	890396.2	1760595.8	1.0000
72 Ge (ISTD) [1]	CPS	119129.6		118555.4	117753.1	118443.8	115207.4	117526.3	114837.2	113955.7	
78 Se [1]	CPS	8.9		231.1	2631.4	5175.5	9996.8	20223.3	49717	98236.2	1.0000
72 Ge (ISTD) [2]	CPS	86650.6	86828.6	85526.1	84109.1	85664.4	83615.3	84373.7	83251.3	81836.4	
75 As [2]	CPS	17.3	116	530.7	4825.2	9540.2	18936.9	37741.7	93131.7	183099.2	1.0000
103 Rh (ISTD) [2]	CPS	2797828.2		2762455	2752620.4	2748370.7	2731148.9	2709646.6	2657339.1	2617508.9	
95 Mo [2]	CPS	265.6		3083.8	29869.9	60383.5	120496.4	243546.6	606391.1	1185819.6	1.0000
159 Tb (ISTD) [3]	CPS	10020482.6		10003866.8	9983591.8	9979748.6	9926777.7	9925572.8	9862566	9824120.2	
137 Ba [3]	CPS	654.1		10250.5	86843.5	169686.1	337356.4	666969.9	1683188.6	3295940.6	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.292	0.10	10.00	0	103	90	110				
Barium	106.172	1.0	100.0	0	106	90	110				
Manganese	103.645	0.50	100.0	0	104	90	110				
Molybdenum	10.990	0.50	10.00	0	110	90	110				
Selenium	10.430	0.50	10.00	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.100	0.10	0.1000	0	99.6	80	120				
Barium	1.103	1.0	1.000	0	110	80	120				
Manganese	0.581	0.50	0.5000	0	116	80	120				
Molybdenum	0.496	0.50	0.5000	0	99.1	80	120				
Selenium	0.471	0.50	0.5000	0	94.2	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.215	0.10	20.00	0	101	90	110				
Barium	20.135	1.0	20.00	0	101	90	110				
Manganese	20.447	0.50	20.00	0	102	90	110				
Molybdenum	19.611	0.50	20.00	0	98.1	90	110				
Selenium	20.654	0.50	20.00	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.021	0.10	20.00	0	100	90	110				
Barium	19.988	1.0	20.00	0	99.9	90	110				
Manganese	20.507	0.50	20.00	0	103	90	110				
Molybdenum	19.449	0.50	20.00	0	97.2	90	110				
Selenium	20.642	0.50	20.00	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Barium	1.121	1.0	1.000	0	112	70	130				
Manganese	0.624	0.50	0.5000	0	125	70	130				
Molybdenum	0.518	0.50	0.5000	0	104	70	130				
Selenium	0.568	0.50	0.5000	0	114	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.035	0.10	20.00	0	100	90	110				
Barium	20.611	1.0	20.00	0	103	90	110				
Manganese	20.924	0.50	20.00	0	105	90	110				
Molybdenum	19.051	0.50	20.00	0	95.3	90	110				
Selenium	20.471	0.50	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.411	0.10	20.00	0	102	90	110				
Barium	20.692	1.0	20.00	0	103	90	110				
Manganese	20.057	0.50	20.00	0	100	90	110				
Molybdenum	19.646	0.50	20.00	0	98.2	90	110				
Selenium	21.185	0.50	20.00	0	106	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.319	0.10	20.00	0	102	90	110				
Barium	21.165	1.0	20.00	0	106	90	110				
Manganese	20.783	0.50	20.00	0	104	90	110				
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	20.671	0.50	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Barium	1.123	1.0	1.000	0	112	70	130				
Manganese	0.635	0.50	0.5000	0	127	70	130				
Molybdenum	0.488	0.50	0.5000	0	97.6	70	130				
Selenium	0.463	0.50	0.5000	0	92.7	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.301	0.10	20.00	0	102	90	110				
Barium	20.943	1.0	20.00	0	105	90	110				
Manganese	20.697	0.50	20.00	0	103	90	110				
Molybdenum	19.839	0.50	20.00	0	99.2	90	110				
Selenium	20.498	0.50	20.00	0	102	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.381	0.10	20.00	0	102	90	110				
Barium	21.255	1.0	20.00	0	106	90	110				
Manganese	20.336	0.50	20.00	0	102	90	110				
Molybdenum	19.995	0.50	20.00	0	100	90	110				
Selenium	21.128	0.50	20.00	0	106	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.619	0.10	20.00	0	103	90	110				
Barium	21.418	1.0	20.00	0	107	90	110				
Manganese	20.391	0.50	20.00	0	102	90	110				
Molybdenum	19.972	0.50	20.00	0	99.9	90	110				
Selenium	21.696	0.50	20.00	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	99.0	70	130				
Barium	1.199	1.0	1.000	0	120	70	130				
Manganese	0.618	0.50	0.5000	0	124	70	130				
Molybdenum	0.428	0.50	0.5000	0	85.5	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.210	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.990	1.0	1.000	0	99.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.362	1.0	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.369	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.049	1.0	1.000	0	105	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.044	1.0	20.00	0	105	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.801	1.0	20.00	0	104	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.618	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.987	1.0	1.000	0	98.7	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.575	1.0	20.00	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.778	1.0	20.00	0	104	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.377	1.0	20.00	0	102	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.216	0.50									
Selenium	0.031	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	0.034	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.101	0.50									
Selenium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549957

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.103	0.50									
Selenium	0.033	0.50									

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549969

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB6	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.026	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.100	0.50									
Selenium	ND	0.50									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.097	0.50									
Selenium	ND	0.50									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2550008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	0.129	0.50									
Molybdenum	0.103	0.50									
Selenium	0.030	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549807**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549822**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549827**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549842**

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

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549854**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549866

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

Sample ID	CCB6	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549881

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

Sample ID	CCB7	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549893

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

Sample ID	CCB8	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549905

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.065	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.908	0.10	20.00	0	99.5	80	120				
Barium	18.998	1.0	20.00	0	95.0	80	120				
Manganese	19.426	0.50	20.00	0	97.1	80	120				
Molybdenum	22.873	0.50	20.00	0	114	80	120				
Selenium	18.260	0.50	20.00	0	91.3	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.038	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.542	0.10	20.00	0	97.7	80	120				
Barium	19.027	1.0	20.00	0	95.1	80	120				
Manganese	19.359	0.50	20.00	0	96.8	80	120				
Molybdenum	22.906	0.50	20.00	0	115	80	120				
Selenium	18.342	0.50	20.00	0	91.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.092	0.10	20.00	0	100	80	120				
Barium	19.972	1.0	20.00	0	99.9	80	120				
Manganese	20.179	0.50	20.00	0	101	80	120				
Molybdenum	23.699	0.50	20.00	0	118	80	120				
Selenium	18.981	0.50	20.00	0	94.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.704	0.10	20.00	0	98.5	80	120				
Barium	20.592	1.0	20.00	0	103	80	120				
Manganese	20.428	0.50	20.00	0	102	80	120				
Molybdenum	23.674	0.50	20.00	0	118	80	120				
Selenium	18.970	0.50	20.00	0	94.8	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.158	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.582	1.0	20.00	0	97.9	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.160	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.466	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.148	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.465	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.155	1.0									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.611	1.0	20.00	0	98.1	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	10020482.6	10020482.6	100	PASS	70-125	115641.6	115641.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	10053104.1	10020482.6	100.33	PASS	70-125	115171.3	115641.6	99.59	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	10003866.8	10020482.6	99.83	PASS	70-125	111759.4	115641.6	96.64	PASS	70-125
Std3-5/50 ppb	ICAL	1	9983591.8	10020482.6	99.63	PASS	70-125	109659.2	115641.6	94.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	9979748.6	10020482.6	99.59	PASS	70-125	111454.2	115641.6	96.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	9926777.7	10020482.6	99.065	PASS	70-125	109672.4	115641.6	94.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	9925572.8	10020482.6	99.053	PASS	70-125	110666.9	115641.6	95.7	PASS	70-125
Std7-100/1000 ppb	ICAL	1	9862566	10020482.6	98.42	PASS	70-125	109640	115641.6	94.81	PASS	70-125
Std8-200/2000 ppb	ICAL	1	9824120.2	10020482.6	98.04	PASS	70-125	108137.5	115641.6	93.51	PASS	70-125
ICV	ICV	1	9804283.1	10020482.6	97.84	PASS	70-125	106355.6	115641.6	91.97	PASS	70-125
ICB	ICB	1	10073009.6	10020482.6	100.52	PASS	70-125	106153.2	115641.6	91.79	PASS	70-125
LLICV	CCV1	1	10732899.8	10020482.6	107.11	PASS	70-125	123572.2	115641.6	106.86	PASS	70-125
ICSA1	ICSA	1	9289624.2	10020482.6	92.71	PASS	70-125	118531.5	115641.6	102.5	PASS	70-125
ICSAB1	ICSAB	1	9507913.7	10020482.6	94.88	PASS	70-125	132732.4	115641.6	114.78	PASS	70-125
CCV1	CCV	1	9934727.1	10020482.6	99.14	PASS	70-125	106383.8	115641.6	91.99	PASS	70-125
CCB1	CCB	1	9967357.5	10020482.6	99.47	PASS	70-125	104859.8	115641.6	90.68	PASS	70-125
CCV2	CCV	1	9844606.3	10020482.6	98.24	PASS	70-125	102664.5	115641.6	88.78	PASS	70-125
CCB2	CCB	1	9829258.7	10020482.6	98.092	PASS	70-125	99374.5	115641.6	85.93	PASS	70-125
LLCCV1	CCV2	1	9858625.2	10020482.6	98.38	PASS	70-125	98006.8	115641.6	84.75	PASS	70-125
ICSA2	ICSA	1	9258985.2	10020482.6	92.4	PASS	70-125	114165.4	115641.6	98.72	PASS	70-125
ICSAB2	ICSAB	1	9615935.3	10020482.6	95.96	PASS	70-125	129066.5	115641.6	111.61	PASS	70-125
MB-61090	MBLK	1	9962840.5	10020482.6	99.42	PASS	70-125	107021.2	115641.6	92.55	PASS	70-125
LCS-61090	LCS	1	10083915.9	10020482.6	100.63	PASS	70-125	108912.1	115641.6	94.18	PASS	70-125
N022819-001B	SAMP	1	9516637.1	10020482.6	94.97	PASS	70-125	109608.2	115641.6	94.78	PASS	70-125
N022819-002B	SAMP	1	9629741.9	10020482.6	96.1	PASS	70-125	112760.7	115641.6	97.51	PASS	70-125
N022819-003B	SAMP	1	9507048.9	10020482.6	94.88	PASS	70-125	113150.2	115641.6	97.85	PASS	70-125
N022819-004B	SAMP	1	9664690.9	10020482.6	96.45	PASS	70-125	114070.5	115641.6	98.64	PASS	70-125
N022819-005B	SAMP	1	9538260	10020482.6	95.19	PASS	70-125	112689.7	115641.6	97.45	PASS	70-125
N022819-006B	SAMP	1	9883831.2	10020482.6	98.64	PASS	70-125	115193.8	115641.6	99.61	PASS	70-125
N022819-007B	SAMP	1	9854444.1	10020482.6	98.34	PASS	70-125	115519.5	115641.6	99.89	PASS	70-125
N022819-008B	SAMP	1	9976004.6	10020482.6	99.56	PASS	70-125	116952.5	115641.6	101.13	PASS	70-125
CCV3	CCV	1	10632956.5	10020482.6	106.11	PASS	70-125	117248.8	115641.6	101.39	PASS	70-125
CCB3	CCB	1	10309530.1	10020482.6	102.88	PASS	70-125	112825.1	115641.6	97.56	PASS	70-125
N022819-009B	SAMP	1	9749163.3	10020482.6	97.29	PASS	70-125	112820.7	115641.6	97.56	PASS	70-125
N022819-010B	SAMP	1	9871309	10020482.6	98.51	PASS	70-125	113407	115641.6	98.068	PASS	70-125
N022819-011B	SAMP	1	9841227.8	10020482.6	98.21	PASS	70-125	112409.7	115641.6	97.21	PASS	70-125
N022820-001B	SAMP	1	10110616	10020482.6	100.9	PASS	70-125	115693.5	115641.6	100.05	PASS	70-125
N022820-002B	SAMP	1	9926315.5	10020482.6	99.06	PASS	70-125	98782.1	115641.6	85.42	PASS	70-125
N022820-003B	SAMP	1	9895204.6	10020482.6	98.75	PASS	70-125	102568.7	115641.6	88.7	PASS	70-125
N022820-004B	SAMP	1	10311788.5	10020482.6	102.91	PASS	70-125	108260	115641.6	93.62	PASS	70-125
N022820-005B	SAMP	1	10326610.3	10020482.6	103.06	PASS	70-125	112174.7	115641.6	97.002	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	10063255.8	10020482.6	100.43	PASS	70-125	108173.1	115641.6	93.54	PASS	70-125
CCV4	CCV	1	10919281.4	10020482.6	108.97	PASS	70-125	113102.9	115641.6	97.8	PASS	70-125
CCB4	CCB	1	10537319.4	10020482.6	105.16	PASS	70-125	105071.5	115641.6	90.86	PASS	70-125
N022828-002B	SAMP	1	9806084.6	10020482.6	97.86	PASS	70-125	101901.5	115641.6	88.12	PASS	70-125
N022819-001B	SAMP	5	9904648.1	10020482.6	98.84	PASS	70-125	100959.3	115641.6	87.3	PASS	70-125
N022819-001B	SAMP	25	9830140.6	10020482.6	98.1	PASS	70-125	98017.2	115641.6	84.76	PASS	70-125
N022819-001B-PS	PS	1	9732572.6	10020482.6	97.13	PASS	70-125	100675	115641.6	87.058	PASS	70-125
N022819-001B-PS	PS	5	9938456	10020482.6	99.18	PASS	70-125	102714.6	115641.6	88.82	PASS	70-125
N022819-001B-MS	MS	1	10066090.3	10020482.6	100.46	PASS	70-125	105831.4	115641.6	91.52	PASS	70-125
N022819-001B-MS	MS	5	10142929.9	10020482.6	101.22	PASS	70-125	105588.9	115641.6	91.31	PASS	70-125
N022819-001B-MSD	MSD	1	10076928.1	10020482.6	100.56	PASS	70-125	105967.7	115641.6	91.63	PASS	70-125
N022819-001B-MSD	MSD	5	10131104.8	10020482.6	101.1	PASS	70-125	103009.6	115641.6	89.077	PASS	70-125
N022828-001B	SAMP	10	10643144.6	10020482.6	106.21	PASS	70-125	105268.7	115641.6	91.03	PASS	70-125
CCV5	CCV	1	10770414	10020482.6	107.48	PASS	70-125	110236.4	115641.6	95.33	PASS	70-125
CCB5	CCB	1	10255698.5	10020482.6	102.35	PASS	70-125	102201.4	115641.6	88.38	PASS	70-125
LLCCV2	CCV2	1	10279482.4	10020482.6	102.58	PASS	70-125	100963.9	115641.6	87.31	PASS	70-125
ICSA3	ICSA	1	9405000.8	10020482.6	93.86	PASS	70-125	112168.4	115641.6	97	PASS	70-125
ICSAB3	ICSAB	1	9568124.4	10020482.6	95.49	PASS	70-125	122390.1	115641.6	105.84	PASS	70-125
N022828-002B	SAMP	10	9658296.7	10020482.6	96.39	PASS	70-125	104548.1	115641.6	90.41	PASS	70-125
CCV6	CCV	1	9908022.9	10020482.6	98.88	PASS	70-125	101073.4	115641.6	87.4	PASS	70-125
CCB6	CCB	1	9685679.7	10020482.6	96.66	PASS	70-125	95721.1	115641.6	82.77	PASS	70-125
CCV7	CCV	1	10392425.3	10020482.6	103.71	PASS	70-125	110331.7	115641.6	95.41	PASS	70-125
CCB7	CCB	1	10103658.7	10020482.6	100.83	PASS	70-125	106064.2	115641.6	91.72	PASS	70-125
CCV8	CCV	1	10150045.4	10020482.6	101.29	PASS	70-125	106783.4	115641.6	92.34	PASS	70-125
CCB8	CCB	1	9800453	10020482.6	97.8	PASS	70-125	100083.1	115641.6	86.55	PASS	70-125
LLCCV3	CCV2	1	9826397.4	10020482.6	98.063	PASS	70-125	95323.6	115641.6	82.43	PASS	70-125
ICSA4	ICSA	1	8528649.5	10020482.6	85.11	PASS	70-125	94431.8	115641.6	81.66	PASS	70-125
ICSAB4	ICSAB	1	8681534.8	10020482.6	86.64	PASS	70-125	104320.1	115641.6	90.21	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	86650.6	86650.6	100	PASS	70-125	119129.6	119129.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	86828.6	86650.6	100.21	PASS	70-125	120519.3	119129.6	101.17	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	85526.1	86650.6	98.7	PASS	70-125	118555.4	119129.6	99.52	PASS	70-125
Std3-5/50 ppb	ICAL	1	84109.1	86650.6	97.067	PASS	70-125	117753.1	119129.6	98.84	PASS	70-125
Std4-10/100 ppb	ICAL	1	85664.4	86650.6	98.86	PASS	70-125	118443.8	119129.6	99.42	PASS	70-125
Std5-20/200 ppb	ICAL	1	83615.3	86650.6	96.5	PASS	70-125	115207.4	119129.6	96.71	PASS	70-125
Std6-40/400 ppb	ICAL	1	84373.7	86650.6	97.37	PASS	70-125	117526.3	119129.6	98.65	PASS	70-125
Std7-100/1000 ppb	ICAL	1	83251.3	86650.6	96.077	PASS	70-125	114837.2	119129.6	96.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	81836.4	86650.6	94.44	PASS	70-125	113955.7	119129.6	95.66	PASS	70-125
ICV	ICV	1	81640.7	86650.6	94.22	PASS	70-125	112487.7	119129.6	94.42	PASS	70-125
ICB	ICB	1	82942.7	86650.6	95.72	PASS	70-125	117295.1	119129.6	98.46	PASS	70-125
LLICV	CCV1	1	92019.1	86650.6	106.2	PASS	70-125	123404	119129.6	103.59	PASS	70-125
ICSA1	ICSA	1	81922.3	86650.6	94.54	PASS	70-125	105532	119129.6	88.59	PASS	70-125
ICSAB1	ICSAB	1	88377.8	86650.6	101.99	PASS	70-125	116783.2	119129.6	98.03	PASS	70-125
CCV1	CCV	1	81692.3	86650.6	94.28	PASS	70-125	112612.8	119129.6	94.53	PASS	70-125
CCB1	CCB	1	81896.6	86650.6	94.51	PASS	70-125	110931.5	119129.6	93.12	PASS	70-125
CCV2	CCV	1	79707.1	86650.6	91.99	PASS	70-125	109401.4	119129.6	91.83	PASS	70-125
CCB2	CCB	1	79914.7	86650.6	92.23	PASS	70-125	107547.8	119129.6	90.28	PASS	70-125
LLCCV1	CCV2	1	74912.2	86650.6	86.45	PASS	70-125	99434	119129.6	83.47	PASS	70-125
ICSA2	ICSA	1	77372.4	86650.6	89.29	PASS	70-125	96982.8	119129.6	81.41	PASS	70-125
ICSAB2	ICSAB	1	85742.9	86650.6	98.95	PASS	70-125	111380.1	119129.6	93.49	PASS	70-125
MB-61090	MBLK	1	80894.6	86650.6	93.36	PASS	70-125	107230.8	119129.6	90.012	PASS	70-125
LCS-61090	LCS	1	82423.1	86650.6	95.12	PASS	70-125	117403.8	119129.6	98.55	PASS	70-125
N022819-001B	SAMP	1	78164.1	86650.6	90.21	PASS	70-125	106450	119129.6	89.36	PASS	70-125
N022819-002B	SAMP	1	80325.4	86650.6	92.7	PASS	70-125	110036.1	119129.6	92.37	PASS	70-125
N022819-003B	SAMP	1	80825	86650.6	93.28	PASS	70-125	108078.4	119129.6	90.72	PASS	70-125
N022819-004B	SAMP	1	79512.6	86650.6	91.76	PASS	70-125	105949.1	119129.6	88.94	PASS	70-125
N022819-005B	SAMP	1	79473.3	86650.6	91.72	PASS	70-125	107662.6	119129.6	90.37	PASS	70-125
N022819-006B	SAMP	1	82260.7	86650.6	94.93	PASS	70-125	110158.6	119129.6	92.47	PASS	70-125
N022819-007B	SAMP	1	82727	86650.6	95.47	PASS	70-125	109235.7	119129.6	91.69	PASS	70-125
N022819-008B	SAMP	1	82819.8	86650.6	95.58	PASS	70-125	109567.4	119129.6	91.97	PASS	70-125
CCV3	CCV	1	90983.9	86650.6	105	PASS	70-125	124453.1	119129.6	104.47	PASS	70-125
CCB3	CCB	1	85690.1	86650.6	98.89	PASS	70-125	118080.7	119129.6	99.12	PASS	70-125
N022819-009B	SAMP	1	80074.3	86650.6	92.41	PASS	70-125	105935.5	119129.6	88.92	PASS	70-125
N022819-010B	SAMP	1	79999.7	86650.6	92.32	PASS	70-125	105208.3	119129.6	88.31	PASS	70-125
N022819-011B	SAMP	1	76648.2	86650.6	88.46	PASS	70-125	99112.5	119129.6	83.2	PASS	70-125
N022820-001B	SAMP	1	81918.9	86650.6	94.54	PASS	70-125	104436.3	119129.6	87.67	PASS	70-125
N022820-002B	SAMP	1	71641	86650.6	82.68	PASS	70-125	89906.8	119129.6	75.47	PASS	70-125
N022820-003B	SAMP	1	73519.3	86650.6	84.85	PASS	70-125	91689.5	119129.6	76.97	PASS	70-125
N022820-004B	SAMP	1	77665	86650.6	89.63	PASS	70-125	96640.5	119129.6	81.12	PASS	70-125
N022820-005B	SAMP	1	78525.8	86650.6	90.62	PASS	70-125	98132.8	119129.6	82.37	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	77761.3	86650.6	89.74	PASS	70-125	97145.7	119129.6	81.55	PASS	70-125
CCV4	CCV	1	85665.9	86650.6	98.86	PASS	70-125	111621.8	119129.6	93.7	PASS	70-125
CCB4	CCB	1	81976	86650.6	94.61	PASS	70-125	107424.1	119129.6	90.17	PASS	70-125
N022828-002B	SAMP	1	74621.8	86650.6	86.12	PASS	70-125	96048.2	119129.6	80.62	PASS	70-125
N022819-001B	SAMP	5	77313	86650.6	89.22	PASS	70-125	101884.5	119129.6	85.52	PASS	70-125
N022819-001B	SAMP	25	78194	86650.6	90.24	PASS	70-125	103013.1	119129.6	86.47	PASS	70-125
N022819-001B-PS	PS	1	73691.2	86650.6	85.044	PASS	70-125	95308.2	119129.6	80.004	PASS	70-125
N022819-001B-PS	PS	5	78429.5	86650.6	90.51	PASS	70-125	102834	119129.6	86.32	PASS	70-125
N022819-001B-MS	MS	1	76923.7	86650.6	88.77	PASS	70-125	97871.3	119129.6	82.16	PASS	70-125
N022819-001B-MS	MS	5	80314.3	86650.6	92.69	PASS	70-125	104699	119129.6	87.89	PASS	70-125
N022819-001B-MSD	MSD	1	76297.4	86650.6	88.052	PASS	70-125	98631.4	119129.6	82.79	PASS	70-125
N022819-001B-MSD	MSD	5	77816.7	86650.6	89.81	PASS	70-125	101992.7	119129.6	85.61	PASS	70-125
N022828-001B	SAMP	10	82038.2	86650.6	94.68	PASS	70-125	109401.5	119129.6	91.83	PASS	70-125
CCV5	CCV	1	88530.9	86650.6	102.17	PASS	70-125	121640.2	119129.6	102.11	PASS	70-125
CCB5	CCB	1	82518.7	86650.6	95.23	PASS	70-125	111911.2	119129.6	93.94	PASS	70-125
LLCCV2	CCV2	1	81416.8	86650.6	93.96	PASS	70-125	112011	119129.6	94.024	PASS	70-125
ICSA3	ICSA	1	78303.6	86650.6	90.37	PASS	70-125	99333.7	119129.6	83.38	PASS	70-125
ICSAB3	ICSAB	1	83837.1	86650.6	96.75	PASS	70-125	111367.5	119129.6	93.48	PASS	70-125
N022828-002B	SAMP	10	81394.1	86650.6	93.93	PASS	70-125	113475	119129.6	95.25	PASS	70-125
CCV6	CCV	1	79904.7	86650.6	92.21	PASS	70-125	109233.8	119129.6	91.69	PASS	70-125
CCB6	CCB	1	75962.5	86650.6	87.67	PASS	70-125	103028.2	119129.6	86.48	PASS	70-125
CCV7	CCV	1	85041.3	86650.6	98.14	PASS	70-125	111786.2	119129.6	93.84	PASS	70-125
CCB7	CCB	1	82740	86650.6	95.49	PASS	70-125	108286.3	119129.6	90.9	PASS	70-125
CCV8	CCV	1	82137.6	86650.6	94.79	PASS	70-125	108607.1	119129.6	91.17	PASS	70-125
CCB8	CCB	1	79493.8	86650.6	91.74	PASS	70-125	104186.6	119129.6	87.46	PASS	70-125
LLCCV3	CCV2	1	74766.1	86650.6	86.28	PASS	70-125	98224.8	119129.6	82.45	PASS	70-125
ICSA4	ICSA	1	66722.5	86650.6	77.002	PASS	70-125	86685.5	119129.6	72.77	PASS	70-125
ICSAB4	ICSAB	1	72819.4	86650.6	84.038	PASS	70-125	94150.6	119129.6	79.032	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2797828.2	2797828.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2805376.1	2797828.2	100.27	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2762455	2797828.2	98.74	PASS	70-125
Std3-5/50 ppb	ICAL	1	2752620.4	2797828.2	98.38	PASS	70-125
Std4-10/100 ppb	ICAL	1	2748370.7	2797828.2	98.23	PASS	70-125
Std5-20/200 ppb	ICAL	1	2731148.9	2797828.2	97.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	2709646.6	2797828.2	96.85	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2657339.1	2797828.2	94.98	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2617508.9	2797828.2	93.56	PASS	70-125
ICV	ICV	1	2652600.7	2797828.2	94.81	PASS	70-125
ICB	ICB	1	2717451.5	2797828.2	97.13	PASS	70-125
LLICV	CCV1	1	2998384.4	2797828.2	107.17	PASS	70-125
ICSA1	ICSA	1	2385775.1	2797828.2	85.27	PASS	70-125
ICSAB1	ICSAB	1	2542331.7	2797828.2	90.87	PASS	70-125
CCV1	CCV	1	2674762.6	2797828.2	95.6	PASS	70-125
CCB1	CCB	1	2656966.9	2797828.2	94.97	PASS	70-125
CCV2	CCV	1	2614872	2797828.2	93.46	PASS	70-125
CCB2	CCB	1	2600393.7	2797828.2	92.94	PASS	70-125
LLCCV1	CCV2	1	2546810.5	2797828.2	91.028	PASS	70-125
ICSA2	ICSA	1	2312772.1	2797828.2	82.66	PASS	70-125
ICSAB2	ICSAB	1	2521638.1	2797828.2	90.13	PASS	70-125
MB-61090	MBLK	1	2650121.1	2797828.2	94.72	PASS	70-125
LCS-61090	LCS	1	2698730.9	2797828.2	96.46	PASS	70-125
N022819-001B	SAMP	1	2322355.7	2797828.2	83.006	PASS	70-125
N022819-002B	SAMP	1	2380920	2797828.2	85.099	PASS	70-125
N022819-003B	SAMP	1	2407627.4	2797828.2	86.053	PASS	70-125
N022819-004B	SAMP	1	2364944.1	2797828.2	84.53	PASS	70-125
N022819-005B	SAMP	1	2370719	2797828.2	84.73	PASS	70-125
N022819-006B	SAMP	1	2431397.2	2797828.2	86.9	PASS	70-125
N022819-007B	SAMP	1	2466456.9	2797828.2	88.16	PASS	70-125
N022819-008B	SAMP	1	2480784.9	2797828.2	88.67	PASS	70-125
CCV3	CCV	1	2931609.3	2797828.2	104.78	PASS	70-125
CCB3	CCB	1	2803351.9	2797828.2	100.2	PASS	70-125
N022819-009B	SAMP	1	2387431.3	2797828.2	85.33	PASS	70-125
N022819-010B	SAMP	1	2409251.6	2797828.2	86.11	PASS	70-125
N022819-011B	SAMP	1	2404219.5	2797828.2	85.93	PASS	70-125
N022820-001B	SAMP	1	2500782.3	2797828.2	89.38	PASS	70-125
N022820-002B	SAMP	1	2290586.9	2797828.2	81.87	PASS	70-125
N022820-003B	SAMP	1	2342124.1	2797828.2	83.71	PASS	70-125
N022820-004B	SAMP	1	2451231.3	2797828.2	87.61	PASS	70-125
N022820-005B	SAMP	1	2440652.6	2797828.2	87.23	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	2432459.8	2797828.2	86.94	PASS	70-125
CCV4	CCV	1	2887714.1	2797828.2	103.21	PASS	70-125
CCB4	CCB	1	2749885.5	2797828.2	98.29	PASS	70-125
N022828-002B	SAMP	1	2333419.1	2797828.2	83.4	PASS	70-125
N022819-001B	SAMP	5	2506281.2	2797828.2	89.58	PASS	70-125
N022819-001B	SAMP	25	2554702.8	2797828.2	91.31	PASS	70-125
N022819-001B-PS	PS	1	2287612.9	2797828.2	81.76	PASS	70-125
N022819-001B-PS	PS	5	2508714.1	2797828.2	89.67	PASS	70-125
N022819-001B-MS	MS	1	2357275.2	2797828.2	84.25	PASS	70-125
N022819-001B-MS	MS	5	2569879.8	2797828.2	91.85	PASS	70-125
N022819-001B-MSD	MSD	1	2383317.5	2797828.2	85.18	PASS	70-125
N022819-001B-MSD	MSD	5	2535002.7	2797828.2	90.61	PASS	70-125
N022828-001B	SAMP	10	2606495.3	2797828.2	93.16	PASS	70-125
CCV5	CCV	1	2879092.5	2797828.2	102.9	PASS	70-125
CCB5	CCB	1	2716176	2797828.2	97.082	PASS	70-125
LLCCV2	CCV2	1	2653245.6	2797828.2	94.83	PASS	70-125
ICSA3	ICSA	1	2297724.7	2797828.2	82.13	PASS	70-125
ICSAB3	ICSAB	1	2437034.8	2797828.2	87.1	PASS	70-125
N022828-002B	SAMP	10	2527991.9	2797828.2	90.36	PASS	70-125
CCV6	CCV	1	2621609.7	2797828.2	93.7	PASS	70-125
CCB6	CCB	1	2523095.8	2797828.2	90.18	PASS	70-125
CCV7	CCV	1	2777302.3	2797828.2	99.27	PASS	70-125
CCB7	CCB	1	2691696.7	2797828.2	96.21	PASS	70-125
CCV8	CCV	1	2675179.7	2797828.2	95.62	PASS	70-125
CCB8	CCB	1	2547880	2797828.2	91.066	PASS	70-125
LLCCV3	CCV2	1	2450913.3	2797828.2	87.6	PASS	70-125
ICSA4	ICSA	1	1976676.7	2797828.2	70.65	PASS	70-125
ICSAB4	ICSAB	1	2093965	2797828.2	74.84	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022819
Test Method: EPA 6020
Analysis Date: 1/31/2017

Matrix: Groundwater
Batch No.: 61090

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001B DT 5X	Arsenic	ug/L	2.146159	NA	2.131533	0.69%	10
N022819-001B DT 25X	Barium	ug/L	124.6075	PASS	123.0992	1.23%	10
N022819-001B DT 5X	Chromium	ug/L	0	NA	0		10
N022819-001B DT 5X	Manganese	ug/L	1.851783	NA	1.694529	9.28%	10
N022819-001B DT 5X	Molybdenum	ug/L	4.899097	NA	5.034545	2.69%	10
N022819-001B DT 5X	Selenium	ug/L	1.73384	NA	1.465781	18.29%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N022819-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.055	0.10	10.00	2.132	99.2	80	120				
Manganese	95.634	0.50	100.0	1.695	93.9	80	120				
Molybdenum	16.038	0.50	10.00	5.035	110	80	120				
Selenium	10.712	0.50	10.00	1.466	92.5	80	120				

Sample ID	N022819-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	225.050	5.0	100.0	123.1	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022819
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N022819-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**113195**
Client ID:	**ZZZZZZ**	Batch ID:	**61090**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/31/2017**		SeqNo:	**2549858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.526	1.0	10.00	0	95.3	80	120				

Qualifiers:

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

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

February 07, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N022820

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 24, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Litucas for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022820

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022820-001A	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001B	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001C	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001D	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001E	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-002A	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002B	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002C	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002D	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002E	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-003A	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003B	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003C	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003D	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003E	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-004A	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004B	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004C	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004D	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004E	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-005A	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-005B	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-005C	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-006A	AB1-Q117L	Groundwater	1/24/2017 10:00:00 AM	1/24/2017	2/7/2017
N022820-007A	AB2-Q117L	Groundwater	1/24/2017 12:55:00 PM	1/24/2017	2/7/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **N022819-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1113.000	0.10						1115	0.180	10	

Sample ID: **N022820-005CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1086.000	0.10						1084	0.184	10	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022819-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.320	0.241	10	H
Temp. at time of pH Analysis	16.400	0.10						16.00	2.47	10	H

Sample ID **N022820-005CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.280	0.10						7.320	0.548	10	H
Temp. at time of pH Analysis	15.800	0.10						15.60	1.27	10	H

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61055	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	LCSW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID	MB-61055	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	PBW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022819-001D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	ZZZZZZ	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61082** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **LCSW** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	935.000	10	1000	0	93.5	80	120				

Sample ID **MB-61082** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **PBW** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N022820-002D-DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **ZZZZZZ** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 01:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:35 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A**	QC Batch: **R113260**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 04:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D**	QC Batch: **61090**			PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 05:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:55 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A**	QC Batch: **R113215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 04:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170131D**	QC Batch: **61090**			PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 05:01 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 04:45 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate	**1/30/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 05:07 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB1-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 05:04 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB2-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 05:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113215** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **PBW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550948**

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

Sample ID **LCS-R113215** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **LCSW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	90	110				

Sample ID **N022819-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Sample ID **N022819-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N022819-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N022819-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022819-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N022819-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N022819-005AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110	1.080	1.29	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N022820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N022820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

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

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

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

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61090	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	PBW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-61090	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	LCSW	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549832

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.562	1.0	10.00	0	106	85	115				

Sample ID	N022819-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.389	1.0	10.00	0	93.9	75	125				

Sample ID	N022819-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/30/2017	RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549862

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.458	1.0	10.00	0	94.6	75	125	9.389	0.737	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113228** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **PBW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113228** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **LCSW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.531	0.050	0.5000	0	106	85	115				

Sample ID **N022820-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.410	0.050						0.4011	2.15	20	

Sample ID **N022820-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.872	0.050	0.5000	0.4011	94.1	75	125				

Sample ID **N022820-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.946	0.050	0.5000	0.4011	109	75	125	0.8718	8.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:52 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	240	1.8	20		ug/L	1	2/3/2017 08:06 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:57 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	220	1.8	20		ug/L	1	2/3/2017 08:11 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	50	1.8	20		ug/L	1	2/3/2017 06:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	260	1.8	20		ug/L	1	2/3/2017 08:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	2/3/2017 06:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	210	1.8	20		ug/L	1	2/3/2017 08:21 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-61046	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	PBW	Batch ID:	61046	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554568

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.068	20									

Sample ID	LCS-61046	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	LCSW	Batch ID:	61046	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.528	20	100.0	0	111	85	115				

Sample ID	N022819-001B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61046	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	145.129	20	100.0	62.36	82.8	75	125				

Sample ID	N022819-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61046	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554576

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	146.407	20	100.0	62.36	84.0	75	125	145.1	0.877	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-61045	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	PBW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-61045	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	LCSW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.370	20	100.0	0	114	85	115				

Sample ID	N022819-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.130	20	100.0	151.7	91.4	75	125				

Sample ID	N022819-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.348	20	100.0	151.7	91.6	75	125	243.1	0.0894	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:35 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 04:35 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 04:35 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 04:35 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:48 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:48 PM
Manganese	0.83	0.056	0.50		µg/L	1	1/31/2017 04:48 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	1/31/2017 04:48 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:55 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:55 PM
Manganese	0.70	0.056	0.50		µg/L	1	1/31/2017 04:55 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 04:55 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 05:01 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 05:01 PM
Manganese	0.61	0.056	0.50		µg/L	1	1/31/2017 05:01 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 05:01 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61090** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61090** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.486	0.10	10.00	0	105	85	115				
Barium	106.579	1.0	100.0	0	107	85	115				
Manganese	105.581	0.50	100.0	0	106	85	115				
Molybdenum	9.901	0.50	10.00	0	99.0	85	115				
Selenium	9.761	0.50	10.00	0	97.6	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.862	0.10	10.00	2.132	97.3	75	125				
Manganese	93.651	0.50	100.0	1.695	92.0	75	125				
Molybdenum	16.358	0.50	10.00	5.035	113	75	125				
Selenium	10.857	0.50	10.00	1.466	93.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.863	5.0	100.0	123.1	108	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.020	0.10	10.00	2.132	98.9	75	125	11.86	1.32	20	
Manganese	93.710	0.50	100.0	1.695	92.0	75	125	93.65	0.0636	20	
Molybdenum	16.253	0.50	10.00	5.035	112	75	125	16.36	0.640	20	
Selenium	10.967	0.50	10.00	1.466	95.0	75	125	10.86	1.01	20	

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.394	5.0	100.0	123.1	107	75	125	230.9	0.203	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 2

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address	
Address: Roseville, CA 95661	Email: [illegible]	Address	
Phone: 916-786-3302 / Fax	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pvox.com	P.O.#
Submitted By:		Phone: 949-727-1400, ext 200	Fax
Title: Susan Mahn	Phone: 916-786-3302 / Fax		
Signature: 1/24/17 Date:	Sampled By: Susan Mahn		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 1/24/17		
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number		
		Regulatory		6. Method of Cooling: ID		
Global ID:		Specify State:		Sample Temp: 7.6C		

Courier:
Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 Cr	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B), HNO3 Fe	Anions (E300.0), Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly		3x500mL poly	3x500mL poly	3x500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N022820 - 01	C-BNS-0117L	1/24/17	1130		X		X		X	X		X	X			X	X	E	9	P	BNS	7
2		C-CON-D-0117L				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~3~~		~~C-CON-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
4	- 02	C-I-3-D-0117L	1/24/17	0915		X		X		X	X		X	X			X	X	E	9	P	BNS	7
	- 03	MW-905-Q117L	1/24/17	0920		X		X		X	X		X	X			X	X	E	9	P	BNS	7
6	- 04	C-I-3-S-0117L	1/24/17	0940		X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~7~~		~~C-MAR-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~8~~		~~C-MAR-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~9~~		~~C-NR1-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~10~~		~~C-NR1-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~11~~		~~C-NR3-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~12~~		~~C-NR3-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~13~~		~~MW-906-Q117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~14~~		~~C-NR4-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	7

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
	1/24/17		1/24/17 1600
	1/24/17 1442		1/24/17 1442

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 3 of 3

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]@arcadis.com; daniel.[illegible]@[illegible].com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Jason Mahan		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 / Fax:		
Signature: Date: 1/24/17	Sampled By: Jason Mahan		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 1/24/17		
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number		
Global ID:		Regulatory		6. Method of Cooling: ice		
		Specify State		Sample Temp: 8.2C		

Courier:
Tracking No.:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6); (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6); (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N022820 - 05	MW-908-Q117L	1/24/17	1500		X		X					X	X					E	1	P	BN	5
	- 06	AB1-Q117L		1000			X												E	1	P	BN	
	- 07	AB2-Q117L		1255			X												E	1	P	BN	
		AB3-Q117L					X												E	1	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	1/24/17	[signature]	1/24/17 1600
[signature]	1/24/17 1842	[signature]	1/24/17 1842

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 1/24/2017 Workorder: N022820

Rep sample Temp (Deg C): ~~2.6/3.2~~ *2.6* MBC IR Gun ID: *2*

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR YR 1/25/2017 Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-001A	C-BNS-0117L	1/24/2017 11:30:00 AM	2/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-001B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-001C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-001D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-001E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-002A	C-I-3-D-0117L	1/24/2017 9:15:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-002B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-002C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-002D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-002D	C-I-3-D-0117L	1/24/2017 9:15:00 AM	2/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-002E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-003A	MW-905-Q117L	1/24/2017 9:20:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-003B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-003C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-003D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-003E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-004A	C-I-3-S-0117L	1/24/2017 9:40:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-004B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-004B	C-I-3-S-0117L	1/24/2017 9:40:00 AM	2/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-004C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-004D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-004E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-005A	MW-908-Q117L	1/24/2017 3:00:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-005B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-005C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022820-006A	AB1-Q117L	1/24/2017 10:00:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-007A	AB2-Q117L	1/24/2017 12:55:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-008A	FOLDER		2/7/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/7/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N022820

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022820

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-55
Sample Receiving Items	56-62
List of Analysts	63
Raw Data	
EPA 120.1	64-67
SM 4500-H+B	68-72
SM 2540D	73-88
EPA 218.6	89-317
SM 4500-NO3F	318-331
EPA 6010B_Dissolved	332-366
EPA 6010B	367-405
EPA 6020_Dissolved	406-464

February 07, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022820

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 24, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022820

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022820-001A	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001B	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001C	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001D	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-001E	C-BNS-0117L	Groundwater	1/24/2017 11:30:00 AM	1/24/2017	2/7/2017
N022820-002A	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002B	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002C	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002D	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-002E	C-I-3-D-0117L	Groundwater	1/24/2017 9:15:00 AM	1/24/2017	2/7/2017
N022820-003A	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003B	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003C	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003D	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-003E	MW-905-Q117L	Groundwater	1/24/2017 9:20:00 AM	1/24/2017	2/7/2017
N022820-004A	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004B	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004C	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004D	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-004E	C-I-3-S-0117L	Groundwater	1/24/2017 9:40:00 AM	1/24/2017	2/7/2017
N022820-005A	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-005B	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-005C	MW-908-Q117L	Groundwater	1/24/2017 3:00:00 PM	1/24/2017	2/7/2017
N022820-006A	AB1-Q117L	Groundwater	1/24/2017 10:00:00 AM	1/24/2017	2/7/2017
N022820-007A	AB2-Q117L	Groundwater	1/24/2017 12:55:00 PM	1/24/2017	2/7/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170125D**	QC Batch: **R113068**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/25/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID: **N022819-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1113.000	0.10						1115	0.180	10	

Sample ID: **N022820-005CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113068**
Client ID: **ZZZZZZ** Batch ID: **R113068** TestNo: **EPA 120.1** Analysis Date: **1/25/2017** SeqNo: **2544137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1086.000	0.10						1084	0.184	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C** QC Batch: **R113067**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170125C**	QC Batch: **R113067**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/25/2017 09:45 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/25/2017 09:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022819-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.320	0.241	10	H
Temp. at time of pH Analysis	16.400	0.10						16.00	2.47	10	H

Sample ID **N022820-005CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113067**
Client ID: **ZZZZZZ** Batch ID: **R113067** TestNo: **SM4500-H+B** Analysis Date: **1/25/2017** SeqNo: **2544109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.280	0.10						7.320	0.548	10	H
Temp. at time of pH Analysis	15.800	0.10						15.60	1.27	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170126F**	QC Batch: **61055**				PrepDate	**1/26/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/26/2017 09:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170130B** QC Batch: **61082** PrepDate **1/30/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61055	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	LCSW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	929.000	10	1000	0	92.9	80	120				

Sample ID	MB-61055	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	PBW	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022819-001D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/26/2017	RunNo:	113115
Client ID:	ZZZZZZ	Batch ID:	61055	TestNo:	SM2540D			Analysis Date:	1/26/2017	SeqNo:	2545757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61082** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **LCSW** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	935.000	10	1000	0	93.5	80	120				

Sample ID **MB-61082** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **PBW** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N022820-002D-DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/30/2017** RunNo: **113171**
Client ID: **ZZZZZZ** Batch ID: **61082** TestNo: **SM2540D** Analysis Date: **1/30/2017** SeqNo: **2548135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 01:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 04:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 05:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 04:26 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61090** PrepDate **1/30/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 3:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A** QC Batch: **R113215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 04:45 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61090**				PrepDate		**1/30/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 05:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB1-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170130A** QC Batch: **R113215** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB2-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170130A**	QC Batch: **R113215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/30/2017 05:57 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113215** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **PBW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113215** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **LCSW** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	90	110				

Sample ID **N022819-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Sample ID **N022819-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID **N022819-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N022819-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022819-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N022819-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N022819-005AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110	1.080	1.29	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022819-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N022820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N022820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61090** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113195**
Client ID: **PBW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61090** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113195**
Client ID: **LCSW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.562	1.0	10.00	0	106	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.389	1.0	10.00	0	93.9	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.458	1.0	10.00	0	94.6	75	125	9.389	0.737	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170201A**	QC Batch: **R113228**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113228** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **PBW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113228** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **LCSW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.531	0.050	0.5000	0	106	85	115				

Sample ID **N022820-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.410	0.050						0.4011	2.15	20	

Sample ID **N022820-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.872	0.050	0.5000	0.4011	94.1	75	125				

Sample ID **N022820-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.946	0.050	0.5000	0.4011	109	75	125	0.8718	8.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:52 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	240	1.8	20		ug/L	1	2/3/2017 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/3/2017 05:57 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	220	1.8	20		ug/L	1	2/3/2017 08:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	50	1.8	20		ug/L	1	2/3/2017 06:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	260	1.8	20		ug/L	1	2/3/2017 08:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61046**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	2/3/2017 06:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61045**				PrepDate	**1/26/2017**	Analyst: **CEI**
Iron	210	1.8	20		ug/L	1	2/3/2017 08:21 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61046** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **PBW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.068	20									

Sample ID **LCS-61046** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **LCSW** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	110.528	20	100.0	0	111	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	145.129	20	100.0	62.36	82.8	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/26/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61046** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	146.407	20	100.0	62.36	84.0	75	125	145.1	0.877	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-61045	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	PBW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-61045	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	LCSW	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	114.370	20	100.0	0	114	85	115				

Sample ID	N022819-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.130	20	100.0	151.7	91.4	75	125				

Sample ID	N022819-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/26/2017	RunNo:	113277
Client ID:	ZZZZZZ	Batch ID:	61045	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/3/2017	SeqNo:	2554758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	243.348	20	100.0	151.7	91.6	75	125	243.1	0.0894	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:35 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 04:35 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 04:35 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 04:35 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:48 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:48 PM
Manganese	0.83	0.056	0.50		µg/L	1	1/31/2017 04:48 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	1/31/2017 04:48 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 04:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 04:55 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 04:55 PM
Manganese	0.70	0.056	0.50		µg/L	1	1/31/2017 04:55 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 04:55 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0117L
Lab Order:	N022820	**Collection Date:**	1/24/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61090**			PrepDate	**1/30/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 05:01 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 05:01 PM
Manganese	0.61	0.056	0.50		µg/L	1	1/31/2017 05:01 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 05:01 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61090** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61090** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.486	0.10	10.00	0	105	85	115				
Barium	106.579	1.0	100.0	0	107	85	115				
Manganese	105.581	0.50	100.0	0	106	85	115				
Molybdenum	9.901	0.50	10.00	0	99.0	85	115				
Selenium	9.761	0.50	10.00	0	97.6	85	115				

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.862	0.10	10.00	2.132	97.3	75	125				
Manganese	93.651	0.50	100.0	1.695	92.0	75	125				
Molybdenum	16.358	0.50	10.00	5.035	113	75	125				
Selenium	10.857	0.50	10.00	1.466	93.9	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022819-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.863	5.0	100.0	123.1	108	75	125				

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.020	0.10	10.00	2.132	98.9	75	125	11.86	1.32	20	
Manganese	93.710	0.50	100.0	1.695	92.0	75	125	93.65	0.0636	20	
Molybdenum	16.253	0.50	10.00	5.035	112	75	125	16.36	0.640	20	
Selenium	10.967	0.50	10.00	1.466	95.0	75	125	10.86	1.01	20	

Sample ID **N022819-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/30/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61090** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.394	5.0	100.0	123.1	107	75	125	230.9	0.203	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 2

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address	Roseville, CA 95661
Phone	916-786-3302
Fax	
Submitted By:	
Title:	Jason Mahn
Signature:	
Date:	1/24/17
Project Name:	PG&E Topock - RMP
Project Number:	RC000753.0801

I hereby authorize ASSET Labs to perform the tests indicated below

Report to	Dan Bush
Company:	Arcadis
Email:	[illegible]
Address	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone	916-786-3302
Fax	
Sampled By:	Jason Mahn
Signature:	
Date:	1/24/17

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Bill to.	Marty Bloes
Address	
Address	
Email to:	mbloes@pvox.com
P.O.#	
Phone	949-727-1400, ext 200
Fax	

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:	ID	
Sample Temp.	7.6C	

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 Cr	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A/dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B), HNO3 Fe	Anions (E300.0), Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly		3x500mL poly	3x500mL poly	3x500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N022820 - 01	C-BNS-0117L	1/24/17	1130		X		X		X	X		X	X			X	X	E	9	P	BNS	7
2		C-CON-D-0117L				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~3~~		~~C-CON-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
4	- 02	C-I-3-D-0117L	1/24/17	0915		X		X		X	X		X	X			X	X	E	9	P	BNS	7
	- 03	MW-905-Q117L	1/24/17	0920		X		X		X	X		X	X			X	X	E	9	P	BNS	7
6	- 04	C-I-3-S-0117L	1/24/17	0940		X		X		X	X		X	X			X	X	E	9	P	BNS	7
~~7~~		~~C-MAR-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~8~~		~~C-MAR-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~9~~		~~C-NR1-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~10~~		~~C-NR1-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~11~~		~~C-NR3-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~12~~		~~C-NR3-S-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~13~~		~~MW-906-Q117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
~~14~~		~~C-NR4-D-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/24/17		1/24/17 1600
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/24/17 1742		1/24/17 1742
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 3 of 3

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Jason Mahan		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 / Fax:		
Signature: / Date: 1/24/17	Sampled By: Jason Mahan		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 1/24/17		
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number		
Global ID:		Regulatory		6. Method of Cooling: ice		
		Specify State		Sample Temp: 8.2C		

Courier:
Tracking No.:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6); (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6); (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020A(dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A(dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A(dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N022820 - 05	MW-908-Q117L	1/24/17	1500		X		X					X	X					E	1	P	BN	5
	- 06	AB1-Q117L	↓	1000			X												E	1	P	BN	
	- 07	AB2-Q117L		1255			X												E	1	P	BN	
		AB3-Q117L					X												E	1	P	BN	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
[signature]	1/24/17	[signature]	1/24/17 1600
[signature]	1/24/17 1842	[signature]	1/24/17 1842

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 1/24/2017 Workorder: N022820

Rep sample Temp (Deg C): ~~2.6/3.2~~ 2.6 MBC IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 1/25/2017 Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-001A	C-BNS-0117L	1/24/2017 11:30:00 AM	2/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-001B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-001C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-001D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-001E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-002A	C-I-3-D-0117L	1/24/2017 9:15:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-002B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-002C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-002D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-002D	C-I-3-D-0117L	1/24/2017 9:15:00 AM	2/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-002E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-003A	MW-905-Q117L	1/24/2017 9:20:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-003B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-003C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-003D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-003E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-004A	C-I-3-S-0117L	1/24/2017 9:40:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-004B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Jan-17

WorkOrder: N022820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/24/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022820-004B	C-I-3-S-0117L	1/24/2017 9:40:00 AM	2/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-004C			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022820-004D			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022820-004E			2/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022820-005A	MW-908-Q117L	1/24/2017 3:00:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-005B			2/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022820-005C			2/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N022820-006A	AB1-Q117L	1/24/2017 10:00:00 AM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-007A	AB2-Q117L	1/24/2017 12:55:00 PM	2/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022820-008A	FOLDER		2/7/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/7/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022820**

NAME	TEST METHOD
Quennie Manimtim	SM 2540D
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500-H+B,
Ria Abes	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113068 **Analyst:** LSR

ASSET #: N022820 **Date Analyzed:** 1/25/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	**No**	**N/A**
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer LSR Date: 2/7/17

2nd Level Reviewer 2/7/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/25/17 1500

Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 mS/cm	CINV-161025C	10.53 mS/cm @18.1°C	% Rec: (90-110%)
1413	160902A	1429 @18.1°C	
10043	161220I	10110 @18.0°C	
99938	161220J	101200 @18.0°C	

	Sample ID	Matrix	Reading	Comments
1	N022819-001D	H_2O	975 @19.1°C	
2	2D		965 @19.2°C	
3	3D		964 @19.0°C	
4	4D		967 @19.0°C	
5	5D		970 @18.9°C	
6	6D		975 @18.8°C	
7	7D		970 @18.8°C	
8	8D		972 @18.8°C	
9	9D		975 @18.8°C	
10	10C		1115 @18.8°C	
Dup	10C DUP		1113 @18.8°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:

Analyst: CONTD

Standard	Std ID	Reading	Comments
1413 mS/cm	CINV-160929A	1434 uS/cm @19.5°C	% Rec: (90-110%)
10043	160909C	10170 @19.7°C	
99899	161104A	99800 @19.8°C	

	Sample ID	Matrix	Reading	Comments
1	N022819-011C	H_2O	1068 @19.1°C	
2	N022820-001D		9603 @19.0°C	
3	2D		974 @18.8°C	
4	3D		967 @19.0°C	
5	4D	HR	9677 @18.8°C	977
6	5C		1084 @19.0°C	
7	5C DUP		1086 @19.1°C	
8				
9	1413 mS/cm	CINV-160929A	1436 uS/cm @19.6°C	
10	10043	160909C	10190 @19.9°C	
Dup	99899	161104A	100600 @20.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113067 **Analyst:** LSR

ASSET #: N022820 **Date Analyzed:** 1/25/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.			X			
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/6/2017

2nd Level Reviewer Nancy 2/7/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/24/17 1705
Analyst: LSR

CONT'D

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.04 @ 20.0°C	SLOPE 98.3%
Buffer 7	161027A	6.95 @ 20.2°C	
Buffer 10	161214A	10.04 @ 20.0°C	

	Sample ID	Matrix	pH	Comments
1	N022805-004A	H2O	4.41 @ 18.7°C	
2	N022816-001C		7.32 @ 15.9°C	
3	2C		7.43 @ 16.1°C	
4	3C		5.68 @ 16.3°C	
5	N022817-001C		7.48 @ 16.1°C	
6	2C		7.57 @ 16.0°C	
7	3C		7.59 @ 15.9°C	
8	4C		7.52 @ 16.1°C	
9	N022818-001D		7.28 @ 16.0°C	
10	DUP		7.30 @ 17°C	
Dup	N022816-003C DUP		5.74 @ 16.6°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.02 @ 19.8°C	Accept: +/-0.1 pH units from expected value

Date: 1/25/17 945
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022819-001D	H2O	8.32 @ 16.0°C	
2	2D		8.24 @ 16.6°C	
3	3D		8.32 @ 16.0°C	
4	4D		8.30 @ 16.3°C	
5	5D		8.28 @ 16.4°C	
6	6D		8.31 @ 15.8°C	
7	7D		8.31 @ 16.3°C	
8	8D		8.30 @ 16.8°C	
9	9D		8.29 @ 16.3°C	
10	10C		8.02 @ 16.6°C	
Dup	1D DUP		8.30 @ 16.4°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.05 @ 17.8°C	Accept: +/-0.1 pH units from expected value

Julia Ramit 2/6/2017

Logbook #10

pH Logbook

Date: 1/25/17 945
Analyst: LSR

CONT'D

Standard	Std ID	pH	Comments
Buffer 4	CIW-161015B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022819-011C	H2O	7.31 @ 16.4°C	
2	N022820-001D		8.25 @ 16.1°C	
3	2D		8.26 @ 16.4°C	
4	3D		8.29 @ 15.9°C	
5	4D		8.28 @ 16.3°C	
6	5C		7.32 @ 15.6°C	
7	5C DVP		7.28 @ 15.8°C	
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CIW-161010A	7.05 @ 17.4°C	Accept: +/-0.1 pH units from expected value

Julia Ramit 2/6/2017

Date: 1/25/17 1530
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CIW-161015B	4.02 @ 17.7°C	SLOPE: 98.2%
Buffer 7	161025A	7.05 @ 17.7°C	
Buffer 10	161214A	10.05 @ 17.7°C	

	Sample ID	Matrix	pH	Comments
1	N022824-001A	H2O	6.63 @ 18.4°C	
2	1A DVP		6.67 @ 18.5°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CIW-161010A	6.97 @ 20.1°C	Accept: +/-0.1 pH units from expected value

Logbook #10

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61055/61082 **Analyst:** QBM

ASSET #: N022820 **Date Analyzed:** 1/26 & 1/30/17

Method: 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)	X					
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/2017 Date:

2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N022820-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.3918 - 1.3913)*1000000}{100}$$
$$= 5 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

2/7/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 9:29:23 A**
Prep End Date: **1/26/2017 5:25:00 P**

Reviewed/ Date: Nancy 2/7/2017
Initials/ Date: 2/7/2017

Prep Batch **61055** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61055	Water		100	☐	0	0	100	1.000		
MB-61055	Water		100	☐	0	0	100	1.000		
N022819-001D	Groundwater		100	☐	0	0	100	1.000		
N022819-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N022819-002D	Groundwater		100	☐	0	0	100	1.000		
N022819-003D	Groundwater		100	☐	0	0	100	1.000		
N022819-004D	Groundwater		100	☐	0	0	100	1.000		
N022819-005D	Groundwater		100	☐	0	0	100	1.000		
N022819-006D	Groundwater		100	☐	0	0	100	1.000		
N022819-007D	Groundwater		100	☐	0	0	100	1.000		
N022819-008D	Groundwater		100	☐	0	0	100	1.000		
N022819-009D	Groundwater		100	☐	0	0	100	1.000		
N022820-001D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8832	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 9:29:23 A**
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: _____

Prep Batch **61055** Prep Code: **160.2 W PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61055	Water	INST120118A	100	☐	0	0	100	1.000		
MB-61055	Water		100	☐	0	0	100	1.000		
N022819-001D	Groundwater		100	☐	0	0	100	1.000		
N022819-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N022819-002D	Groundwater		100	☐	0	0	100	1.000		
N022819-003D	Groundwater		100	☐	0	0	100	1.000		
N022819-004D	Groundwater		100	☐	0	0	100	1.000		
N022819-005D	Groundwater		100	☐	0	0	100	1.000		
N022819-006D	Groundwater		100	☐	0	0	100	1.000		
N022819-007D	Groundwater		100	☐	0	0	100	1.000		
N022819-008D	Groundwater		100	☐	0	0	100	1.000		
N022819-009D	Groundwater		100	☐	0	0	100	1.000		
N022820-001D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8832

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 10:25:39**
Prep End Date: **1/30/2017 6:00:00 P**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/2017

Prep Batch **61082** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61082	Water		100	☐	0	0	100	1.000		
MB-61082	Water		100	☐	0	0	100	1.000		
N022820-002D	Groundwater		100	☐	0	0	100	1.000		
N022820-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N022820-003D	Groundwater		100	☐	0	0	100	1.000		
N022820-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-001D	Groundwater		100	☐	0	0	100	1.000		
N022830-002D	Groundwater		100	☐	0	0	100	1.000		
N022830-003D	Groundwater		100	☐	0	0	100	1.000		
N022830-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-005D	Groundwater		100	☐	0	0	100	1.000		
N022830-006D	Groundwater		100	☐	0	0	100	1.000		
N022830-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8832	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 1/30/2017 10:25:39
Prep End Date:

Reviewed/ Date: _____

Initials/ Date: _____

Prep Batch 61082 Prep Code: 160.2_W_PRE Technician: Quennie Manimtim

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61082	Water	1WST701180	100	☐	0	0	100	1.000		
MB-61082	Water		100	☐	0	0	100	1.000		
N022820-002D	Groundwater		100	☐	0	0	100	1.000		
N022820-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N022820-003D	Groundwater		100	☐	0	0	100	1.000		
N022820-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-001D	Groundwater		100	☐	0	0	100	1.000		
N022830-002D	Groundwater		100	☐	0	0	100	1.000		
N022830-003D	Groundwater		100	☐	0	0	100	1.000		
N022830-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-005D	Groundwater		100	☐	0	0	100	1.000		
N022830-006D	Groundwater		100	☐	0	0	100	1.000		
N022830-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8832

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/26/2017							
MB-61055	100	1.3986	1.3985	-1.0000	1.00	-1	MBLK
LCS-61055	100	1.3921	1.4850	929.0000	1.00	929	LCS
N022819-001D	100	1.4055	1.4058	3.0000	1.00	3	SAMP
N022819-001D-DUP	100	1.3989	1.3991	2.0000	1.00	2	DUP
N022819-002D	100	1.4077	1.4079	2.0000	1.00	2	SAMP
N022819-003D	100	1.3986	1.3991	5.0000	1.00	5	SAMP
N022819-004D	100	1.4071	1.4076	5.0000	1.00	5	SAMP
N022819-005D	100	1.4196	1.4197	1.0000	1.00	1	SAMP
N022819-006D	100	1.4068	1.4069	1.0000	1.00	1	SAMP
N022819-007D	100	1.4069	1.407	1.0000	1.00	1	SAMP
N022819-008D	100	1.4295	1.4298	3.0000	1.00	3	SAMP
N022819-009D	100	1.4062	1.4065	3.0000	1.00	3	SAMP
N022820-001D	100	1.3913	1.3918	5.0000	1.00	5	SAMP

SOLIDS RAW DATA

TEST (TSS) TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/26/17	MB-61055 mb	100	1.3989 1.3986	1.3986 1.3985	
	LCS-61055 LCS	100	1.3924 1.3921	1.4851 1.4850	
	N022819-0010 1	100	1.4057 1.4055	1.4059 1.4058	
	10DWP DWP	100	1.3990 1.3989	1.3992 1.3991	
	2D 2	100	1.4078 1.4077	1.4080 1.4079	
	3D 3	100	1.3988 1.3986	1.3992 1.3991	
	4D 4	100	1.4073 1.4071	1.4078 1.4076	
	5D 5	100	1.4199 1.4196	1.4197 1.4197	
	6D 6	100	1.4069 1.4068	1.4069 1.4069	
	7D 7	100	1.4070 1.4069	1.4070 1.4070	

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7434
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
SBA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3101 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/ELAP Cert 4046

SOLIDS RAW DATA

TEST (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/20/17	N022819-0086 8	100	1.4297 1.4205	1.4299 1.4298	
	9b 9	100	1.4063 1.4062	1.4067 1.4065	
	N022820-0010 10	100	1.3915 1.3913	1.3920 1.3918	

ASSET Laboratories Logbook#4

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/30/2017							
MB-61082	100	1.4124	1.4123	-1.0000	1.00	-1	MBLK
LCS-61082	100	1.4164	1.5099	935.0000	1.00	935	LCS
N022820-002D	100	1.4009	1.4017	8.0000	1.00	8	SAMP
N022820-002D-DUP	100	1.3912	1.3918	6.0000	1.00	6	DUP
N022820-003D	100	1.4105	1.4114	9.0000	1.00	9	SAMP
N022820-004D	100	1.388	1.3886	6.0000	1.00	6	SAMP
N022830-001D	100	1.4207	1.421	3.0000	1.00	3	SAMP
N022830-002D	100	1.4151	1.4152	1.0000	1.00	1	SAMP
N022830-003D	100	1.4147	1.4156	9.0000	1.00	9	SAMP
N022830-004D	100	1.4104	1.4145	41.0000	1.00	41	SAMP
N022830-005D	100	1.4112	1.4115	3.0000	1.00	3	SAMP
N022830-006D	100	1.4185	1.4186	1.0000	1.00	1	SAMP
N022830-007D	100	1.4075	1.4078	3.0000	1.00	3	SAMP

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/30/11	MB - 61082	100	1.4126 1.4124	1.4124 1.4123	
	LCS - 61082	100	1.4164 1.4164	1.5101 1.5094	
	N022820-0029	100	1.4009 1.4009	1.4018 ~~1.4018~~ 2 ~~1.4017~~	
	2D DWP	100	1.3913 1.3912	1.3918 1.3918	
	3D	100	1.4108 1.4105	1.4115 1.4114	
	4D	100	1.3882 1.3880	1.3887 1.3886	
	N022830-0010	100	1.4210 1.4207	1.4211 ~~1.4209~~ 2 1.4210	
	2D	100	1.4152 1.4151	1.4153 1.4153	
	3D	100	1.4149 1.4147	1.4157 1.4156	
	4D	100	1.4105 1.4104	1.4147 1.4145	

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
	N022830-0050	100	1.4114 1.4112	1.4115 1.4115	
	60	100	1.4185 1.4185	1.4185 1.4186	
	70	100	1.4078 1.4075	1.4077 1.4078	

ASSET Laboratories

Logbook#5

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113215
ASSET #: N022820

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/30/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer 2/7/2017 Date:

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113260
ASSET #: N022820

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/2/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer 2/7/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N022820-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0620 * 1$$

$$Cr^{+6}, \mu g/L = 0.062$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}, \mu g/L = ND}$$

rba 2/6/2017

ANALYSIS RUN LOG

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMP	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMP	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMP	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMP	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMP	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMP	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMP	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMP	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMP	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMP	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMP	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMP	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMP	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMP	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMP	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMP	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMP	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMP	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMP	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMP	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMP	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMP	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMP	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMP	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMP	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMP	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMP	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMP	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/30/17 9:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/30/17 9:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/30/17 9:51 AM	Reported
15	MB-R113215	MBLK	1	Hexavalent Chromium	01/30/17 10:00 AM	Reported
16	LCS-R113215	LCS	1	Hexavalent Chromium	01/30/17 10:09 AM	Reported
17	N022819-001A	SAMP	1	Hexavalent Chromium	01/30/17 10:21 AM	Reported
18	N022819-001AMS	MS	1	Hexavalent Chromium	01/30/17 10:32 AM	Reported
19	N022819-002A	SAMP	1	Hexavalent Chromium	01/30/17 10:42 AM	Reported
20	N022819-002AMS	MS	1	Hexavalent Chromium	01/30/17 10:51 AM	Reported
21	N022819-003A	SAMP	1	Hexavalent Chromium	01/30/17 11:01 AM	Reported
22	N022819-003AMS	MS	1	Hexavalent Chromium	01/30/17 11:10 AM	Reported
23	N022819-004A	SAMP	1	Hexavalent Chromium	01/30/17 11:20 AM	Reported
24	N022819-004AMS	MS	1	Hexavalent Chromium	01/30/17 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/30/17 11:38 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/30/17 11:48 AM	Reported
27	N022819-005A	SAMP	1	Hexavalent Chromium	01/30/17 11:57 AM	Reported
28	N022819-005AMS	MS	1	Hexavalent Chromium	01/30/17 12:07 PM	Reported
29	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 12:16 PM	Not Reported
30	N022819-006A	SAMP	1	Hexavalent Chromium	01/30/17 12:26 PM	Reported
31	N022819-006ADUP	DUP	1	Hexavalent Chromium	01/30/17 12:35 PM	Reported
32	N022819-006AMS	MS	1	Hexavalent Chromium	01/30/17 12:45 PM	Reported
33	N022819-007A	SAMP	1	Hexavalent Chromium	01/30/17 12:54 PM	Reported
34	N022819-007AMS	MS	1	Hexavalent Chromium	01/30/17 1:04 PM	Reported
35	N022819-008A	SAMP	1	Hexavalent Chromium	01/30/17 1:13 PM	Not Reported
36	N022819-008AMS	MS	1	Hexavalent Chromium	01/30/17 1:23 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/30/17 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:41 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:53 PM	Not Reported
40	N022819-009A	SAMP	1	Hexavalent Chromium	01/30/17 2:04 PM	Not Reported
41	N022819-009AMS	MS	1	Hexavalent Chromium	01/30/17 2:14 PM	Not Reported
42	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 2:23 PM	Reported
43	N022819-010A	SAMP	1	Hexavalent Chromium	01/30/17 2:33 PM	Not Reported
44	N022819-010AMS	MS	1	Hexavalent Chromium	01/30/17 2:42 PM	Not Reported

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
45	N022819-011A	SAMP	1	Hexavalent Chromium	01/30/17 2:51 PM	Reported
46	N022819-011AMS	MS	1	Hexavalent Chromium	01/30/17 3:01 PM	Reported
47	N022820-001A	SAMP	1	Hexavalent Chromium	01/30/17 3:10 PM	Not Reported
48	N022820-001AMS	MS	1	Hexavalent Chromium	01/30/17 3:20 PM	Not Reported
49	N022820-002A	SAMP	1	Hexavalent Chromium	01/30/17 3:29 PM	Not Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	01/30/17 3:39 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	01/30/17 3:48 PM	Reported
52	N022820-002AMS	MS	1	Hexavalent Chromium	01/30/17 3:58 PM	Not Reported
53	N022820-003A	SAMP	1	Hexavalent Chromium	01/30/17 4:07 PM	Not Reported
54	N022820-003AMS	MS	1	Hexavalent Chromium	01/30/17 4:17 PM	Not Reported
55	N022820-004A	SAMP	1	Hexavalent Chromium	01/30/17 4:26 PM	Reported
56	N022820-004AMS	MS	1	Hexavalent Chromium	01/30/17 4:36 PM	Reported
57	N022820-005A	SAMP	1	Hexavalent Chromium	01/30/17 4:45 PM	Reported
58	N022820-005AMS	MS	1	Hexavalent Chromium	01/30/17 4:54 PM	Reported
59	N022820-006A	SAMP	1	Hexavalent Chromium	01/30/17 5:04 PM	Reported
60	N022820-006AMS	MS	1	Hexavalent Chromium	01/30/17 5:17 PM	Reported
61	N022773-016A	SAMP	1	Hexavalent Chromium	01/30/17 5:29 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	01/30/17 5:38 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	01/30/17 5:47 PM	Reported
64	N022820-007A	SAMP	1	Hexavalent Chromium	01/30/17 5:57 PM	Reported
65	N022820-007AMS	MS	1	Hexavalent Chromium	01/30/17 6:06 PM	Reported
66	N022702-012A	SAMP	2	Hexavalent Chromium	01/30/17 6:16 PM	Not Reported
67	N022702-012AMS	MS	2	Hexavalent Chromium	01/30/17 6:25 PM	Not Reported
68	LCS-R113217	LCS	1	Hexavalent Chromium	01/30/17 6:35 PM	Reported
69	MB-R113217	MBLK	1	Hexavalent Chromium	01/30/17 6:44 PM	Reported
70	N022866-005A	SAMP	50	Hexavalent Chromium	01/30/17 6:54 PM	Reported
71	N022866-005AMS	MS	50	Hexavalent Chromium	01/30/17 7:03 PM	Reported
72	N022866-005AMSD	MSD	50	Hexavalent Chromium	01/30/17 7:13 PM	Reported
73	N022866-001A	SAMP	50	Hexavalent Chromium	01/30/17 7:22 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	01/30/17 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	01/30/17 7:41 PM	Reported
76	N022866-001ADUP	DUP	50	Hexavalent Chromium	01/30/17 7:50 PM	Reported
77	N022866-002A	SAMP	1	Hexavalent Chromium	01/30/17 8:00 PM	Reported
78	N022866-003A	SAMP	1	Hexavalent Chromium	01/30/17 8:09 PM	Reported
79	N022866-004A	SAMP	1	Hexavalent Chromium	01/30/17 8:19 PM	Reported
80	N022866-006A	SAMP	1	Hexavalent Chromium	01/30/17 8:28 PM	Reported
81	N022866-007A	SAMP	1	Hexavalent Chromium	01/30/17 8:38 PM	Reported
82	N022869-001A	SAMP	1	Hexavalent Chromium	01/30/17 8:47 PM	Reported
83	N022822-011A	SAMP	1	Hexavalent Chromium	01/30/17 8:57 PM	Reported
84	N022822-011AMS	MS	1	Hexavalent Chromium	01/30/17 9:06 PM	Reported
85	N022822-012A	SAMP	1	Hexavalent Chromium	01/30/17 9:16 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	01/30/17 9:25 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	01/30/17 9:35 PM	Reported
88	N022822-012AMS	MS	1	Hexavalent Chromium	01/30/17 9:44 PM	Reported

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
89	N022822-013A	SAMP	1	Hexavalent Chromium	01/30/17 10:17 PM	Reported
90	N022822-013AMS	MS	1	Hexavalent Chromium	01/30/17 10:28 PM	Reported
91	N022822-014A	SAMP	1	Hexavalent Chromium	01/30/17 10:37 PM	Reported
92	N022822-014AMS	MS	1	Hexavalent Chromium	01/30/17 10:47 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	01/30/17 10:56 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	01/30/17 11:06 PM	Reported
95	MB-61081	MBLK	1	Hexavalent Chromium	01/30/17 11:15 PM	Reported
96	N022615-001D_STLC	SAMP	10000	Hexavalent Chromium	01/30/17 11:25 PM	Reported
97	N022615-001DREP	DUP	10000	Hexavalent Chromium	01/30/17 11:34 PM	Reported
98	CCV-9	CCV	1	Hexavalent Chromium	01/30/17 11:44 PM	Reported
99	CCB-9	CCB	1	Hexavalent Chromium	01/30/17 11:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170130A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Feb/17 16:00:29**
No. of Injections:	**102**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/30/2017 09:11	Finished	
11	BLANK	2	1000	Unknown		01/30/2017 09:22	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/30/2017 09:32	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/30/2017 09:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/30/2017 09:51	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/30/2017 10:00	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/30/2017 10:09	Finished	LCS, IWST-161114D
17	N022819-001A,SAMF	9	1000	Unknown		01/30/2017 10:21	Finished	SAMP, 10mL
18	N022819-001AMS,MS	10	1000	Unknown		01/30/2017 10:32	Finished	MS (1ppb), IWST-161114D,10
19	N022819-002A,SAMF	11	1000	Unknown		01/30/2017 10:42	Finished	SAMP, 10mL
20	N022819-002AMS,MS	12	1000	Unknown		01/30/2017 10:51	Finished	MS (1ppb), IWST-161114D,10
21	N022819-003A,SAMF	13	1000	Unknown		01/30/2017 11:01	Finished	SAMP, 10mL
22	N022819-003AMS,MS	14	1000	Unknown		01/30/2017 11:10	Finished	MS (1ppb), IWST-161114D,10
23	N022819-004A,SAMF	15	1000	Unknown		01/30/2017 11:20	Finished	SAMP, 10mL
24	N022819-004AMS,MS	16	1000	Unknown		01/30/2017 11:29	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		01/30/2017 11:38	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/30/2017 11:48	Finished	CCB R170112D
27	N022819-005A,SAMF	19	1000	Unknown		01/30/2017 11:57	Finished	SAMP, 10mL
28	N022819-005AMS,MS	20	1000	Unknown		01/30/2017 12:07	Finished	MS (1ppb), IWST-161114D,10
29	N022819-005AMSD,M	21	1000	Unknown		01/30/2017 12:16	Finished	MSD (1ppb), IWST-161114D,1
30	N022819-006A,SAMF	22	1000	Unknown		01/30/2017 12:26	Finished	SAMP, 10mL
31	N022819-006ADUP,D	23	1000	Unknown		01/30/2017 12:35	Finished	DUP, 10mL
32	N022819-006AMS,MS	24	1000	Unknown		01/30/2017 12:45	Finished	MS (1ppb), IWST-161114D,0.0
33	N022819-007A,SAMF	25	1000	Unknown		01/30/2017 12:54	Finished	SAMP, 10mL
34	N022819-007AMS,MS	26	1000	Unknown		01/30/2017 13:04	Finished	MS (1ppb), IWST-161114D,10
35	N022819-008A,SAMF	27	1000	Unknown		01/30/2017 13:13	Finished	SAMP, 10mL
36	N022819-008AMS,MS	28	1000	Unknown		01/30/2017 13:23	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		01/30/2017 13:32	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:41	Finished	CCB R170112D
39	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:53	Finished	CCB R170112D
40	N022819-009A,SAMF	31	1000	Unknown		01/30/2017 14:04	Finished	SAMP, 10mL
41	N022819-009AMS,MS	32	1000	Unknown		01/30/2017 14:14	Finished	MS (1ppb), IWST-161114D,10
42	N022819-005AMSD,M	33	1000	Unknown		01/30/2017 14:23	Finished	MSD (1ppb), IWST-161114D,1
43	N022819-010A,SAMF	34	1000	Unknown		01/30/2017 14:33	Finished	SAMP, 10mL
44	N022819-010AMS,MS	35	1000	Unknown		01/30/2017 14:42	Finished	MS (1ppb), IWST-161114D,10
45	N022819-011A,SAMF	36	1000	Unknown		01/30/2017 14:51	Finished	SAMP, 10mL
46	N022819-011AMS,MS	37	1000	Unknown		01/30/2017 15:01	Finished	MS (1ppb), IWST-161114D,10
47	N022820-001A,SAMF	38	1000	Unknown		01/30/2017 15:10	Finished	SAMP, 10mL
48	N022820-001AMS,MS	39	1000	Unknown		01/30/2017 15:20	Finished	MS (1ppb), IWST-161114D,10
49	N022820-002A,SAMF	40	1000	Unknown		01/30/2017 15:29	Finished	SAMP, 10mL
50	CCV-4,CCV1,1,	41	1000	Unknown		01/30/2017 15:39	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	42	1000	Unknown		01/30/2017 15:48	Finished	CCB R170112D
52	N022820-002AMS,MS	43	1000	Unknown		01/30/2017 15:58	Finished	MS (1ppb), IWST-161114D,10
53	N022820-003A,SAMF	44	1000	Unknown		01/30/2017 16:07	Finished	SAMP, 10mL
54	N022820-003AMS,MS	45	1000	Unknown		01/30/2017 16:17	Finished	MS (1ppb), IWST-161114D,10
55	N022820-004A,SAMF	46	1000	Unknown		01/30/2017 16:26	Finished	SAMP, 10mL
56	N022820-004AMS,MS	47	1000	Unknown		01/30/2017 16:36	Finished	MS (1ppb), IWST-161114D,10
57	N022820-005A,SAMF	48	1000	Unknown		01/30/2017 16:45	Finished	SAMP, 10mL
58	N022820-005AMS,MS	49	1000	Unknown		01/30/2017 16:54	Finished	MS (1ppb), IWST-161114D,10
59	N022820-006A,SAMF	50	1000	Unknown		01/30/2017 17:04	Finished	SAMP, 10mL
60	N022820-006AMS,MS	1	1000	Unknown		01/30/2017 17:17	Finished	MS (1ppb), IWST-161114D,10

61	N022773-016A,SAMF	2	1000	Unknown		01/30/2017 17:29	Finished	SAMP, 10mL
62	CCV-5,CCV,1,	3	1000	Unknown		01/30/2017 17:38	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	4	1000	Unknown		01/30/2017 17:47	Finished	CCB R170112D
64	N022820-007A,SAMF	5	1000	Unknown		01/30/2017 17:57	Finished	SAMP, 10mL
65	N022820-007AMS,MS	6	1000	Unknown		01/30/2017 18:06	Finished	MS (1ppb), IWST-161114D,10
66	N022702-012A,SAMF	7	1000	Unknown		01/30/2017 18:16	Finished	SAMP, 5>10mL
67	N022702-012AMS,MS	8	1000	Unknown		01/30/2017 18:25	Finished	MS (5ppb), IWST-161114D,5>
68	LCS-2,LCS,1	9	1000	Unknown		01/30/2017 18:35	Finished	LCS, IWST-161114D
69	MB-2,MBLK,1	10	1000	Unknown		01/30/2017 18:44	Finished	MB R170112D
70	N022866-005A,SAMF	11	1000	Unknown		01/30/2017 18:54	Finished	SAMP, 0.2>10mL
71	N022866-005AMS,MS	12	1000	Unknown		01/30/2017 19:03	Finished	MS (5ppb), IWST-161114D,0.2
72	N022866-005AMSD,M	13	1000	Unknown		01/30/2017 19:13	Finished	MSD (5ppb), IWST-161114D,0
73	N022866-001A,SAMF	14	1000	Unknown		01/30/2017 19:22	Finished	SAMP, 0.2>10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		01/30/2017 19:32	Finished	CCV @10ppb, IWST-161114C
75	CCB-6,CCB,1,	16	1000	Unknown		01/30/2017 19:41	Finished	CCB R170103B
76	N022866-001ADUP,D	17	1000	Unknown		01/30/2017 19:50	Finished	DUP, 0.2>10mL
77	N022866-002A,SAMF	18	1000	Unknown		01/30/2017 20:00	Finished	SAMP, 10mL
78	N022866-003A,SAMF	19	1000	Unknown		01/30/2017 20:09	Finished	SAMP, 10mL
79	N022866-004A,SAMF	20	1000	Unknown		01/30/2017 20:19	Finished	SAMP, 10mL
80	N022866-006A,SAMF	21	1000	Unknown		01/30/2017 20:28	Finished	SAMP, 10mL
81	N022866-007A,SAMF	22	1000	Unknown		01/30/2017 20:38	Finished	SAMP, 10mL
82	N022869-001A,SAMF	23	1000	Unknown		01/30/2017 20:47	Finished	SAMP, 10mL
83	N022822-011A,SAMF	24	1000	Unknown		01/30/2017 20:57	Finished	SAMP, 10mL
84	N022822-011AMS,MS	25	1000	Unknown		01/30/2017 21:06	Finished	MS (1ppb), IWST-161114D,10
85	N022822-012A,SAMF	26	1000	Unknown		01/30/2017 21:16	Finished	SAMP, 10mL
86	CCV-7,CCV,1,	27	1000	Unknown		01/30/2017 21:25	Finished	CCV @5ppb, IWST-161114C
87	CCB-7,CCB,1,	28	1000	Unknown		01/30/2017 21:35	Finished	CCB R170112D
88	N022822-012AMS,MS	29	1000	Unknown		01/30/2017 21:44	Finished	MS (1ppb), IWST-161114D,10
89	N022822-013A,SAMF	30	1000	Unknown		01/30/2017 22:17	Finished	SAMP, 10mL
90	N022822-013AMS,MS	31	1000	Unknown		01/30/2017 22:28	Finished	MS (1ppb), IWST-161114D,10
91	N022822-014A,SAMF	32	1000	Unknown		01/30/2017 22:37	Finished	SAMP, 10mL
92	N022822-014AMS,MS	33	1000	Unknown		01/30/2017 22:47	Finished	MS (1ppb), IWST-161114D,10
93	CCV-8,CCV1,1,	34	1000	Unknown		01/30/2017 22:56	Finished	CCV @10ppb, IWST-161114C
94	CCB-8,CCB,1,	35	1000	Unknown		01/30/2017 23:06	Finished	CCB R170103B
95	MB-61081,MBLK,1	36	1000	Unknown		01/30/2017 23:15	Finished	MB R170112D
96	N022615-001D_STLC	37	1000	Unknown		01/30/2017 23:25	Finished	SAMP,0.001>10mL
97	N022615-001DREP,D	38	1000	Unknown		01/30/2017 23:34	Finished	REP,0.001>10mL
98	CCV-9,CCV,1,	39	1000	Unknown		01/30/2017 23:44	Finished	CCV @5ppb, IWST-161114C
99	CCB-9,CCB,1,	40	1000	Unknown		01/30/2017 23:53	Finished	CCB R170103B
100	SHUTDOWN	41	1000	Unknown		01/31/2017 00:03	Finished	
101	Eluent: R170130A	42	1000	Unknown		n.a.	Finished	Eluent
102	PCR: R170127B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Not Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMP	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMP	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMP	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMP	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMP	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMP	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMP	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMP	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMP	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMP	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMP	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMP	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMP	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMP	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMP	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMP	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMP	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMP	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMP	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMP	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'N

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-1610 12A
NH4OH + NH4SO4 eluent: R170130A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022819 - 7A	9.48	–	~250 mL	~250 mL		3/3 R170112D
2)	8A	9.47	–				1/3
3)	8A	9.47	–				2/3
4)	8A	9.47	–				3/3
5)	9A	9.48	–				1/3
6)	9A	9.49	–				2/3
7)	9A	9.46	–				3/3
8)	10A	9.40	–				1/3
9)	10A	9.39	–				2/3
10)	10A	9.40	–				3/3
11)	11A	9.37	–				1/3
12)	11A	9.35	–				2/3
13)	11A	9.38	–				3/3
14)	N022820 - 1A	9.47	–				1/3
15)	1A	9.46	–				2/3
	1A	9.45	–				3/3

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'N

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: INV-1610 12A
NH4OH + NH4SO4 eluent: R170130A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022820 - 2A	9.44	–	~250 mL	~250 mL		1/3 R170112D
2)	2A	9.47	–				2/3
3)	2A	9.43	–				3/3
4)	3A	9.46	–				1/3
5)	3A	9.45	–				2/3
6)	3A	9.48	–				3/3
7)	4A	9.48	–				1/3
8)	4A	9.49	–				2/3
9)	4A	9.48	–				3/3
10)	5A	9.38	–				1/3
11)	5A	9.39	–				2/3
12)	5A	9.37	–				3/3
13)	6A	9.57	–				
14)	7A	9.57	–				
15)	11A	9.53	–				
	12A	9.40	–				

Logbook No. 12

jrba 2/6/2017

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-16012A
NH4OH + NH4SO4 eluent: R170130A / R170131A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022830 - 13A	9.55	–	~250mL	~250mL		R170112D
2)	14A	9.55	–				
3)	N022830 - 1A	9.65	–				1/3
4)	1A	9.63	–				2/3
5)	1A	9.63	–				3/3
6)	2A	9.62	–				1/3
7)	2A	9.60	–				2/3
8)	2A	9.65	–				3/3
9)	3A	9.66	–				1/3
10)	3A	9.67	–				2/3
11)	3A	9.62	–				3/3
12)	4A	9.62	–				1/3
13)	4A	9.65	–				2/3
14)	4A	9.66	–				3/3
15)	5A	9.64	–				1/3
	5A	9.65	–				2/3

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-16012A
NH4OH + NH4SO4 eluent: R170131A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022830 - 5A	9.62	–	~250 mL	~250mL		3/3 R170112D
2)	6A	9.64	–				1/3
3)	6A	9.64	–				2/3
4)	6A	9.61	–				3/3
5)	7A	9.64	–				1/3
6)	7A	9.64	–				2/3
7)	7A	9.65	–				3/3
8)	8A	9.65	–				1/3
9)	8A	9.64	–				2/3
10)	8A	9.63	–				3/3
11)	9A	9.62	–				1/3
12)	9A	9.60	–				2/3
13)	9A	9.58	–				3/3
14)	10A	9.60	–				1/3
15)	10A	9.57	–				2/3
	10A	9.56	–				3/3

Logbook No. 12

rba 2/6/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/9/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0502	0.2519	1.2883	2.5528	3.8621	5.0920	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ICV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.086	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.209	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.032	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.115	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCV** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ZZZZZZ** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2551000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.219	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.178	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.203	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.368	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.205	0.20	5.000	0	104	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.397	0.20	10.00	0	104	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.212	0.20	5.000	0	104	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.359	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **ICB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2550944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113215**
Client ID: **CCB** Batch ID: **R113215** TestNo: **EPA 218.6** Analysis Date: **1/30/2017** SeqNo: **2550983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113215
Client ID:	CCB	Batch ID:	R113215	TestNo:	EPA 218.6			Analysis Date:	1/30/2017	SeqNo:	2550995

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113215
Client ID:	CCB	Batch ID:	R113215	TestNo:	EPA 218.6			Analysis Date:	1/30/2017	SeqNo:	2551001

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553880

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	
Average	4.272	
Actual RT Window	4.192 - 4.352	
Applied RT Window	4.072 - 4.472	
MB-R113215	N.A.	N.A.
LCS-R113215	4.273	PASS
N022819-001A	4.256	PASS
N022819-001AMS	4.273	PASS
N022819-002A	4.256	PASS
N022819-002AMS	4.265	PASS
N022819-003A	4.273	PASS
N022819-003AMS	4.265	PASS
N022819-004A	4.265	PASS
N022819-004AMS	4.265	PASS
N022819-005A	4.256	PASS
N022819-005AMS	4.265	PASS
N022819-005AMSD	4.265	PASS
N022819-006A	4.248	PASS
N022819-006ADUP	4.256	PASS
N022819-006AMS	4.265	PASS
N022819-007A	4.248	PASS
N022819-007AMS	4.265	PASS
N022819-008A	4.256	PASS
N022819-008AMS	4.265	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	
Average	4.272	
Actual RT Window	4.192 - 4.352	
Applied RT Window	4.072 - 4.472	
N022819-009A	4.256	PASS
N022819-009AMS	4.265	PASS
N022819-005AMSD	4.265	PASS
N022819-010A	4.256	PASS
N022819-010AMS	4.265	PASS
N022819-011A	N.A.	N.A.
N022819-011AMS	4.265	PASS
N022820-001A	4.281	PASS
N022820-001AMS	4.265	PASS
N022820-002A	4.223	PASS
N022820-002AMS	4.265	PASS
N022820-003A	4.256	PASS
N022820-003AMS	4.273	PASS
N022820-004A	4.248	PASS
N022820-004AMS	4.265	PASS
N022820-005A	4.248	PASS
N022820-005AMS	4.265	PASS
N022820-006A	N.A.	N.A.
N022820-006AMS	4.273	PASS
N022773-016A	4.265	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	
Average	4.272	
Actual RT Window	4.192 - 4.352	
Applied RT Window	4.072 - 4.472	
N022820-007A	N.A.	N.A.
N022820-007AMS	4.273	PASS
N022702-012A	4.265	PASS
N022702-012AMS	4.256	PASS
LCS-R113217	4.273	PASS
MB-R113217	N.A.	N.A.
N022866-005A	4.273	PASS
N022866-005AMS	4.273	PASS
N022866-005AMSD	4.273	PASS
N022866-001A	4.273	PASS
N022866-001ADUP	4.265	PASS
N022866-002A	4.273	PASS
N022866-003A	N.A.	N.A.
N022866-004A	N.A.	N.A.
N022866-006A	N.A.	N.A.
N022866-007A	N.A.	N.A.
N022869-001A	N.A.	N.A.
N022822-011A	4.256	PASS
N022822-011AMS	4.273	PASS
N022822-012A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/30/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.273	
CCV-2	4.273	
CCV-3	4.273	
CCV-4	4.273	
CCV-5	4.265	
CCV-6	4.273	
CCV-7	4.273	
CCV-8	4.273	
CCV-9	4.273	

Average	4.272
Actual RT Window	4.192 - 4.352
Applied RT Window	4.072 - 4.472

N022822-012AMS	4.273	PASS
N022822-013A	N.A.	N.A.
N022822-013AMS	4.273	PASS
N022822-014A	N.A.	N.A.
N022822-014AMS	4.265	PASS
MB-61081	N.A.	N.A.
N022615-001D_STLC	4.273	PASS
N022615-001DREP	4.273	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

MB-H2O	4.281	PASS	not reported
LCS-R113260	4.256	PASS	
MB-R113260	N.A.	N.A.	
N022819-006A	4.248	PASS	
N022819-008A	4.256	PASS	
N022819-008AMS	4.256	PASS	
N022819-009A	4.256	PASS	
N022819-009AMS	4.256	PASS	
N022819-010A	4.256	PASS	
N022819-010AMS	4.256	PASS	
N022820-001A	4.256	PASS	
N022820-001AMS	4.256	PASS	
N022774-008A	N.A.	N.A.	
N022774-009A	4.148	PASS	
N022774-010A	4.065	PASS	
N022774-011A	4.098	PASS	
N022830-005A	4.223	PASS	
N022830-005AMS	4.240	PASS	
N022830-006A	4.356	PASS	
N022830-006AMS	4.240	PASS	
N022830-010A	4.223	PASS	

02/08/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022830-011A	N.A.	N.A.
N022830-011AMS	4.240	PASS
N022819-006AMS	4.240	PASS
N022819-008AMS	4.240	PASS
N022819-009AMS	4.231	PASS
N022819-010AMS	4.240	PASS
N022820-002A	4.065	PASS
N022820-002AMS	4.240	PASS
N022820-003A	4.206	PASS
N022820-003AMS	4.231	PASS
N022927-004A	4.231	PASS
N022927-004AMS	4.231	PASS
N022927-002A	4.231	PASS
N022927-004AMSD	4.231	PASS
N022927-002ADUP	4.231	PASS
N022927-003A	4.231	PASS
N022927-006A	N.A.	N.A.
N022927-007A	4.240	PASS
N022819-009AMS	4.240	PASS
N022819-010AMS	4.240	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022820-002AMS	4.240	PASS
LCS-R113261	4.248	PASS
MB-R113261	N.A.	N.A.
N022922-005A	4.248	PASS
N022922-005AMS	4.248	PASS
N022922-005AMSD	4.240	PASS
N022922-013A	4.248	PASS
N022922-013AMS	4.248	PASS
N022922-004A	4.240	PASS
N022922-004ADUP	4.240	PASS
N022922-001A	4.248	PASS
N022922-002A	N.A.	N.A.
N022922-003A	4.240	PASS
N022922-006A	4.248	PASS
N022922-007A	4.248	PASS
N022922-008A	N.A.	N.A.
N022922-009A	4.240	PASS
N022922-010A	4.248	PASS
N022922-011A	N.A.	N.A.
N022922-012A	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	
Average	4.249	
Actual RT Window	4.169 - 4.329	
Applied RT Window	4.049 - 4.449	
N022922-014A	4.248	PASS
N022922-003A	4.240	PASS
N022922-009AMS	4.240	PASS
N022922-009AMSD	4.248	PASS
N022922-009A	4.240	PASS
N022828-001AMS	N.A.	N.A.
N022828-001AMS	4.240	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

rba 1/15/2017

1/16/2017

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMF	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMF	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMF	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMF	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMF	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMF	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMF	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMF	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMF	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMF	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMF	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMF	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMF	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMF	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMF	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMF	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMF	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMF	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMF	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMF	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMF	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMF	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMF	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMF	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMF	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMF	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMF	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMF	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

rba 1/15/2017

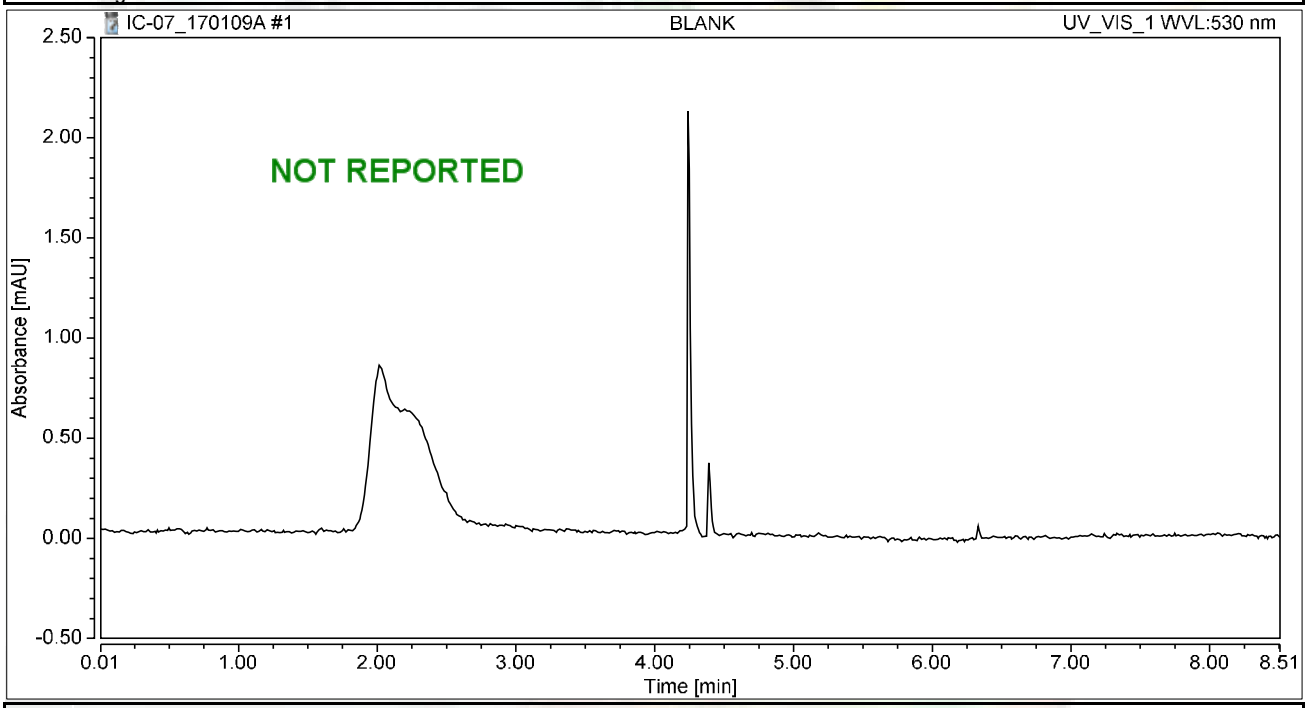
61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

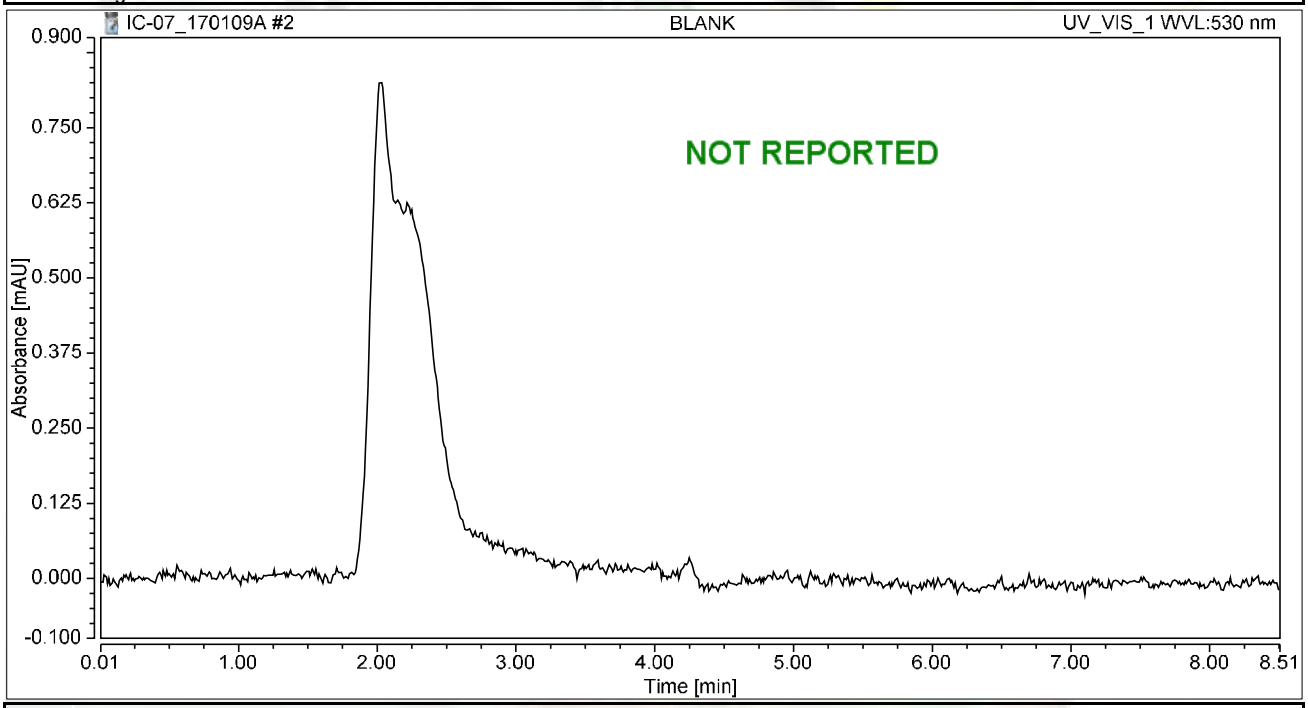
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

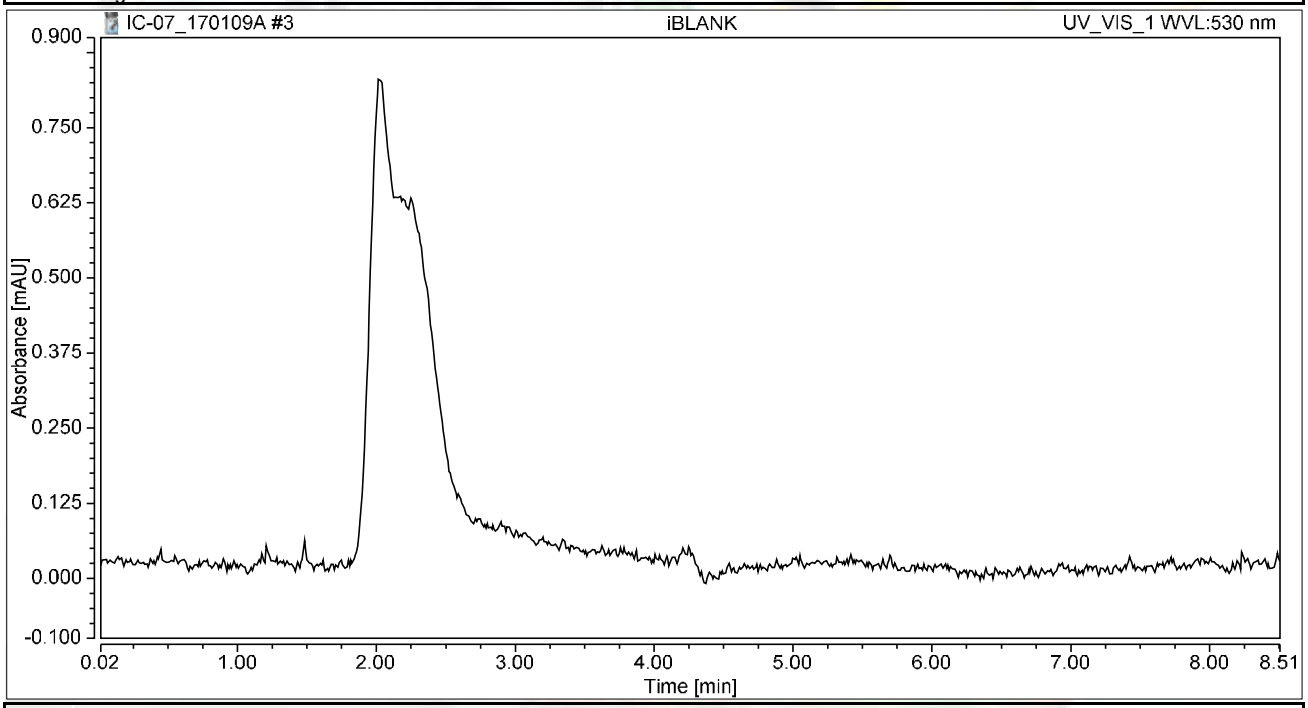
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

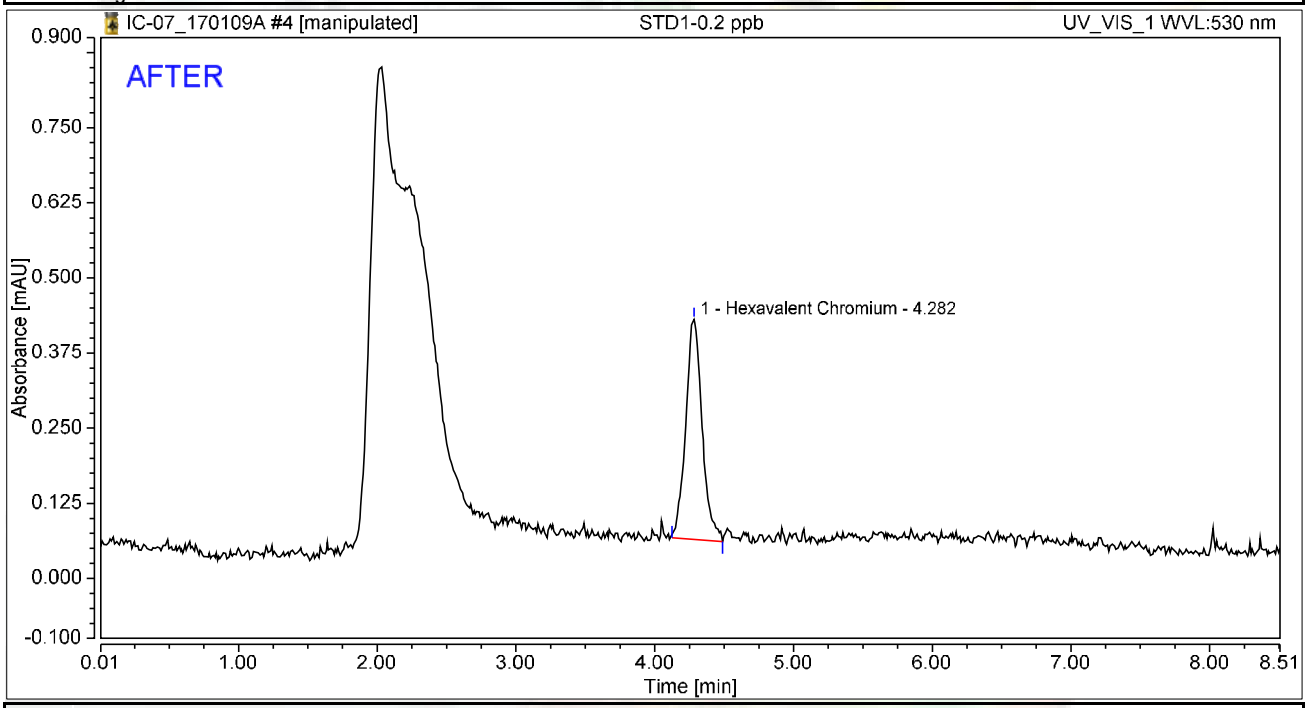
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.050	0.367	100.00	100.00	0.1965
Total:			**0.050**	**0.367**	**100.00**	**100.00**	

rba 1/15/2017

Reviewed by: 1/13/2017

My first report/integration

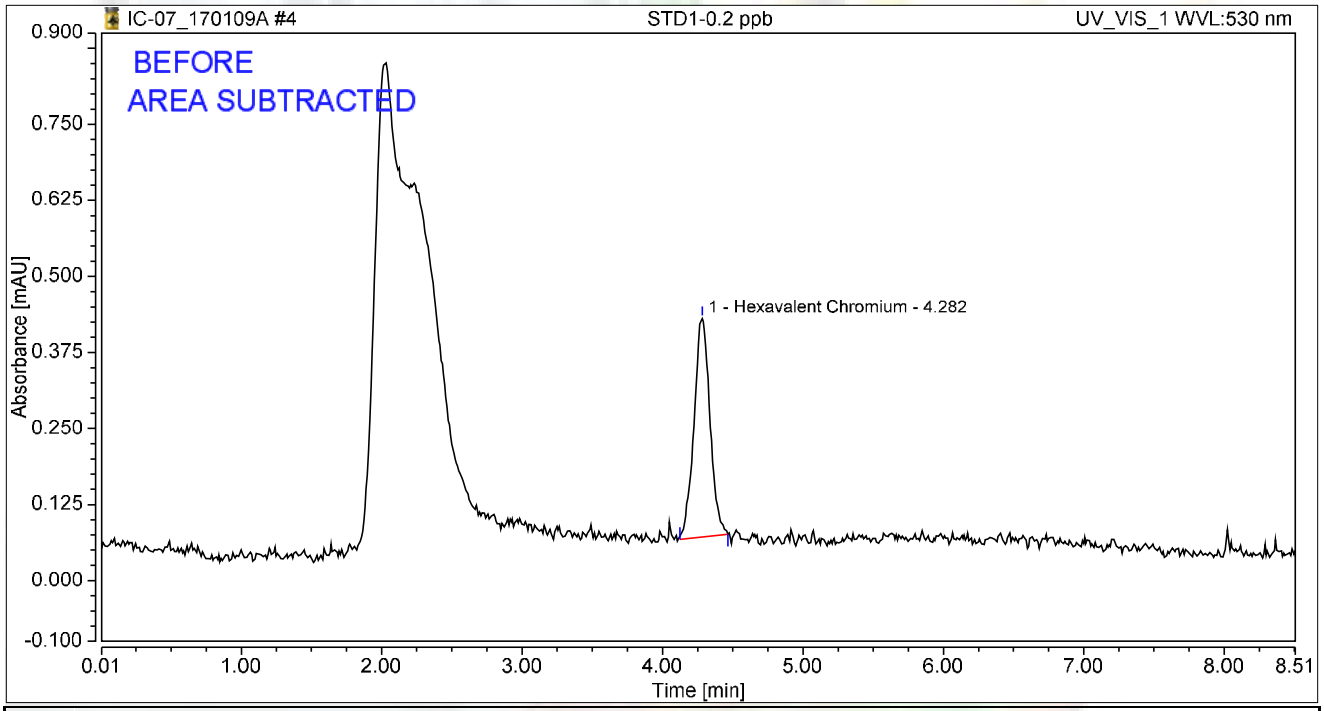
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.047	0.360	100.00	100.00	0.1857
Total:			**0.047**	**0.360**	**100.00**	**100.00**	

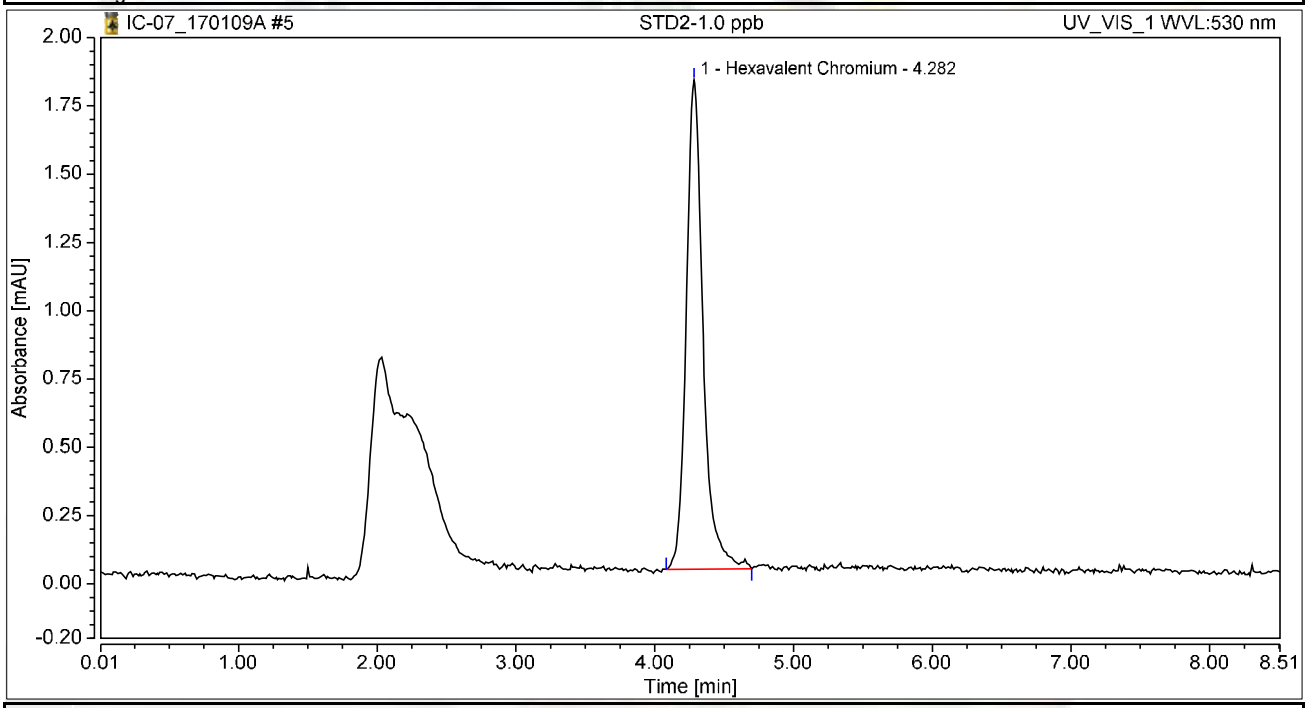
rba 1/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

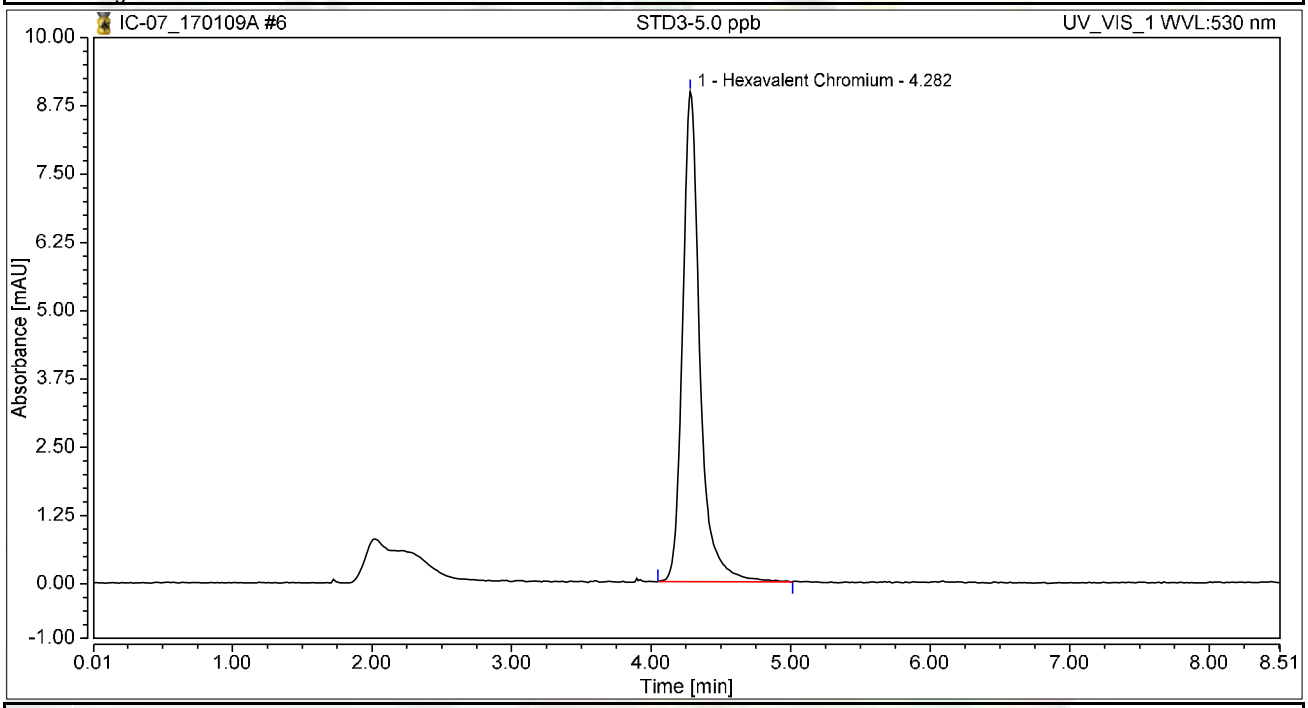
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.252	1.792	100.00	100.00	0.9852
Total:			**0.252**	**1.792**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

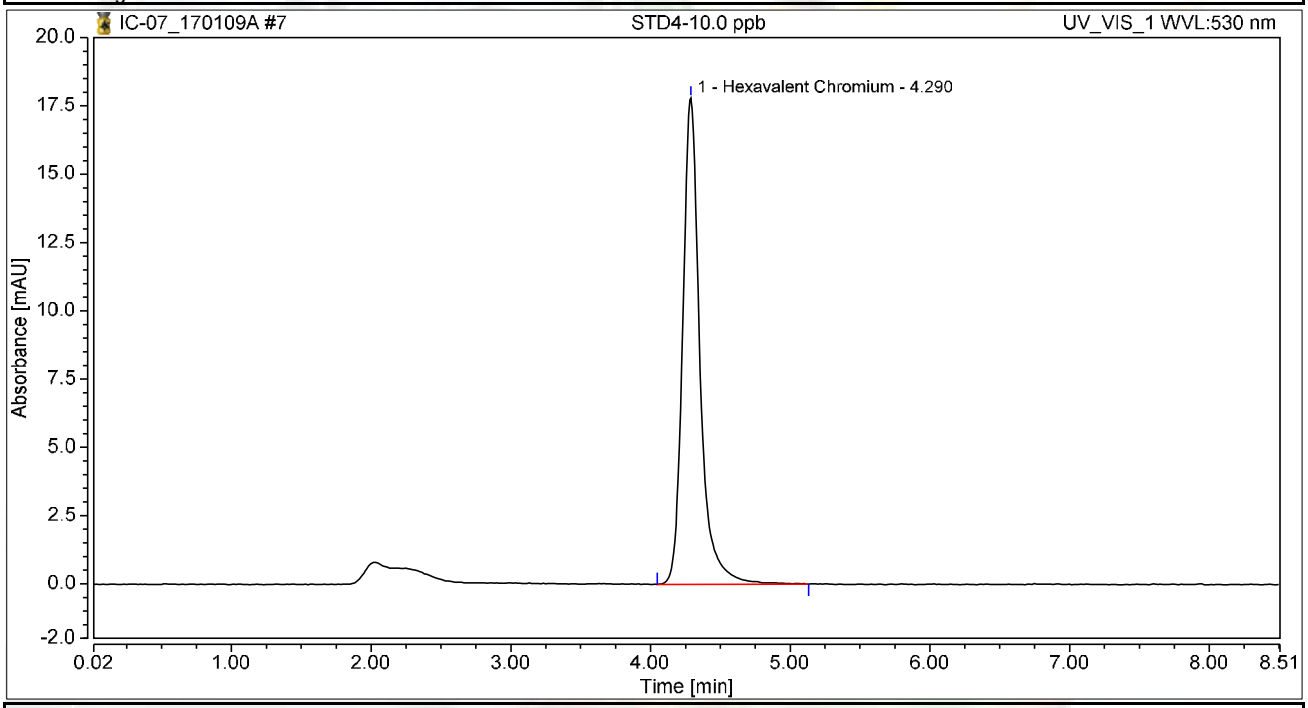
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	1.288	8.975	100.00	100.00	5.0392
Total:			**1.288**	**8.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

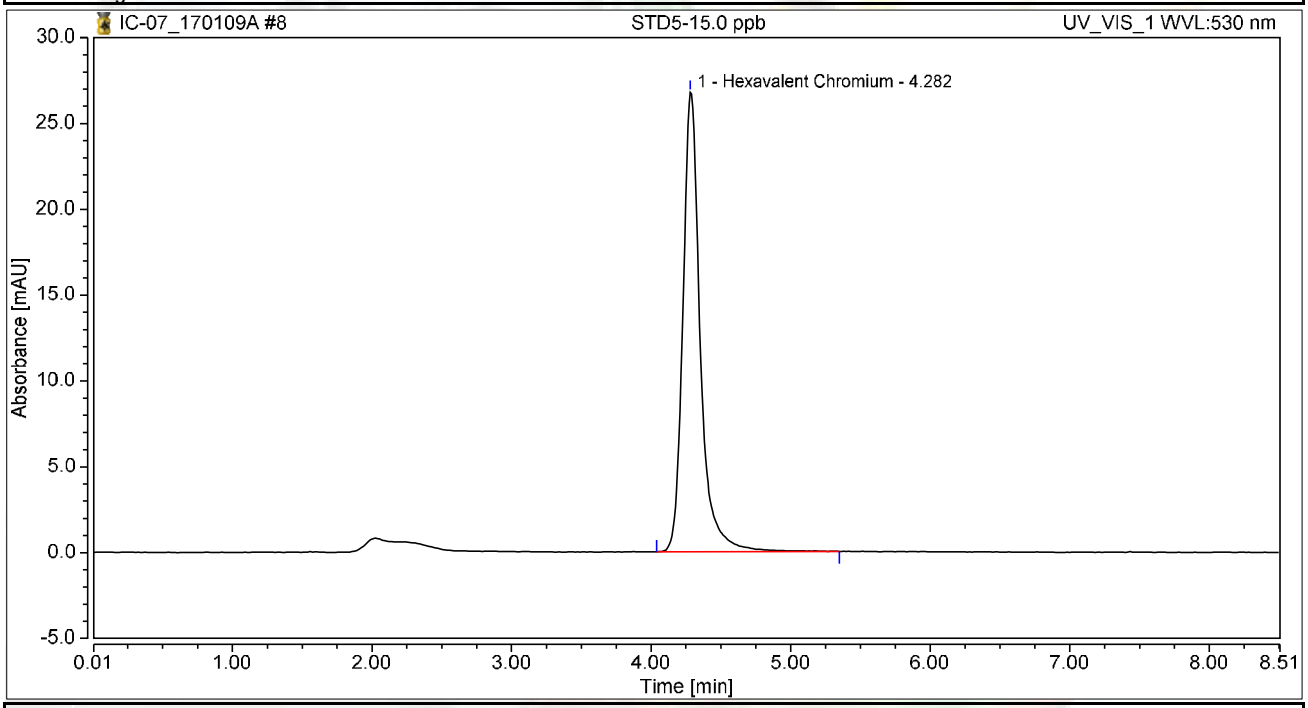
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.553	17.802	100.00	100.00	9.9856
Total:			**2.553**	**17.802**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

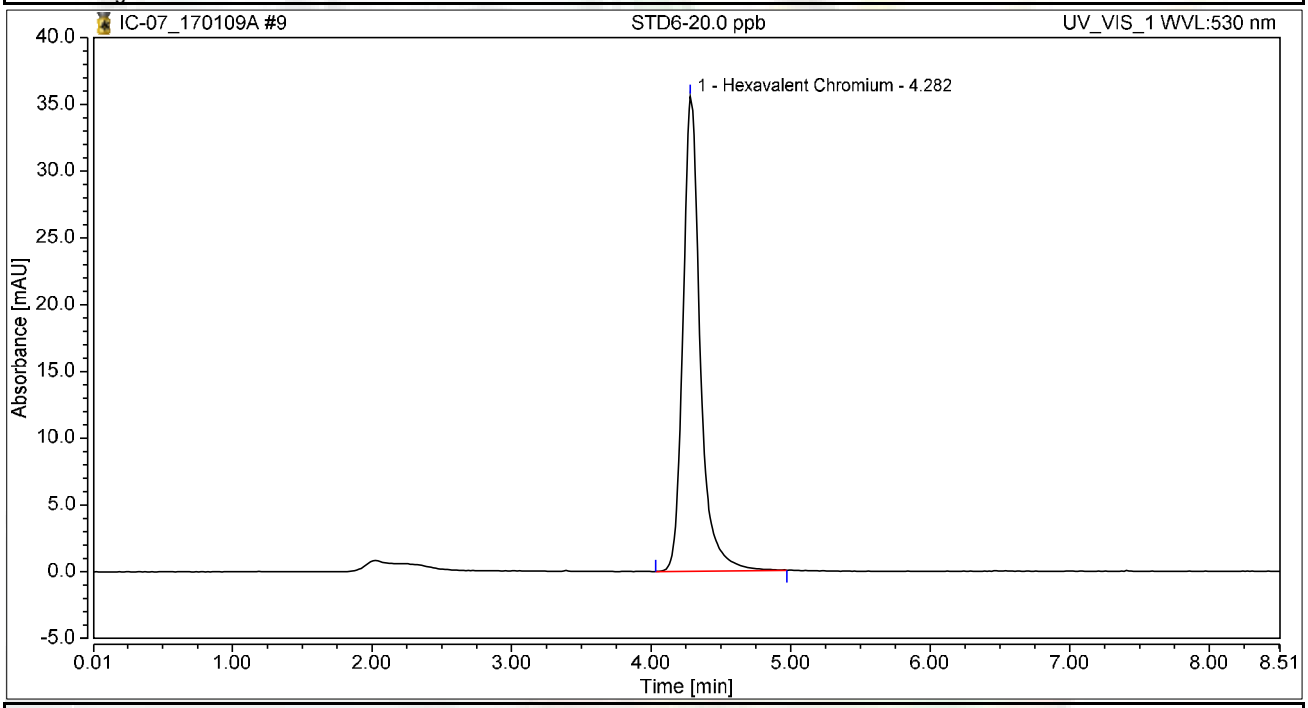
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	3.862	26.764	100.00	100.00	15.1070
Total:			**3.862**	**26.764**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



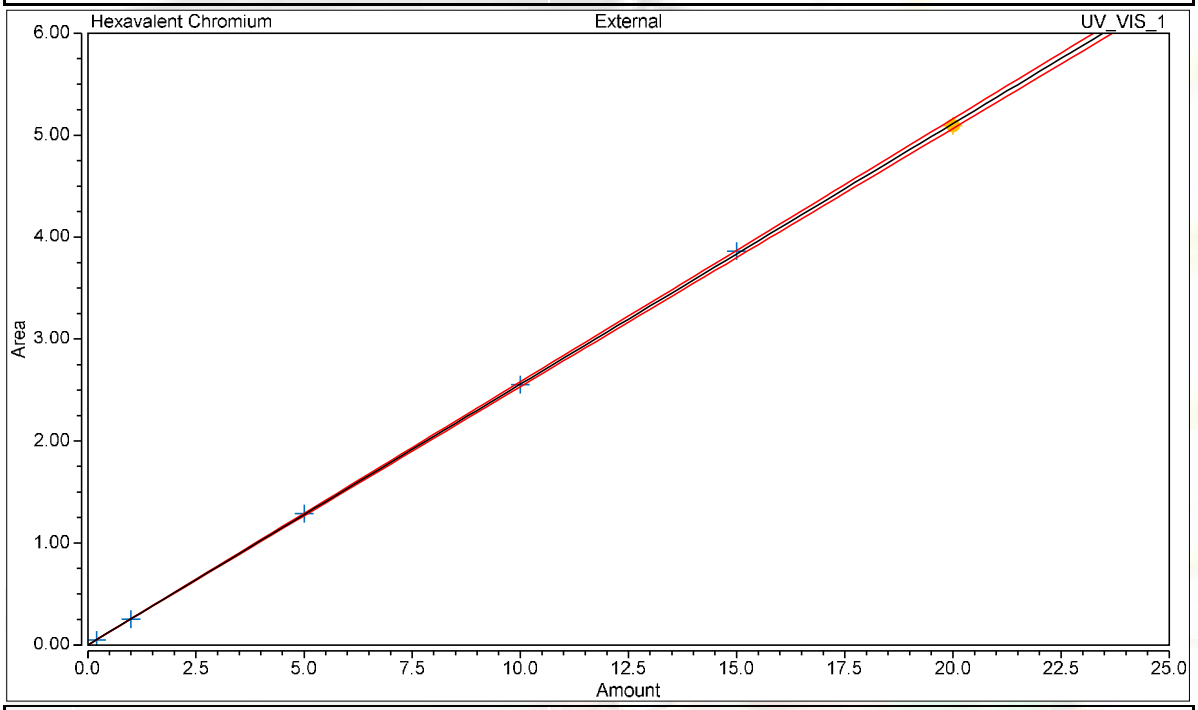
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	5.092	35.542	100.00	100.00	19.9179
Total:			**5.092**	**35.542**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2556
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99994

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

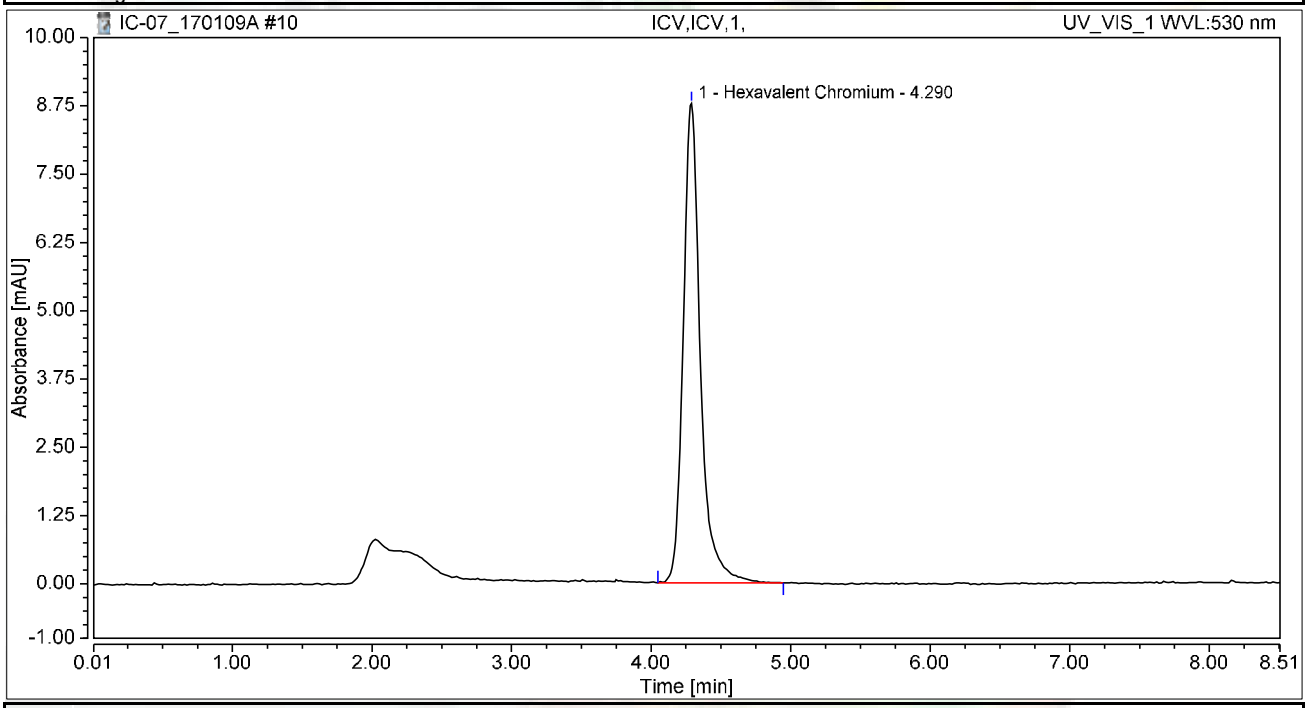
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
			UV_VIS_1	VIS_1	UV_VIS_1	
4	STD1-0.2 ppb	01	0.2000	0.0502	0.050	0.367
5	STD2-1.0 ppb	02	1.0000	0.2519	0.252	1.792
6	STD3-5.0 ppb	03	5.0000	1.2883	1.288	8.975
7	STD4-10.0 ppb	04	10.0000	2.5528	2.553	17.802
8	STD5-15.0 ppb	05	15.0000	3.8621	3.862	26.764
9	STD6-20.0 ppb	06	20.0000	5.0920	5.092	35.542

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

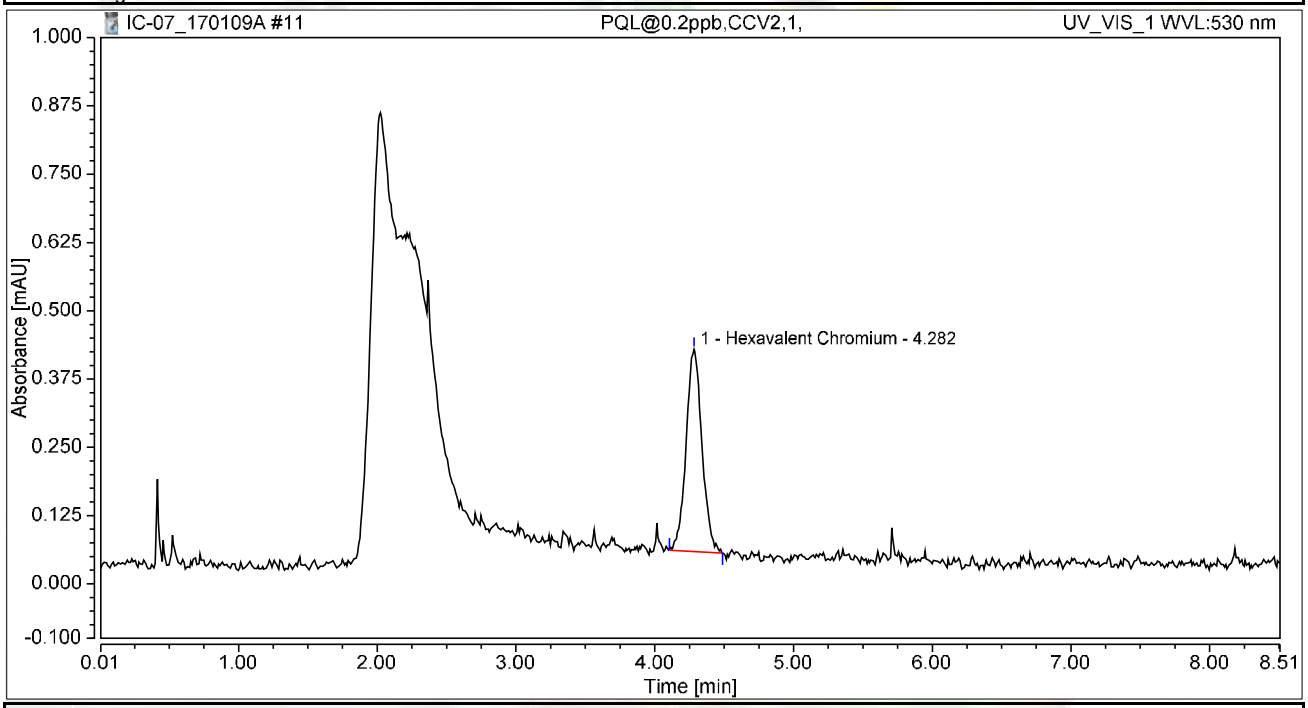
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.249	8.772	100.00	100.00	4.8871
Total:			**1.249**	**8.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

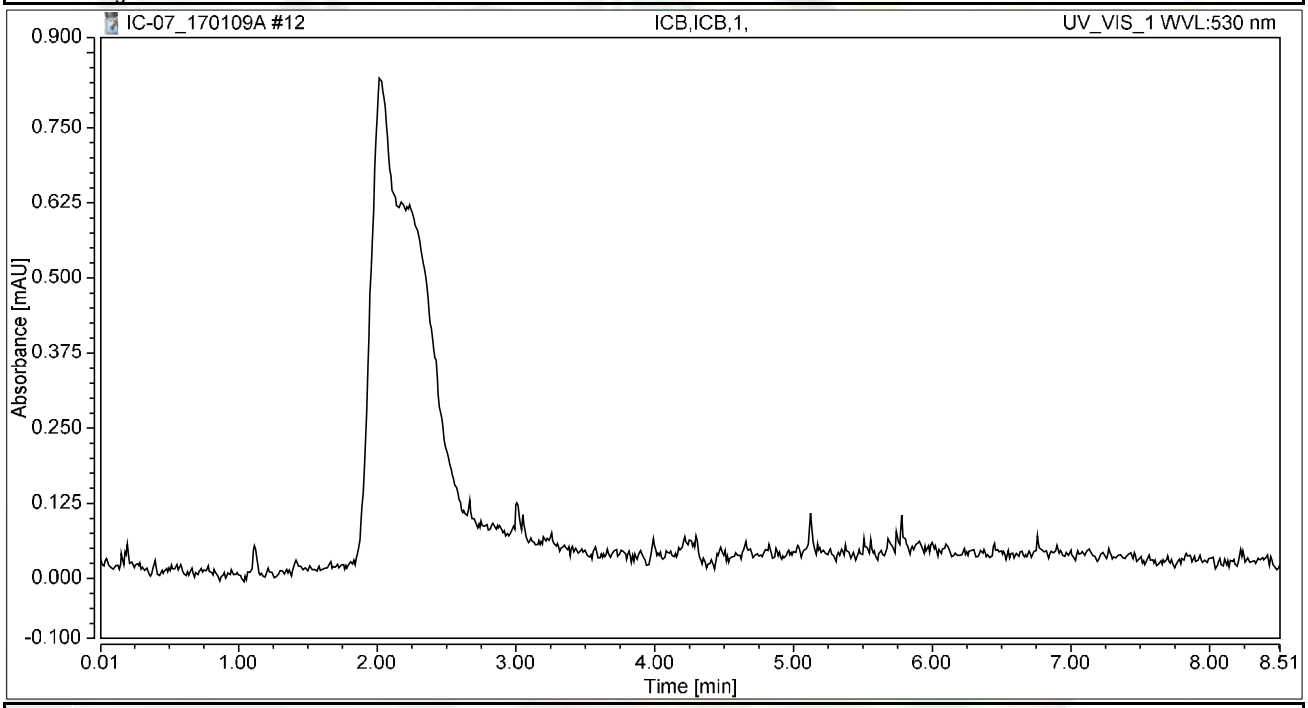
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.049	0.370	100.00	100.00	0.1914
Total:			**0.049**	**0.370**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/30/17 9:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/30/17 9:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/30/17 9:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/30/17 9:51 AM	Reported
15	MB-R113215	MBLK	1	Hexavalent Chromium	01/30/17 10:00 AM	Reported
16	LCS-R113215	LCS	1	Hexavalent Chromium	01/30/17 10:09 AM	Reported
17	N022819-001A	SAMP	1	Hexavalent Chromium	01/30/17 10:21 AM	Reported
18	N022819-001AMS	MS	1	Hexavalent Chromium	01/30/17 10:32 AM	Reported
19	N022819-002A	SAMP	1	Hexavalent Chromium	01/30/17 10:42 AM	Reported
20	N022819-002AMS	MS	1	Hexavalent Chromium	01/30/17 10:51 AM	Reported
21	N022819-003A	SAMP	1	Hexavalent Chromium	01/30/17 11:01 AM	Reported
22	N022819-003AMS	MS	1	Hexavalent Chromium	01/30/17 11:10 AM	Reported
23	N022819-004A	SAMP	1	Hexavalent Chromium	01/30/17 11:20 AM	Reported
24	N022819-004AMS	MS	1	Hexavalent Chromium	01/30/17 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/30/17 11:38 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/30/17 11:48 AM	Reported
27	N022819-005A	SAMP	1	Hexavalent Chromium	01/30/17 11:57 AM	Reported
28	N022819-005AMS	MS	1	Hexavalent Chromium	01/30/17 12:07 PM	Reported
29	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 12:16 PM	Not Reported
30	N022819-006A	SAMP	1	Hexavalent Chromium	01/30/17 12:26 PM	Not Reported
31	N022819-006ADUP	DUP	1	Hexavalent Chromium	01/30/17 12:35 PM	Reported
32	N022819-006AMS	MS	1	Hexavalent Chromium	01/30/17 12:45 PM	Not Reported
33	N022819-007A	SAMP	1	Hexavalent Chromium	01/30/17 12:54 PM	Reported
34	N022819-007AMS	MS	1	Hexavalent Chromium	01/30/17 1:04 PM	Reported
35	N022819-008A	SAMP	1	Hexavalent Chromium	01/30/17 1:13 PM	Not Reported
36	N022819-008AMS	MS	1	Hexavalent Chromium	01/30/17 1:23 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/30/17 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:41 PM	Not Reported
39	CCB-3	CCB	1	Hexavalent Chromium	01/30/17 1:53 PM	Reported
40	N022819-009A	SAMP	1	Hexavalent Chromium	01/30/17 2:04 PM	Not Reported
41	N022819-009AMS	MS	1	Hexavalent Chromium	01/30/17 2:14 PM	Not Reported
42	N022819-005AMSD	MSD	1	Hexavalent Chromium	01/30/17 2:23 PM	Reported
43	N022819-010A	SAMP	1	Hexavalent Chromium	01/30/17 2:33 PM	Not Reported
44	N022819-010AMS	MS	1	Hexavalent Chromium	01/30/17 2:42 PM	Not Reported
45	N022819-011A	SAMP	1	Hexavalent Chromium	01/30/17 2:51 PM	Reported
46	N022819-011AMS	MS	1	Hexavalent Chromium	01/30/17 3:01 PM	Reported
47	N022820-001A	SAMP	1	Hexavalent Chromium	01/30/17 3:10 PM	Not Reported
48	N022820-001AMS	MS	1	Hexavalent Chromium	01/30/17 3:20 PM	Not Reported
49	N022820-002A	SAMP	1	Hexavalent Chromium	01/30/17 3:29 PM	Not Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	01/30/17 3:39 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	01/30/17 3:48 PM	Reported

rba 2/4/2017

Nancy 2/6/2017

INJECTION LOG: 170130A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
52	N022820-002AMS	MS	1	Hexavalent Chromium	01/30/17 3:58 PM	Not Reported
53	N022820-003A	SAMP	1	Hexavalent Chromium	01/30/17 4:07 PM	Not Reported
54	N022820-003AMS	MS	1	Hexavalent Chromium	01/30/17 4:17 PM	Not Reported
55	N022820-004A	SAMP	1	Hexavalent Chromium	01/30/17 4:26 PM	Reported
56	N022820-004AMS	MS	1	Hexavalent Chromium	01/30/17 4:36 PM	Reported
57	N022820-005A	SAMP	1	Hexavalent Chromium	01/30/17 4:45 PM	Reported
58	N022820-005AMS	MS	1	Hexavalent Chromium	01/30/17 4:54 PM	Reported
59	N022820-006A	SAMP	1	Hexavalent Chromium	01/30/17 5:04 PM	Reported
60	N022820-006AMS	MS	1	Hexavalent Chromium	01/30/17 5:17 PM	Reported
61	N022773-016A	SAMP	1	Hexavalent Chromium	01/30/17 5:29 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	01/30/17 5:38 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	01/30/17 5:47 PM	Reported
64	N022820-007A	SAMP	1	Hexavalent Chromium	01/30/17 5:57 PM	Reported
65	N022820-007AMS	MS	1	Hexavalent Chromium	01/30/17 6:06 PM	Reported
66	N022702-012A	SAMP	2	Hexavalent Chromium	01/30/17 6:16 PM	Not Reported
67	N022702-012AMS	MS	2	Hexavalent Chromium	01/30/17 6:25 PM	Not Reported
68	LCS-R113217	LCS	1	Hexavalent Chromium	01/30/17 6:35 PM	Reported
69	MB-R113217	MBLK	1	Hexavalent Chromium	01/30/17 6:44 PM	Reported
70	N022866-005A	SAMP	50	Hexavalent Chromium	01/30/17 6:54 PM	Reported
71	N022866-005AMS	MS	50	Hexavalent Chromium	01/30/17 7:03 PM	Reported
72	N022866-005AMSD	MSD	50	Hexavalent Chromium	01/30/17 7:13 PM	Reported
73	N022866-001A	SAMP	50	Hexavalent Chromium	01/30/17 7:22 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	01/30/17 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	01/30/17 7:41 PM	Reported
76	N022866-001ADUP	DUP	50	Hexavalent Chromium	01/30/17 7:50 PM	Reported
77	N022866-002A	SAMP	1	Hexavalent Chromium	01/30/17 8:00 PM	Reported
78	N022866-003A	SAMP	1	Hexavalent Chromium	01/30/17 8:09 PM	Reported
79	N022866-004A	SAMP	1	Hexavalent Chromium	01/30/17 8:19 PM	Reported
80	N022866-006A	SAMP	1	Hexavalent Chromium	01/30/17 8:28 PM	Reported
81	N022866-007A	SAMP	1	Hexavalent Chromium	01/30/17 8:38 PM	Reported
82	N022869-001A	SAMP	1	Hexavalent Chromium	01/30/17 8:47 PM	Reported
83	N022822-011A	SAMP	1	Hexavalent Chromium	01/30/17 8:57 PM	Reported
84	N022822-011AMS	MS	1	Hexavalent Chromium	01/30/17 9:06 PM	Reported
85	N022822-012A	SAMP	1	Hexavalent Chromium	01/30/17 9:16 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	01/30/17 9:25 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	01/30/17 9:35 PM	Reported
88	N022822-012AMS	MS	1	Hexavalent Chromium	01/30/17 9:44 PM	Reported
89	N022822-013A	SAMP	1	Hexavalent Chromium	01/30/17 10:17 PM	Reported
90	N022822-013AMS	MS	1	Hexavalent Chromium	01/30/17 10:28 PM	Reported
91	N022822-014A	SAMP	1	Hexavalent Chromium	01/30/17 10:37 PM	Reported
92	N022822-014AMS	MS	1	Hexavalent Chromium	01/30/17 10:47 PM	Reported
93	CCV-8	CCV1	1	Hexavalent Chromium	01/30/17 10:56 PM	Reported
94	CCB-8	CCB	1	Hexavalent Chromium	01/30/17 11:06 PM	Reported
95	MB-61081	MBLK	1	Hexavalent Chromium	01/30/17 11:15 PM	Reported
96	N022615-001D_STLC	SAMP	10000	Hexavalent Chromium	01/30/17 11:25 PM	Reported
97	N022615-001DREP	DUP	10000	Hexavalent Chromium	01/30/17 11:34 PM	Reported
98	CCV-9	CCV	1	Hexavalent Chromium	01/30/17 11:44 PM	Reported
99	CCB-9	CCB	1	Hexavalent Chromium	01/30/17 11:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170130A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**01/Feb/17 16:00:29**
No. of Injections:	**102**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/30/2017 09:11	Finished	
11	BLANK	2	1000	Unknown		01/30/2017 09:22	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/30/2017 09:32	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/30/2017 09:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/30/2017 09:51	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/30/2017 10:00	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/30/2017 10:09	Finished	LCS, IWST-161114D
17	N022819-001A,SAMF	9	1000	Unknown		01/30/2017 10:21	Finished	SAMP, 10mL
18	N022819-001AMS,MS	10	1000	Unknown		01/30/2017 10:32	Finished	MS (1ppb), IWST-161114D,10
19	N022819-002A,SAMF	11	1000	Unknown		01/30/2017 10:42	Finished	SAMP, 10mL
20	N022819-002AMS,MS	12	1000	Unknown		01/30/2017 10:51	Finished	MS (1ppb), IWST-161114D,10
21	N022819-003A,SAMF	13	1000	Unknown		01/30/2017 11:01	Finished	SAMP, 10mL
22	N022819-003AMS,MS	14	1000	Unknown		01/30/2017 11:10	Finished	MS (1ppb), IWST-161114D,10
23	N022819-004A,SAMF	15	1000	Unknown		01/30/2017 11:20	Finished	SAMP, 10mL
24	N022819-004AMS,MS	16	1000	Unknown		01/30/2017 11:29	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		01/30/2017 11:38	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		01/30/2017 11:48	Finished	CCB R170112D
27	N022819-005A,SAMF	19	1000	Unknown		01/30/2017 11:57	Finished	SAMP, 10mL
28	N022819-005AMS,MS	20	1000	Unknown		01/30/2017 12:07	Finished	MS (1ppb), IWST-161114D,10
29	N022819-005AMSD,M	21	1000	Unknown		01/30/2017 12:16	Finished	MSD (1ppb), IWST-161114D,1
30	N022819-006A,SAMF	22	1000	Unknown		01/30/2017 12:26	Finished	SAMP, 10mL
31	N022819-006ADUP,D	23	1000	Unknown		01/30/2017 12:35	Finished	DUP, 10mL
32	N022819-006AMS,MS	24	1000	Unknown		01/30/2017 12:45	Finished	MS (1ppb), IWST-161114D,0.0
33	N022819-007A,SAMF	25	1000	Unknown		01/30/2017 12:54	Finished	SAMP, 10mL
34	N022819-007AMS,MS	26	1000	Unknown		01/30/2017 13:04	Finished	MS (1ppb), IWST-161114D,10
35	N022819-008A,SAMF	27	1000	Unknown		01/30/2017 13:13	Finished	SAMP, 10mL
36	N022819-008AMS,MS	28	1000	Unknown		01/30/2017 13:23	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		01/30/2017 13:32	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:41	Finished	CCB R170112D
39	CCB-3,CCB,1,	30	1000	Unknown		01/30/2017 13:53	Finished	CCB R170112D
40	N022819-009A,SAMF	31	1000	Unknown		01/30/2017 14:04	Finished	SAMP, 10mL
41	N022819-009AMS,MS	32	1000	Unknown		01/30/2017 14:14	Finished	MS (1ppb), IWST-161114D,10
42	N022819-005AMSD,M	33	1000	Unknown		01/30/2017 14:23	Finished	MSD (1ppb), IWST-161114D,1
43	N022819-010A,SAMF	34	1000	Unknown		01/30/2017 14:33	Finished	SAMP, 10mL
44	N022819-010AMS,MS	35	1000	Unknown		01/30/2017 14:42	Finished	MS (1ppb), IWST-161114D,10
45	N022819-011A,SAMF	36	1000	Unknown		01/30/2017 14:51	Finished	SAMP, 10mL
46	N022819-011AMS,MS	37	1000	Unknown		01/30/2017 15:01	Finished	MS (1ppb), IWST-161114D,10
47	N022820-001A,SAMF	38	1000	Unknown		01/30/2017 15:10	Finished	SAMP, 10mL
48	N022820-001AMS,MS	39	1000	Unknown		01/30/2017 15:20	Finished	MS (1ppb), IWST-161114D,10
49	N022820-002A,SAMF	40	1000	Unknown		01/30/2017 15:29	Finished	SAMP, 10mL
50	CCV-4,CCV1,1,	41	1000	Unknown		01/30/2017 15:39	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	42	1000	Unknown		01/30/2017 15:48	Finished	CCB R170112D
52	N022820-002AMS,MS	43	1000	Unknown		01/30/2017 15:58	Finished	MS (1ppb), IWST-161114D,10
53	N022820-003A,SAMF	44	1000	Unknown		01/30/2017 16:07	Finished	SAMP, 10mL
54	N022820-003AMS,MS	45	1000	Unknown		01/30/2017 16:17	Finished	MS (1ppb), IWST-161114D,10
55	N022820-004A,SAMF	46	1000	Unknown		01/30/2017 16:26	Finished	SAMP, 10mL
56	N022820-004AMS,MS	47	1000	Unknown		01/30/2017 16:36	Finished	MS (1ppb), IWST-161114D,10
57	N022820-005A,SAMF	48	1000	Unknown		01/30/2017 16:45	Finished	SAMP, 10mL
58	N022820-005AMS,MS	49	1000	Unknown		01/30/2017 16:54	Finished	MS (1ppb), IWST-161114D,10
59	N022820-006A,SAMF	50	1000	Unknown		01/30/2017 17:04	Finished	SAMP, 10mL
60	N022820-006AMS,MS	1	1000	Unknown		01/30/2017 17:17	Finished	MS (1ppb), IWST-161114D,10

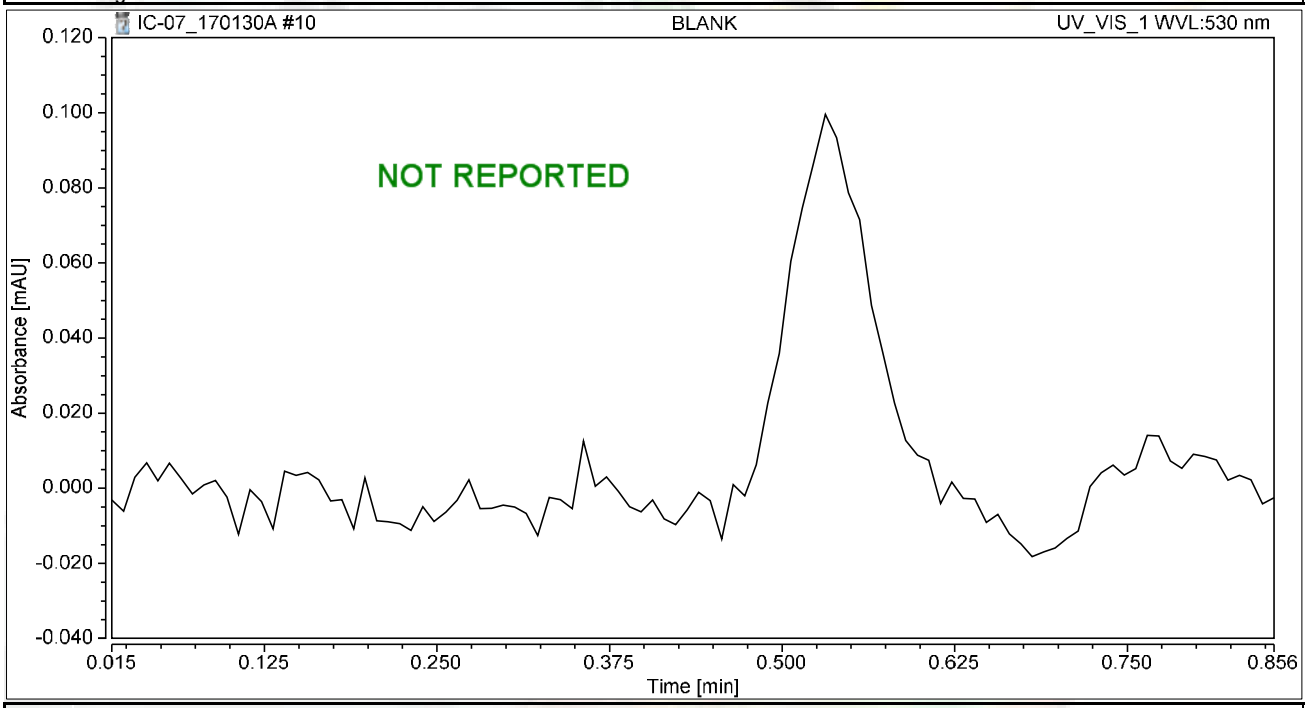
61	N022773-016A,SAMF	2	1000	Unknown		01/30/2017 17:29	Finished	SAMP, 10mL
62	CCV-5,CCV,1,	3	1000	Unknown		01/30/2017 17:38	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	4	1000	Unknown		01/30/2017 17:47	Finished	CCB R170112D
64	N022820-007A,SAMF	5	1000	Unknown		01/30/2017 17:57	Finished	SAMP, 10mL
65	N022820-007AMS,MS	6	1000	Unknown		01/30/2017 18:06	Finished	MS (1ppb), IWST-161114D,10
66	N022702-012A,SAMF	7	1000	Unknown		01/30/2017 18:16	Finished	SAMP, 5>10mL
67	N022702-012AMS,MS	8	1000	Unknown		01/30/2017 18:25	Finished	MS (5ppb), IWST-161114D,5>1
68	LCS-2,LCS,1	9	1000	Unknown		01/30/2017 18:35	Finished	LCS, IWST-161114D
69	MB-2,MBLK,1	10	1000	Unknown		01/30/2017 18:44	Finished	MB R170112D
70	N022866-005A,SAMF	11	1000	Unknown		01/30/2017 18:54	Finished	SAMP, 0.2>10mL
71	N022866-005AMS,MS	12	1000	Unknown		01/30/2017 19:03	Finished	MS (5ppb), IWST-161114D,0.2
72	N022866-005AMSD,M	13	1000	Unknown		01/30/2017 19:13	Finished	MSD (5ppb), IWST-161114D,0.
73	N022866-001A,SAMF	14	1000	Unknown		01/30/2017 19:22	Finished	SAMP, 0.2>10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		01/30/2017 19:32	Finished	CCV @10ppb, IWST-161114C
75	CCB-6,CCB,1,	16	1000	Unknown		01/30/2017 19:41	Finished	CCB R170103B
76	N022866-001ADUP,D	17	1000	Unknown		01/30/2017 19:50	Finished	DUP, 0.2>10mL
77	N022866-002A,SAMF	18	1000	Unknown		01/30/2017 20:00	Finished	SAMP, 10mL
78	N022866-003A,SAMF	19	1000	Unknown		01/30/2017 20:09	Finished	SAMP, 10mL
79	N022866-004A,SAMF	20	1000	Unknown		01/30/2017 20:19	Finished	SAMP, 10mL
80	N022866-006A,SAMF	21	1000	Unknown		01/30/2017 20:28	Finished	SAMP, 10mL
81	N022866-007A,SAMF	22	1000	Unknown		01/30/2017 20:38	Finished	SAMP, 10mL
82	N022869-001A,SAMF	23	1000	Unknown		01/30/2017 20:47	Finished	SAMP, 10mL
83	N022822-011A,SAMF	24	1000	Unknown		01/30/2017 20:57	Finished	SAMP, 10mL
84	N022822-011AMS,MS	25	1000	Unknown		01/30/2017 21:06	Finished	MS (1ppb), IWST-161114D,10
85	N022822-012A,SAMF	26	1000	Unknown		01/30/2017 21:16	Finished	SAMP, 10mL
86	CCV-7,CCV,1,	27	1000	Unknown		01/30/2017 21:25	Finished	CCV @5ppb, IWST-161114C
87	CCB-7,CCB,1,	28	1000	Unknown		01/30/2017 21:35	Finished	CCB R170112D
88	N022822-012AMS,MS	29	1000	Unknown		01/30/2017 21:44	Finished	MS (1ppb), IWST-161114D,10
89	N022822-013A,SAMF	30	1000	Unknown		01/30/2017 22:17	Finished	SAMP, 10mL
90	N022822-013AMS,MS	31	1000	Unknown		01/30/2017 22:28	Finished	MS (1ppb), IWST-161114D,10
91	N022822-014A,SAMF	32	1000	Unknown		01/30/2017 22:37	Finished	SAMP, 10mL
92	N022822-014AMS,MS	33	1000	Unknown		01/30/2017 22:47	Finished	MS (1ppb), IWST-161114D,10
93	CCV-8,CCV1,1,	34	1000	Unknown		01/30/2017 22:56	Finished	CCV @10ppb, IWST-161114C
94	CCB-8,CCB,1,	35	1000	Unknown		01/30/2017 23:06	Finished	CCB R170103B
95	MB-61081,MBLK,1	36	1000	Unknown		01/30/2017 23:15	Finished	MB R170112D
96	N022615-001D_STLC	37	1000	Unknown		01/30/2017 23:25	Finished	SAMP,0.001>10mL
97	N022615-001DREP,D	38	1000	Unknown		01/30/2017 23:34	Finished	REP,0.001>10mL
98	CCV-9,CCV,1,	39	1000	Unknown		01/30/2017 23:44	Finished	CCV @5ppb, IWST-161114C
99	CCB-9,CCB,1,	40	1000	Unknown		01/30/2017 23:53	Finished	CCB R170103B
100	SHUTDOWN	41	1000	Unknown		01/31/2017 00:03	Finished	
101	Eluent: R170130A	42	1000	Unknown		n.a.	Finished	Eluent
102	PCR: R170127B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.84**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

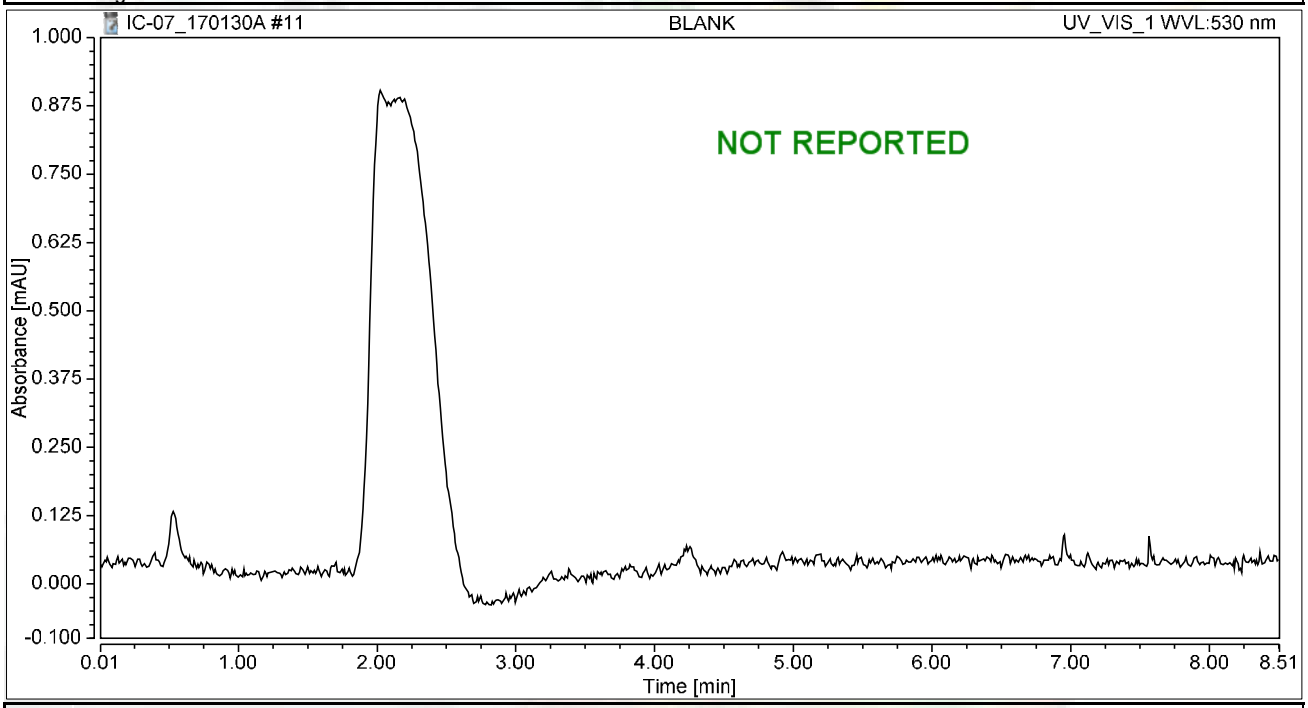
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

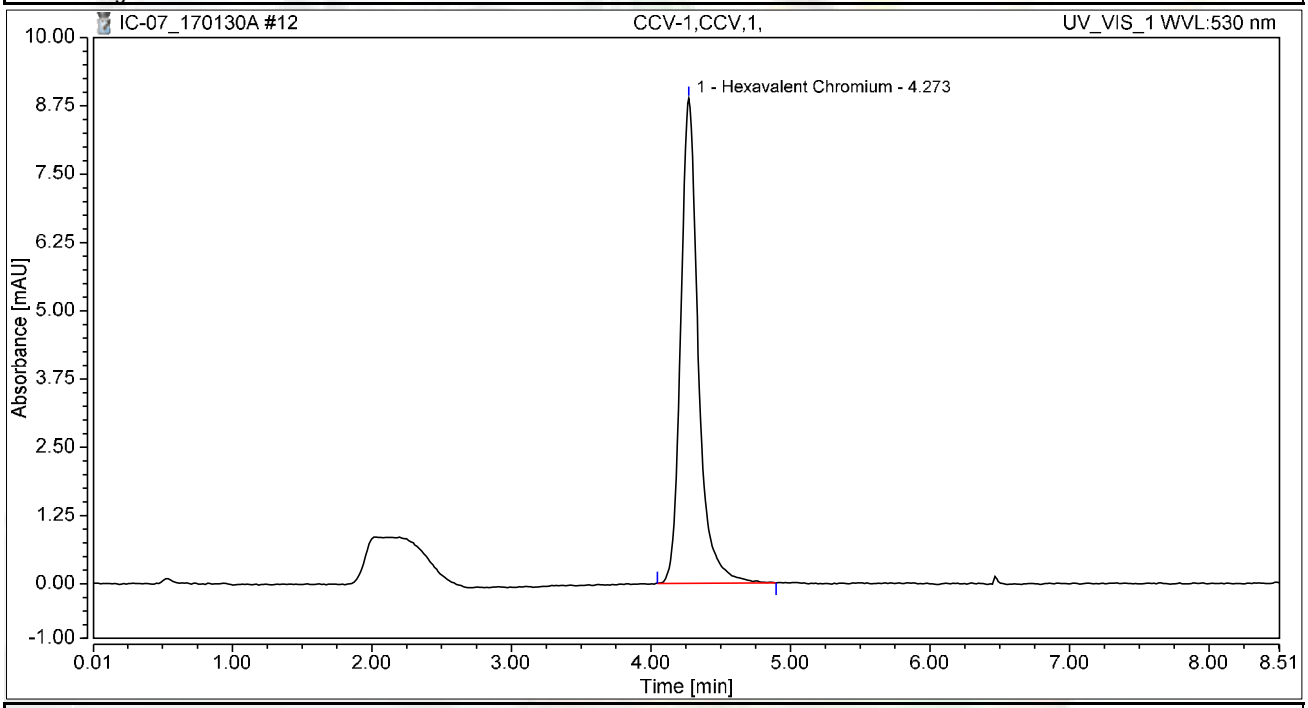
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

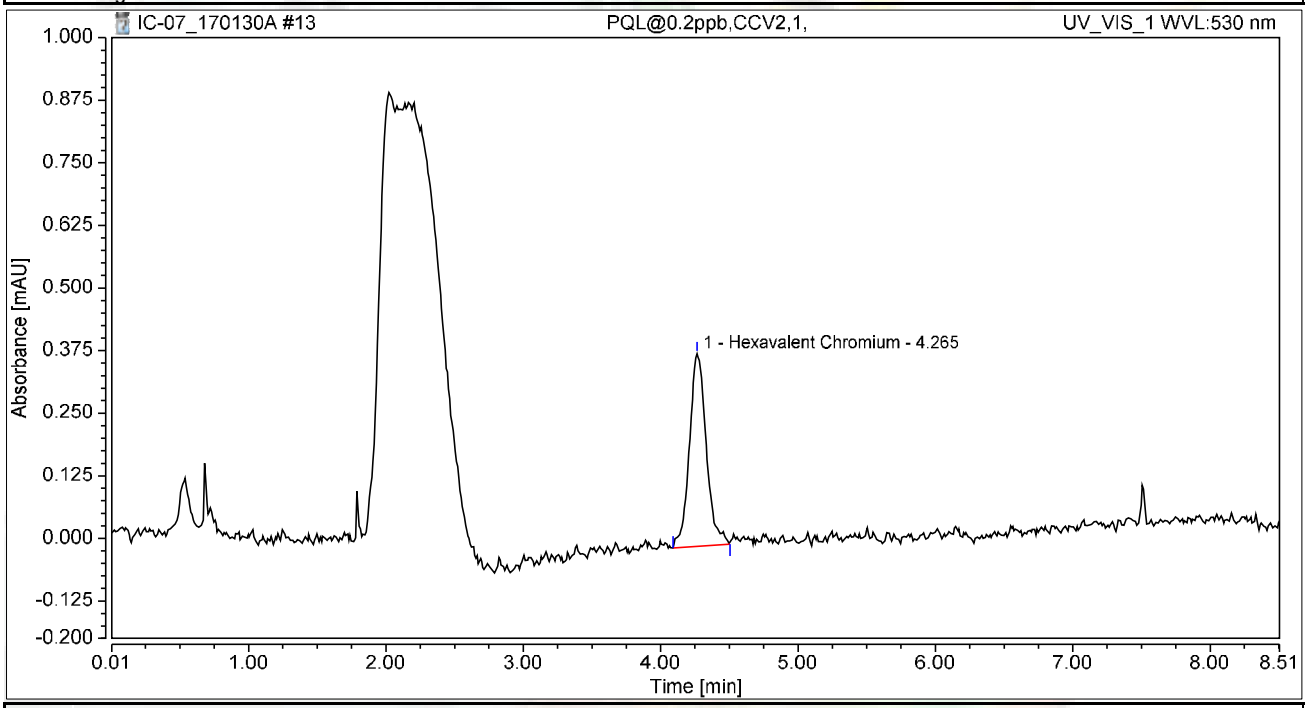
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.300	8.883	100.00	100.00	5.0857
Total:			**1.300**	**8.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

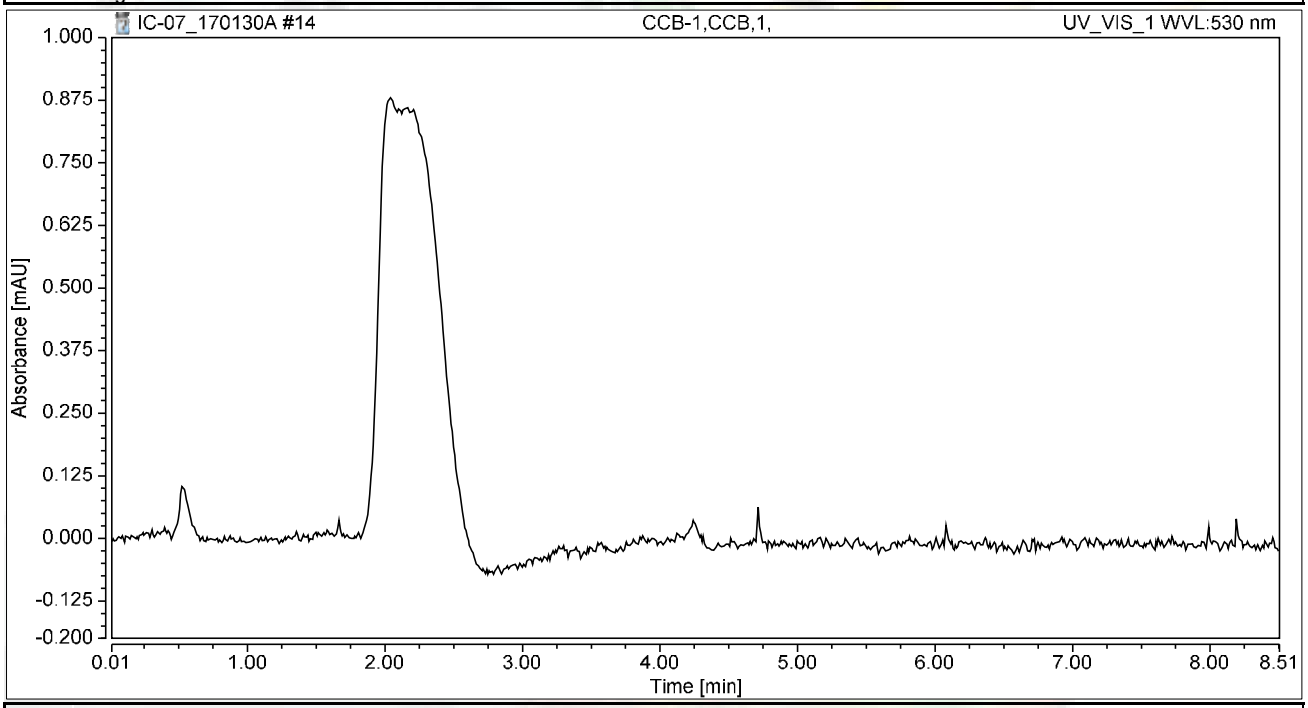
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.055	0.384	100.00	100.00	0.2138
Total:			**0.055**	**0.384**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

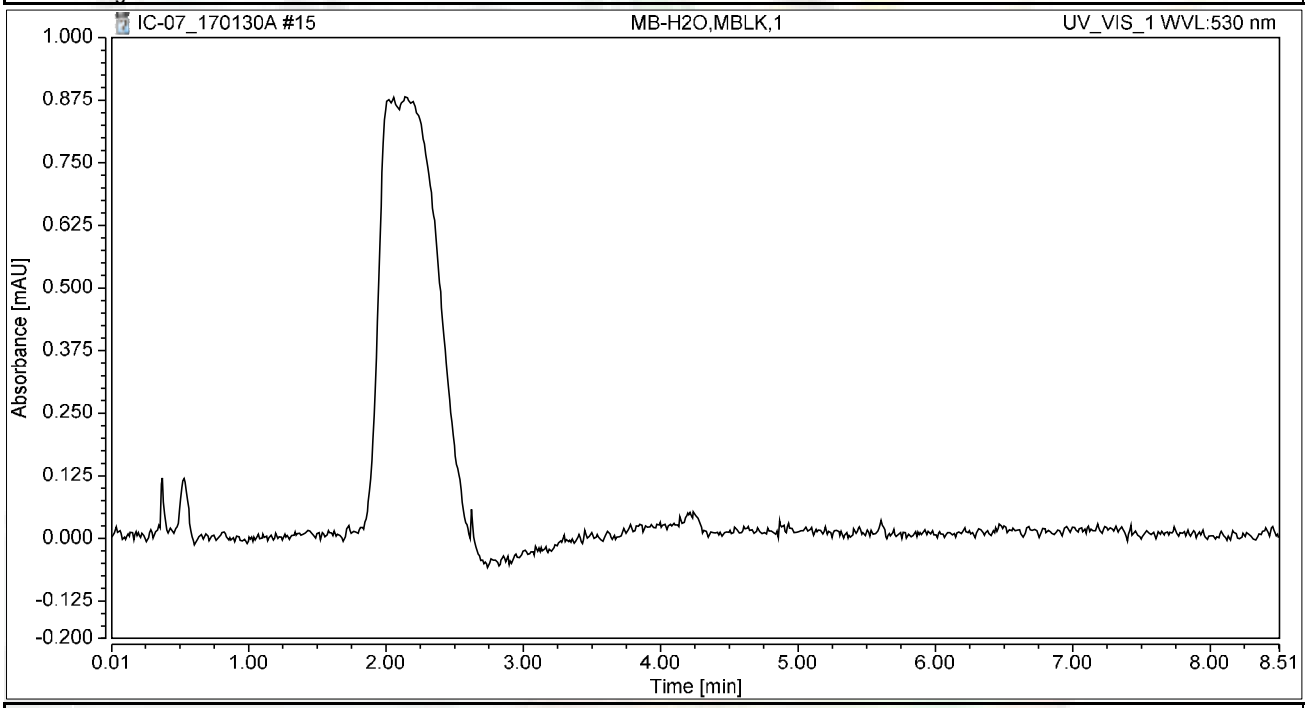
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

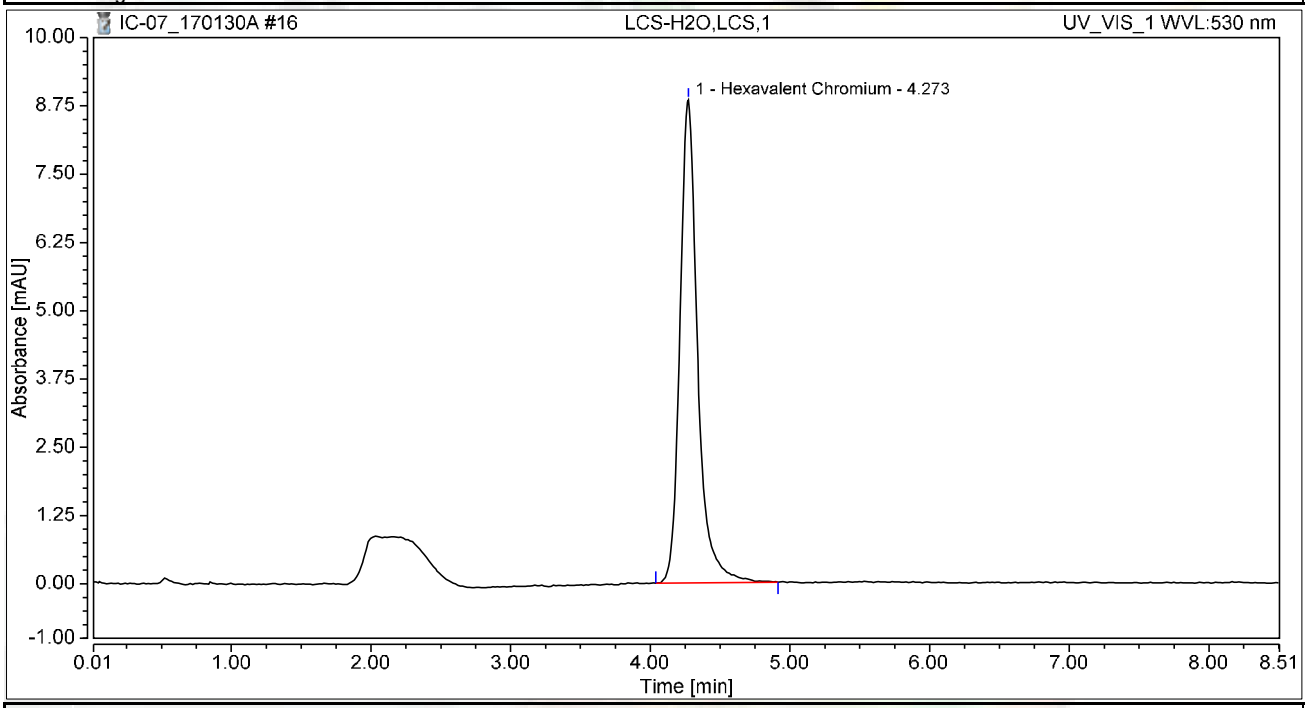
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

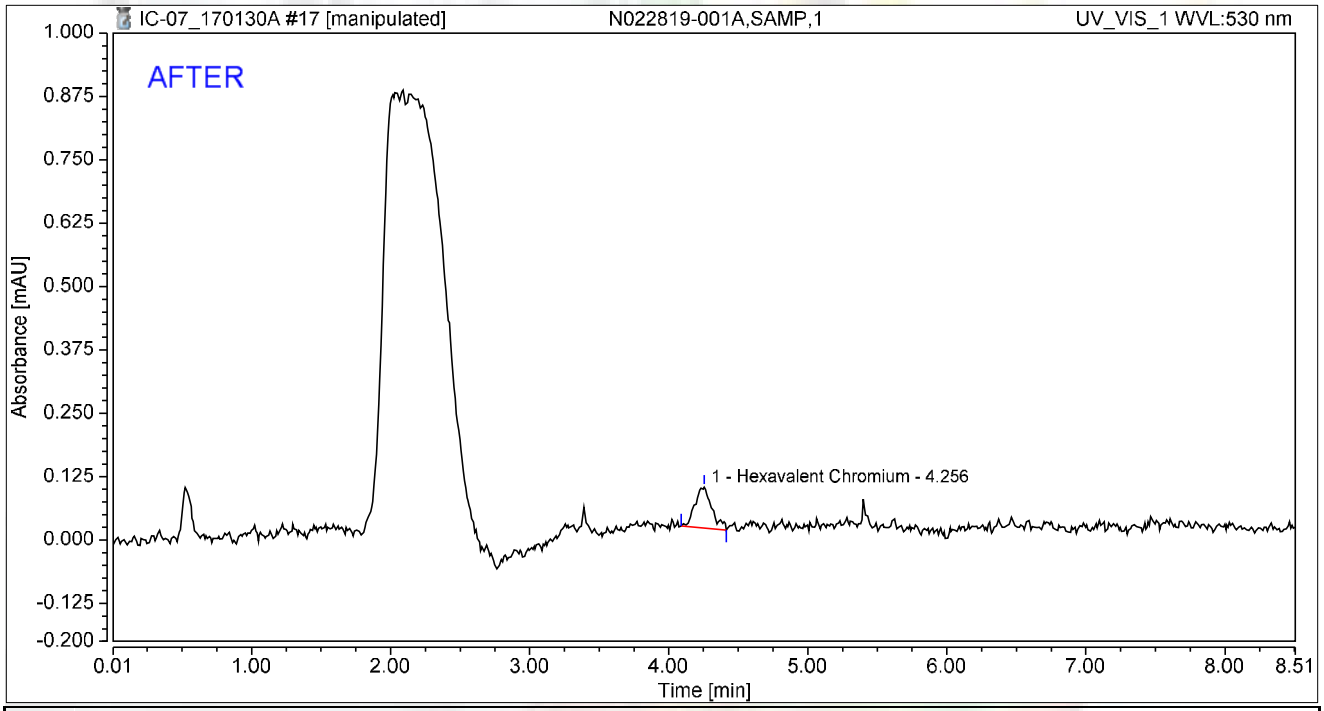
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.295	8.840	100.00	100.00	5.0669
Total:			**1.295**	**8.840**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0441
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/4/2017

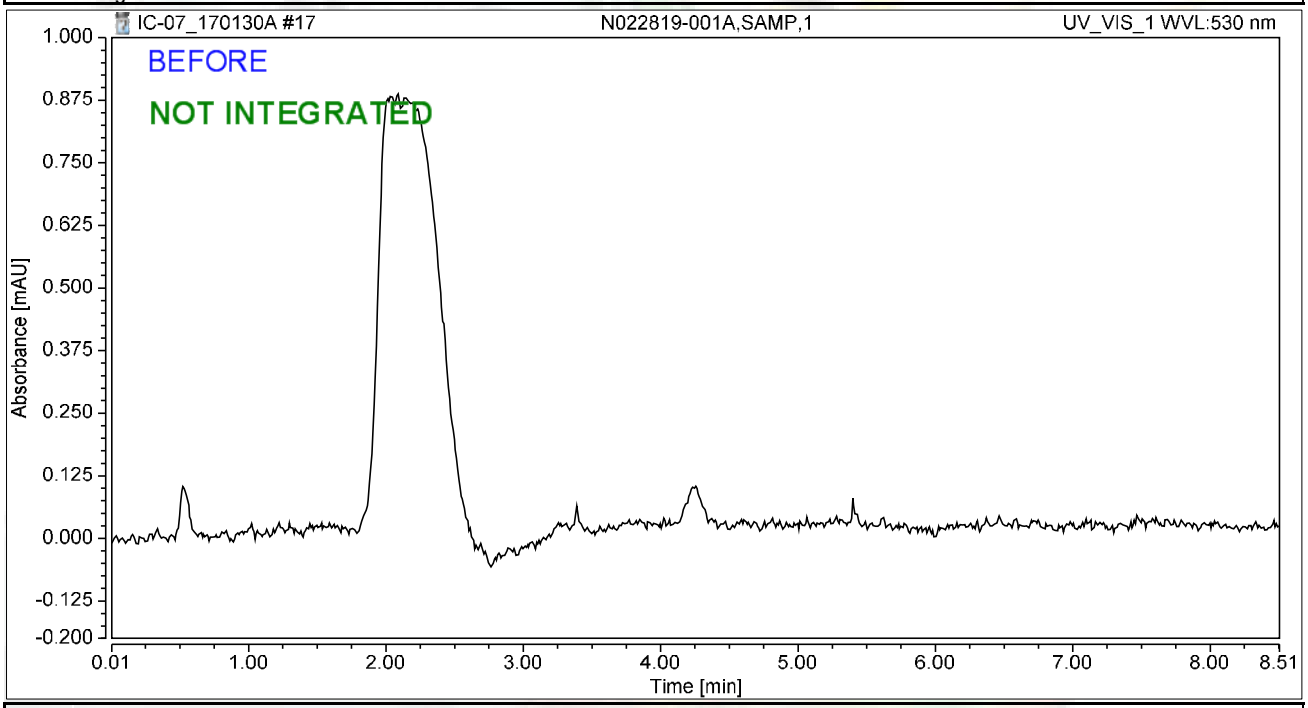
2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

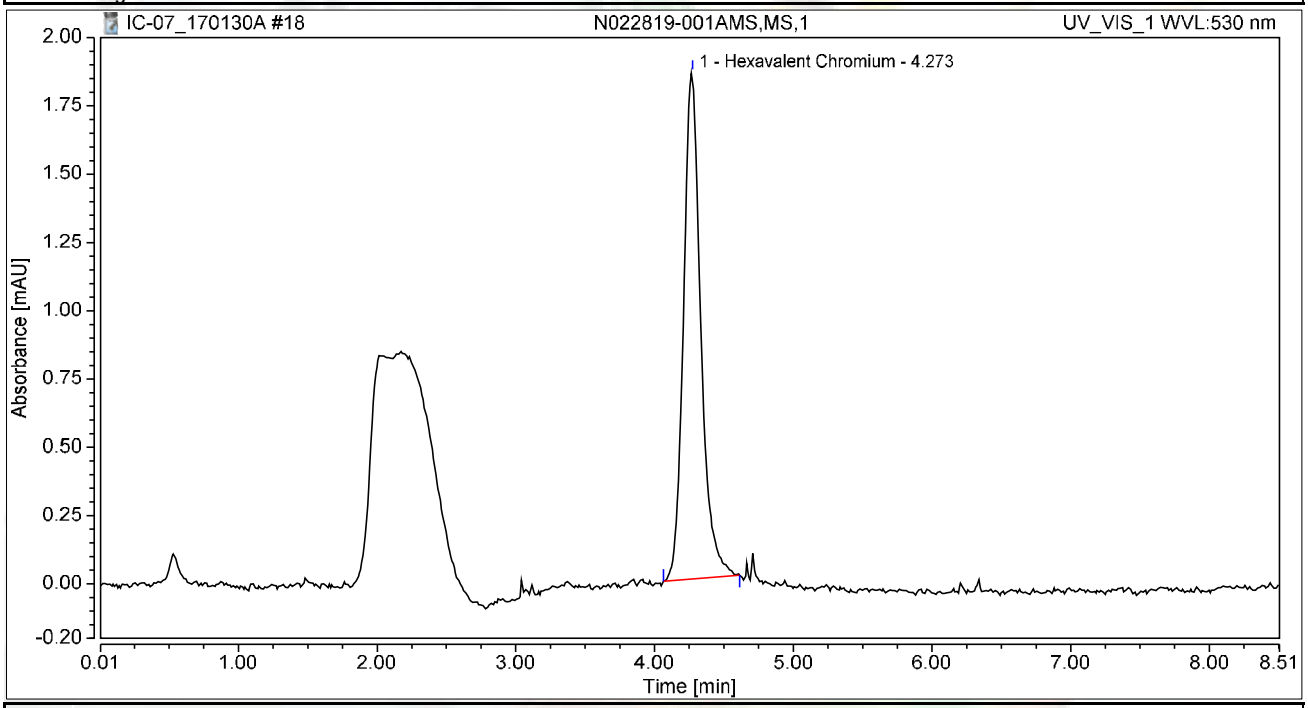
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

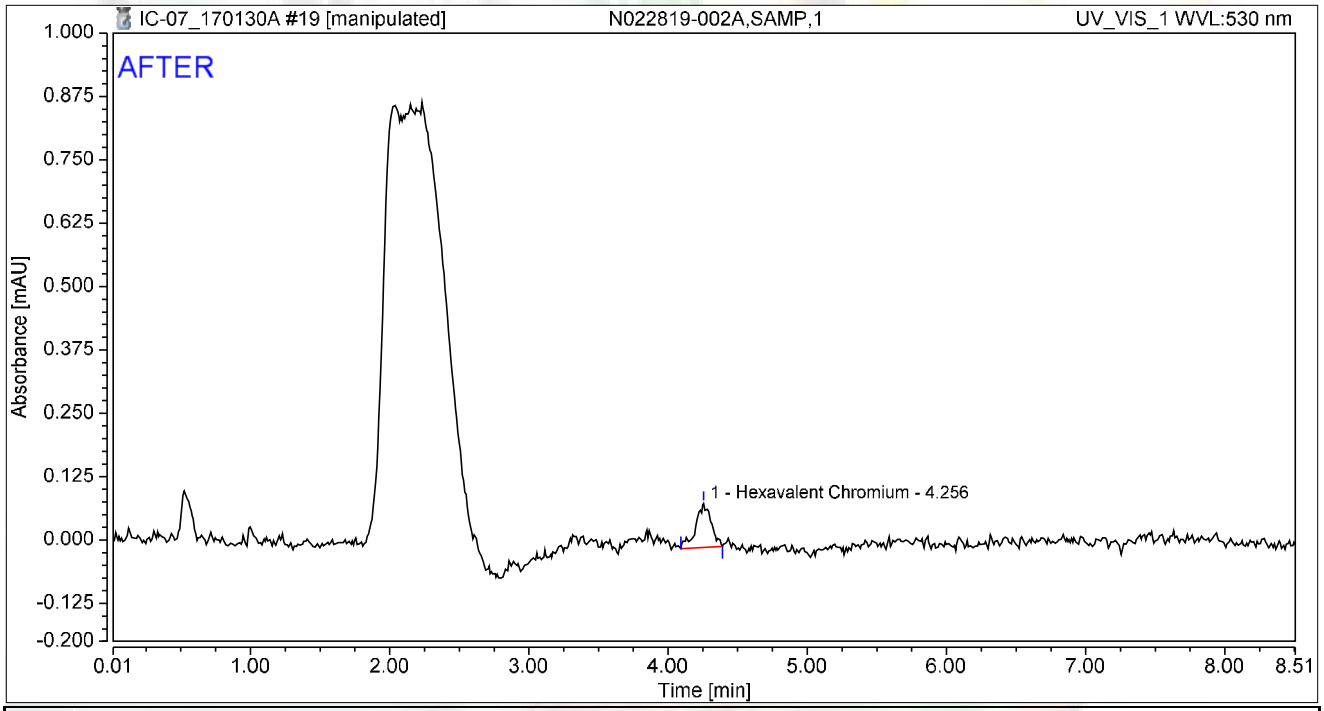
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.268	1.855	100.00	100.00	1.0497
Total:			**0.268**	**1.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.086	100.00	100.00	0.0435
Total:			**0.011**	**0.086**	**100.00**	**100.00**	

rba 2/4/2017

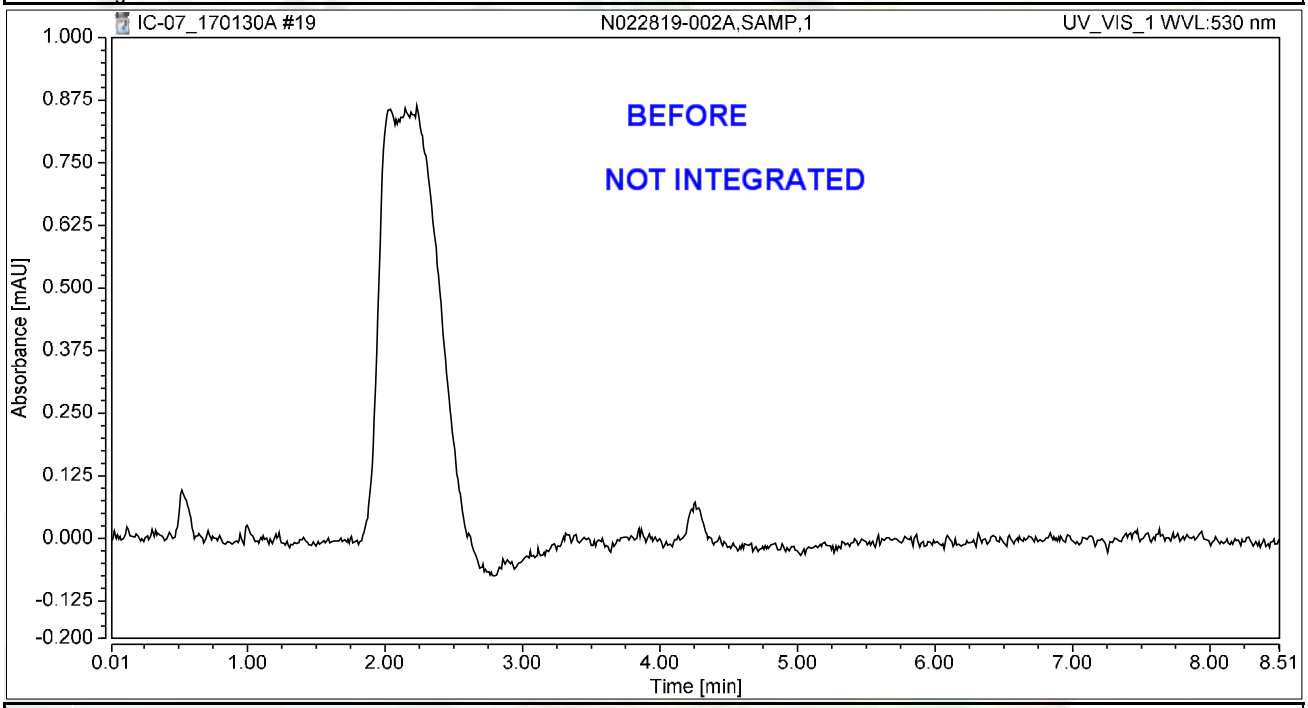
2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

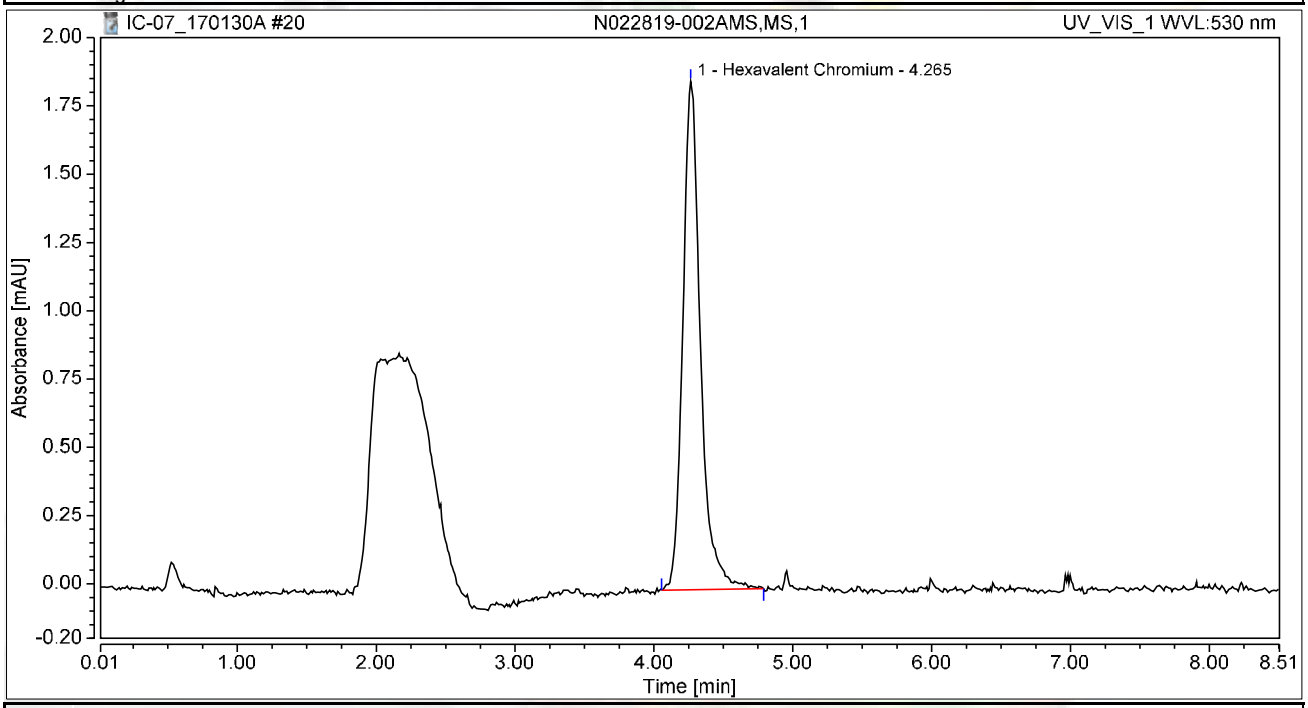
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

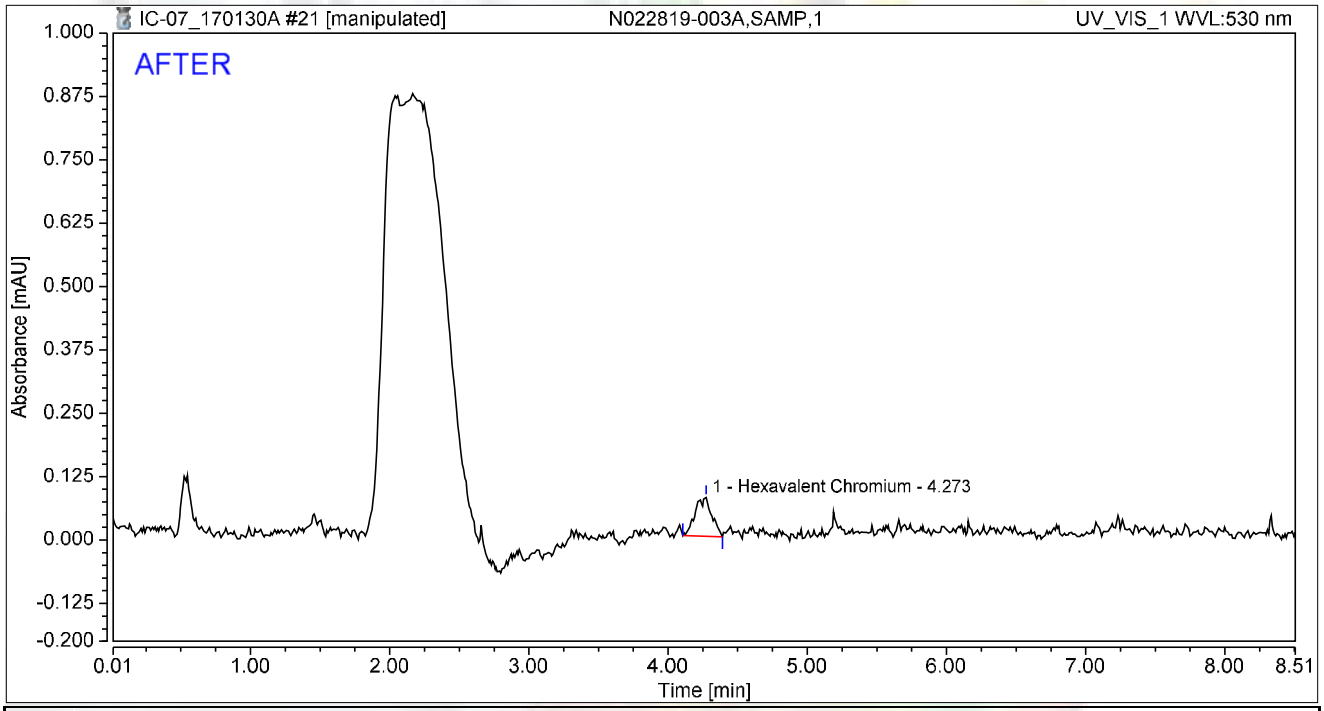
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.274	1.862	100.00	100.00	1.0736
Total:			**0.274**	**1.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.011	0.076	100.00	100.00	0.0411
Total:			**0.011**	**0.076**	**100.00**	**100.00**	

rba 2/4/2017

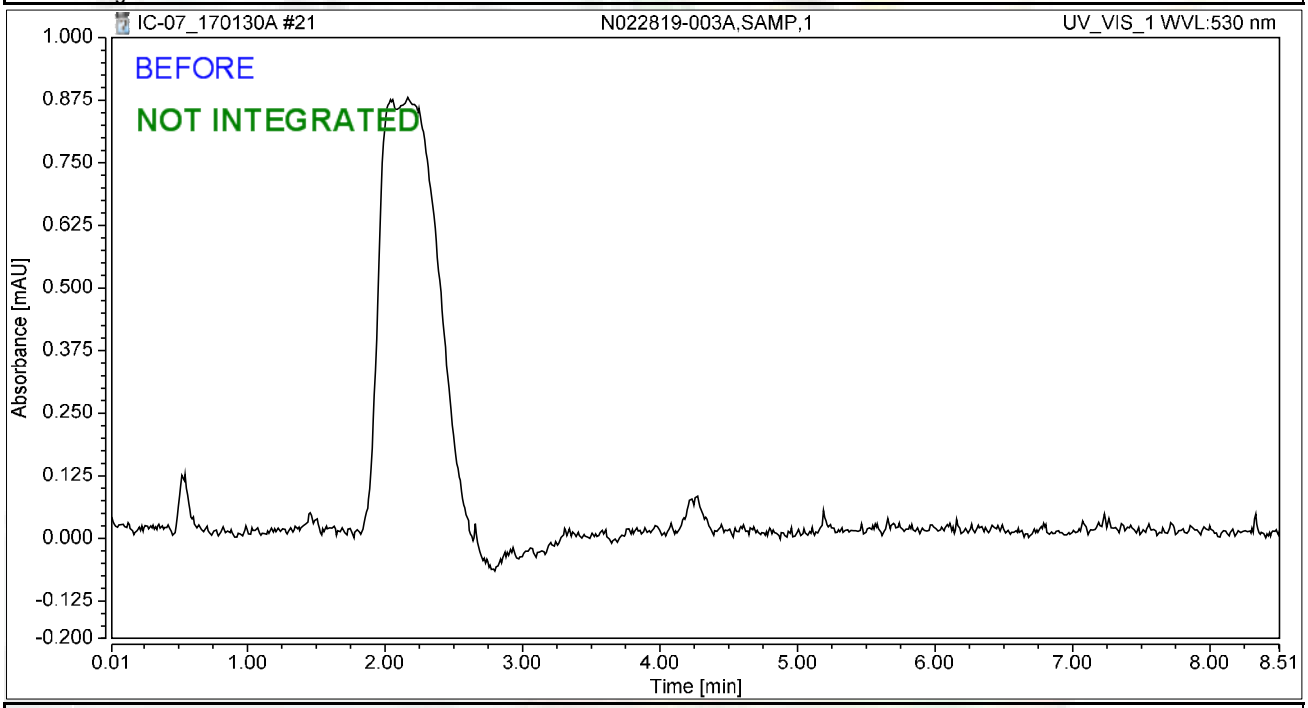
Mary 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

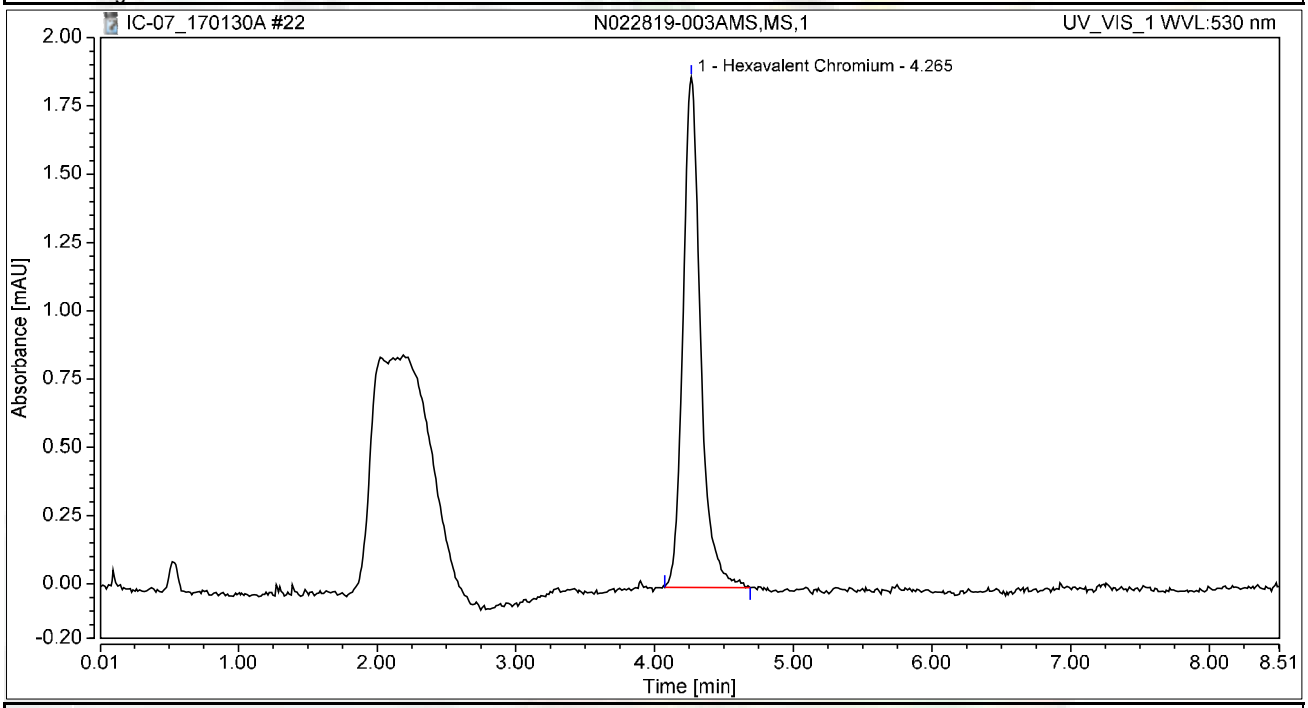
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

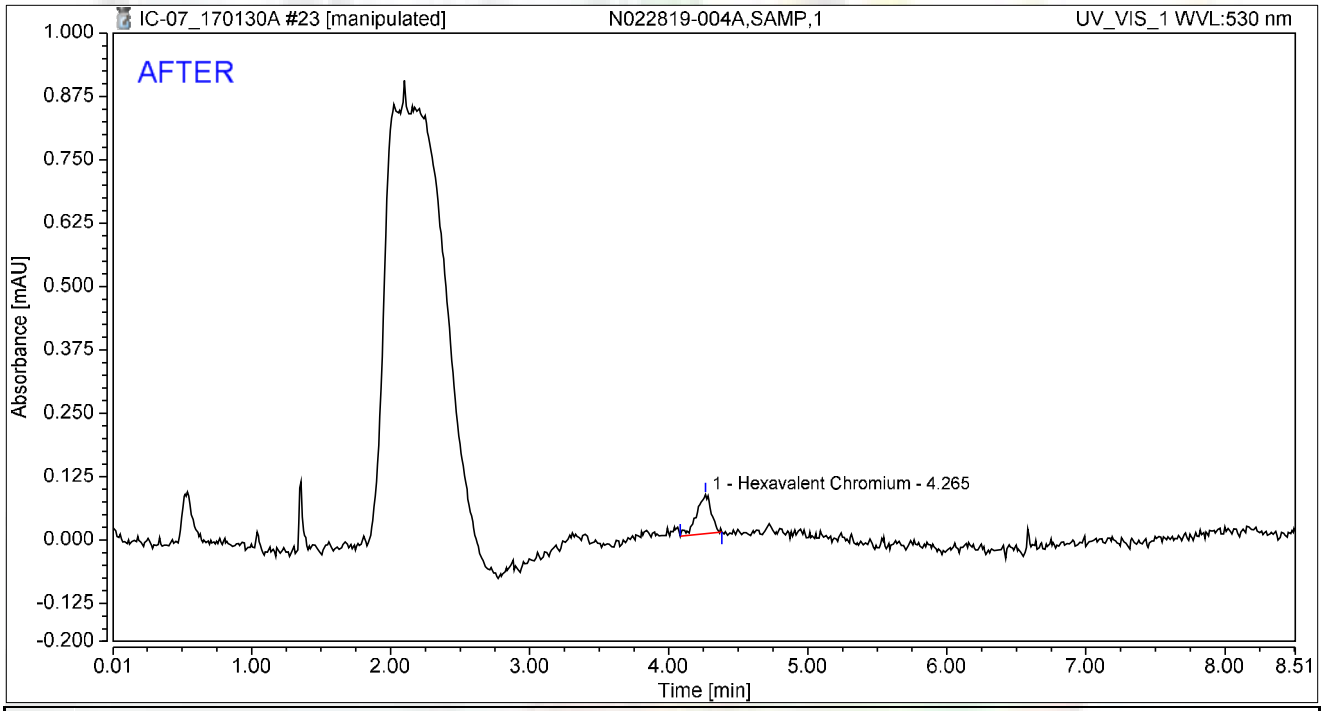
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.274	1.868	100.00	100.00	1.0734
Total:			**0.274**	**1.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.009	0.076	100.00	100.00	0.0369
Total:			**0.009**	**0.076**	**100.00**	**100.00**	

rba 2/4/2017

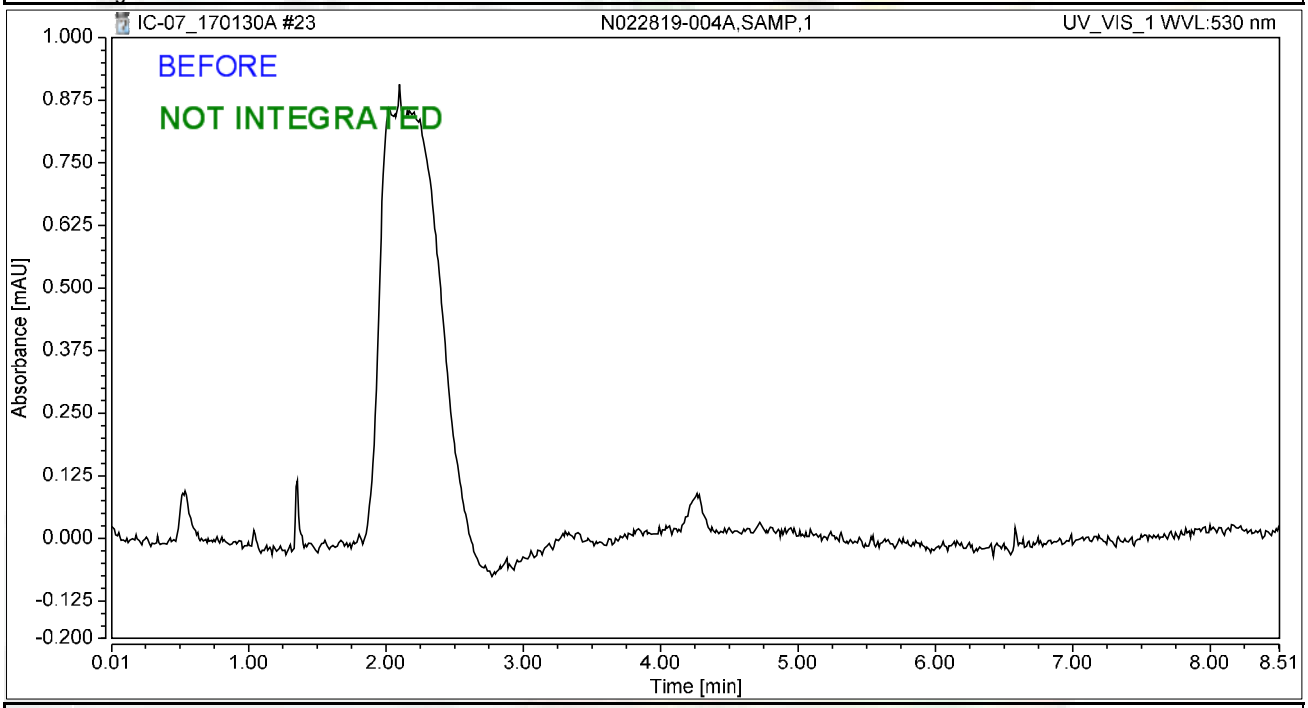
Mary 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

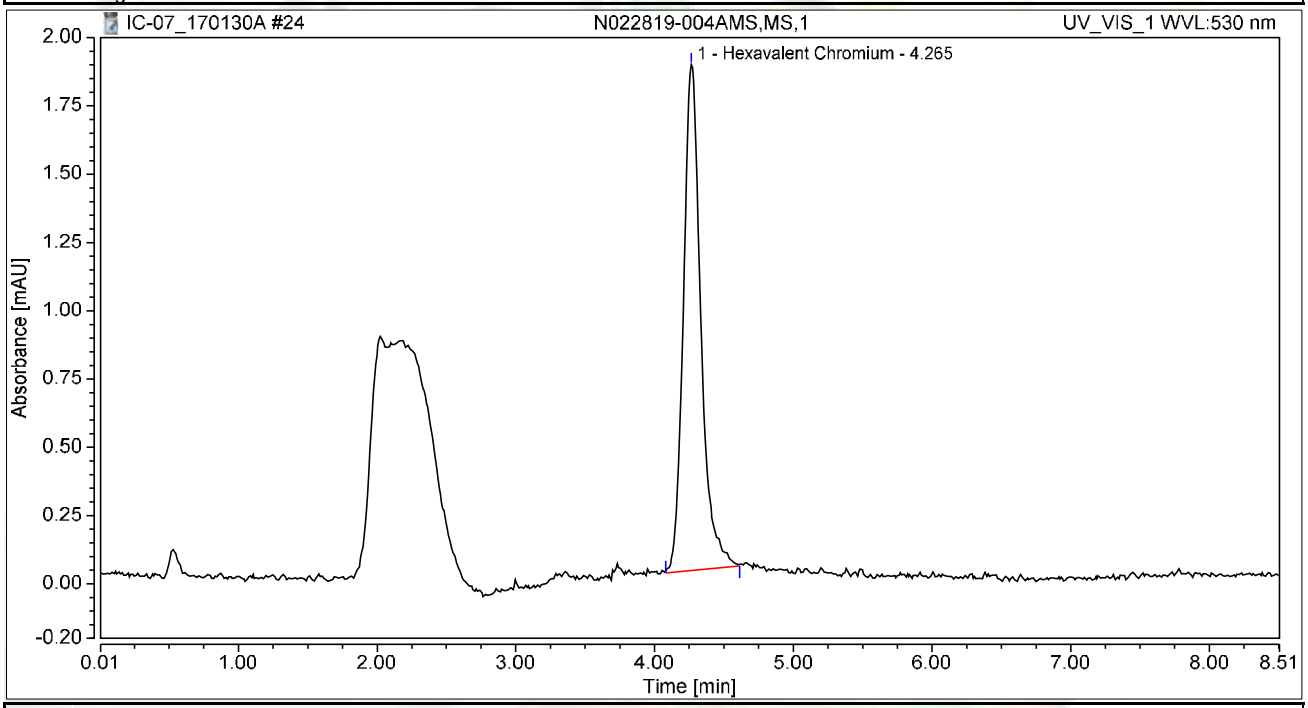
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

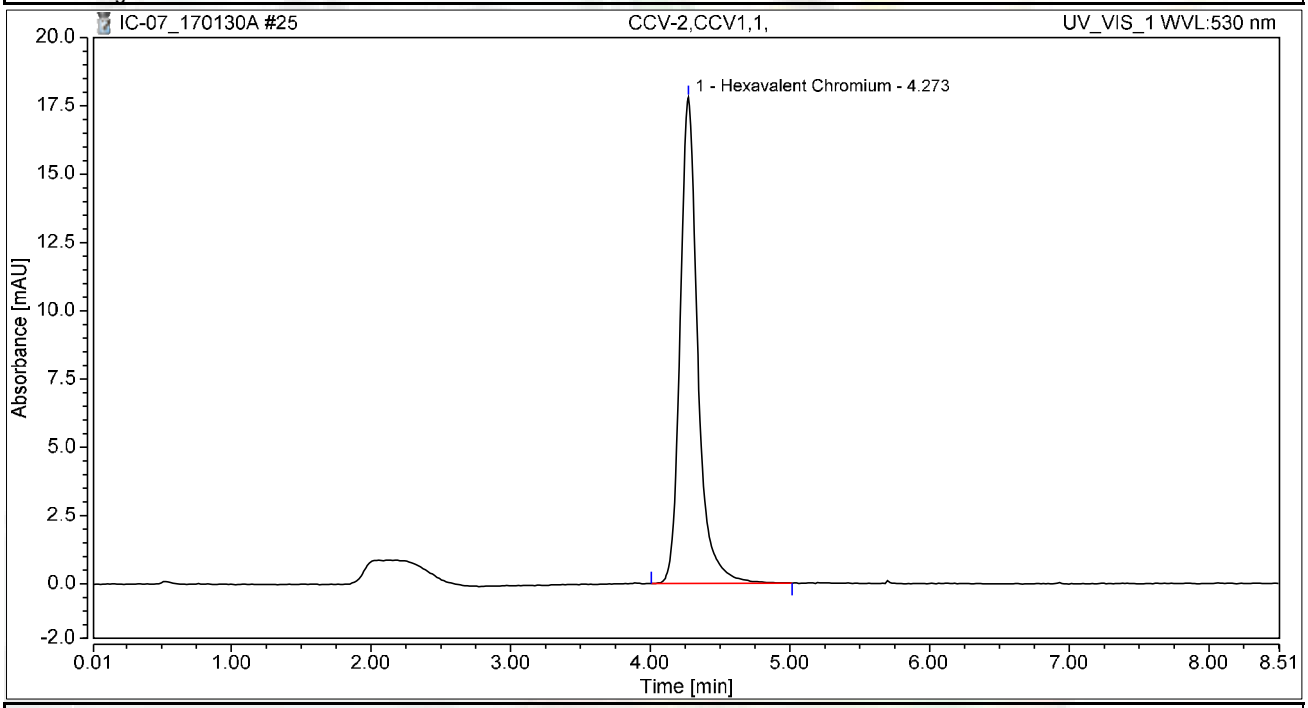
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.270	1.852	100.00	100.00	1.0569
Total:			**0.270**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

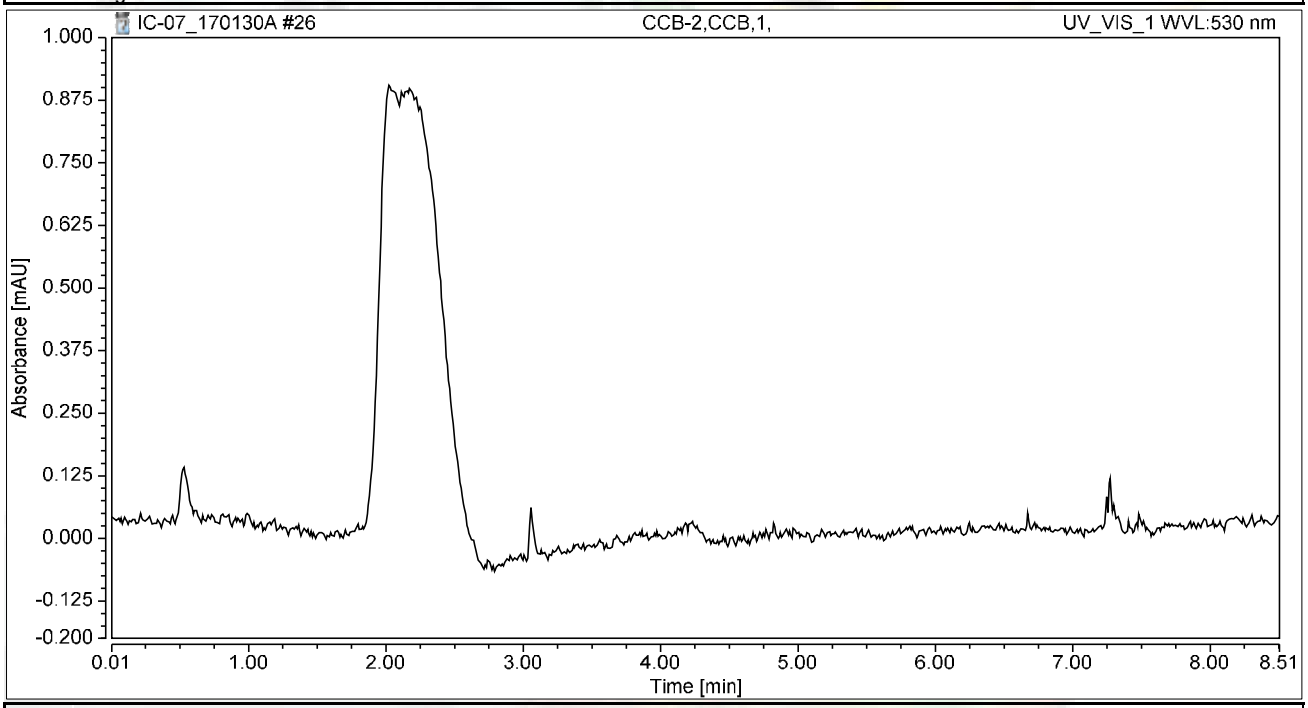
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.610	17.801	100.00	100.00	10.2092
Total:			**2.610**	**17.801**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

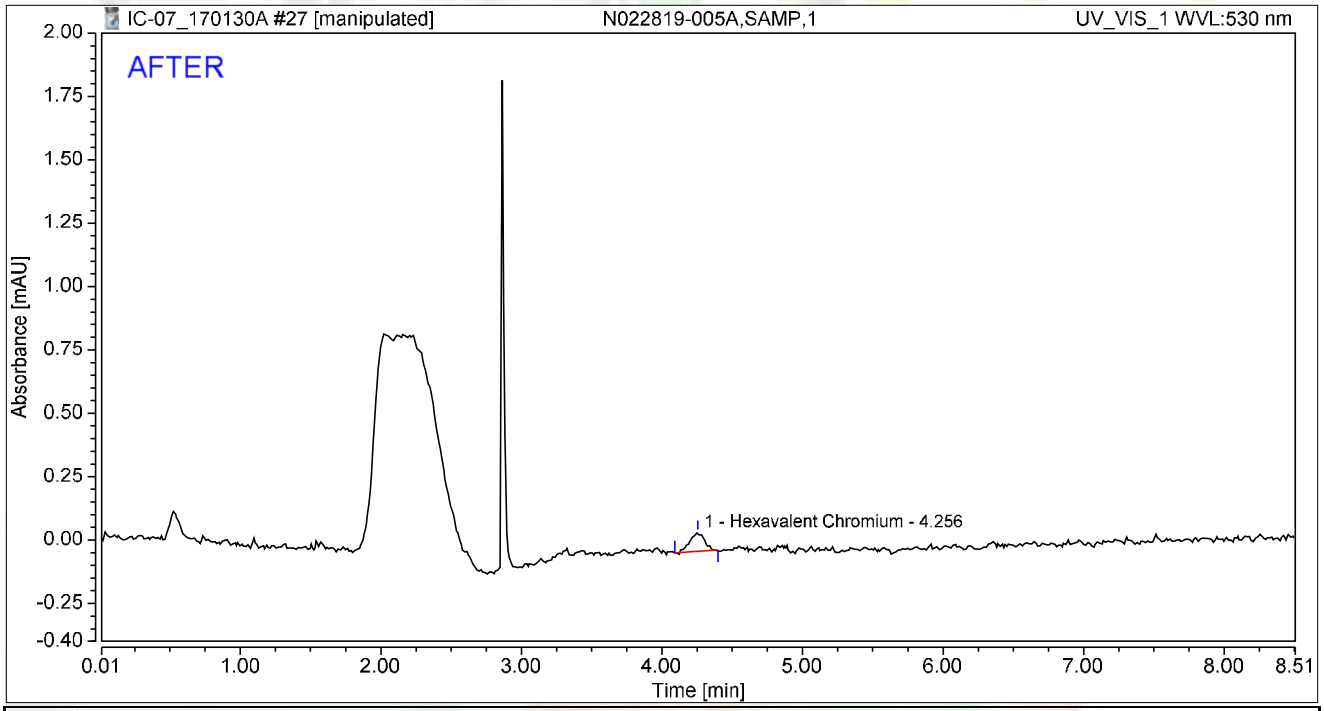
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.009	0.074	100.00	100.00	0.0343
Total:			**0.009**	**0.074**	**100.00**	**100.00**	

rba 2/4/2017

Reviewed by: Nancy 2/6/2017

My first report/Integration

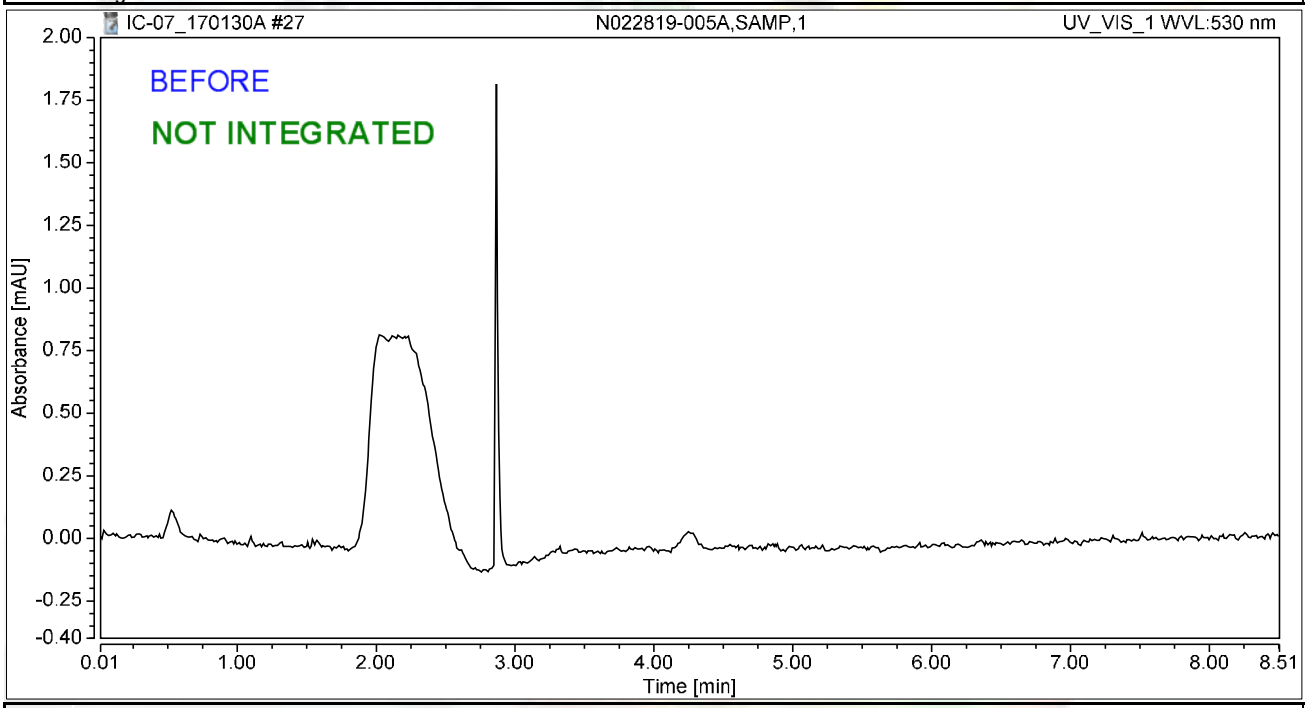
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

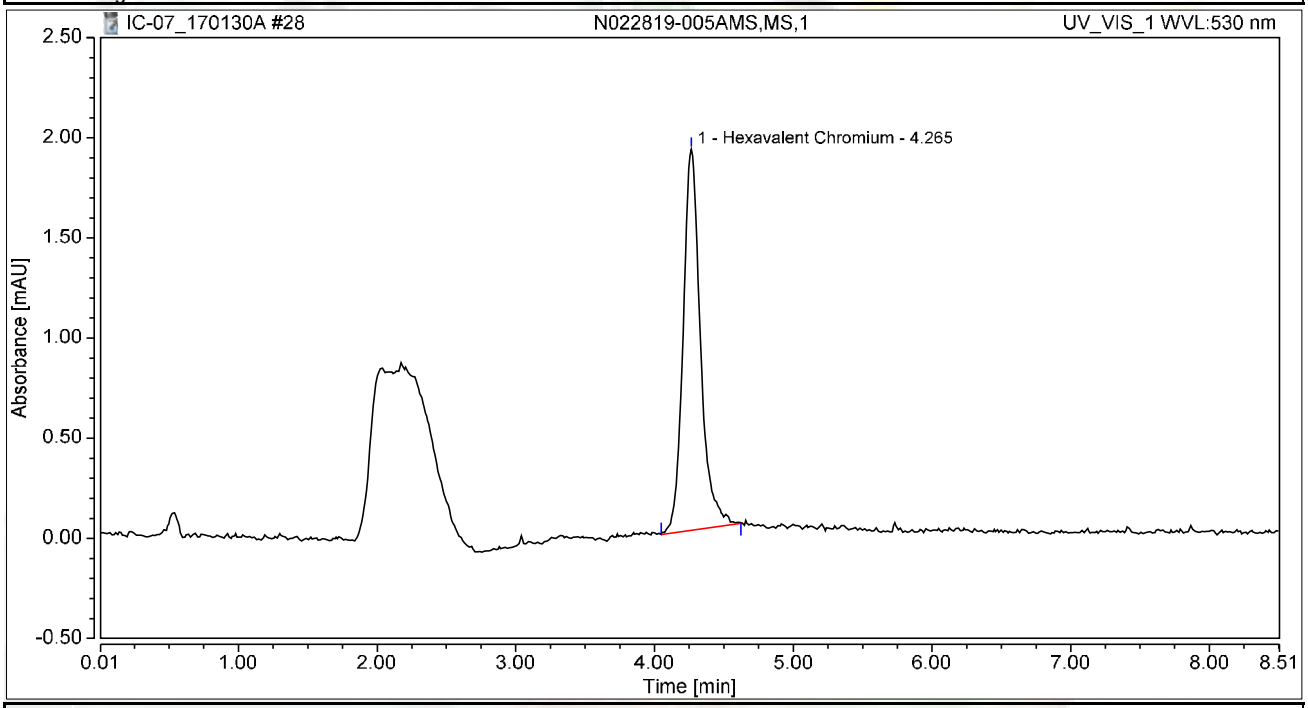
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

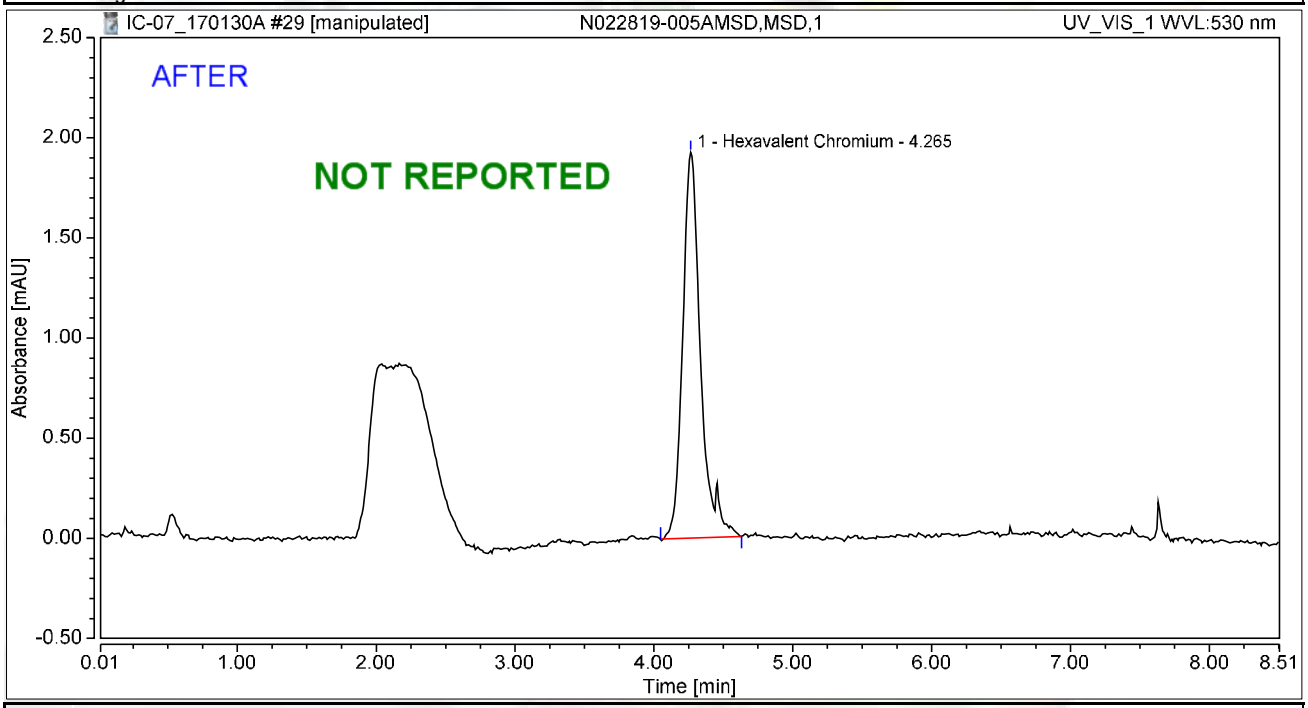
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.276	1.903	100.00	100.00	1.0798
Total:			**0.276**	**1.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.287	1.925	100.00	100.00	1.1219
Total:			**0.287**	**1.925**	**100.00**	**100.00**	

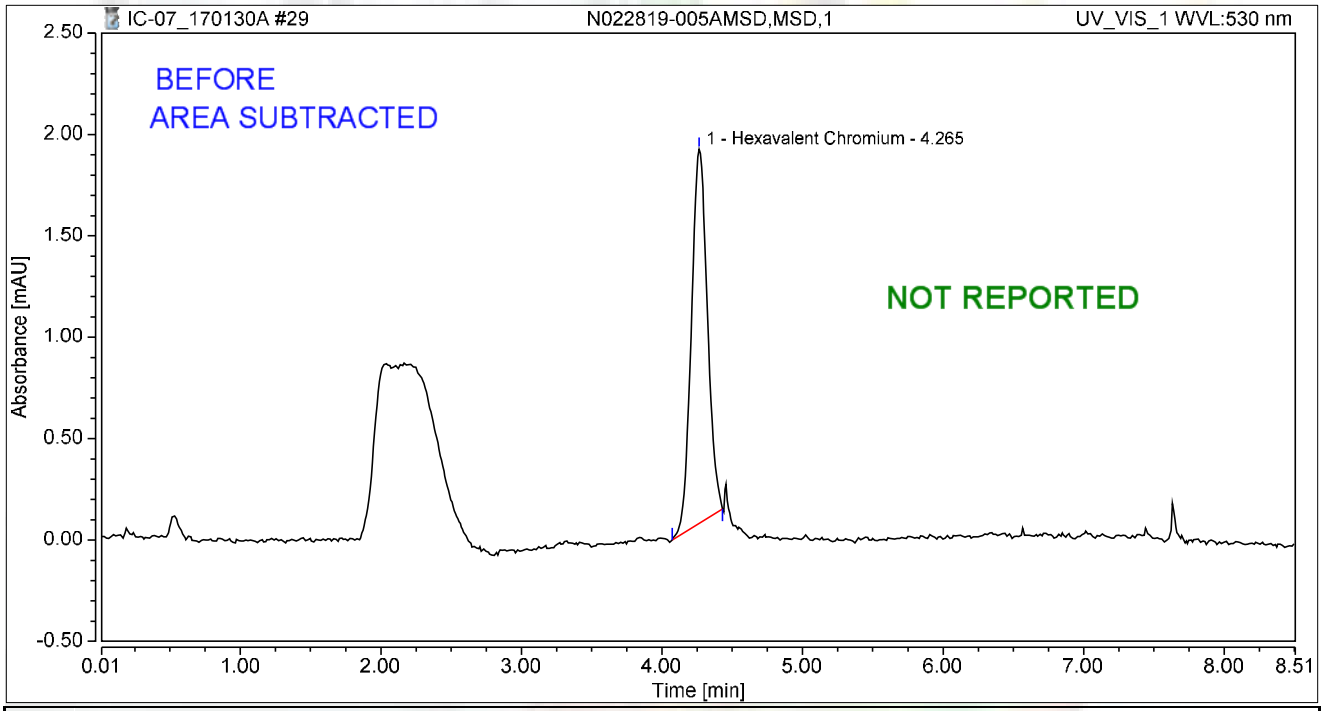
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.244	1.844	100.00	100.00	0.9530
Total:			**0.244**	**1.844**	**100.00**	**100.00**	

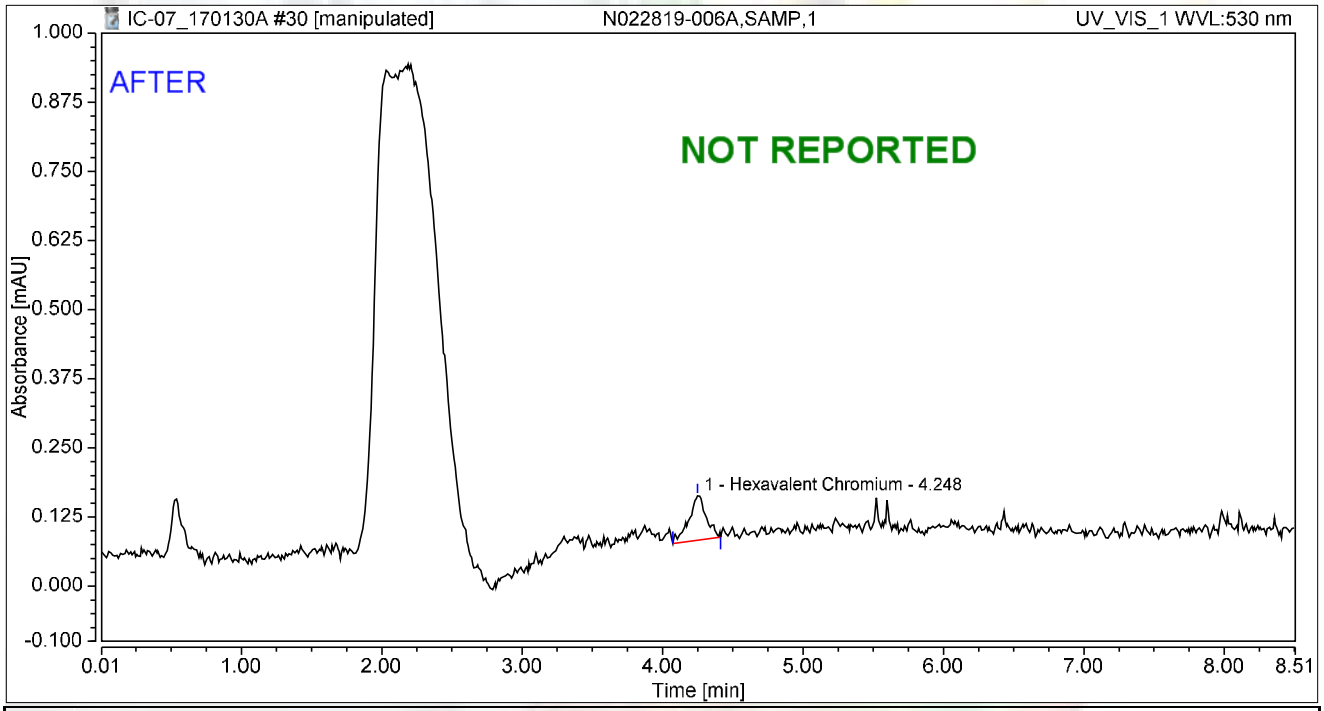
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.080	100.00	100.00	0.0453
Total:			**0.012**	**0.080**	**100.00**	**100.00**	

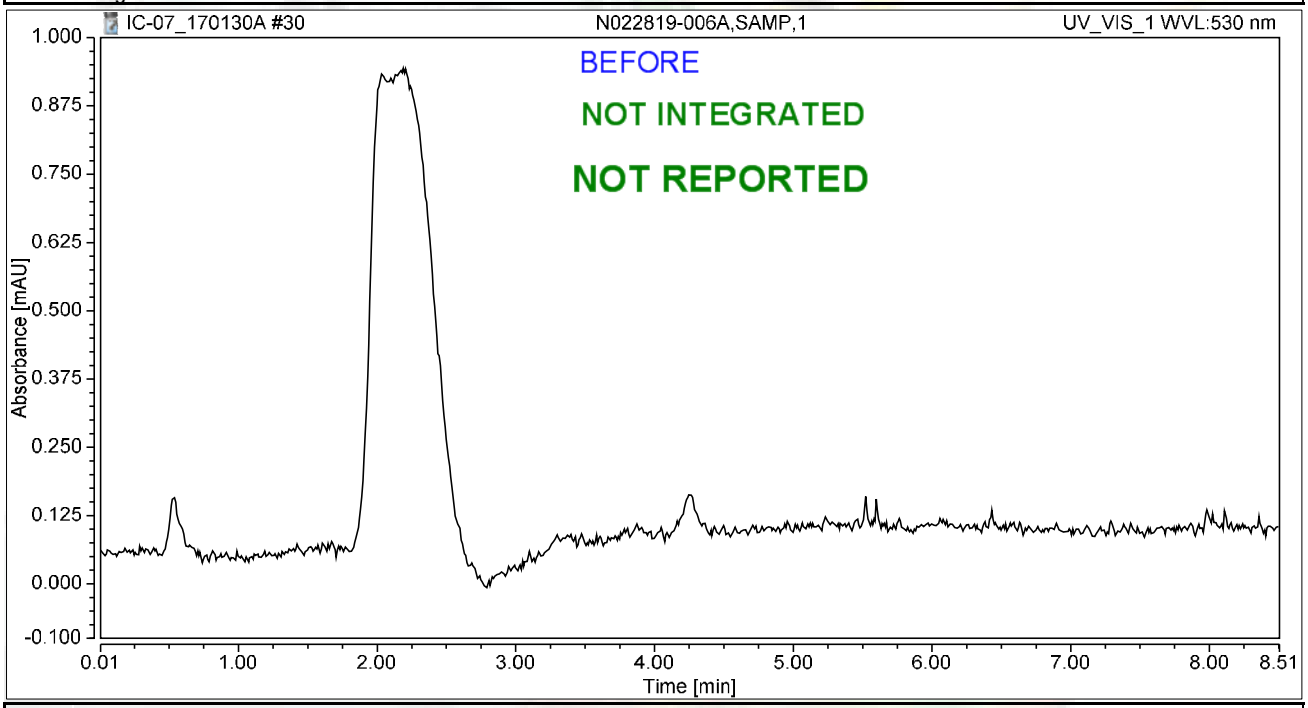
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

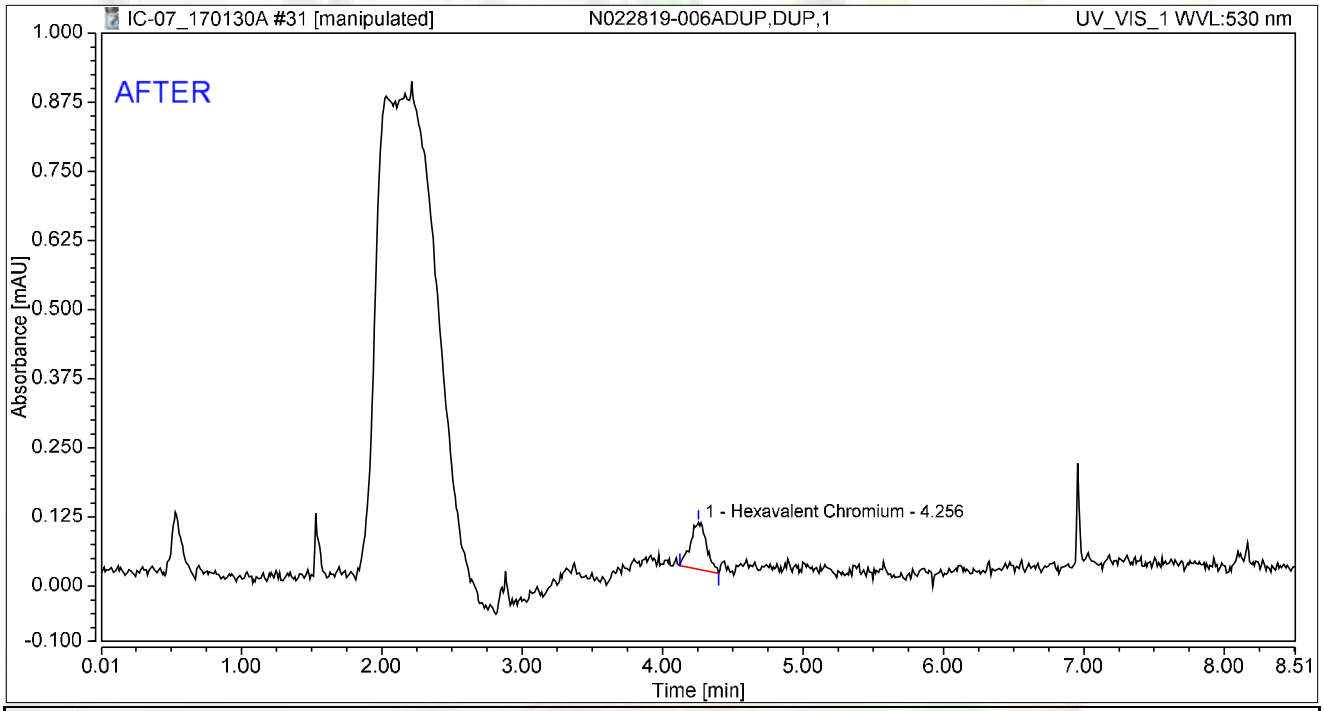
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.084	100.00	100.00	0.0440
Total:			**0.011**	**0.084**	**100.00**	**100.00**	

rba 2/4/2017

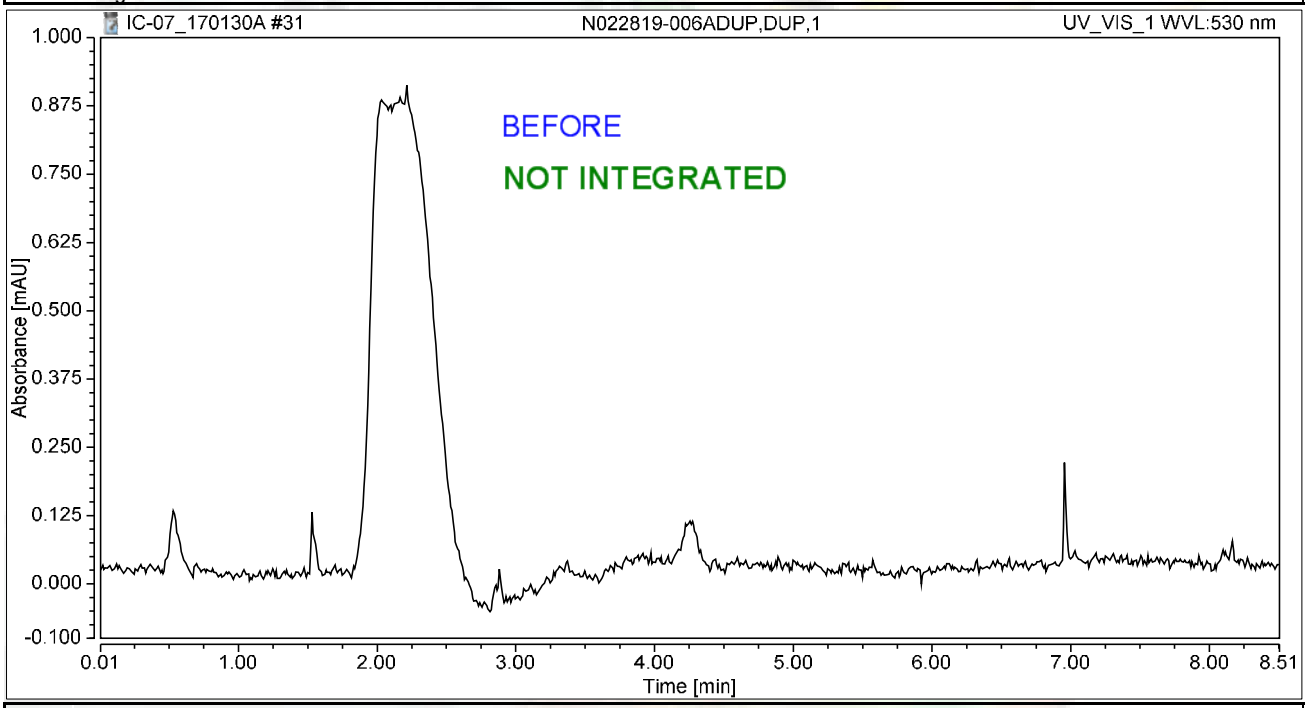
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

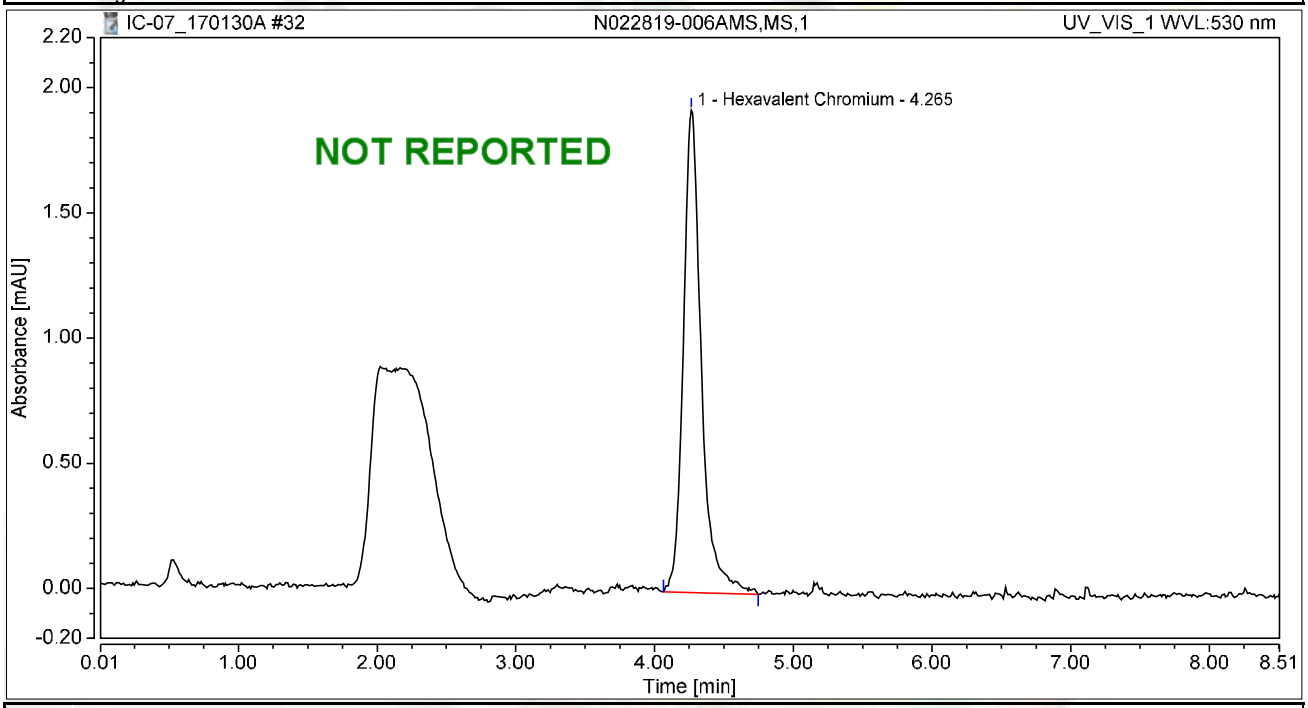
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

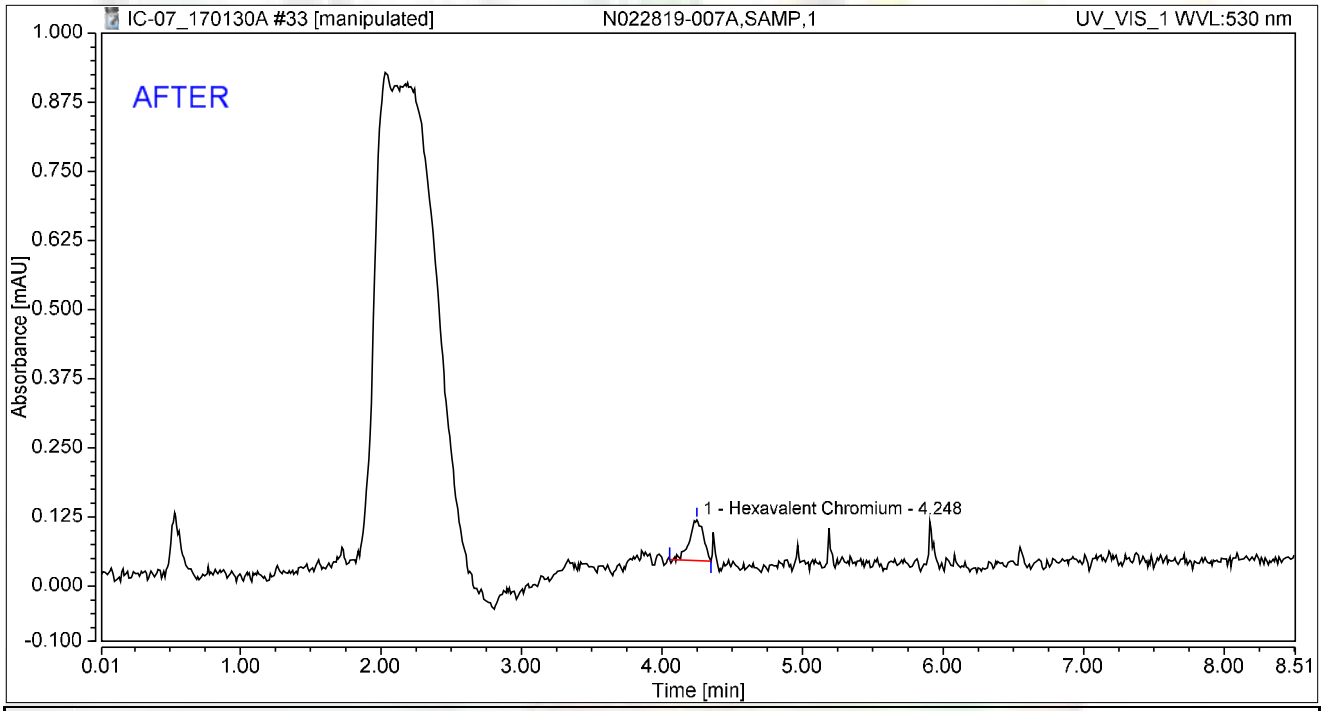
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.290	1.927	100.00	100.00	1.1328
Total:			**0.290**	**1.927**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.008	0.074	100.00	100.00	0.0327
Total:			**0.008**	**0.074**	**100.00**	**100.00**	

rba 2/4/2017

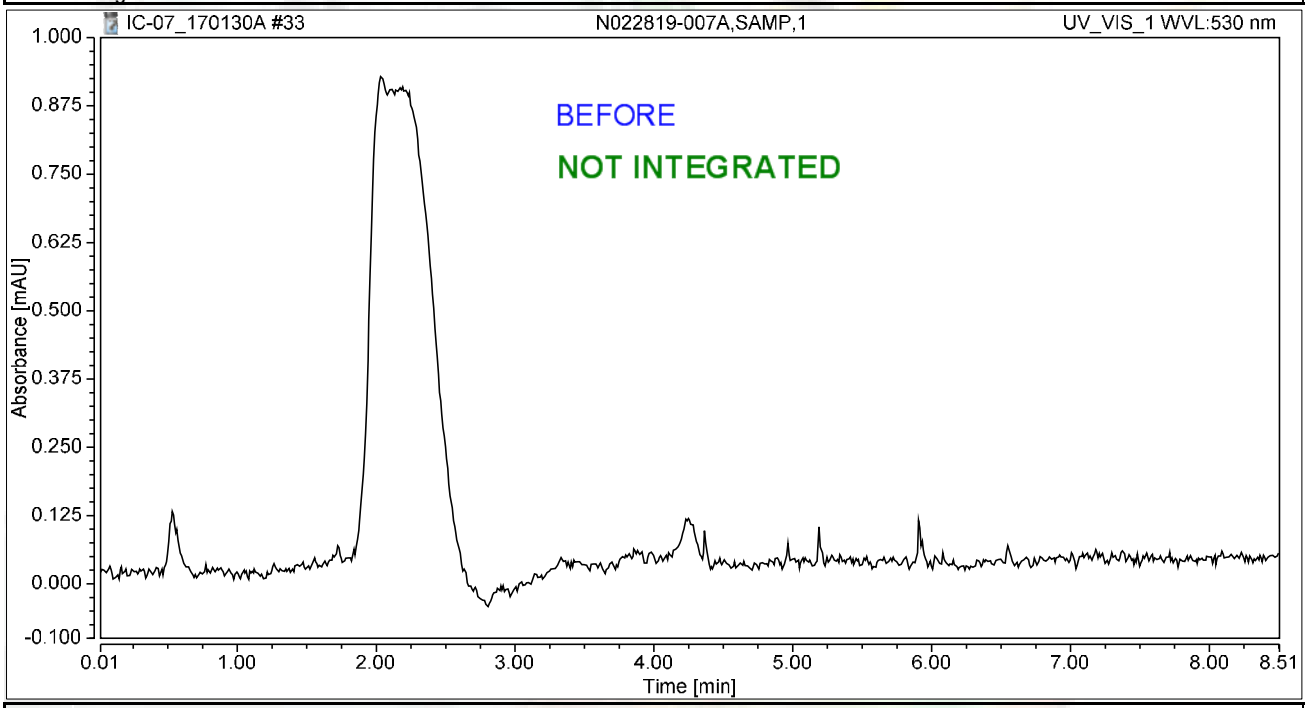
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

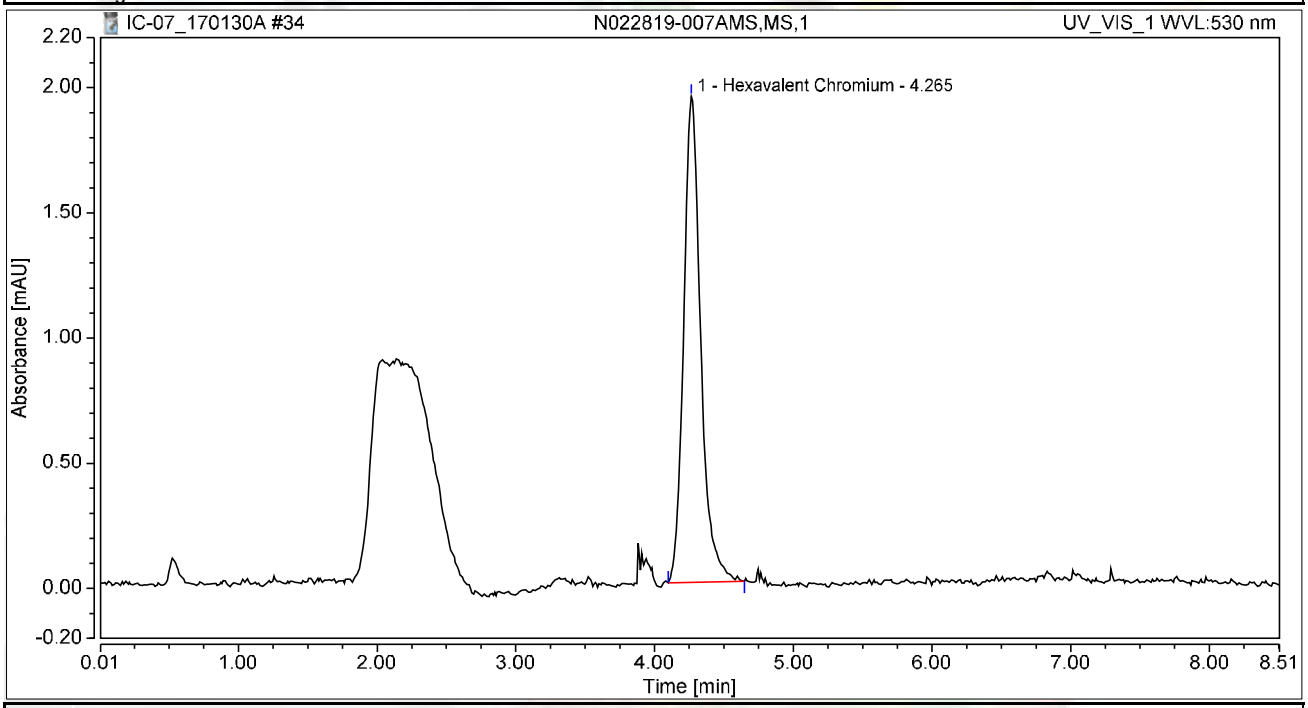
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

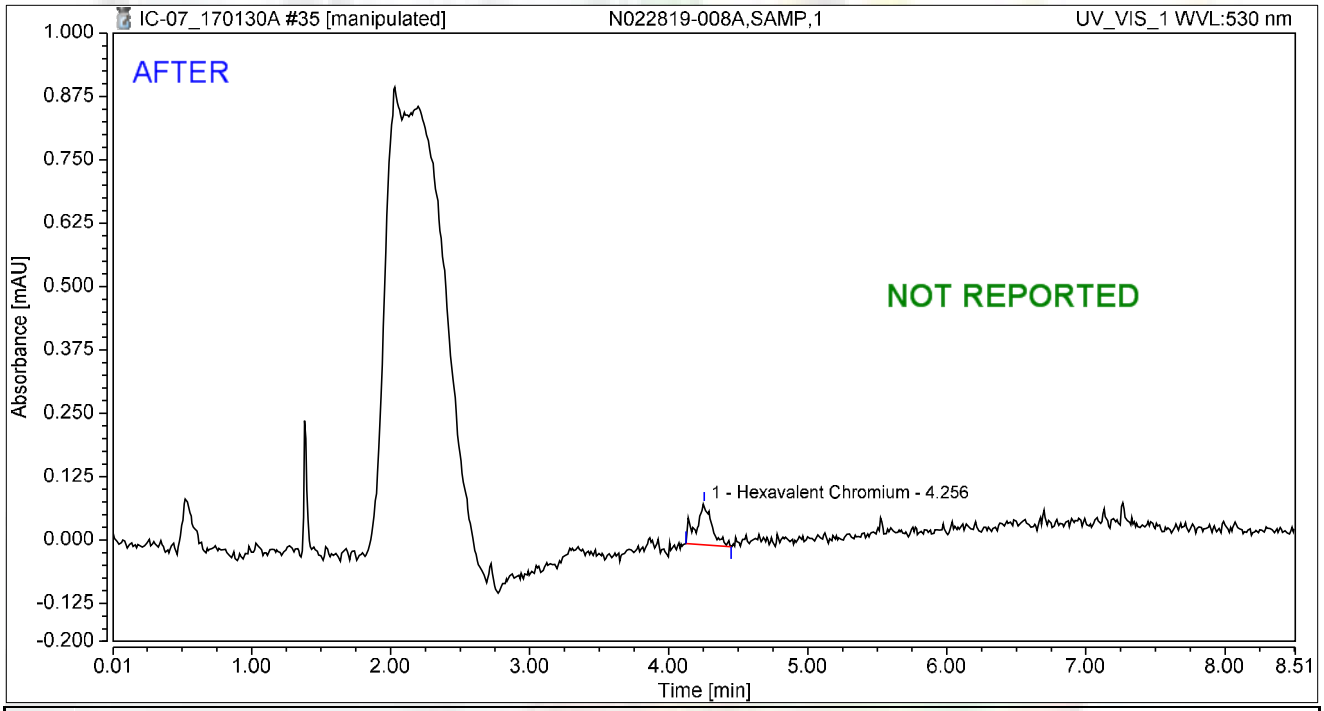
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.277	1.942	100.00	100.00	1.0821
Total:			**0.277**	**1.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0418
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

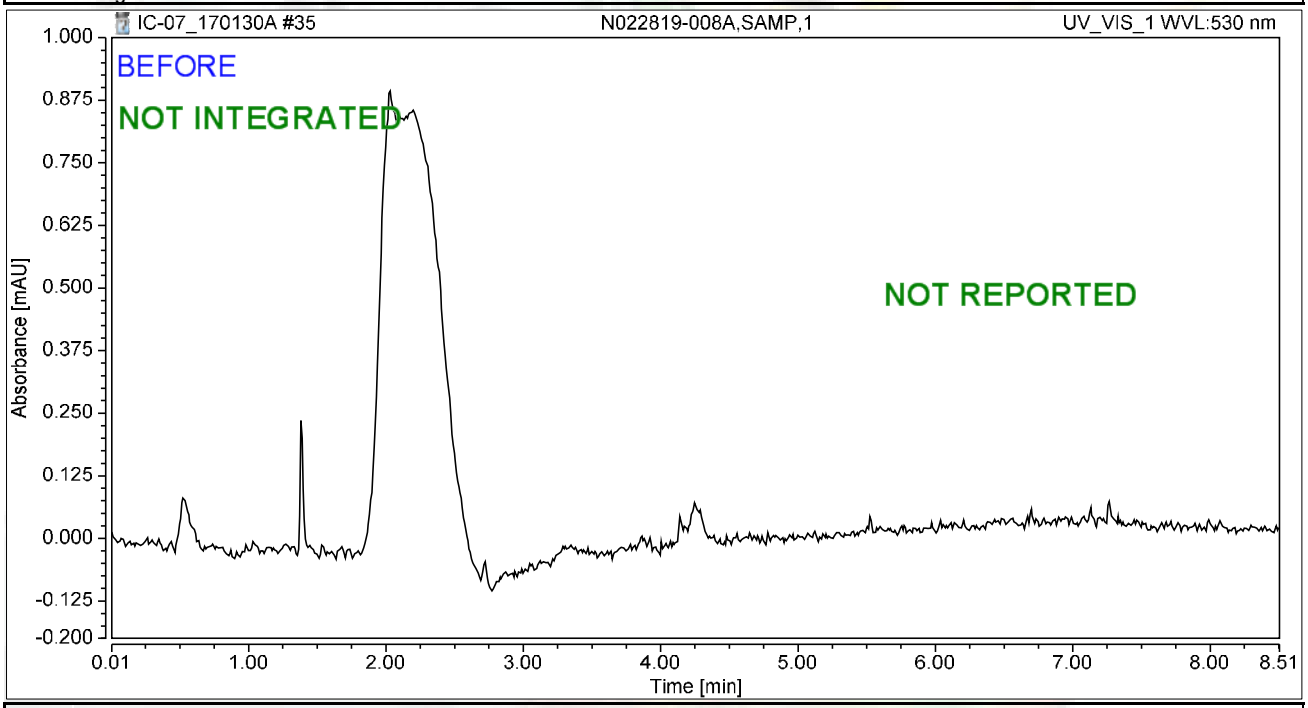
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

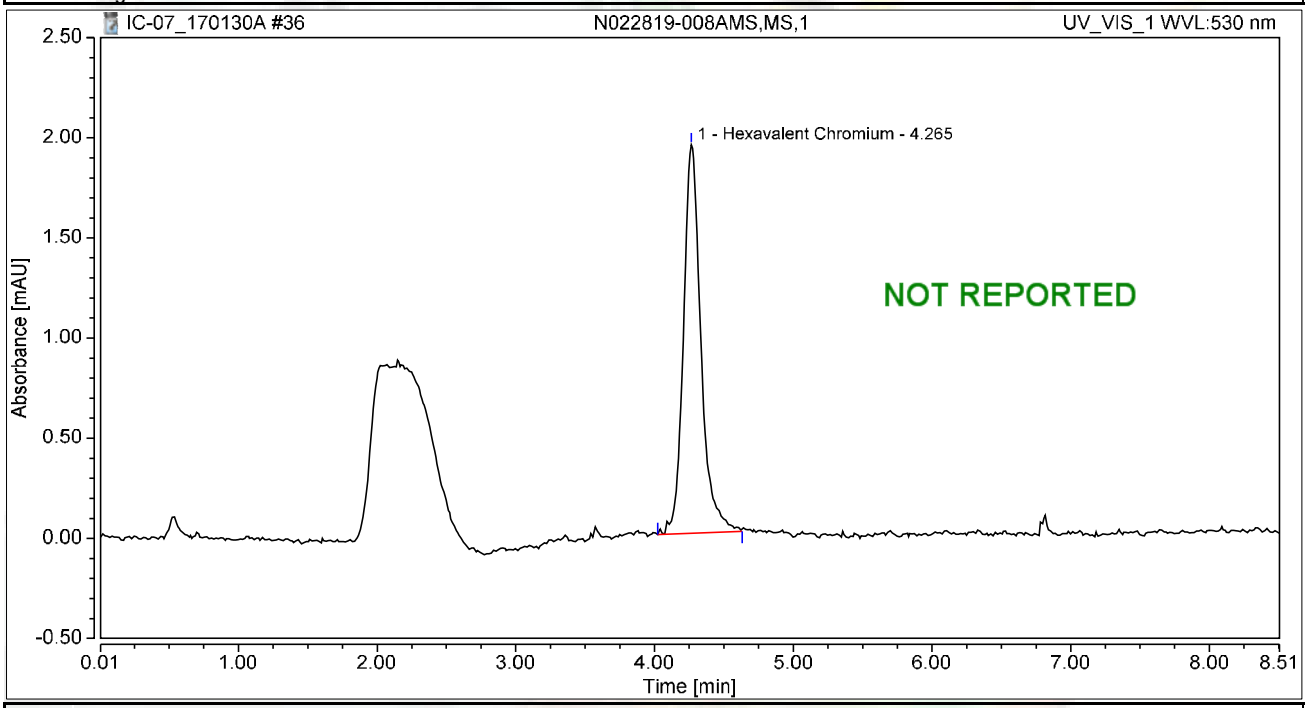
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

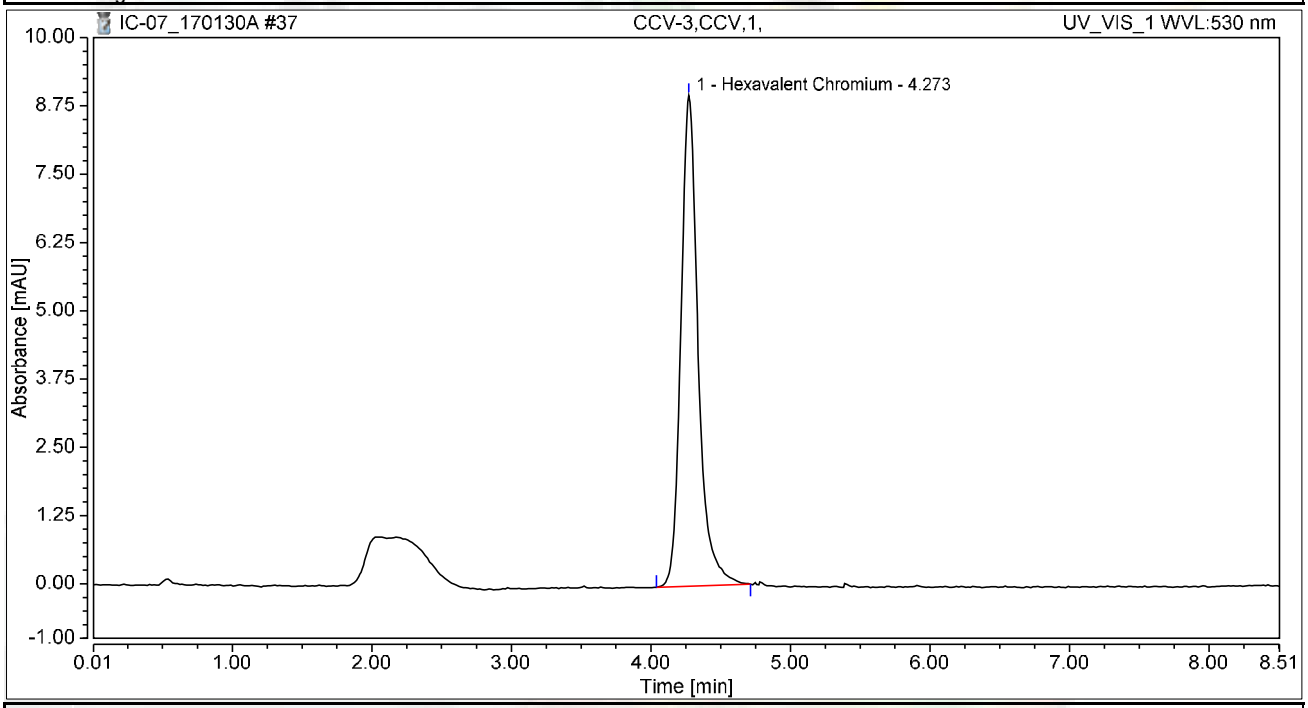
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.284	1.939	100.00	100.00	1.1111
Total:			**0.284**	**1.939**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

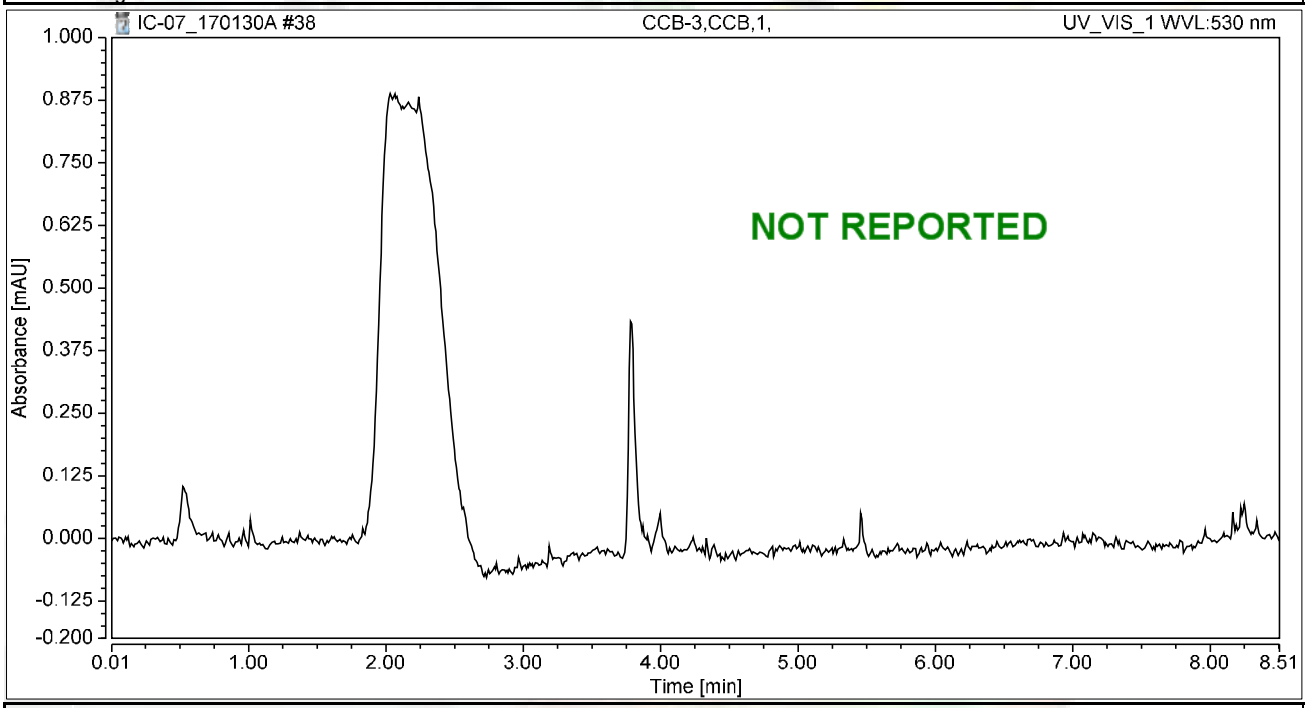
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	1.286	8.984	100.00	100.00	5.0321
Total:			**1.286**	**8.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

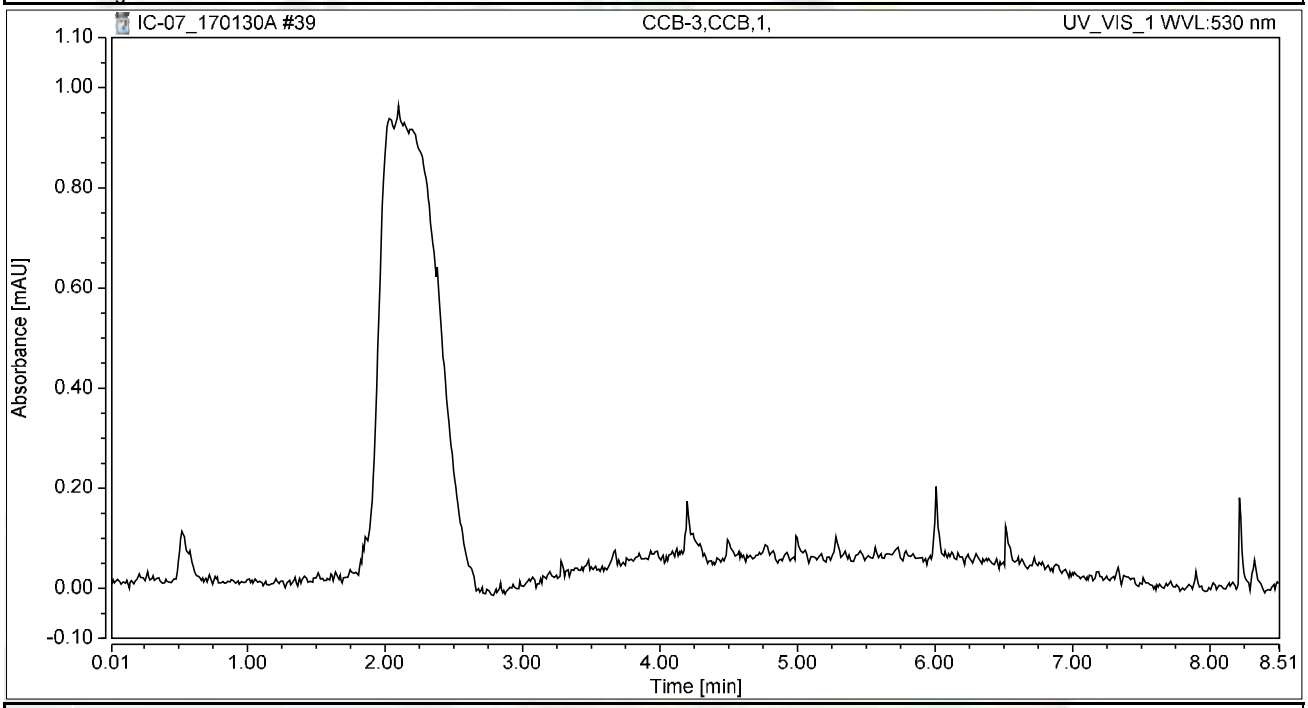
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

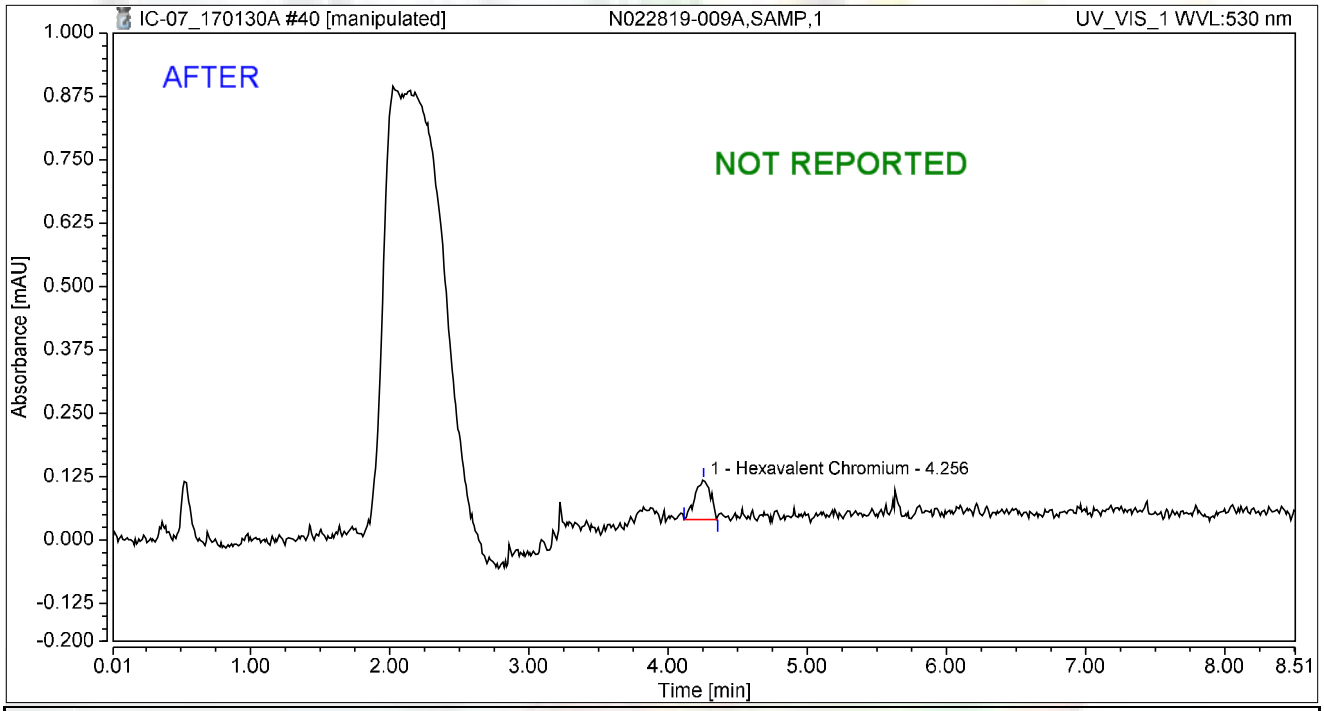
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.010	0.078	100.00	100.00	0.0392
Total:			**0.010**	**0.078**	**100.00**	**100.00**	

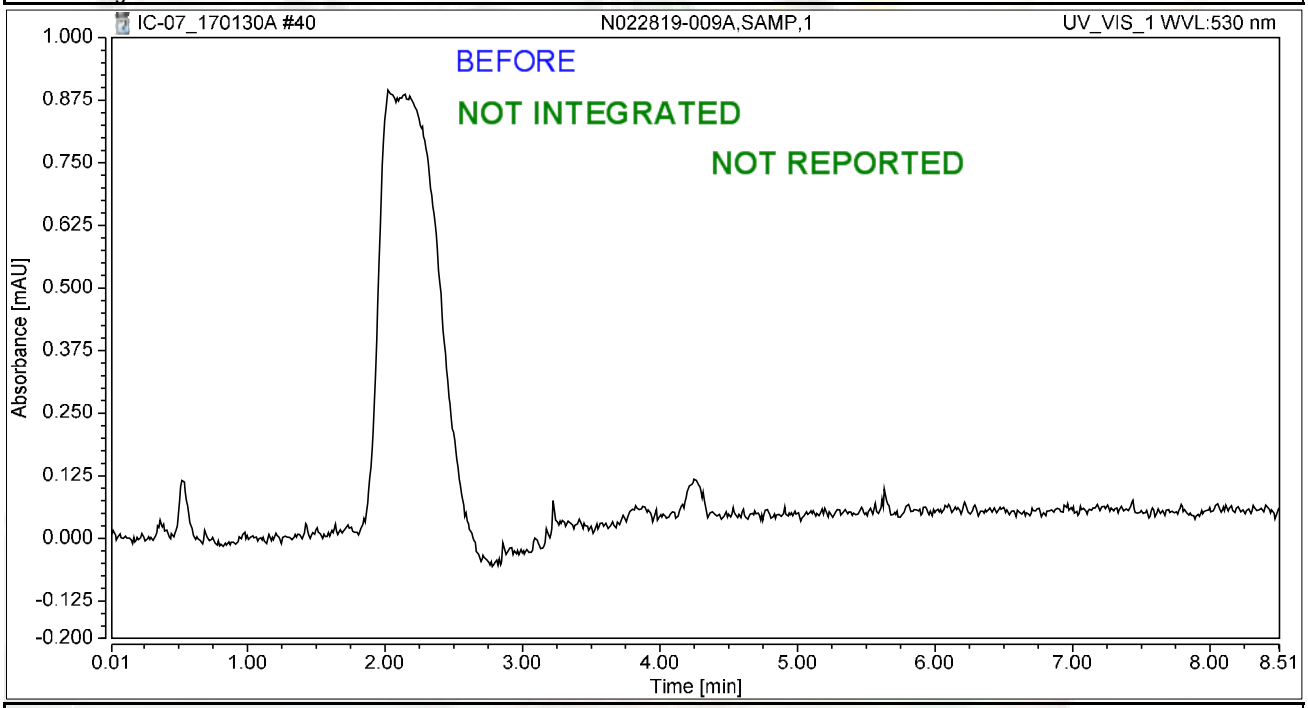
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

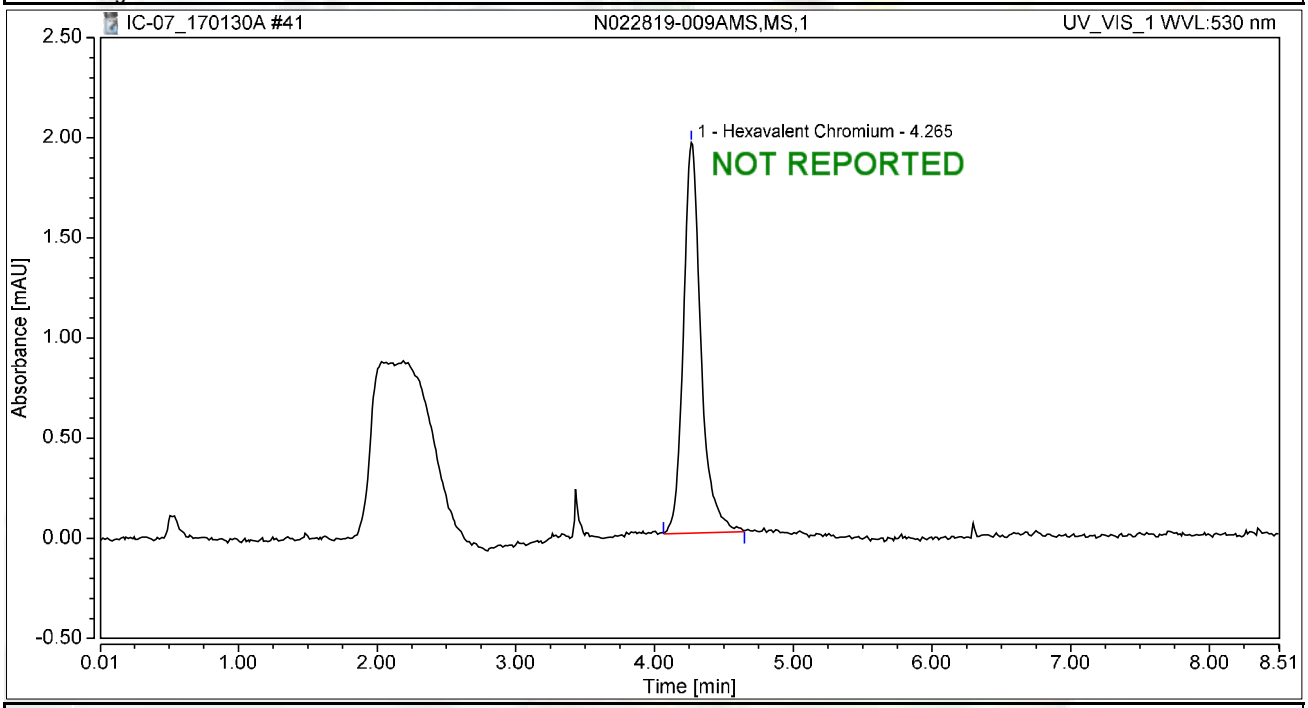
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

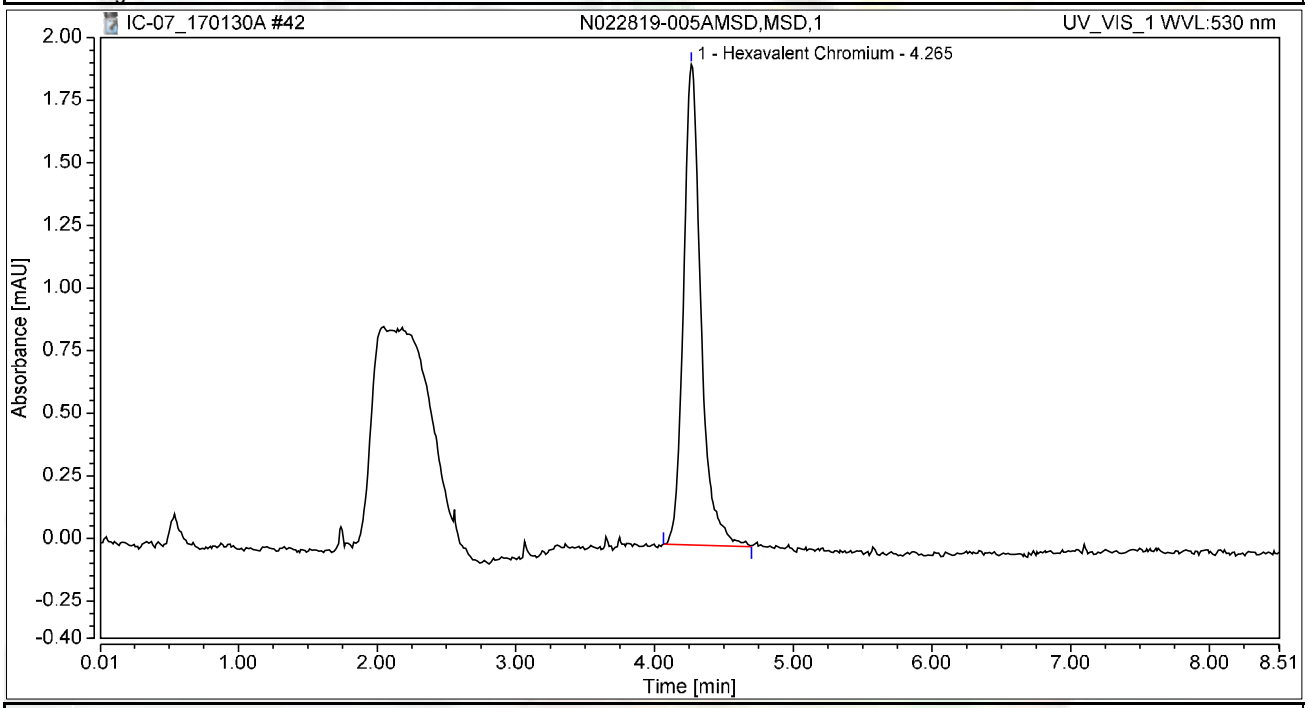
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.286	1.950	100.00	100.00	1.1175
Total:			**0.286**	**1.950**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-005AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

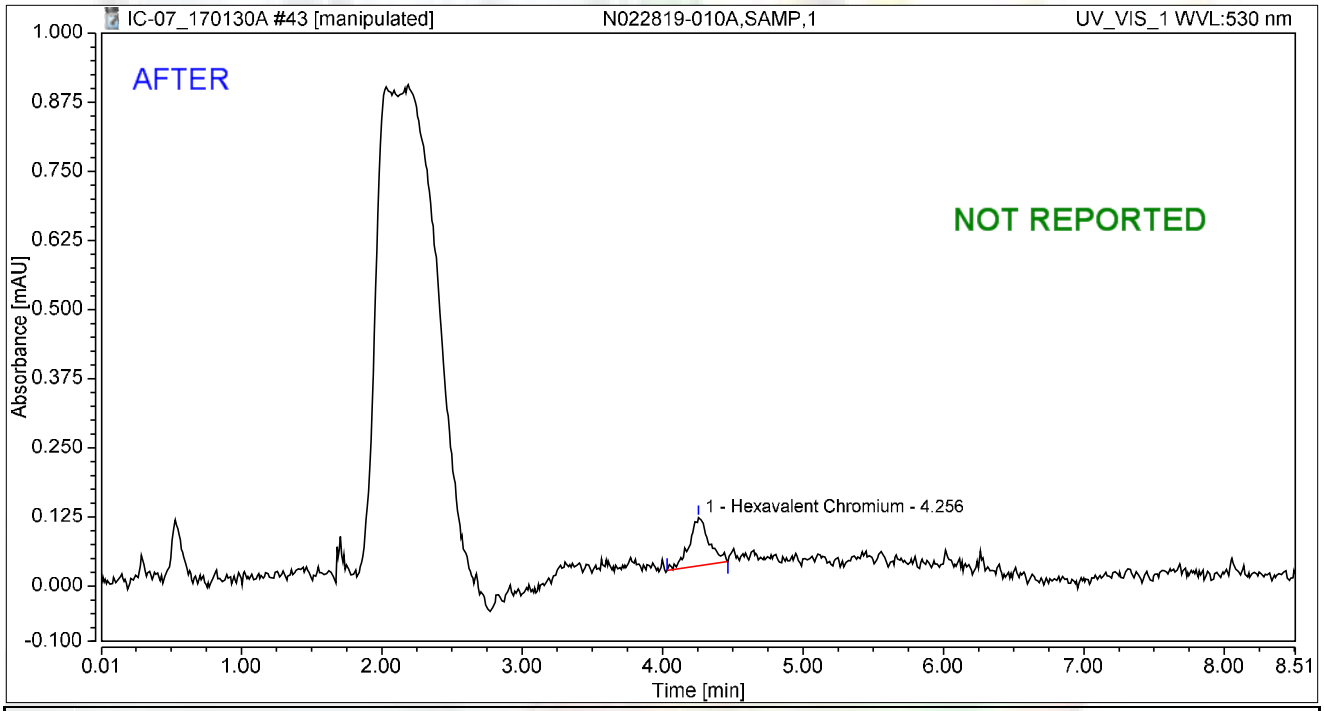
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.280	1.920	100.00	100.00	1.0938
Total:			**0.280**	**1.920**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.015	0.087	100.00	100.00	0.0568
Total:			**0.015**	**0.087**	**100.00**	**100.00**	

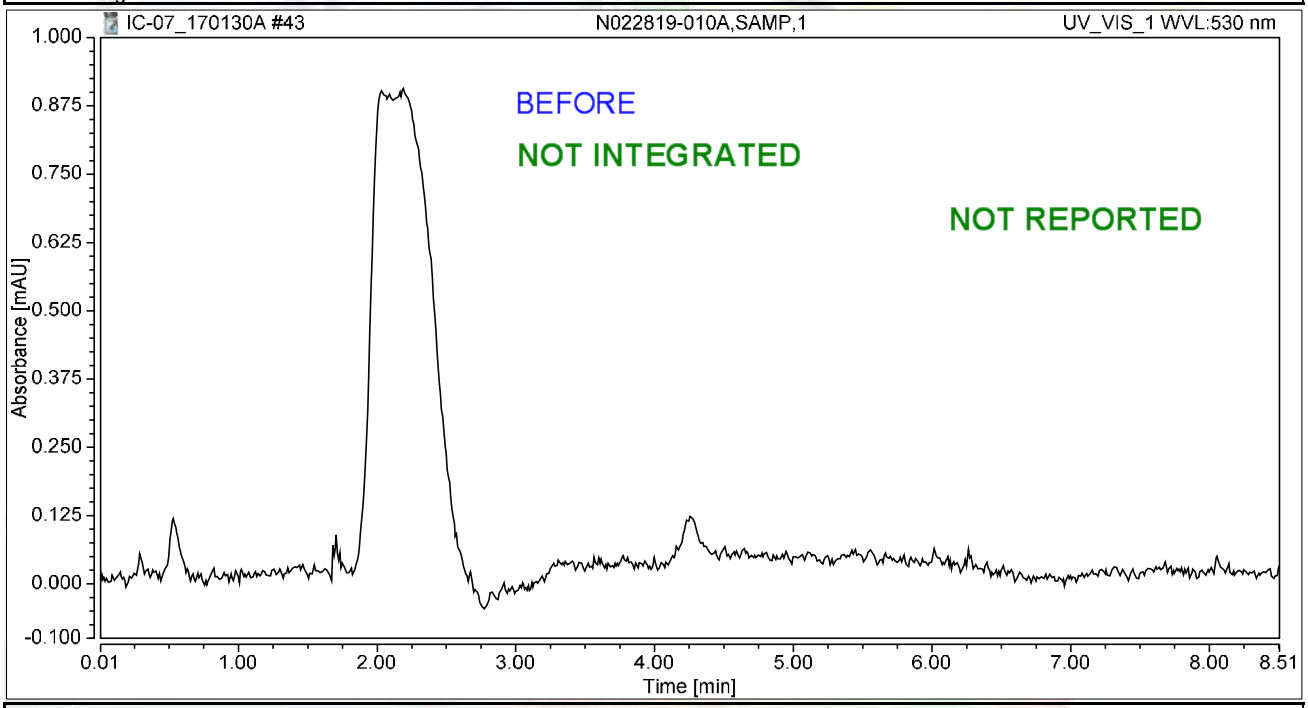
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

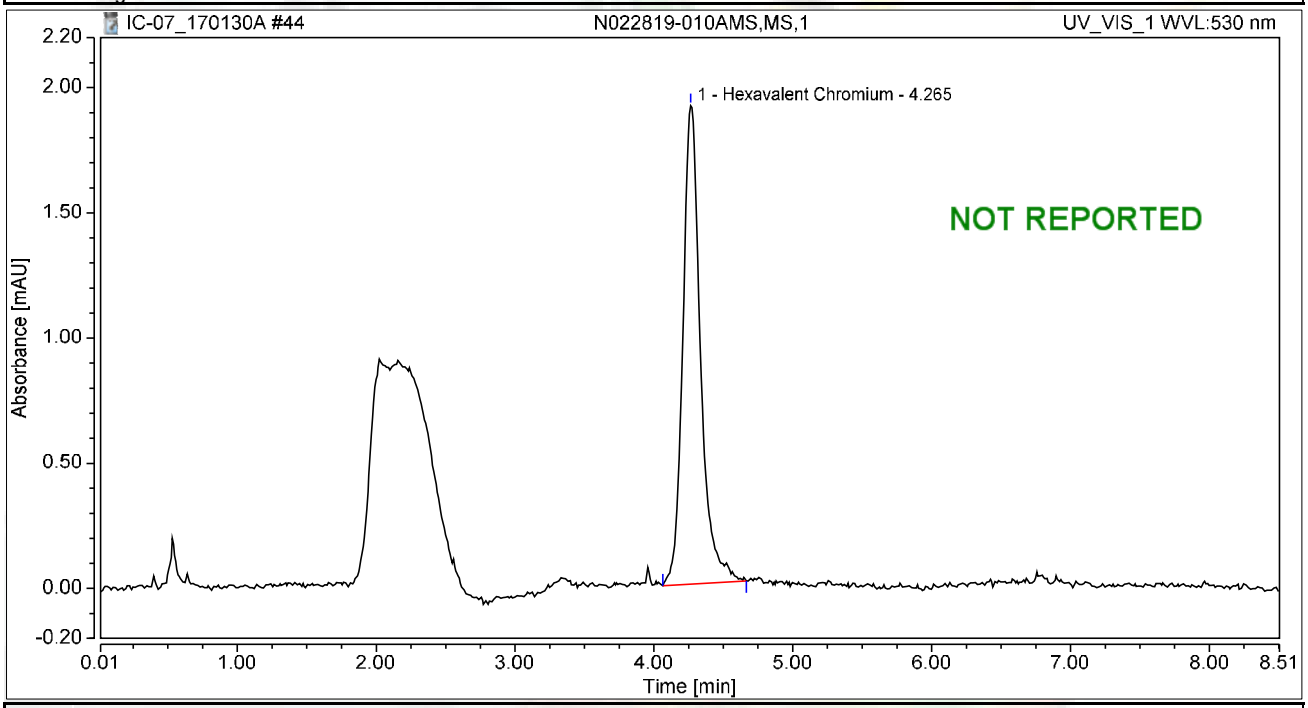
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

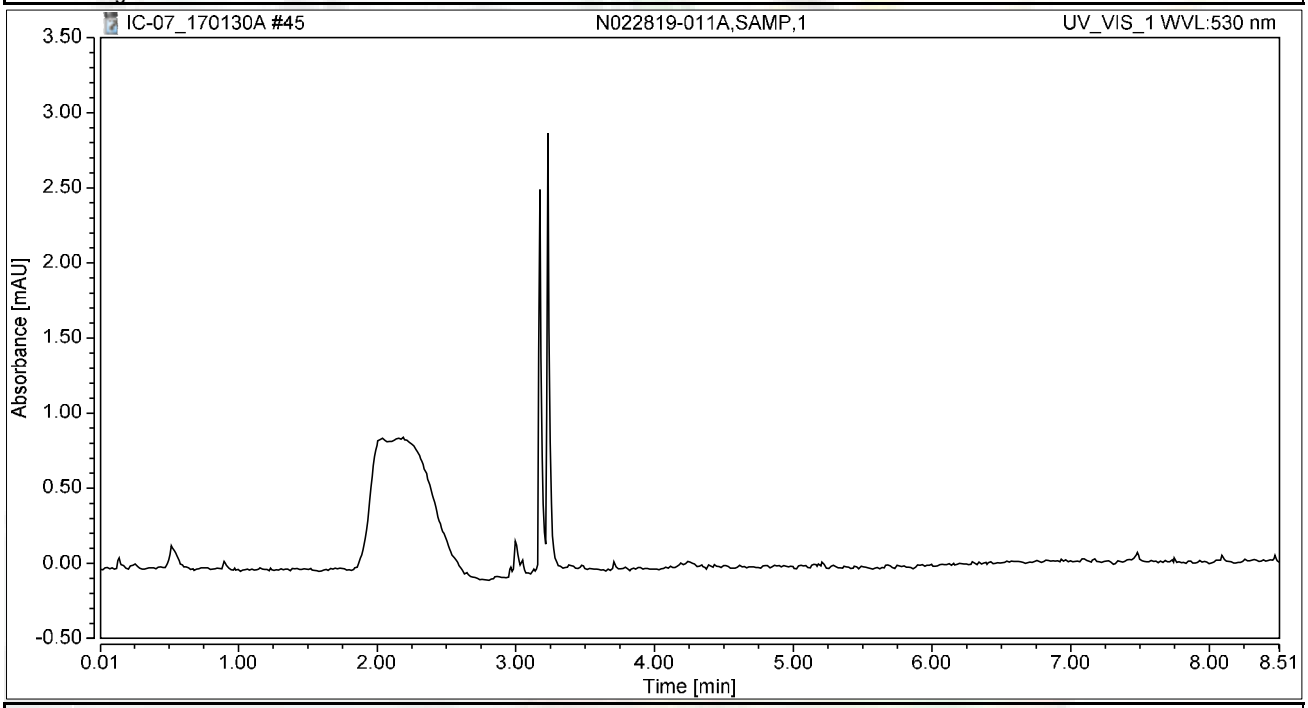
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.283	1.912	100.00	100.00	1.1055
Total:			**0.283**	**1.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

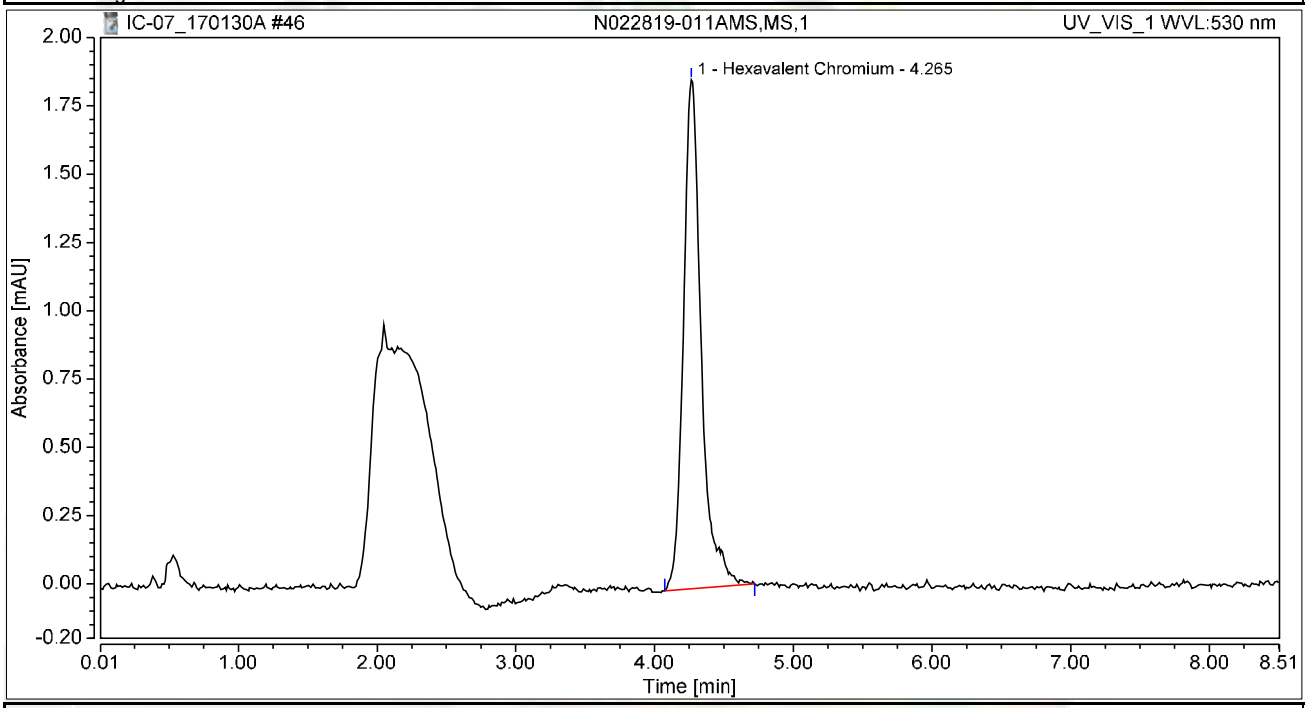
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

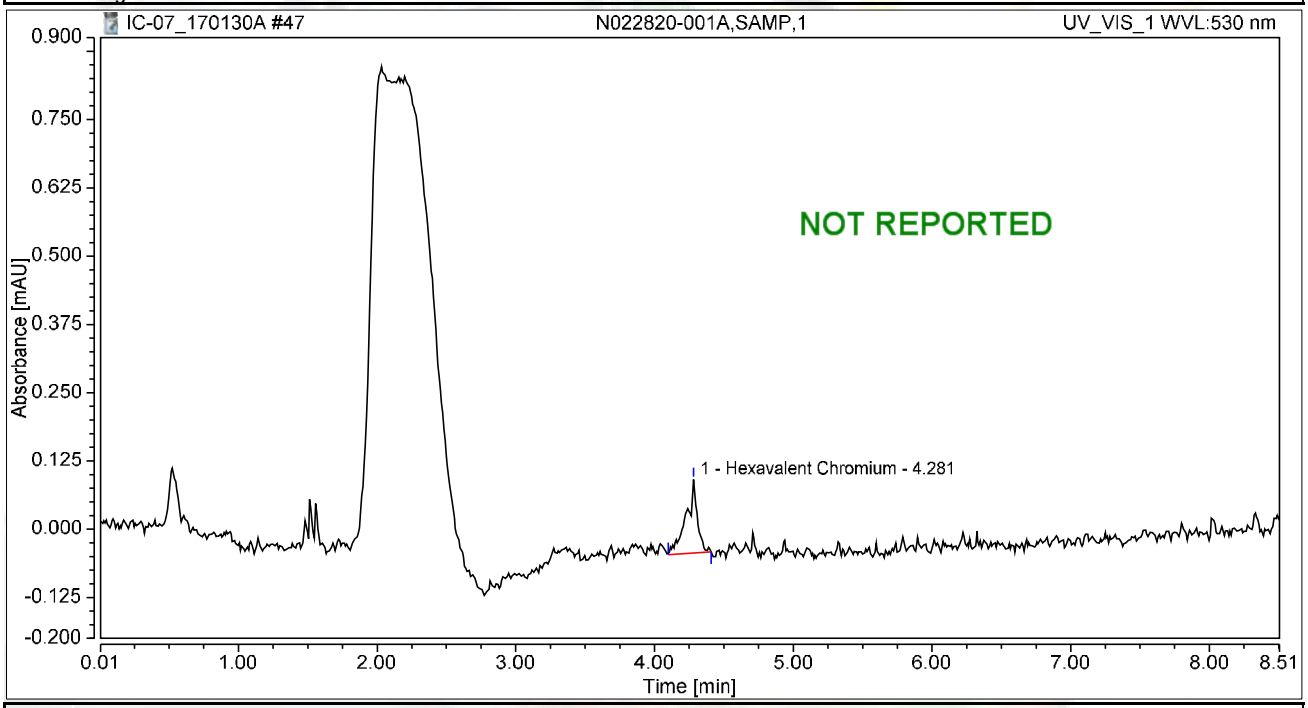
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.277	1.863	100.00	100.00	1.0842
Total:			**0.277**	**1.863**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

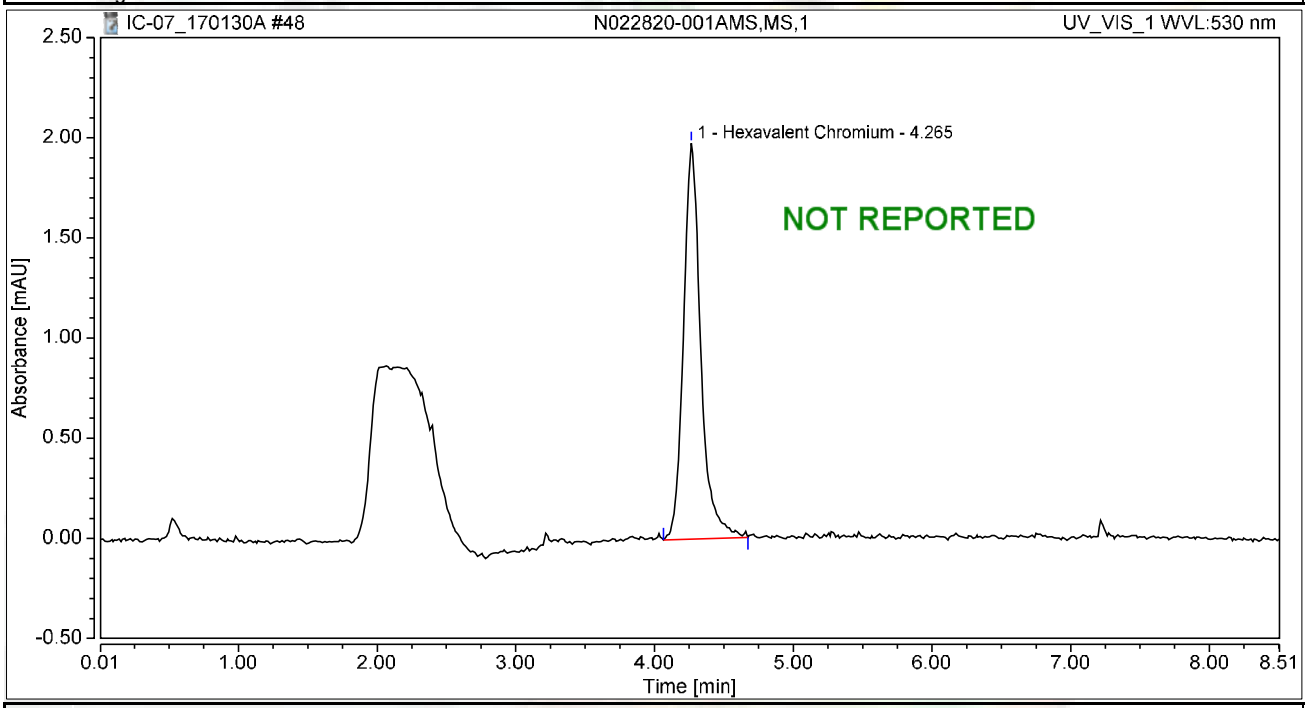
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.281	0.012	0.135	100.00	100.00	0.0489
Total:			**0.012**	**0.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

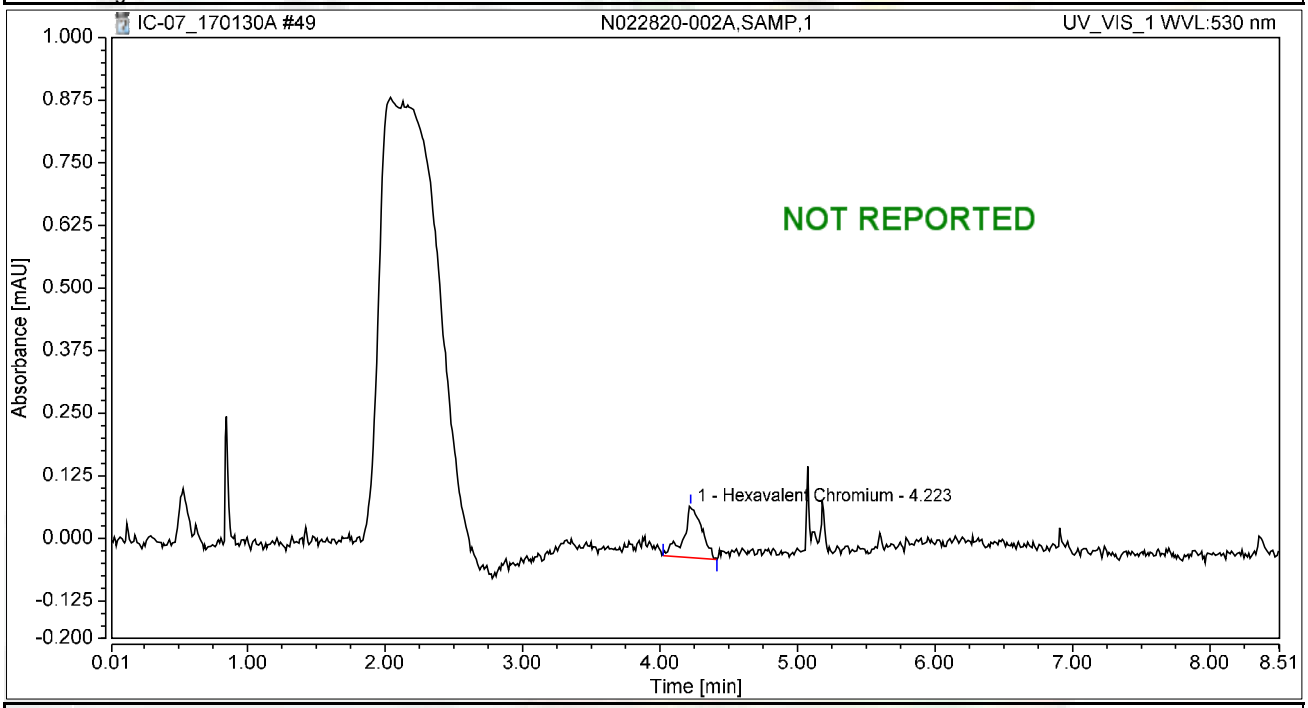
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.285	1.976	100.00	100.00	1.1146
Total:			**0.285**	**1.976**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

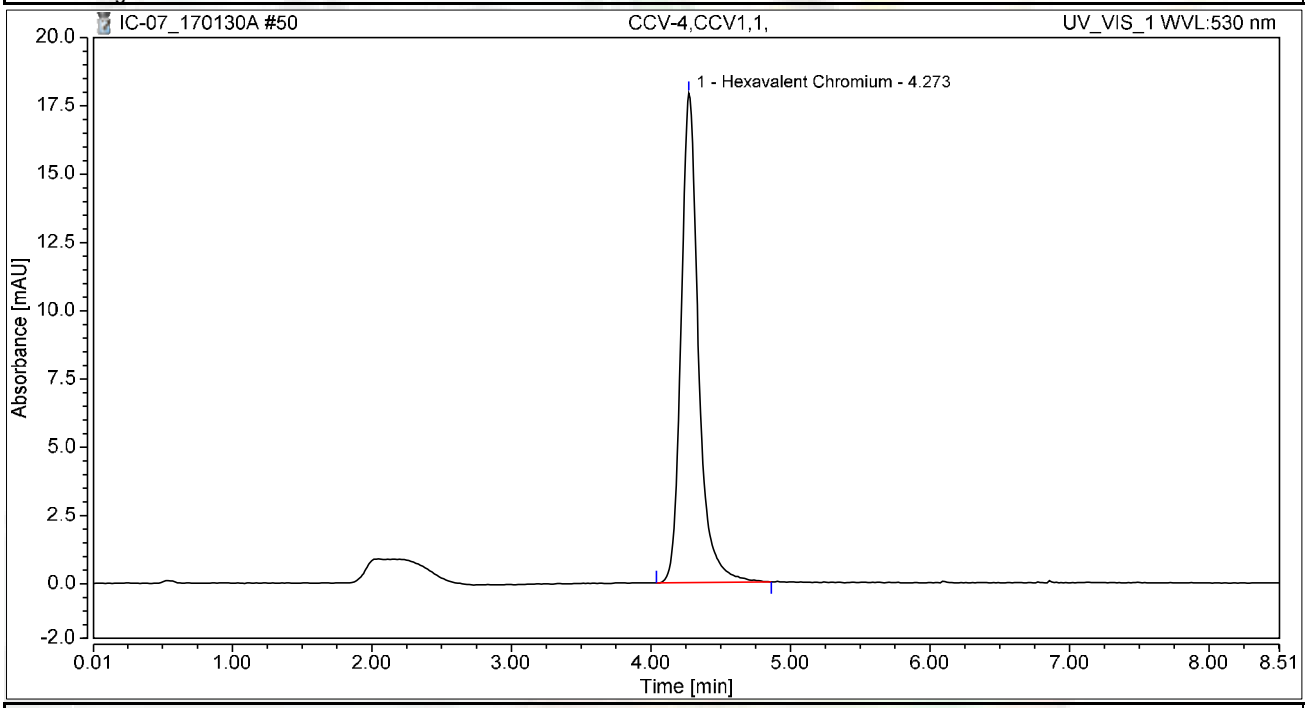
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.016	0.102	100.00	100.00	0.0623
Total:			**0.016**	**0.102**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

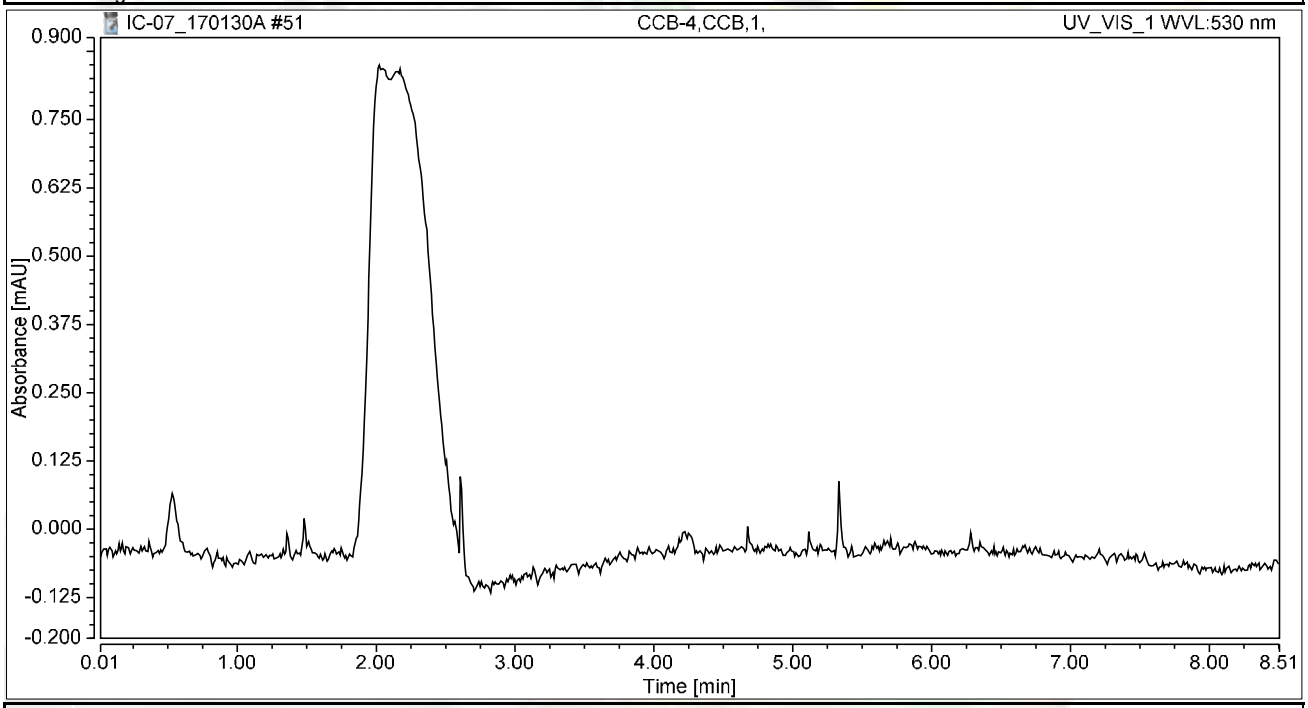
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.586	17.917	100.00	100.00	10.1152
Total:			**2.586**	**17.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

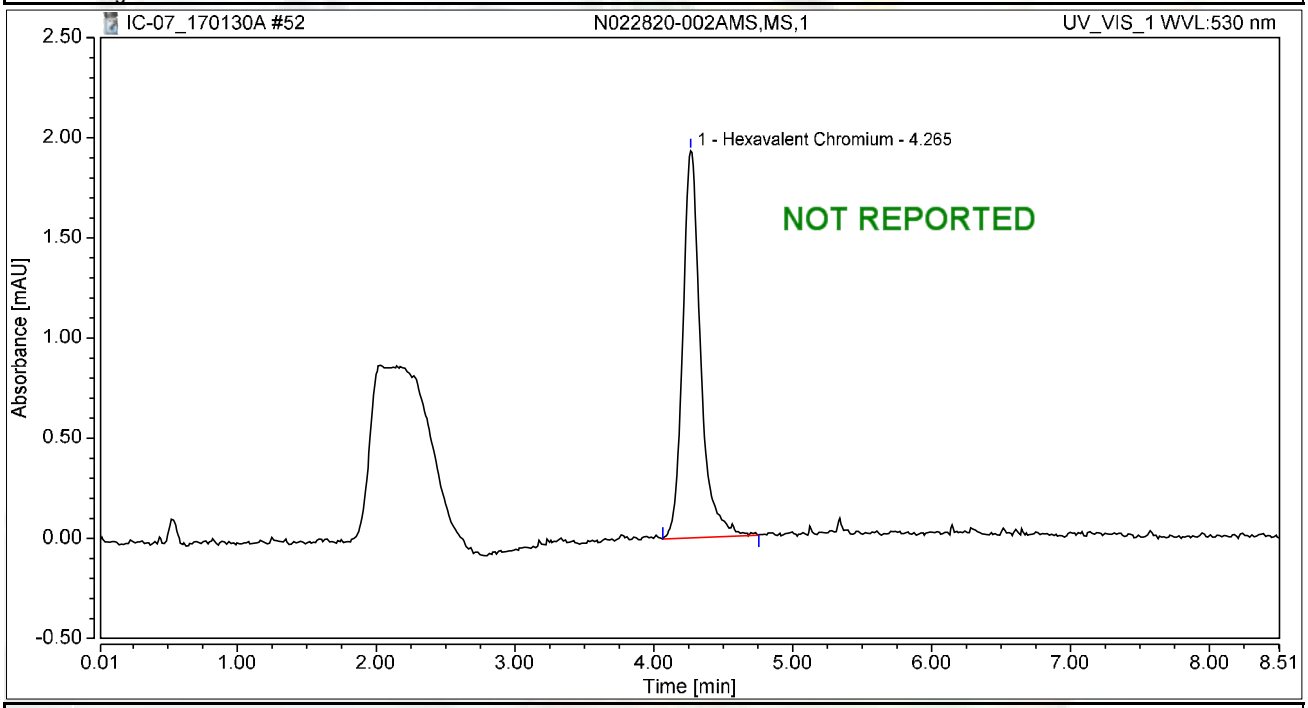
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 15:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

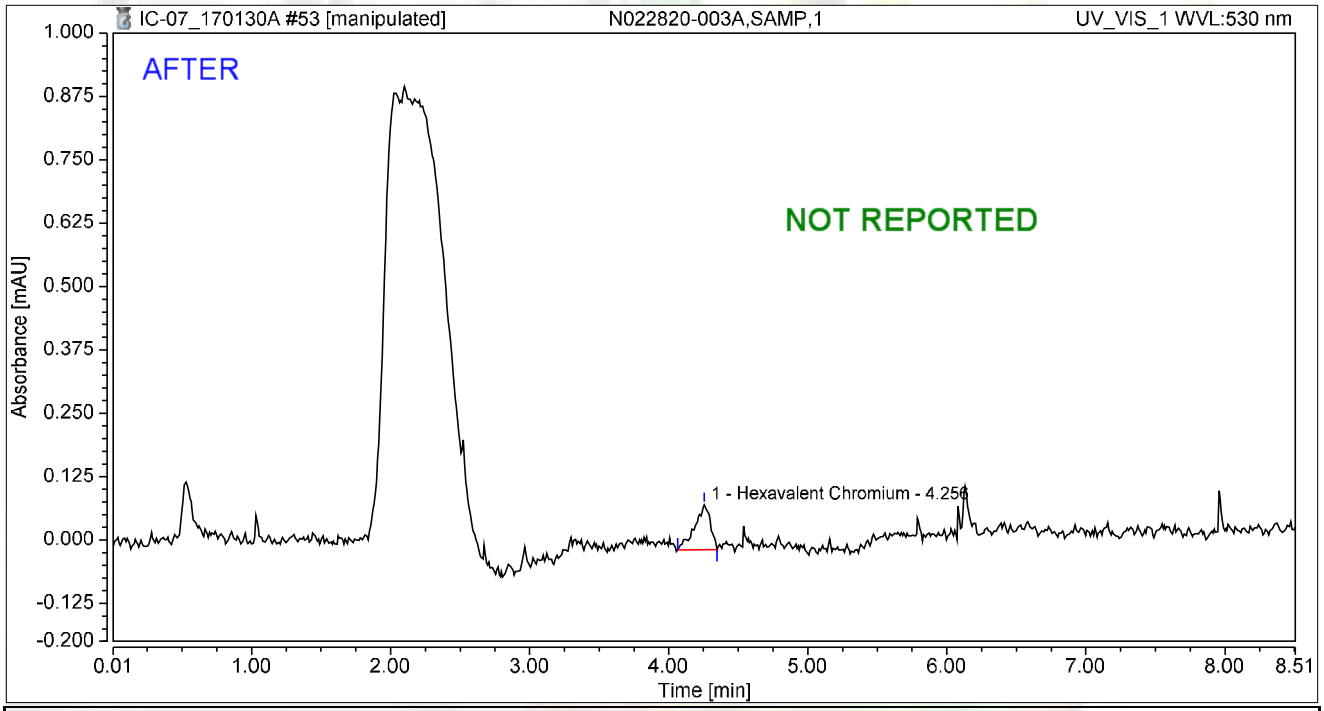
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.289	1.934	100.00	100.00	1.1292
Total:			**0.289**	**1.934**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.012	0.089	100.00	100.00	0.0457
Total:			**0.012**	**0.089**	**100.00**	**100.00**	

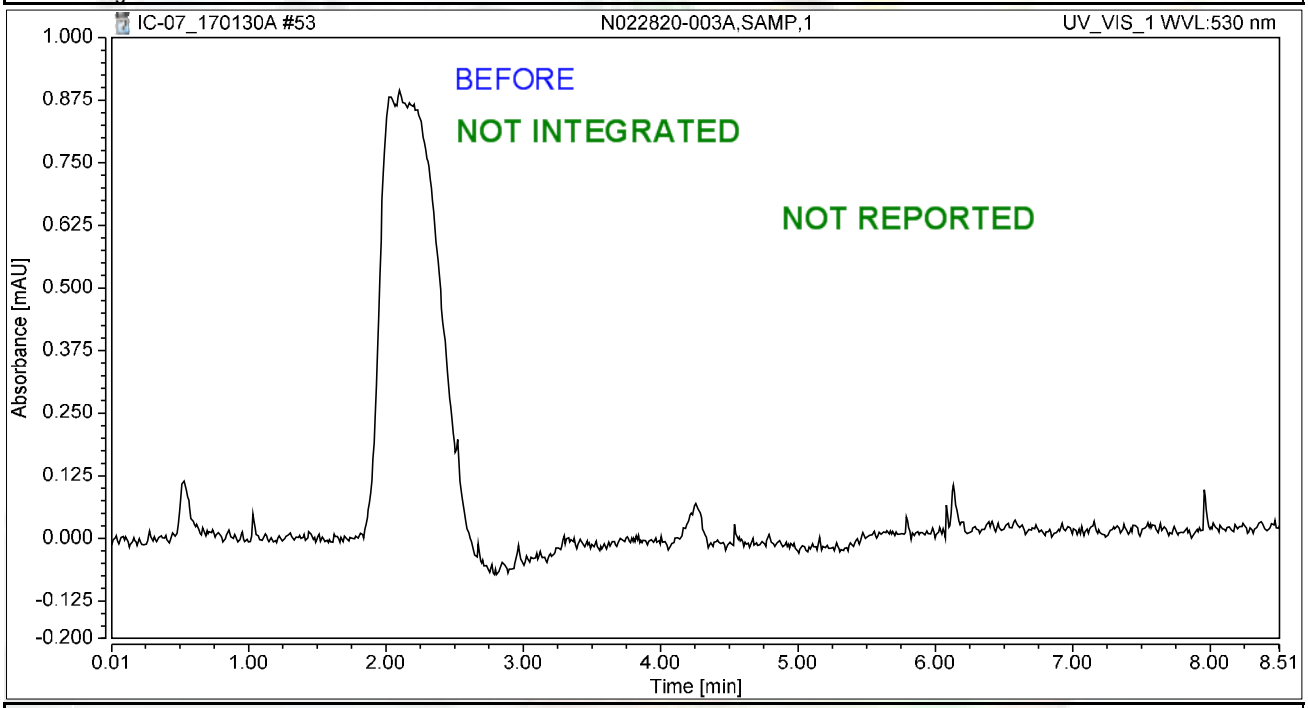
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

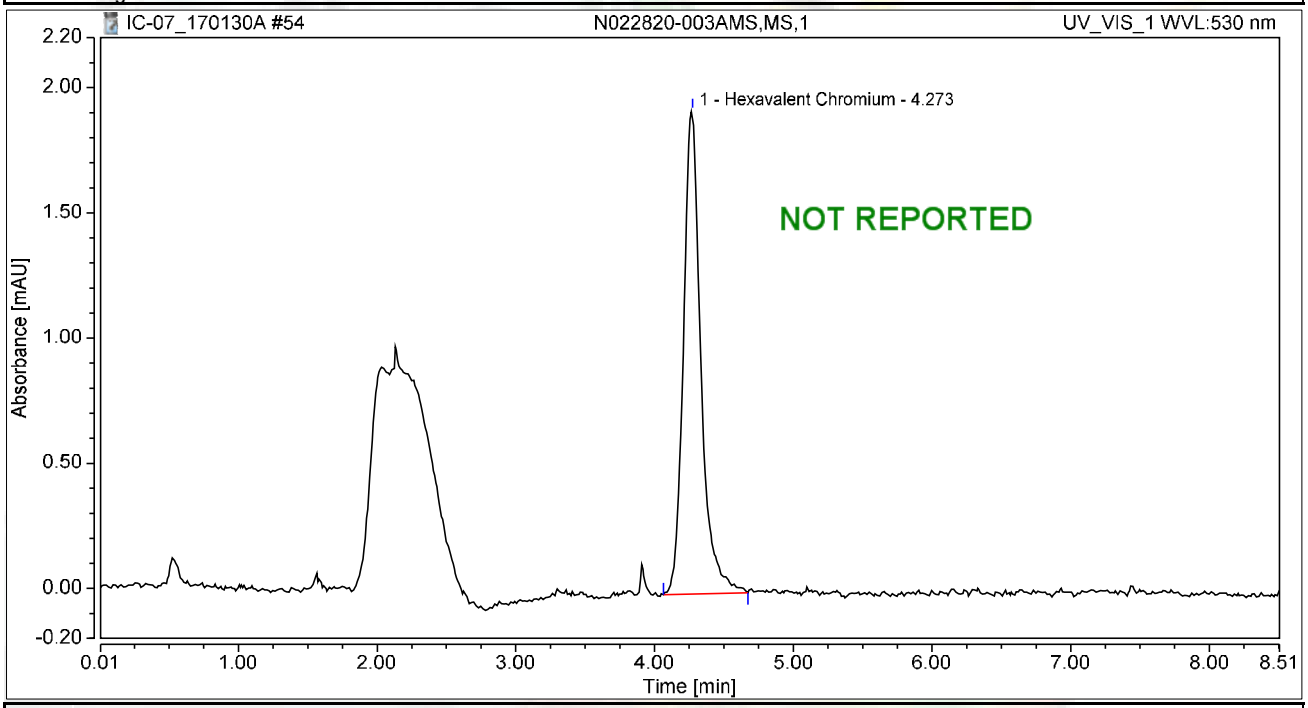
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

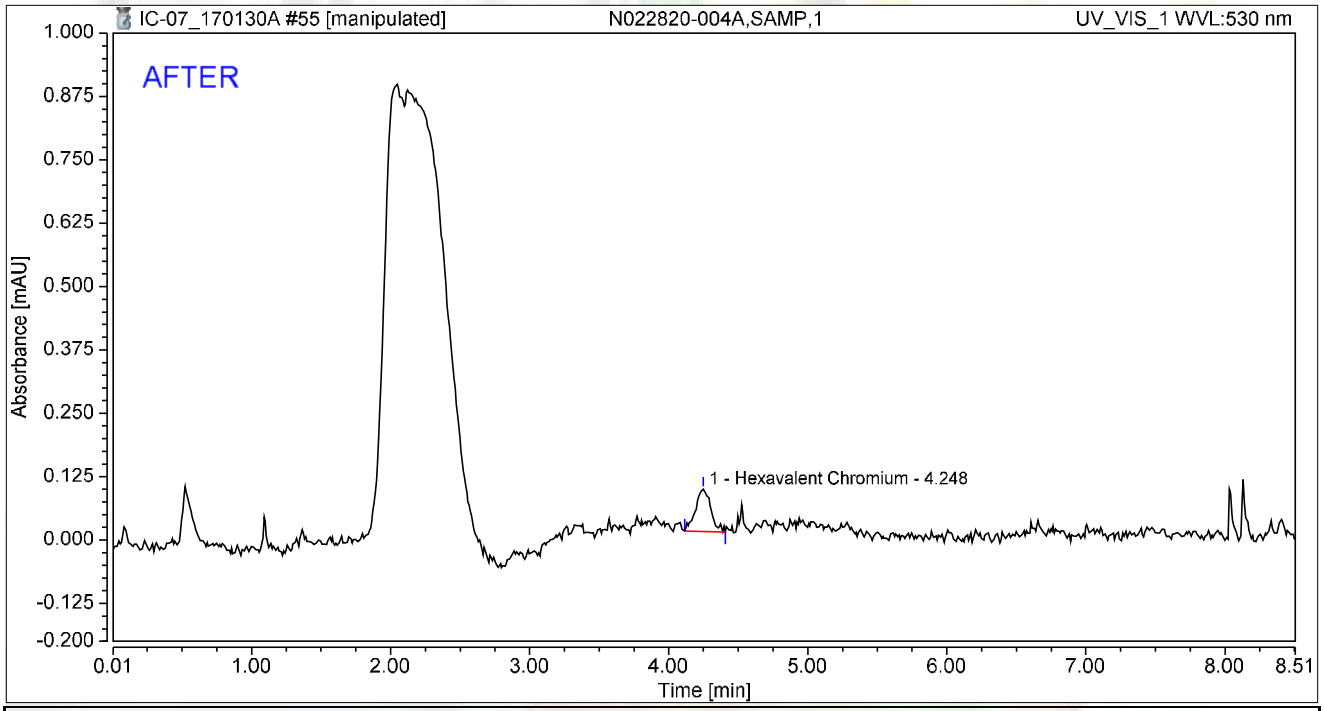
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.282	1.930	100.00	100.00	1.1020
Total:			**0.282**	**1.930**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.011	0.083	100.00	100.00	0.0412
Total:			**0.011**	**0.083**	**100.00**	**100.00**	

rba 2/4/2017

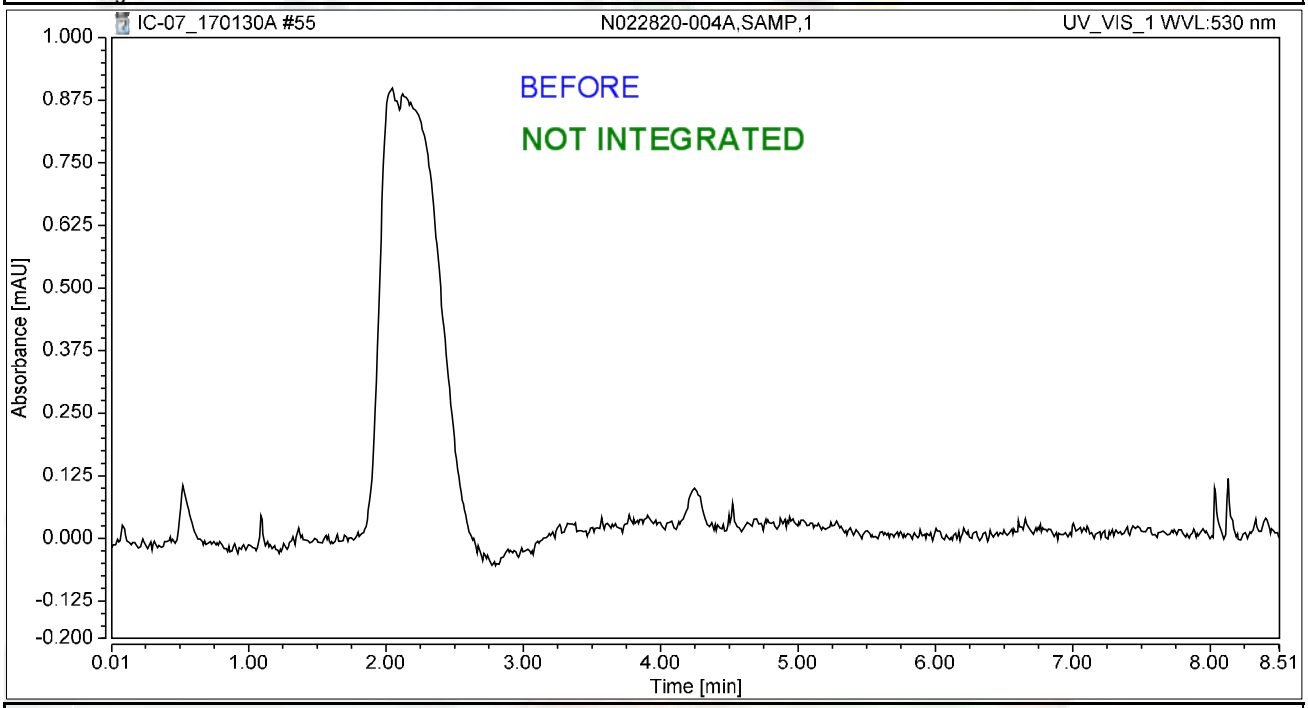
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

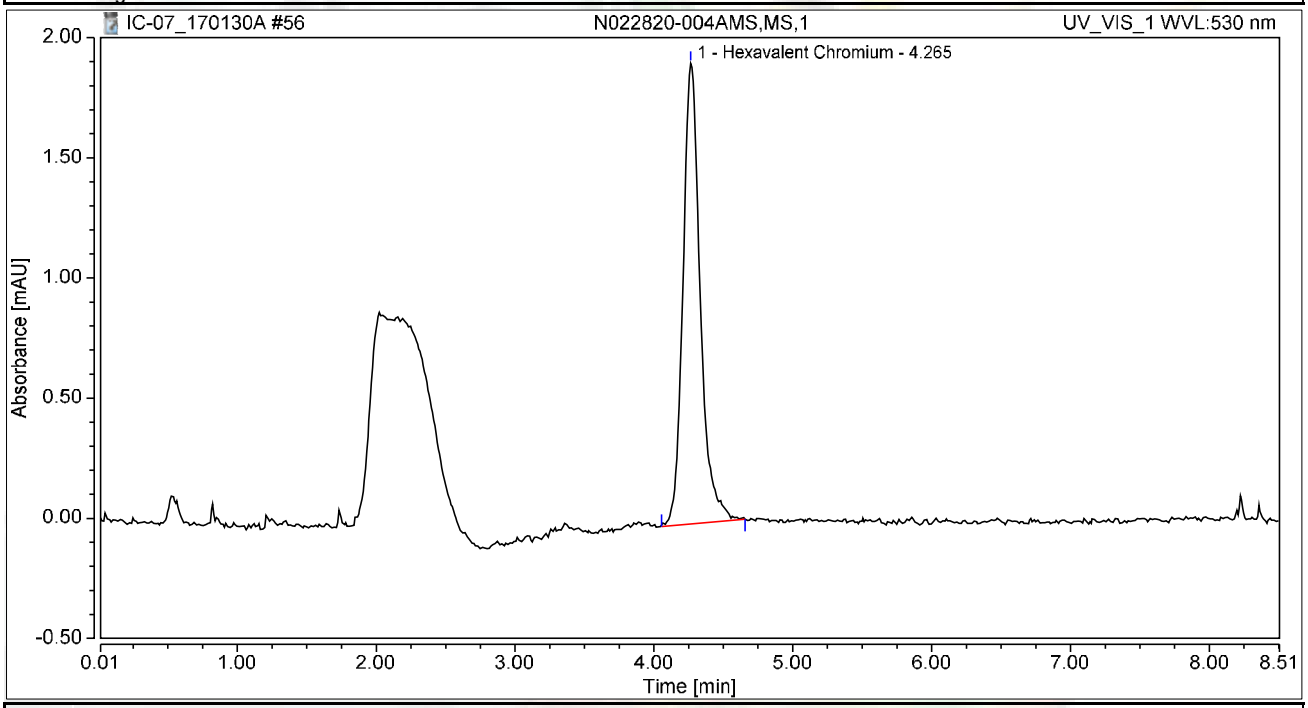
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

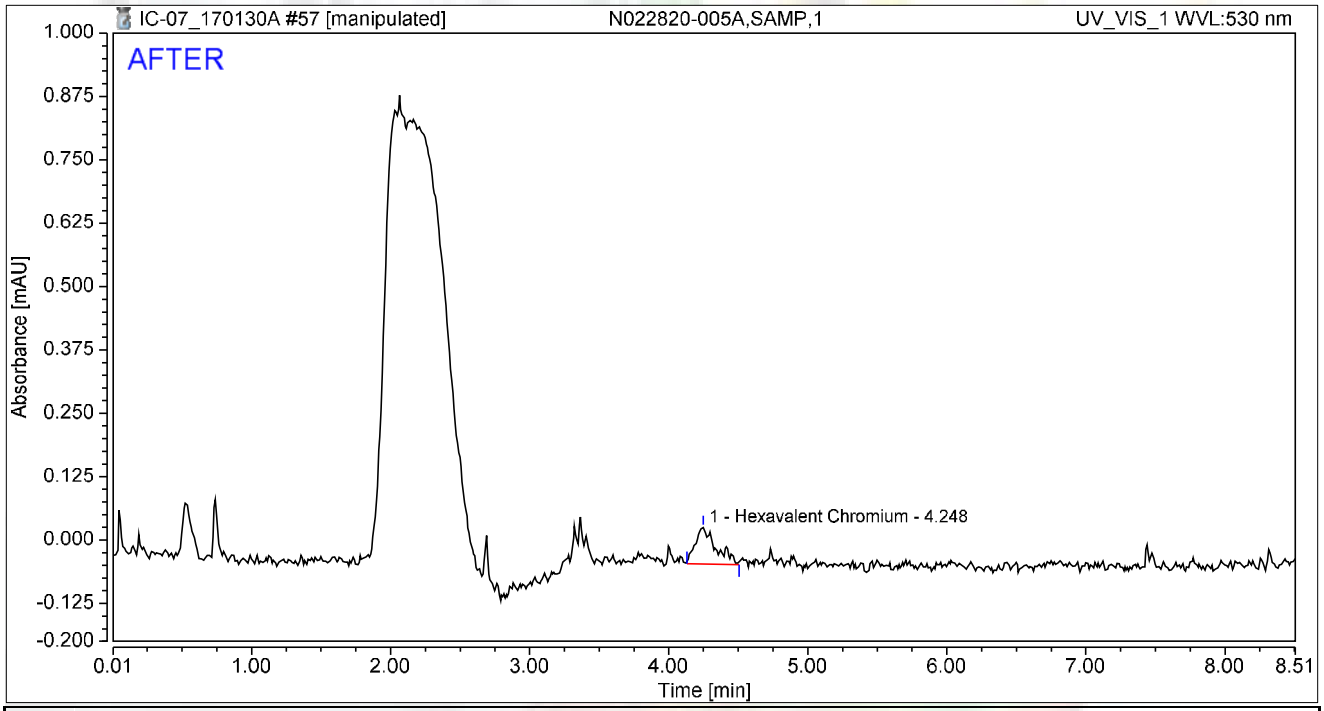
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.276	1.916	100.00	100.00	1.0812
Total:			**0.276**	**1.916**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.013	0.072	100.00	100.00	0.0493
Total:			**0.013**	**0.072**	**100.00**	**100.00**	

rba 2/4/2017

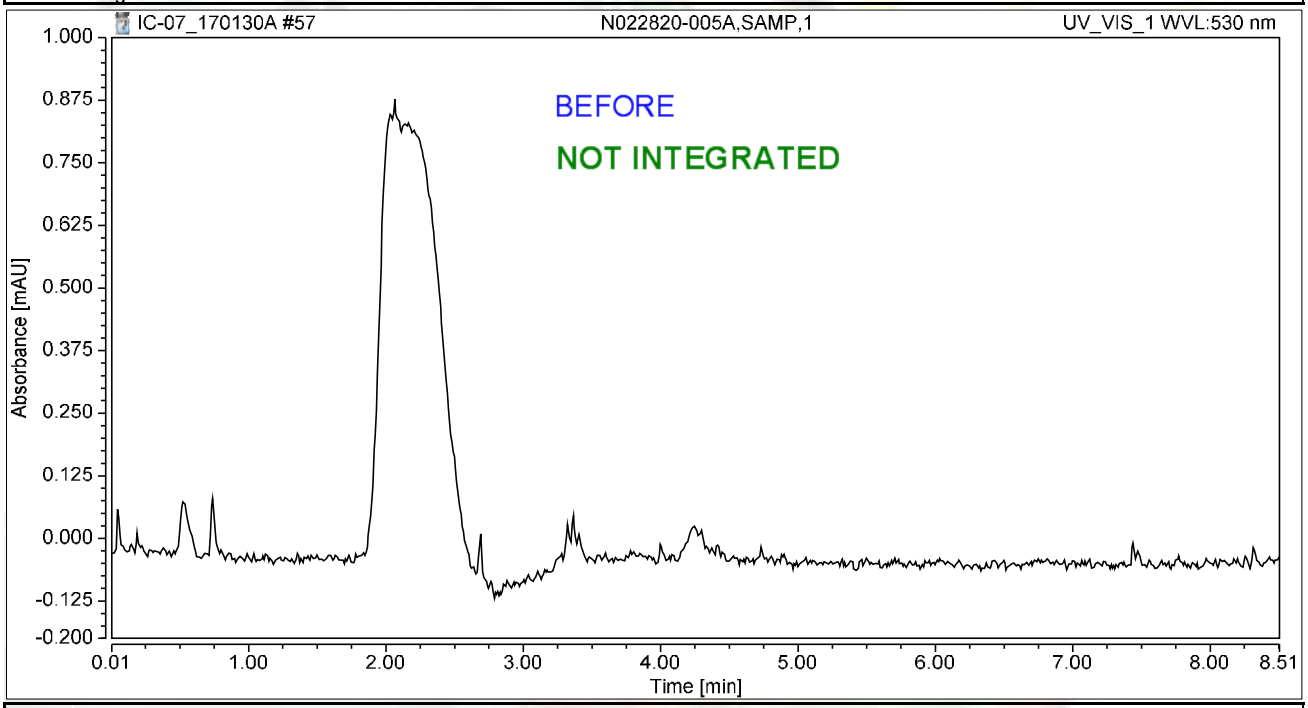
Reviewed by: Nancy 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

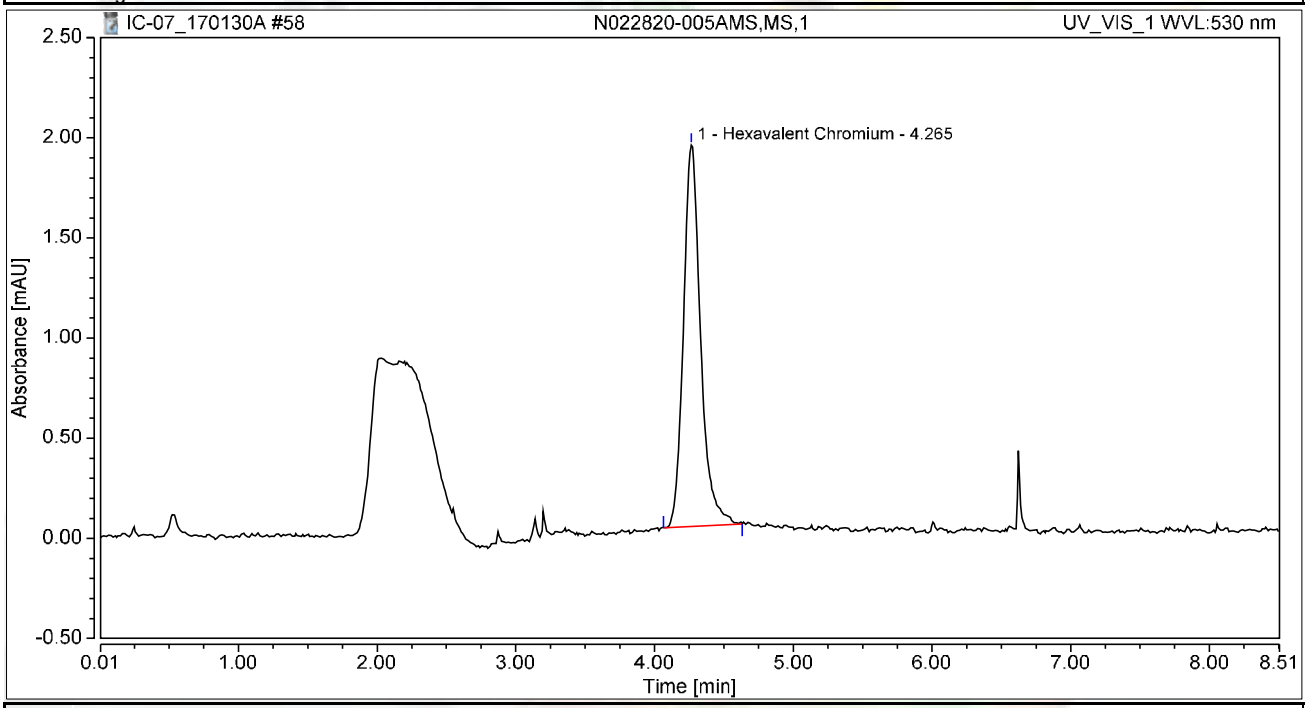
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

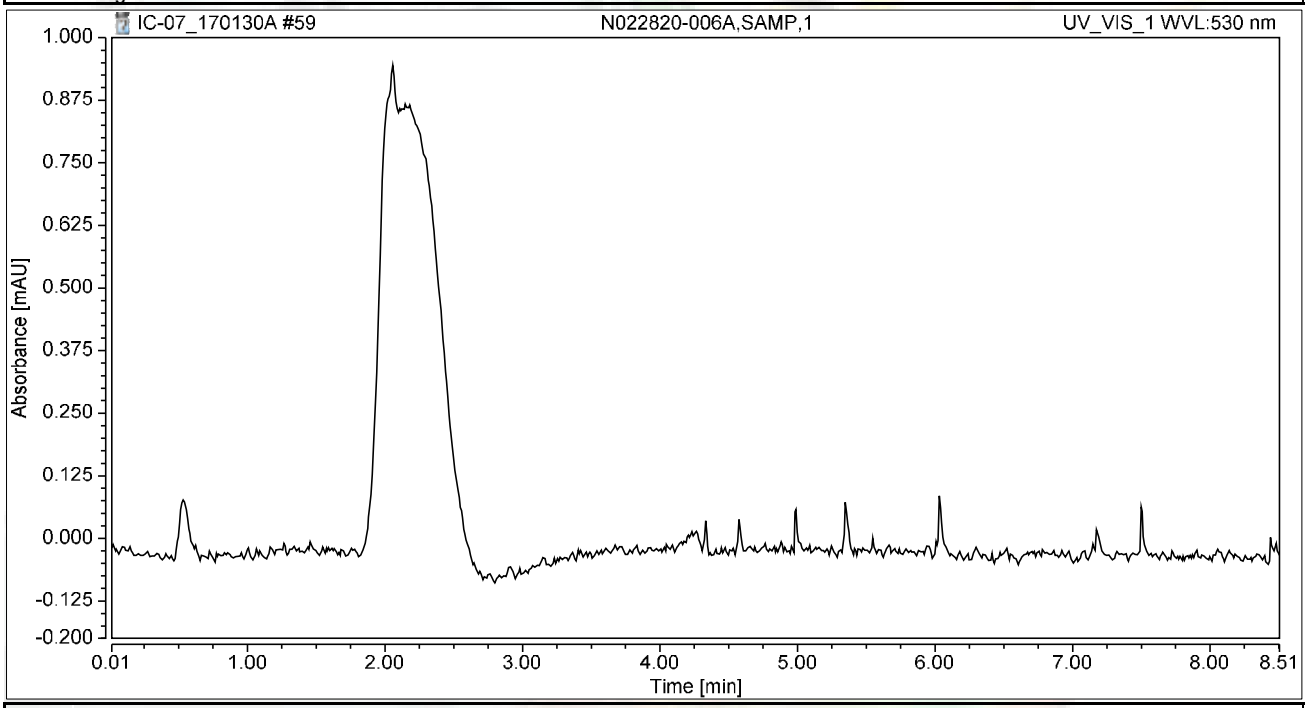
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.273	1.905	100.00	100.00	1.0690
Total:			**0.273**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

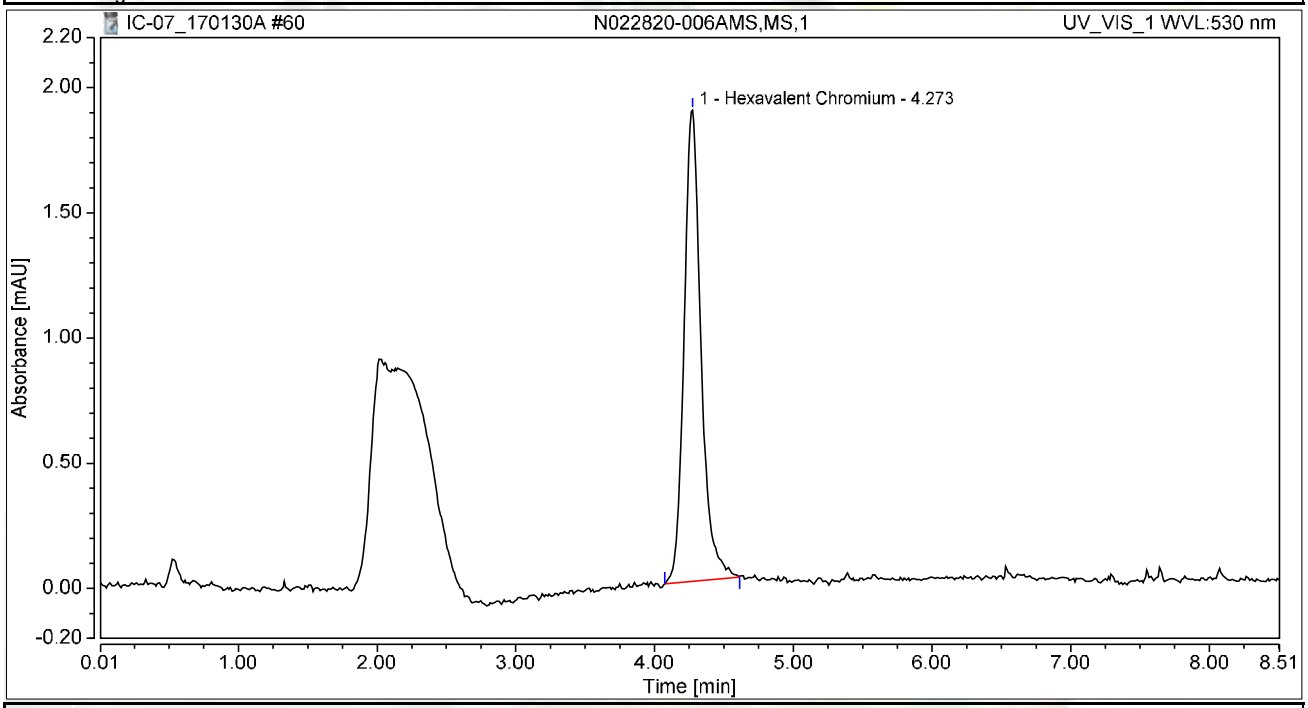
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

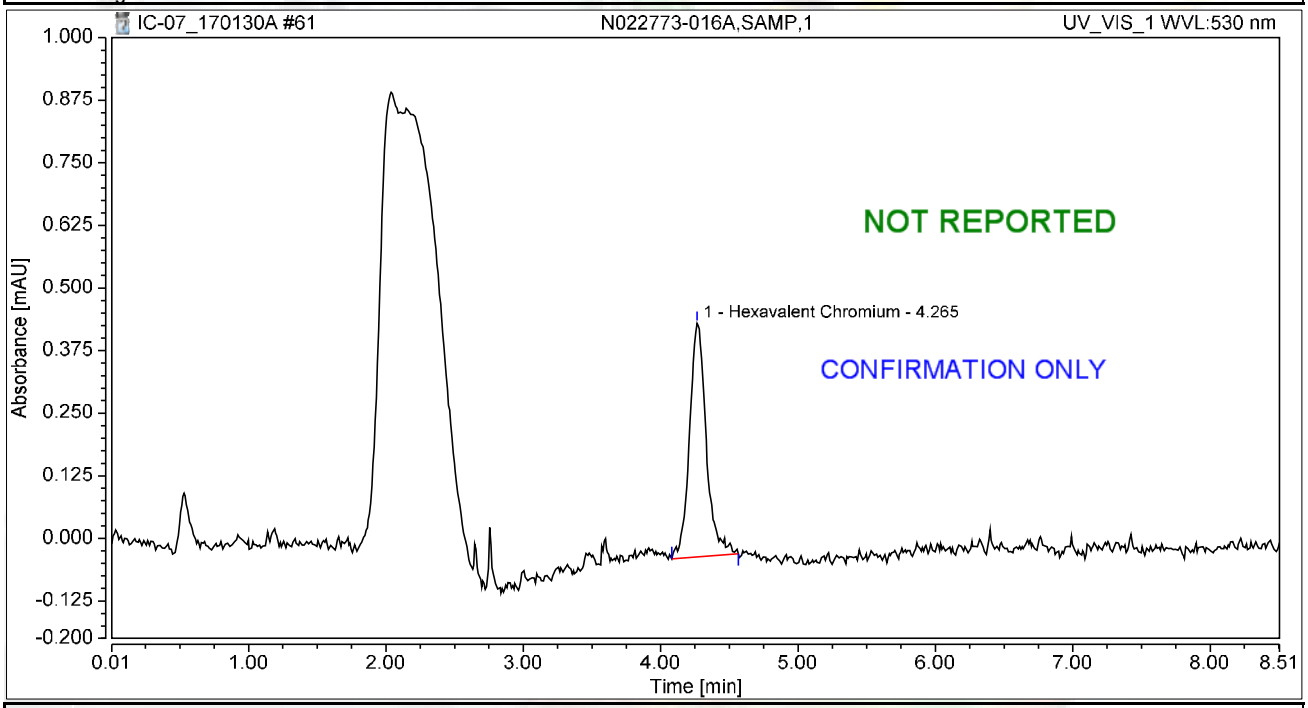
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.266	1.883	100.00	100.00	1.0423
Total:			**0.266**	**1.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022773-016A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

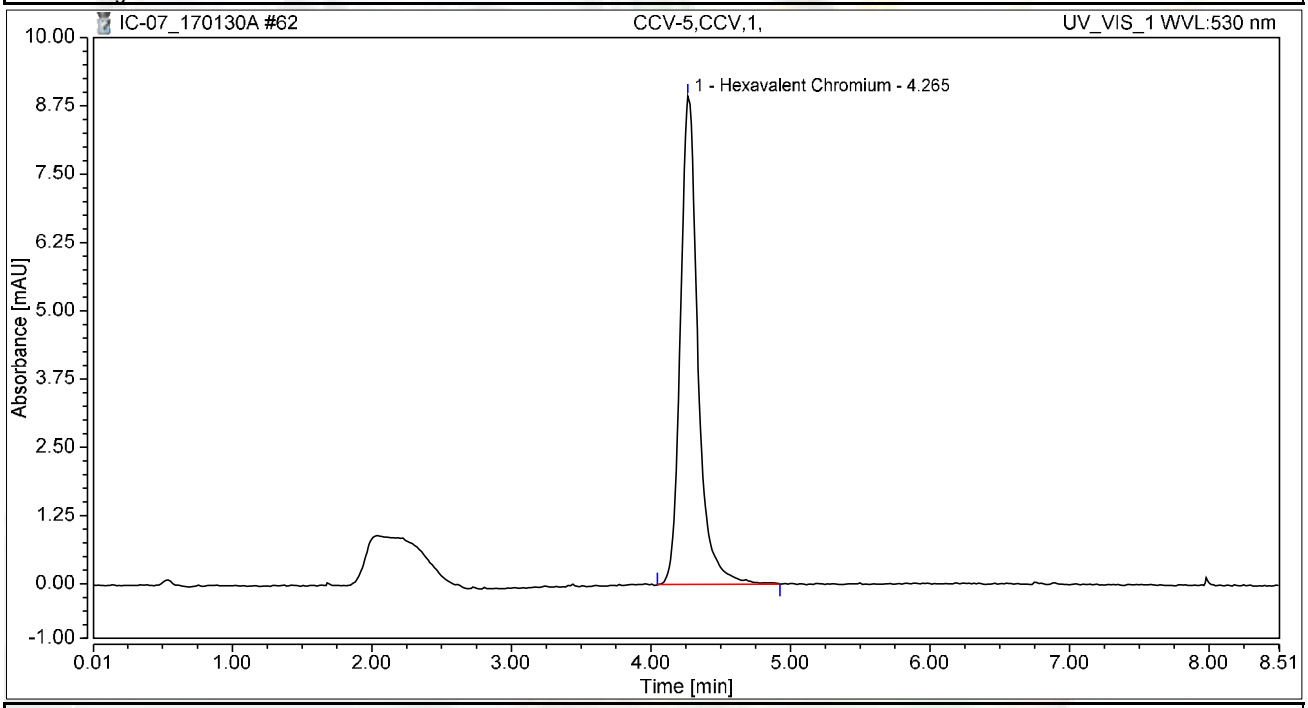
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.066	0.466	100.00	100.00	0.2579
Total:			**0.066**	**0.466**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

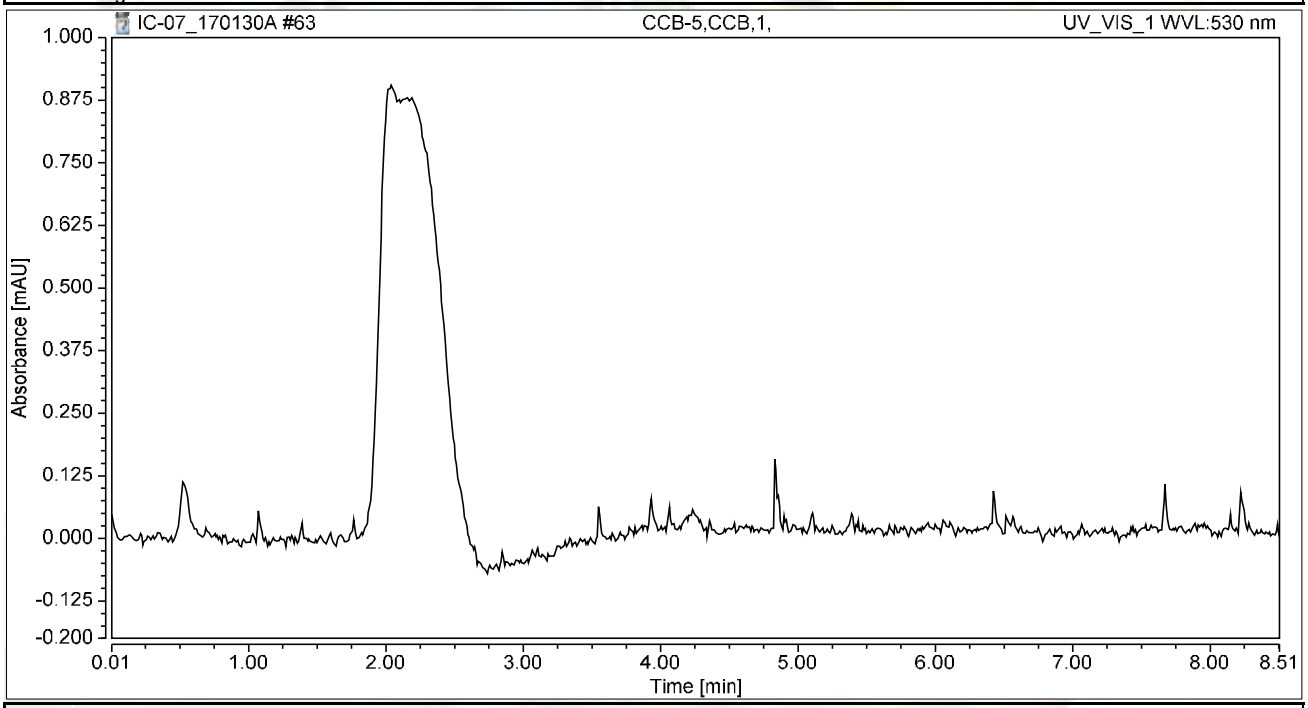
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.304	8.942	100.00	100.00	5.1020
Total:			**1.304**	**8.942**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

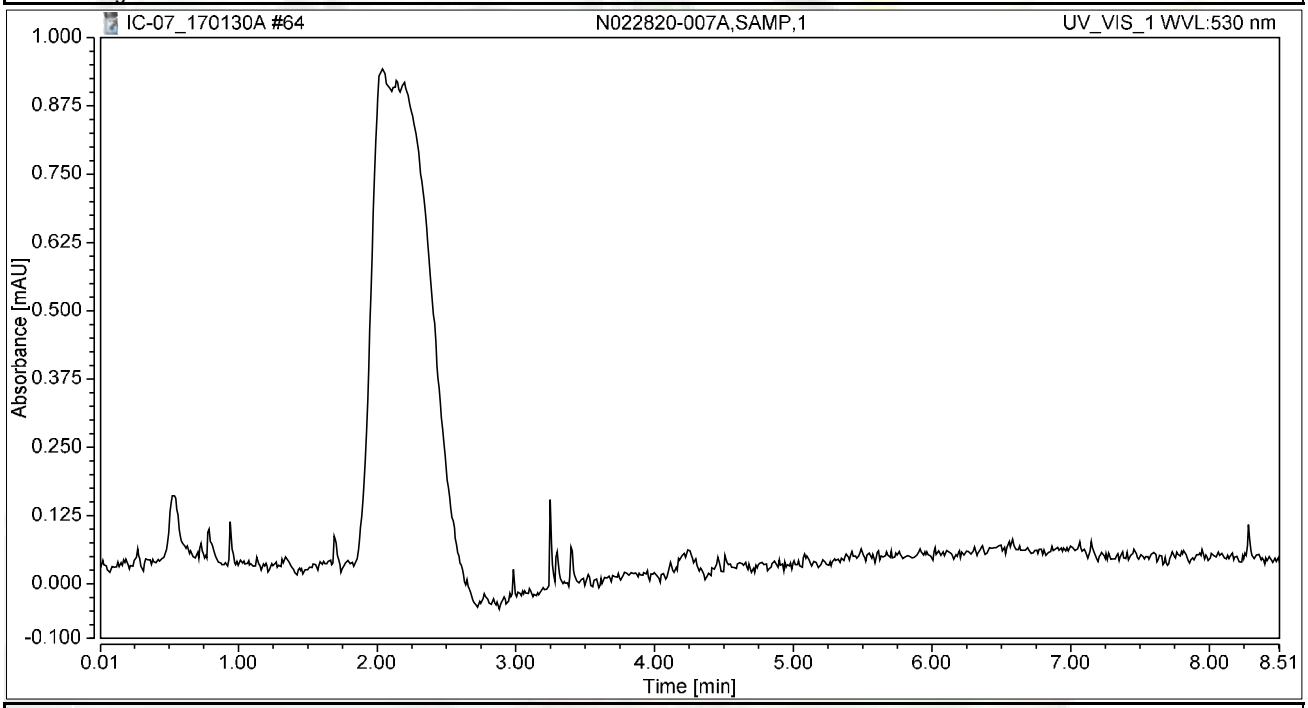
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

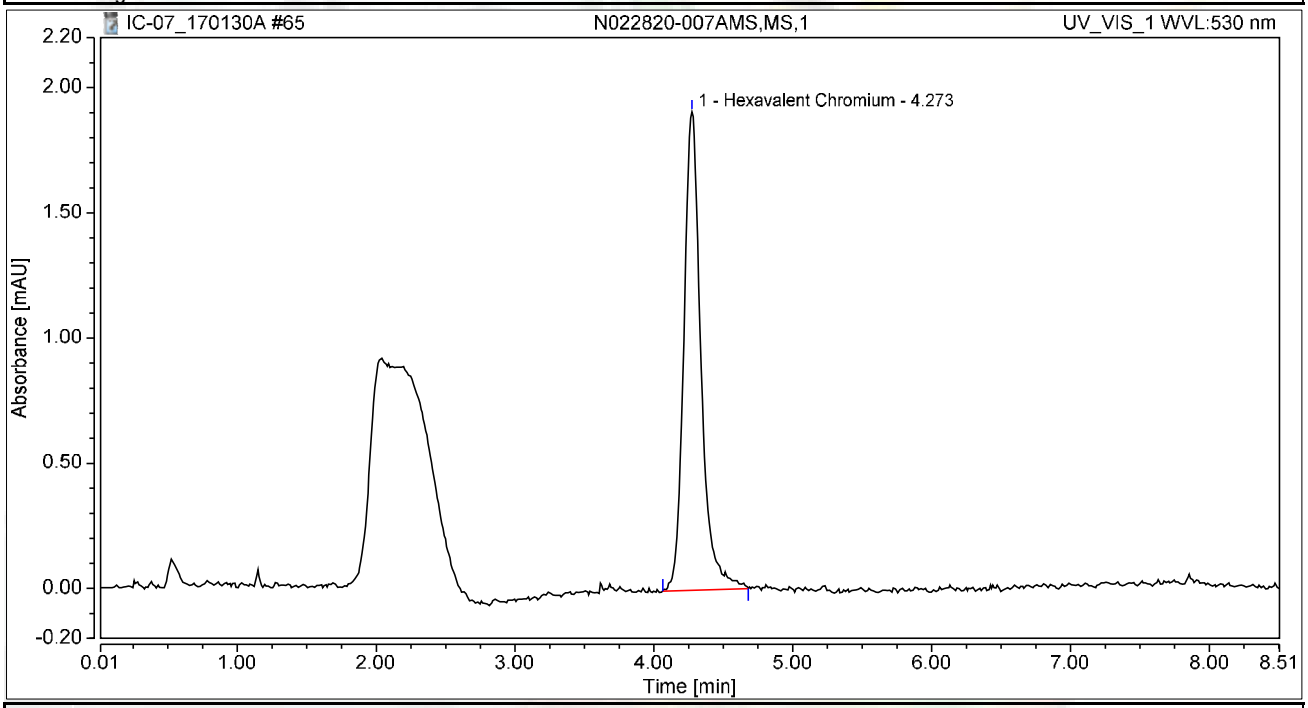
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

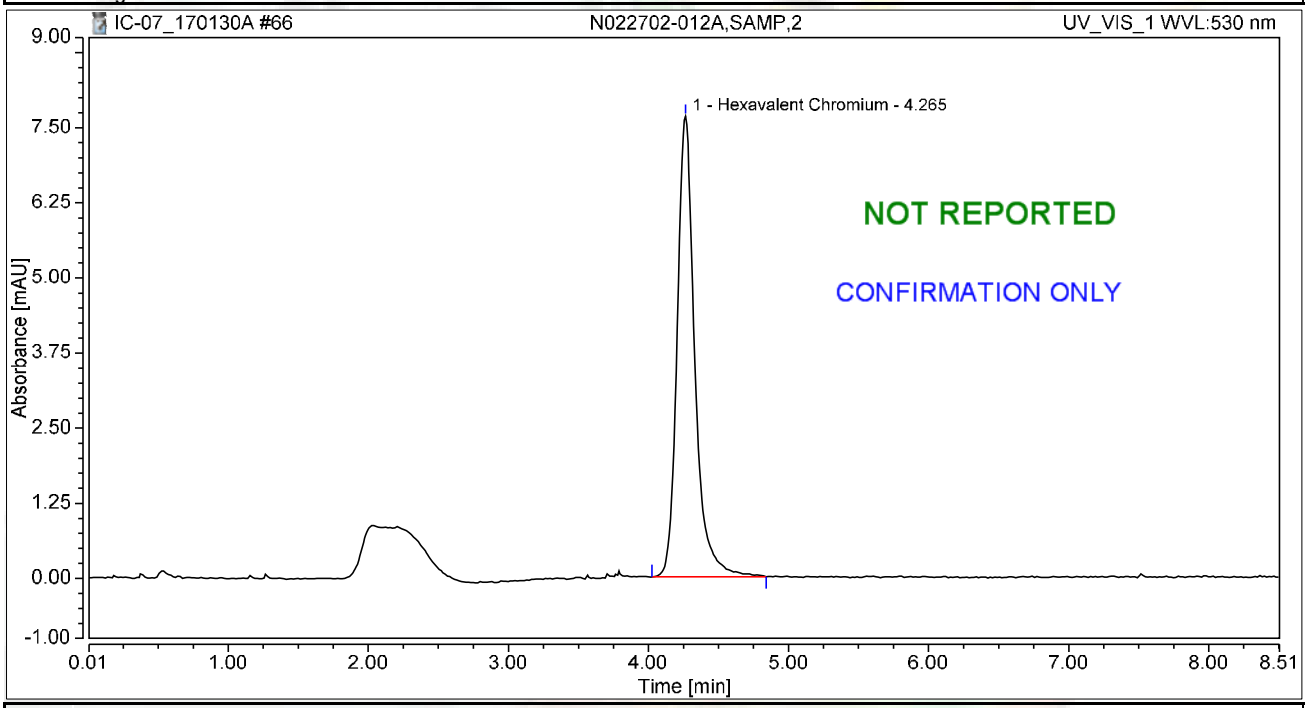
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	0.274	1.911	100.00	100.00	1.0700
Total:			**0.274**	**1.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022702-012A,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.117	7.664	100.00	100.00	4.3683
Total:			**1.117**	**7.664**	**100.00**	**100.00**	

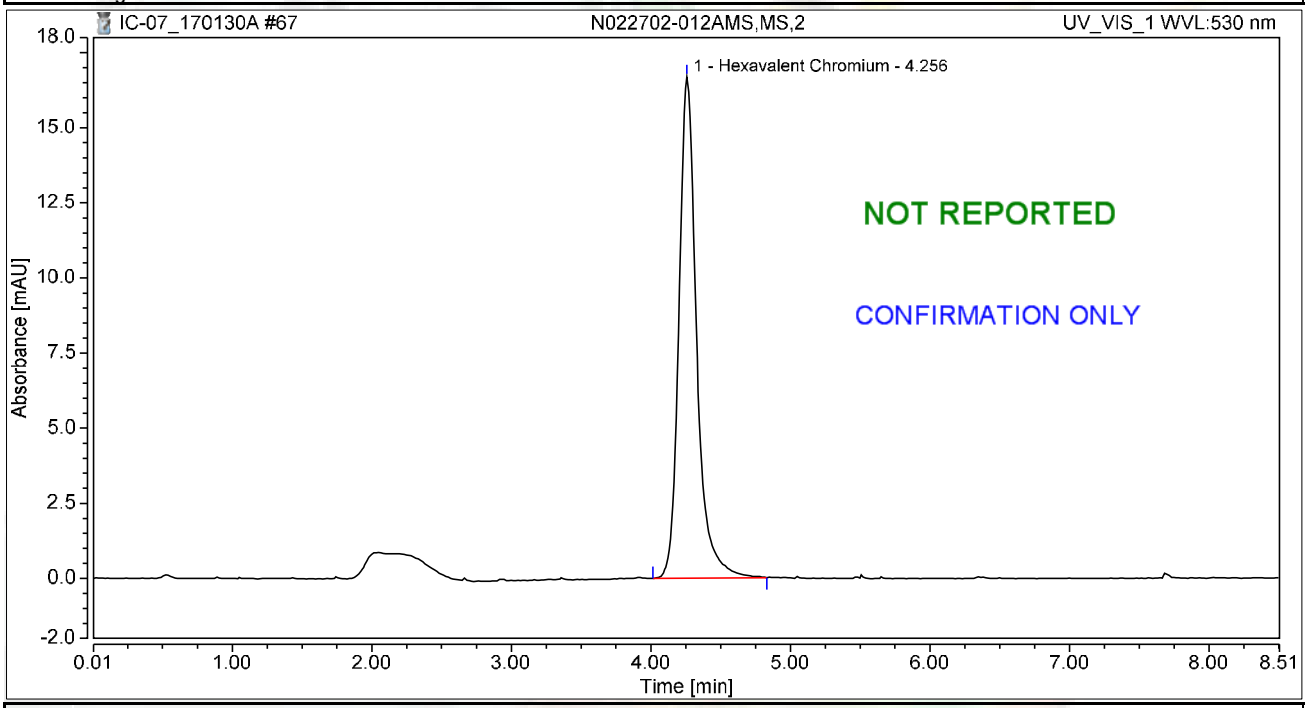
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022702-012AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.447	16.686	100.00	100.00	9.5721
Total:			**2.447**	**16.686**	**100.00**	**100.00**	

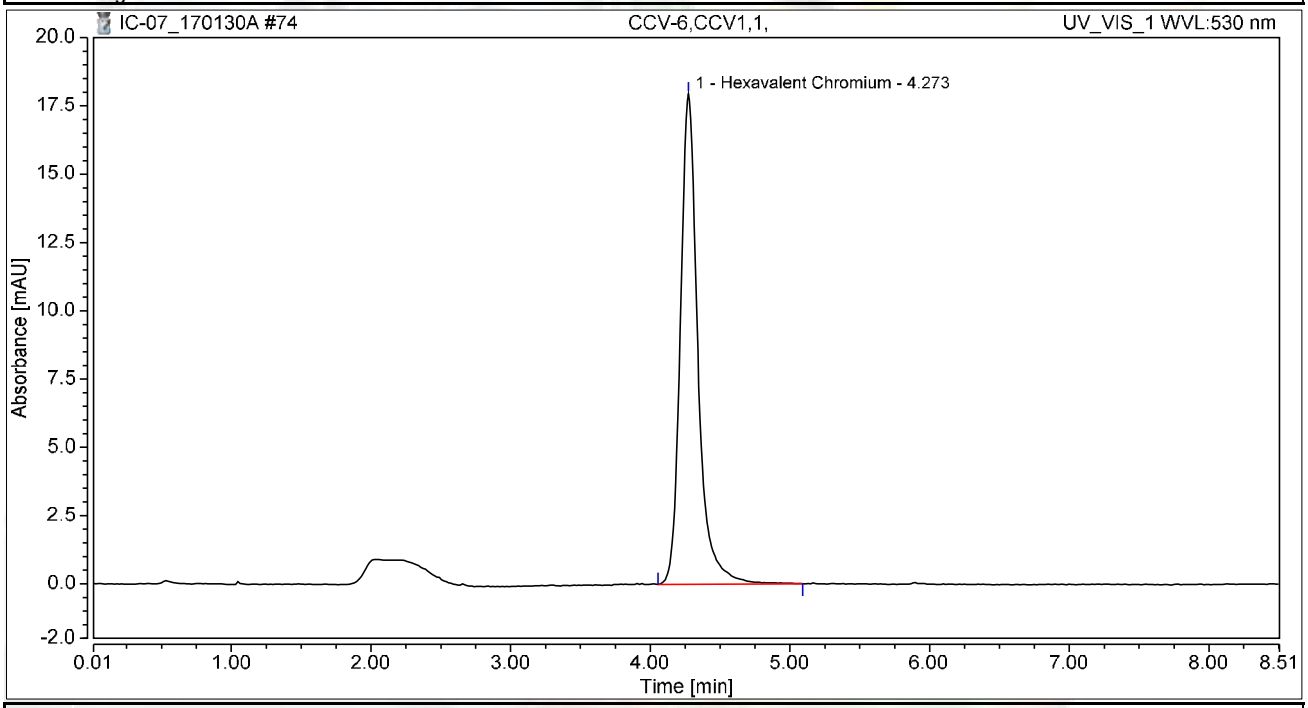
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

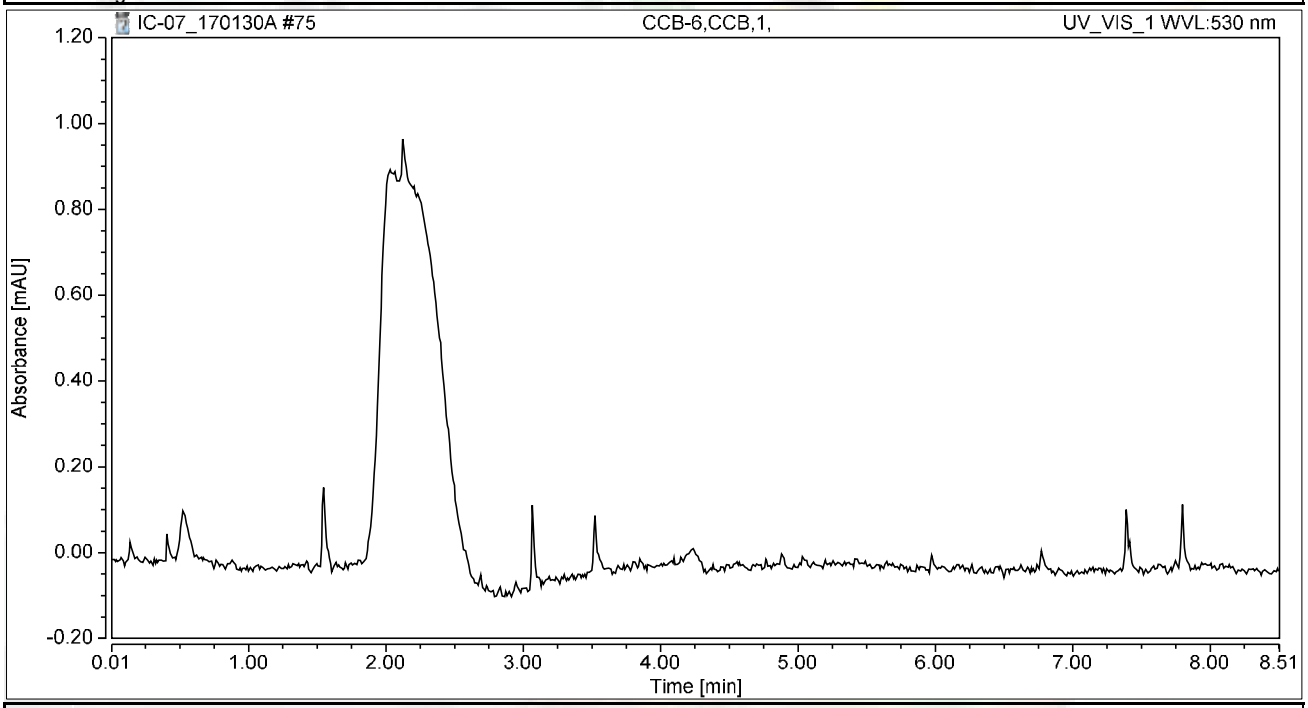
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.273	2.613	17.960	100.00	100.00	10.2193
Total:			**2.613**	**17.960**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Jan/17 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Not Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

rba 2/6/2017

IC7 RBA 2/6/2017 1:22 PM

Nancy 2/7/2017

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMF	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMF	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMF	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMF	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMF	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMF	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMF	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMF	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMF	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMF	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMF	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMF	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMF	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMF	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMF	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMF	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMF	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMF	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMF	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMF	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

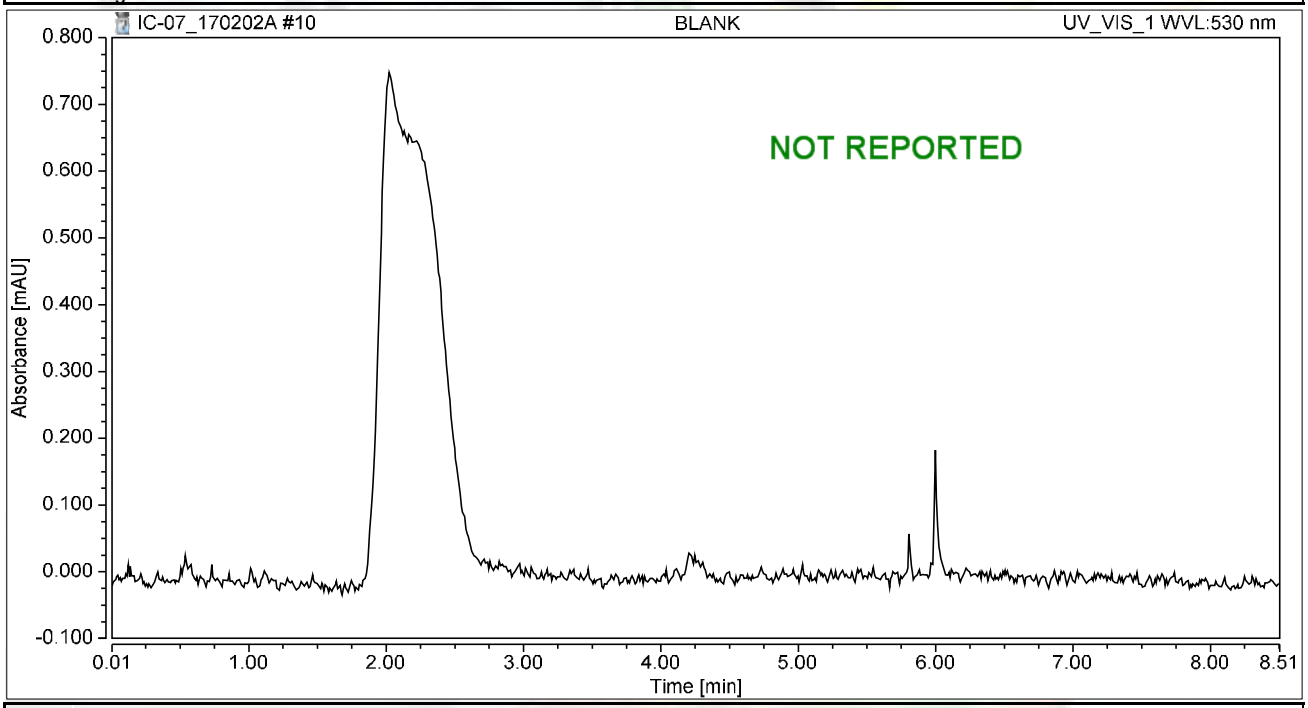
61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

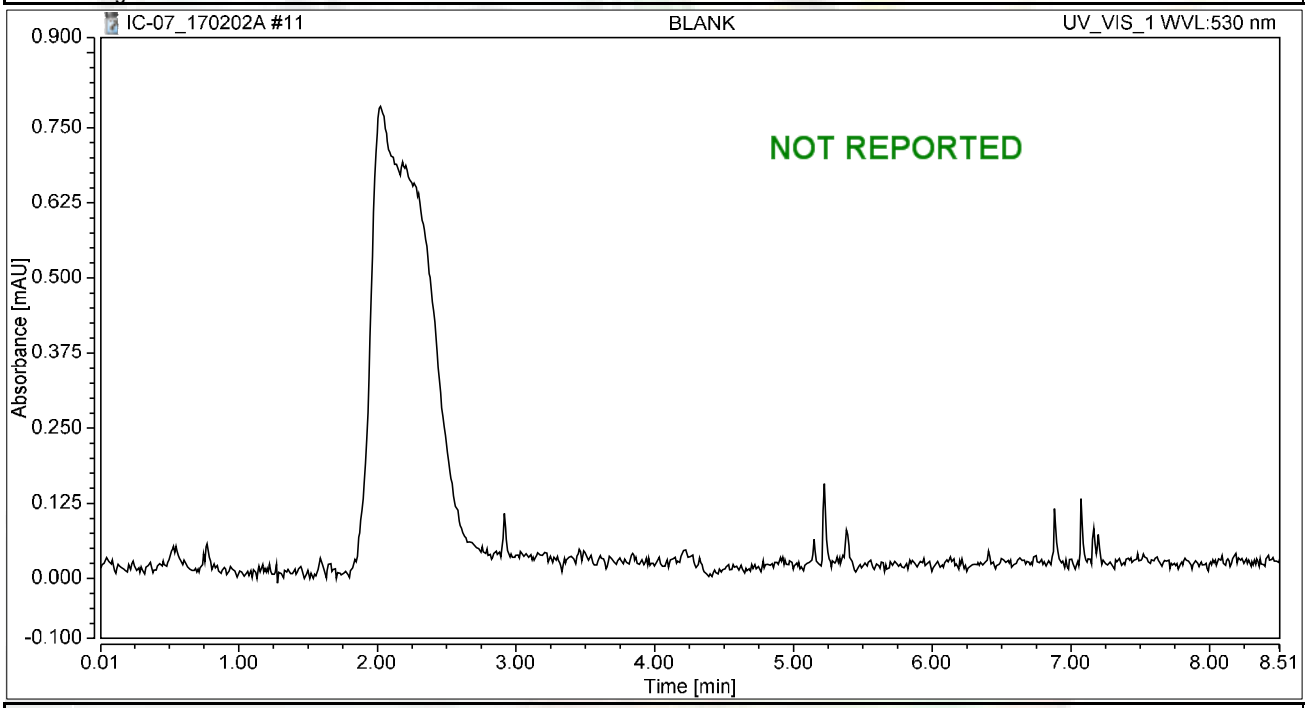
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

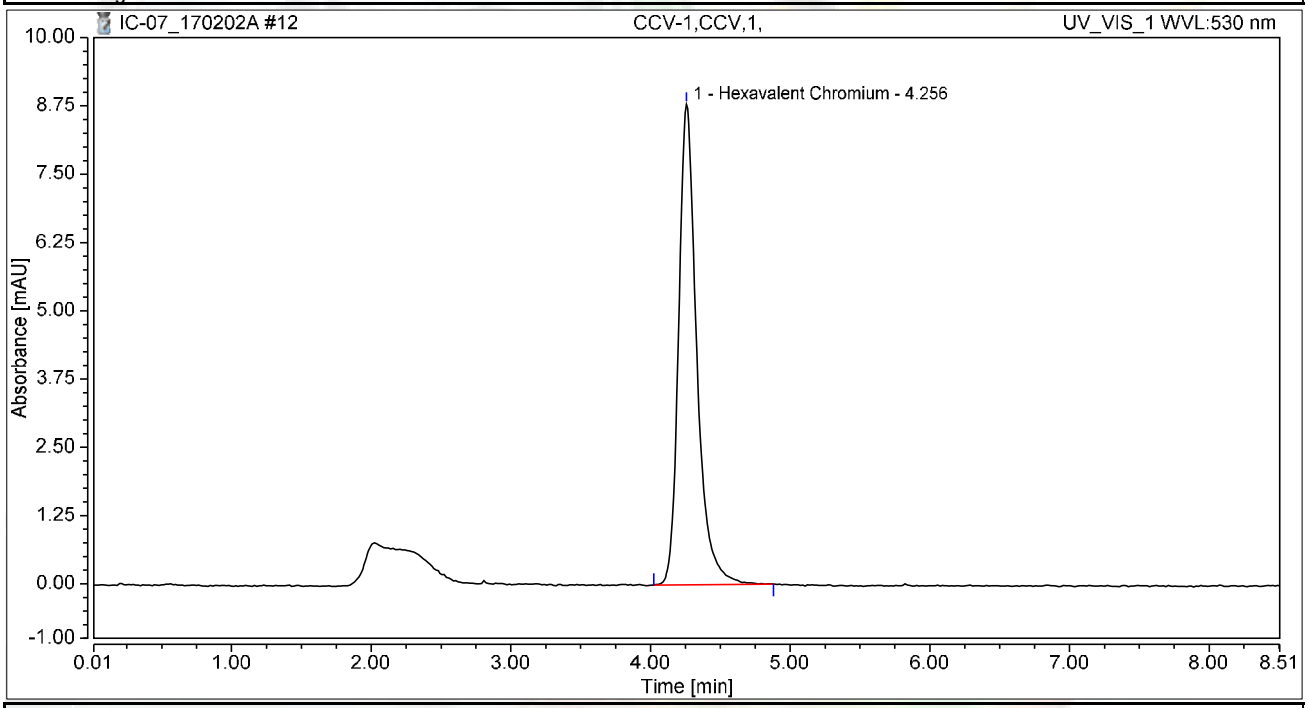
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

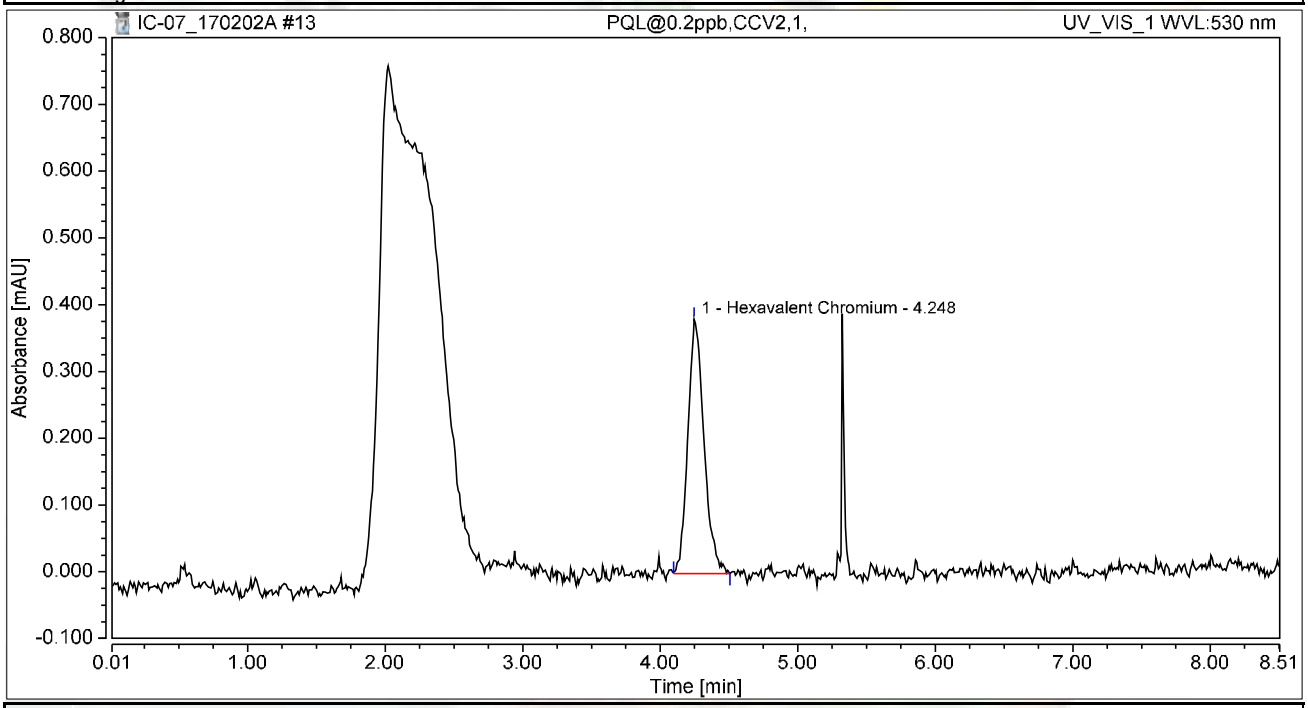
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.324	8.800	100.00	100.00	5.1780
Total:			**1.324**	**8.800**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

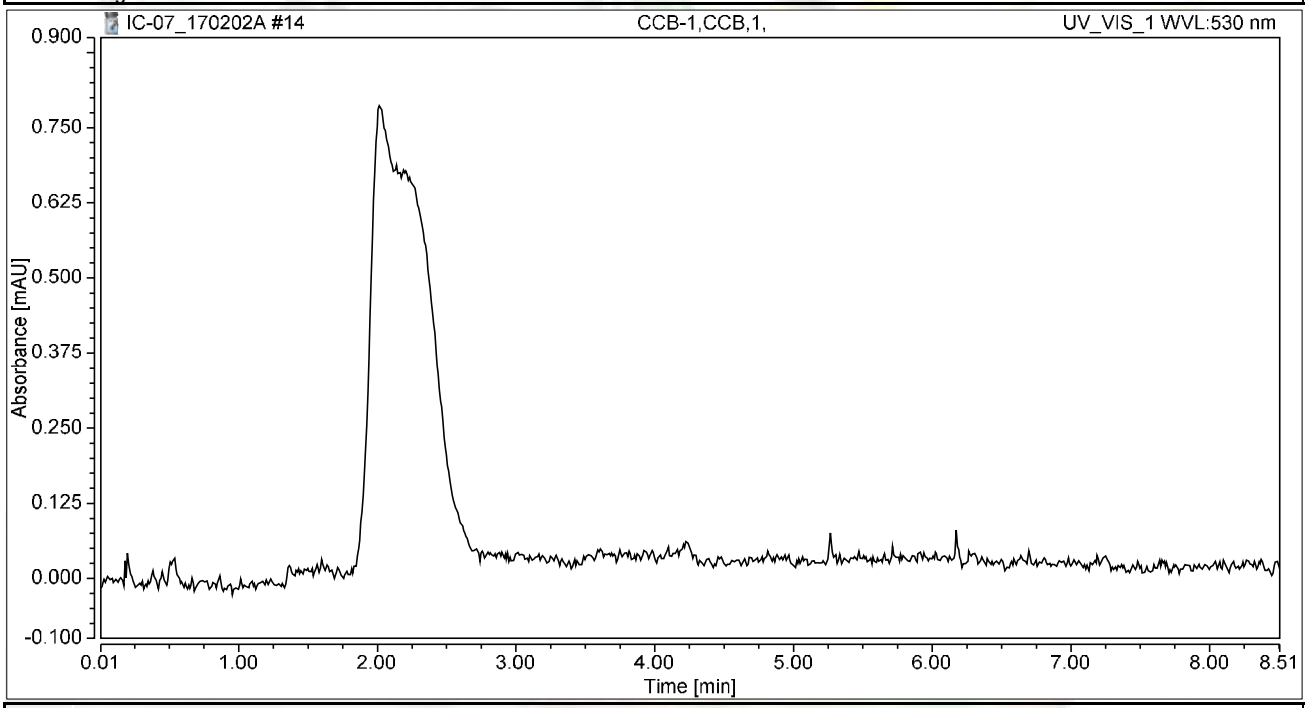
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.052	0.381	100.00	100.00	0.2032
Total:			**0.052**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

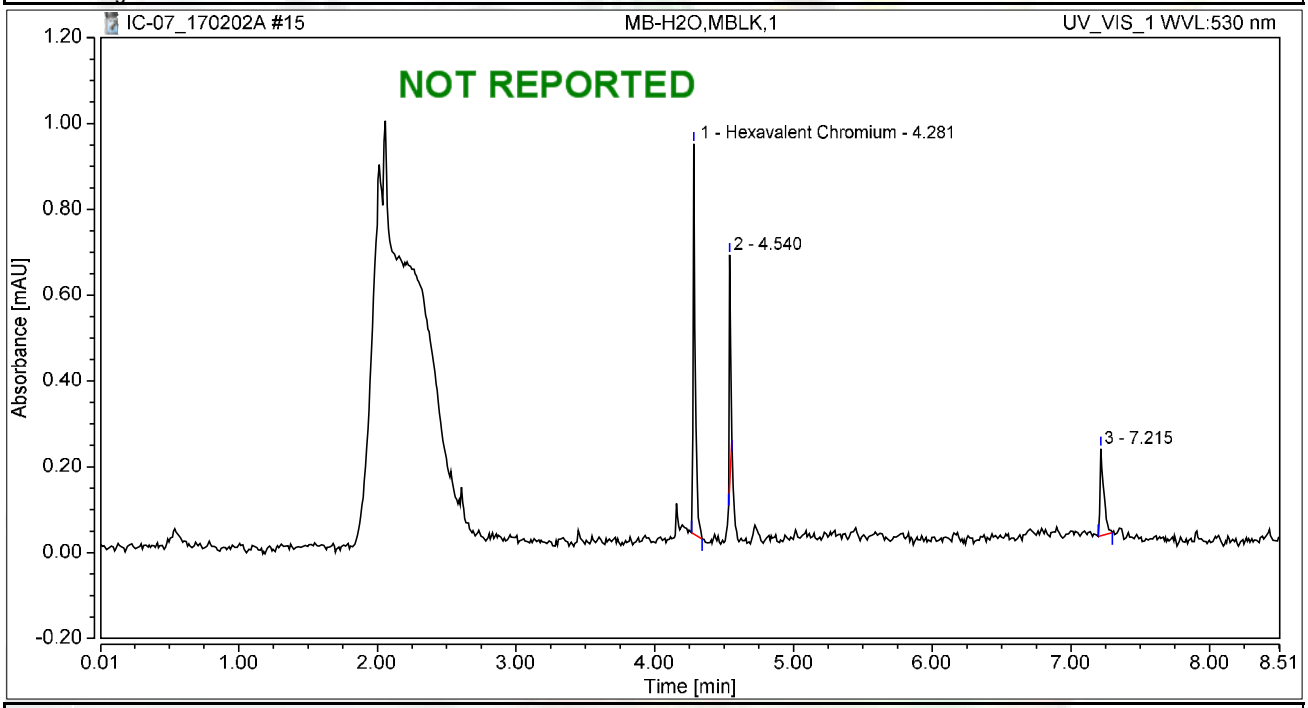
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

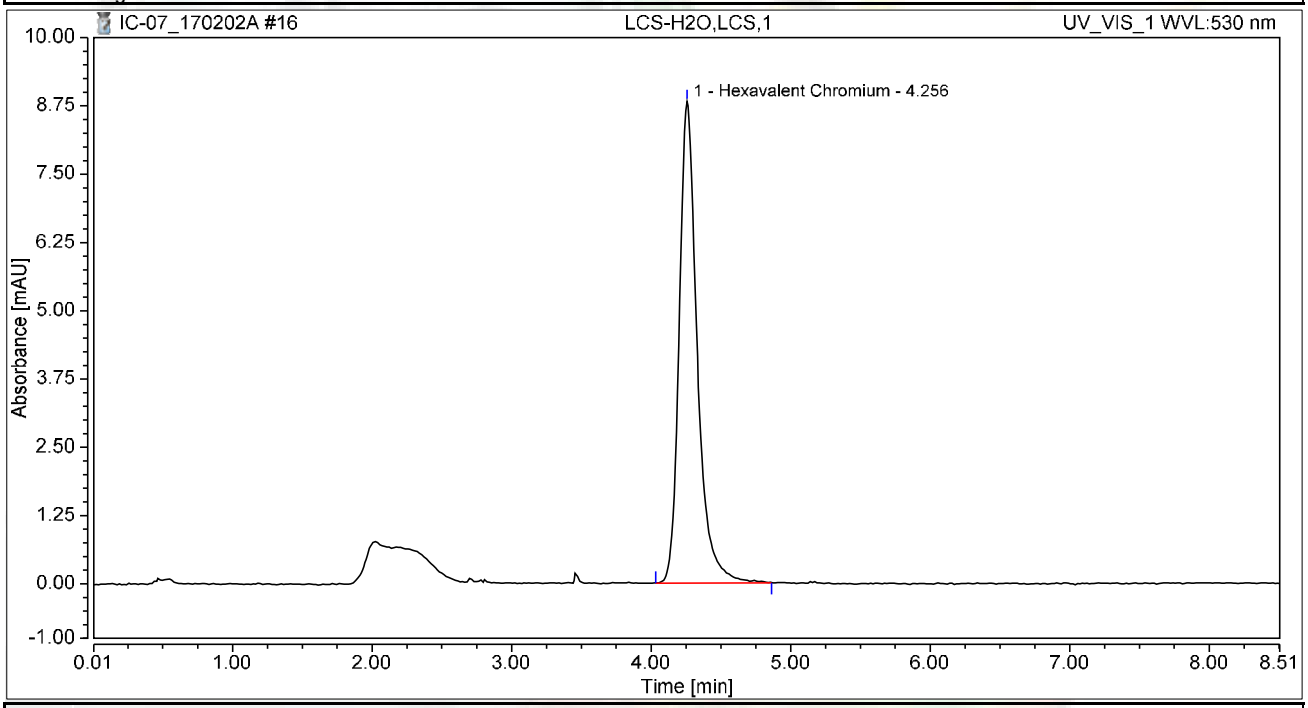
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.281	0.017	0.910	57.22	55.28	0.0681
2		4.540	0.007	0.533	21.97	32.38	n.a.
3		7.215	0.006	0.203	20.81	12.34	n.a.
Total:			**0.030**	**1.645**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

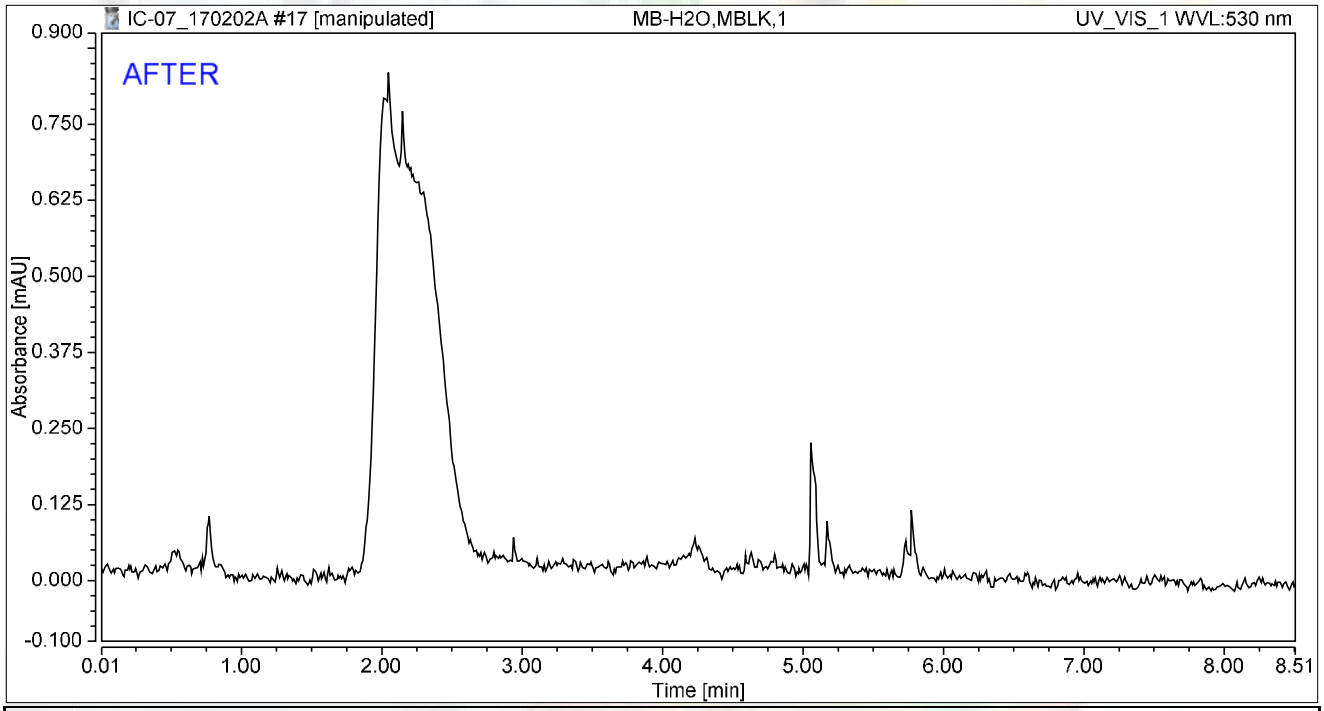
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.317	8.811	100.00	100.00	5.1510
Total:			**1.317**	**8.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 2/6/2017

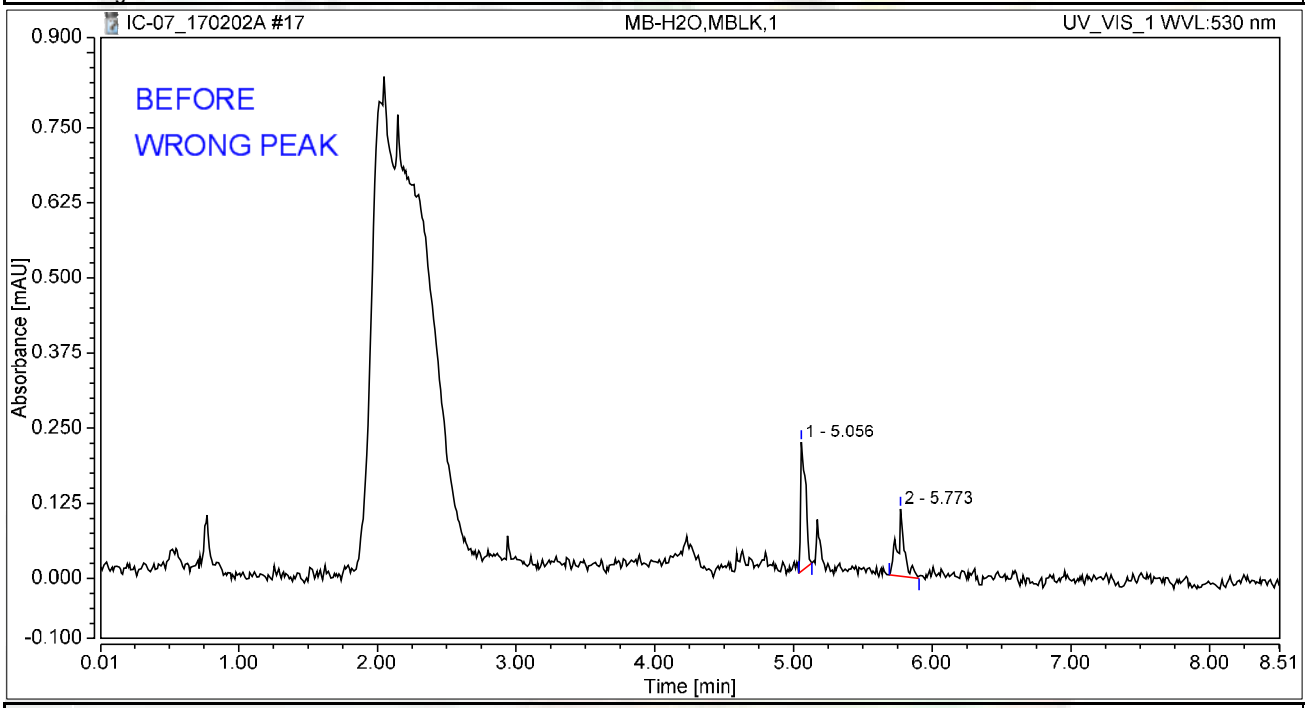
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.056	0.009	0.215	56.37	65.76	n.a.
2		5.773	0.007	0.112	43.63	34.24	n.a.
Total:			**0.015**	**0.327**	**100.00**	**100.00**	

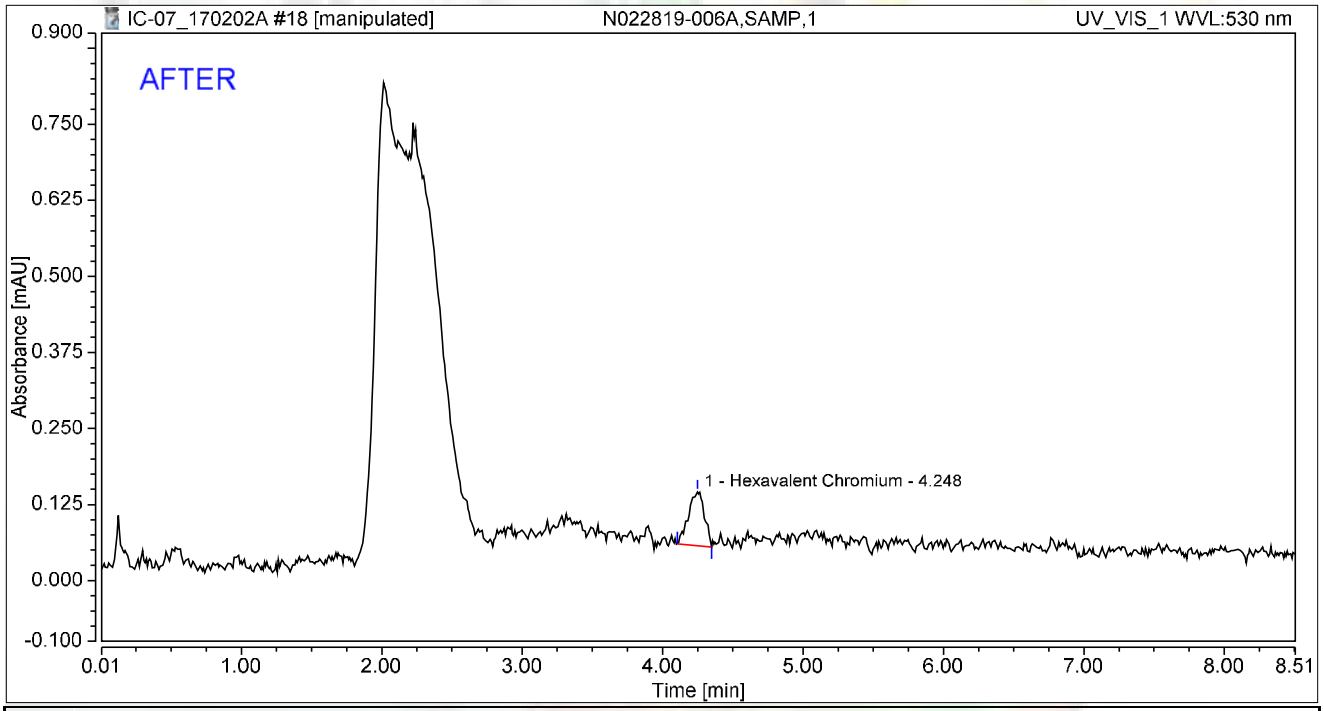
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.088	100.00	100.00	0.0454
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

rba 2/6/2017

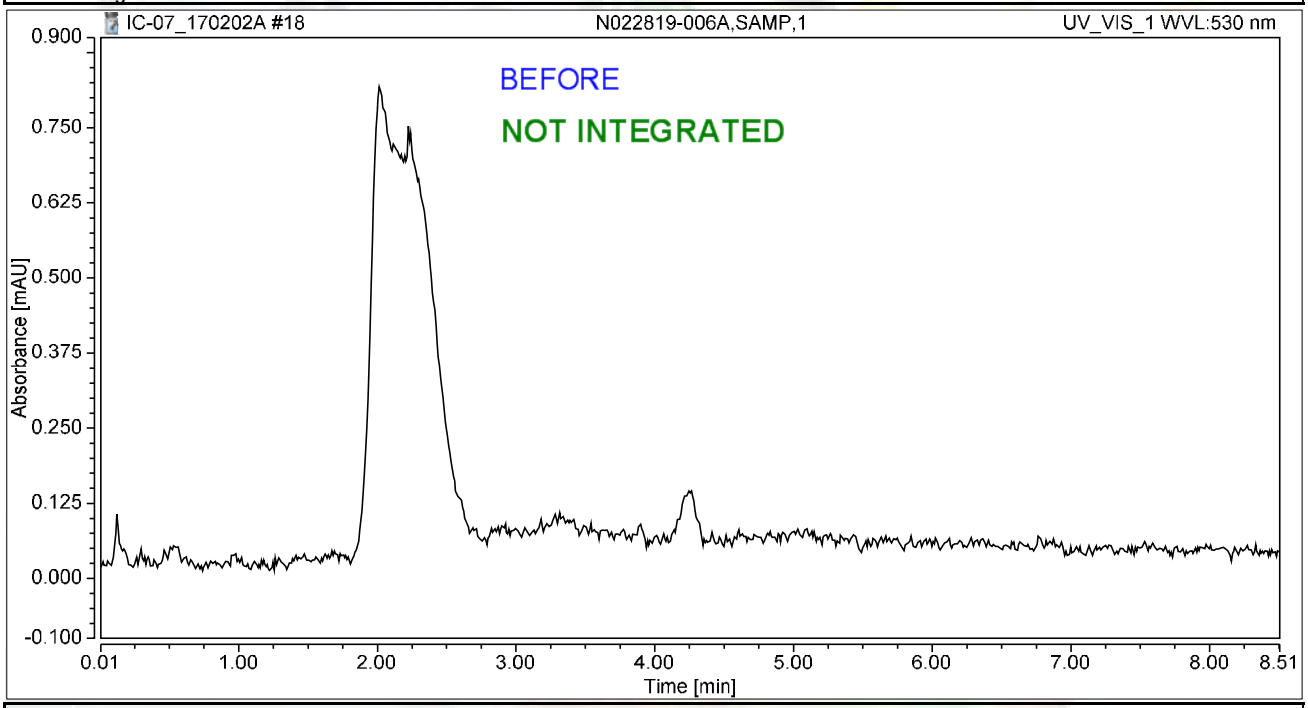
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

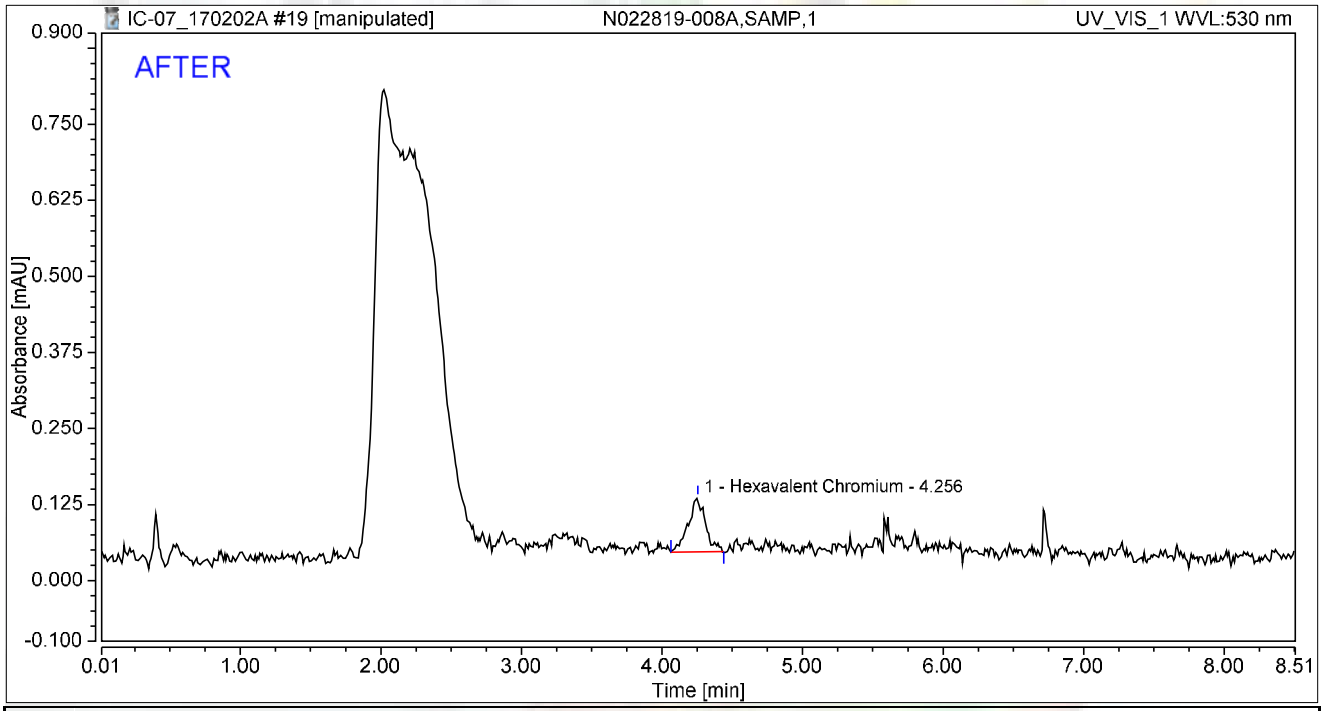
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.013	0.089	100.00	100.00	0.0492
Total:			**0.013**	**0.089**	**100.00**	**100.00**	

rba 2/6/2017

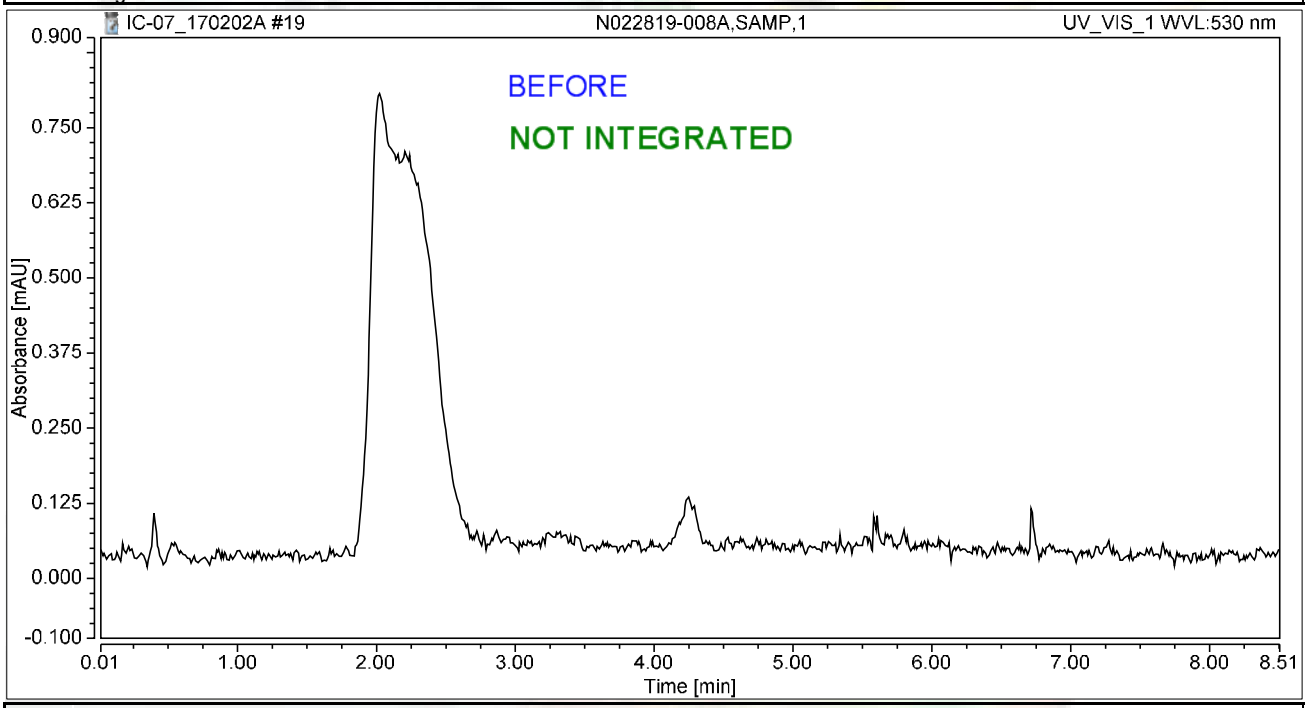
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

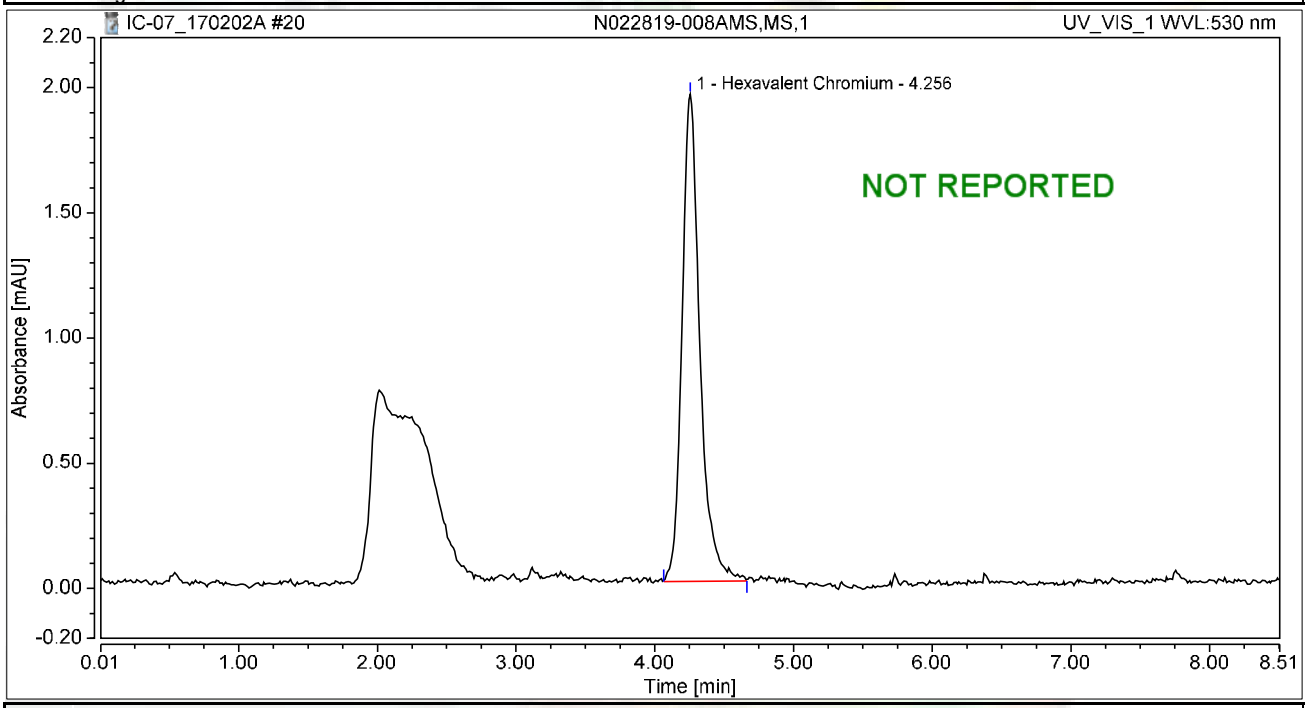
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

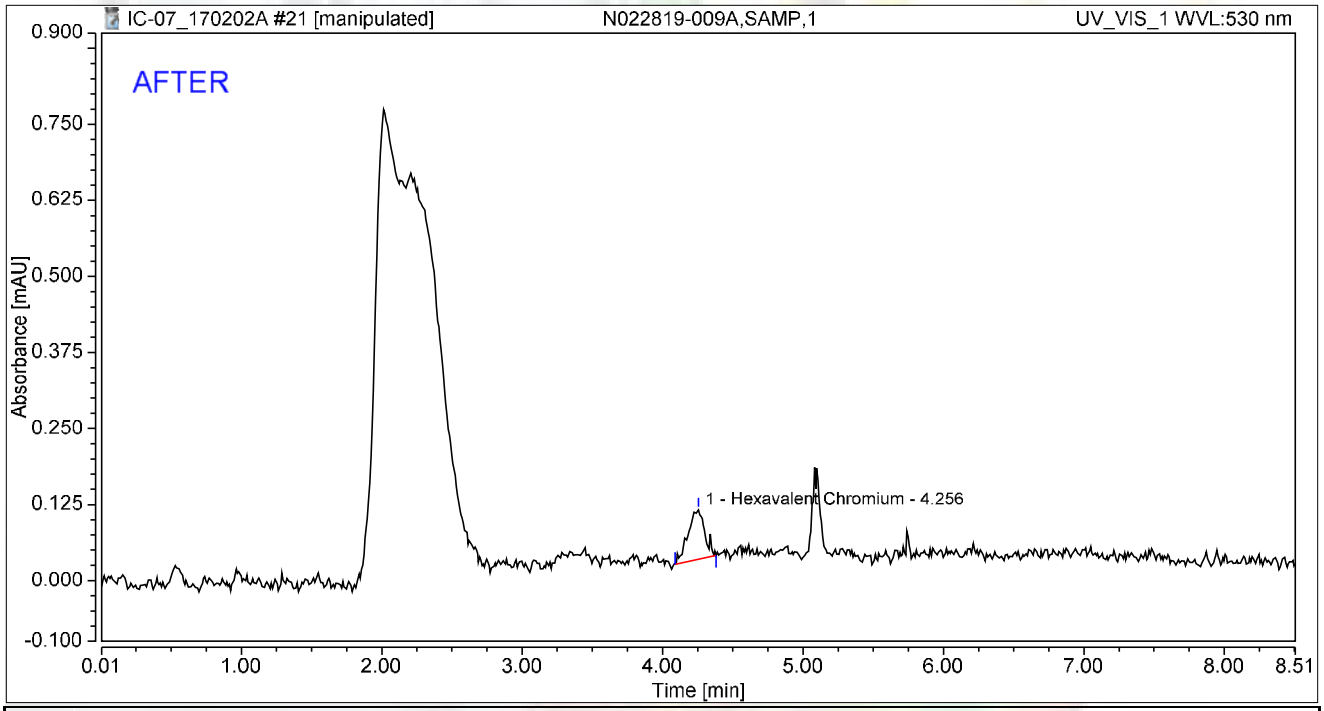
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.290	1.946	100.00	100.00	1.1356
Total:			**0.290**	**1.946**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0437
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

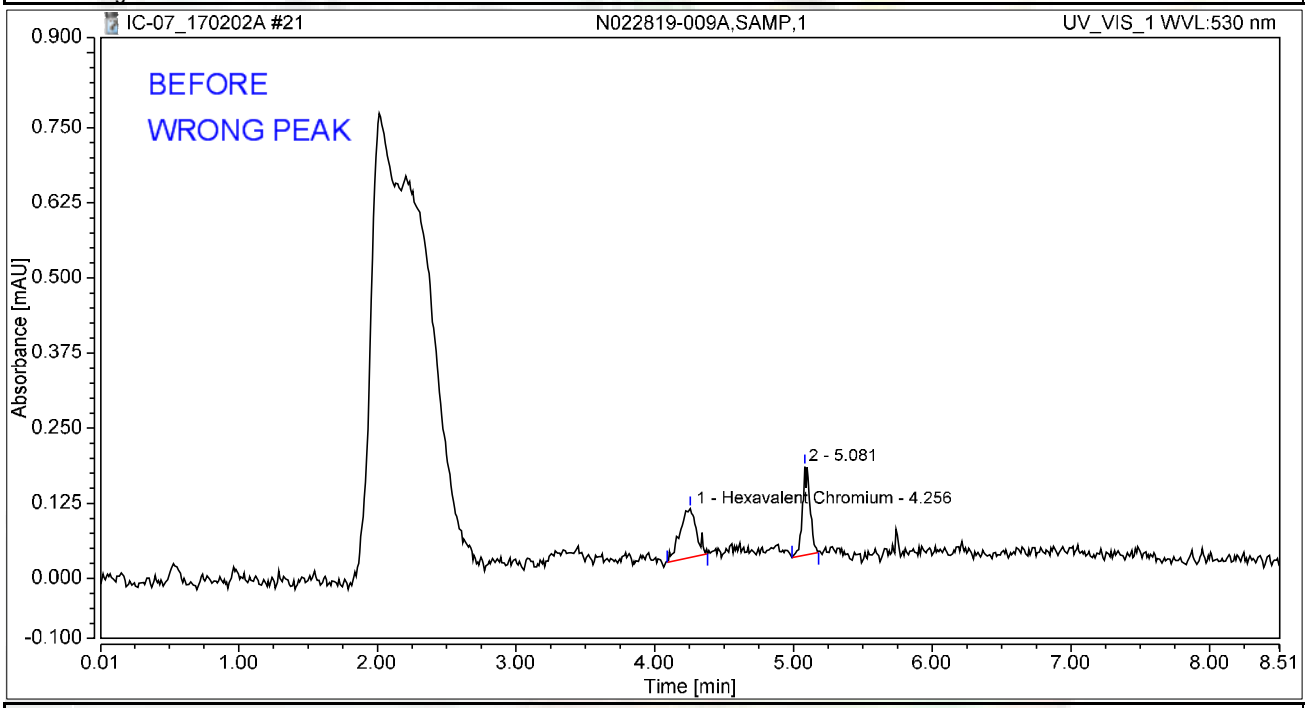
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	54.59	35.48	0.0437
2		5.081	0.009	0.147	45.41	64.52	n.a.
Total:			**0.020**	**0.228**	**100.00**	**100.00**	

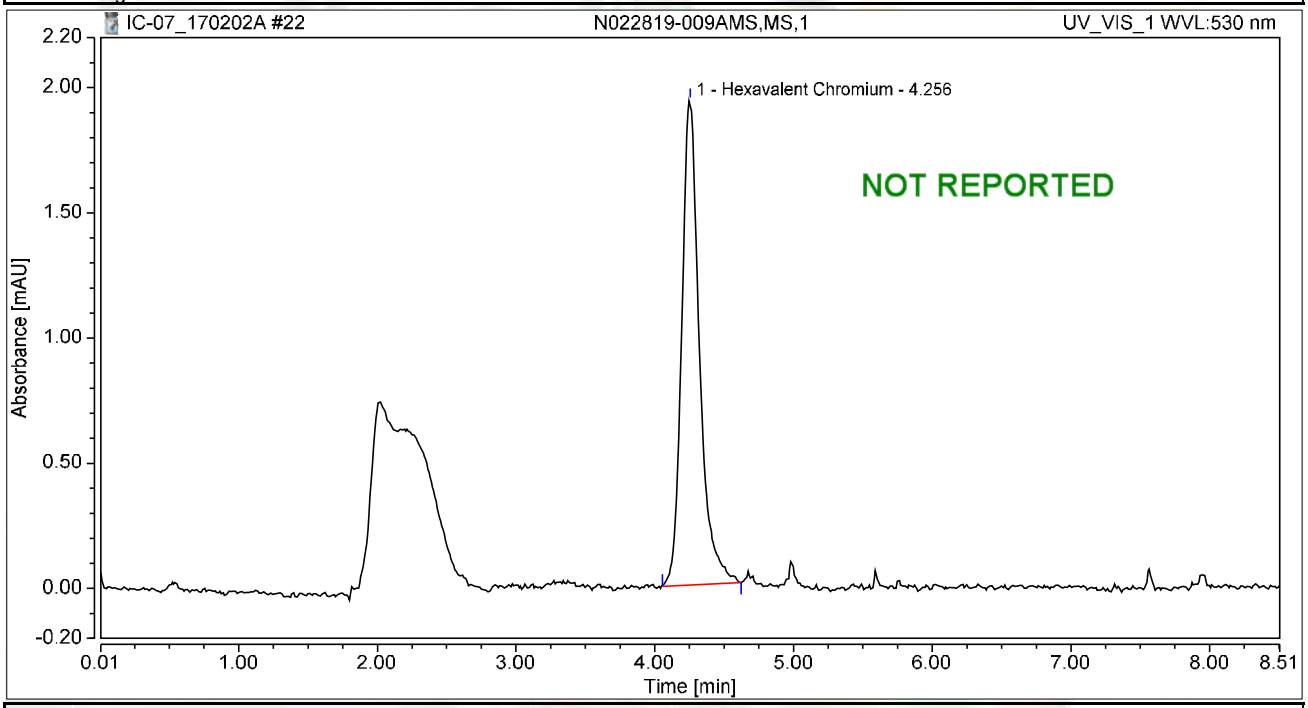
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.287	1.935	100.00	100.00	1.1231
Total:			**0.287**	**1.935**	**100.00**	**100.00**	

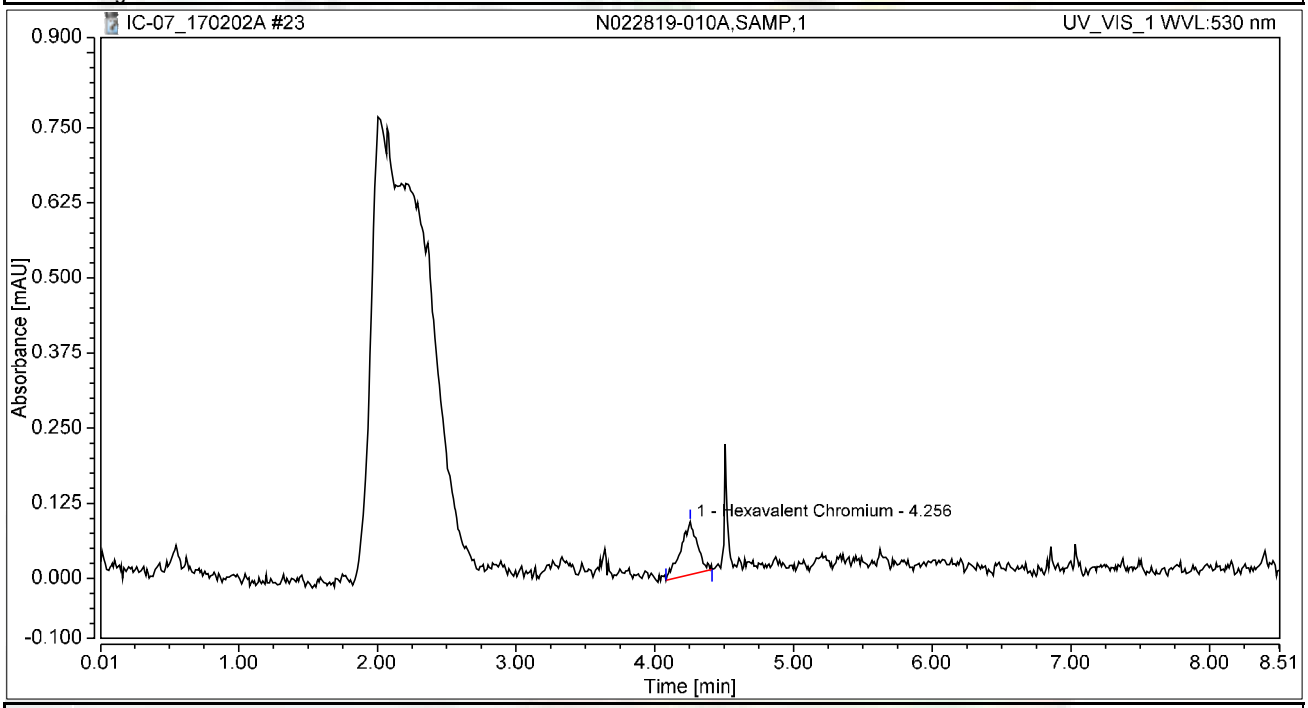
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

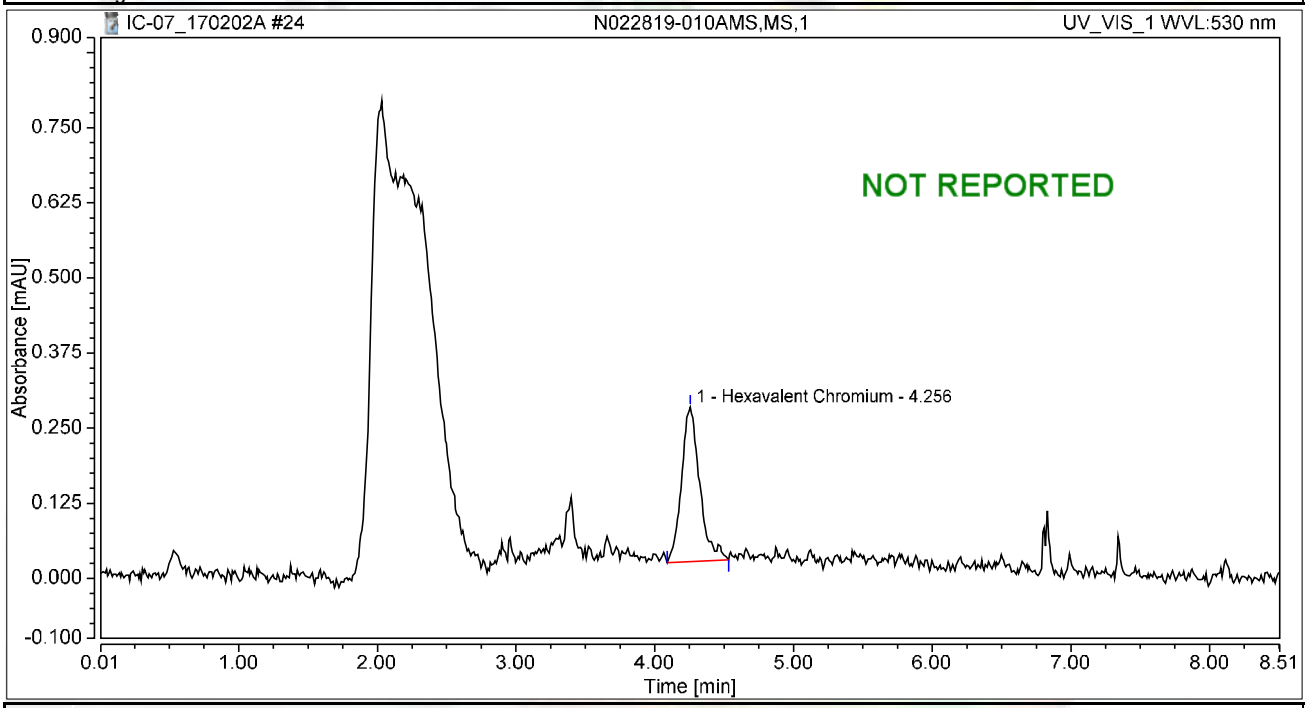
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.012	0.088	100.00	100.00	0.0477
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.039	0.257	100.00	100.00	0.1524
Total:			**0.039**	**0.257**	**100.00**	**100.00**	

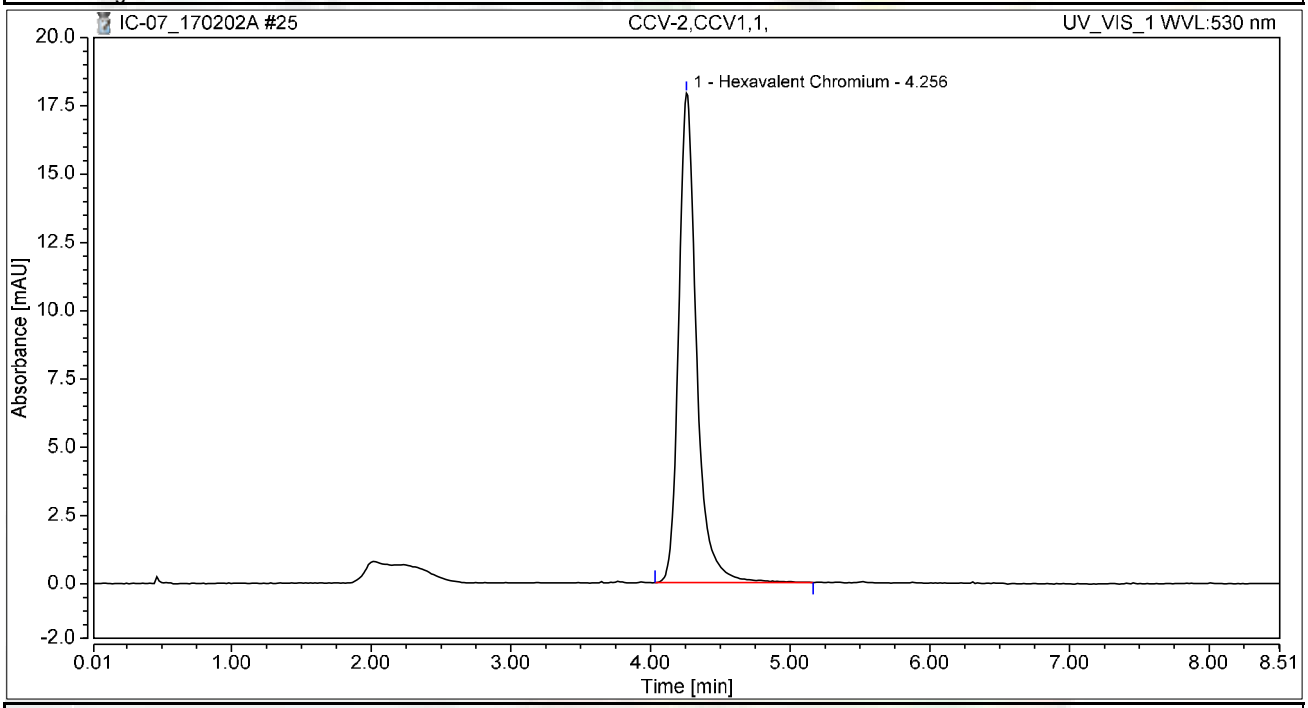
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

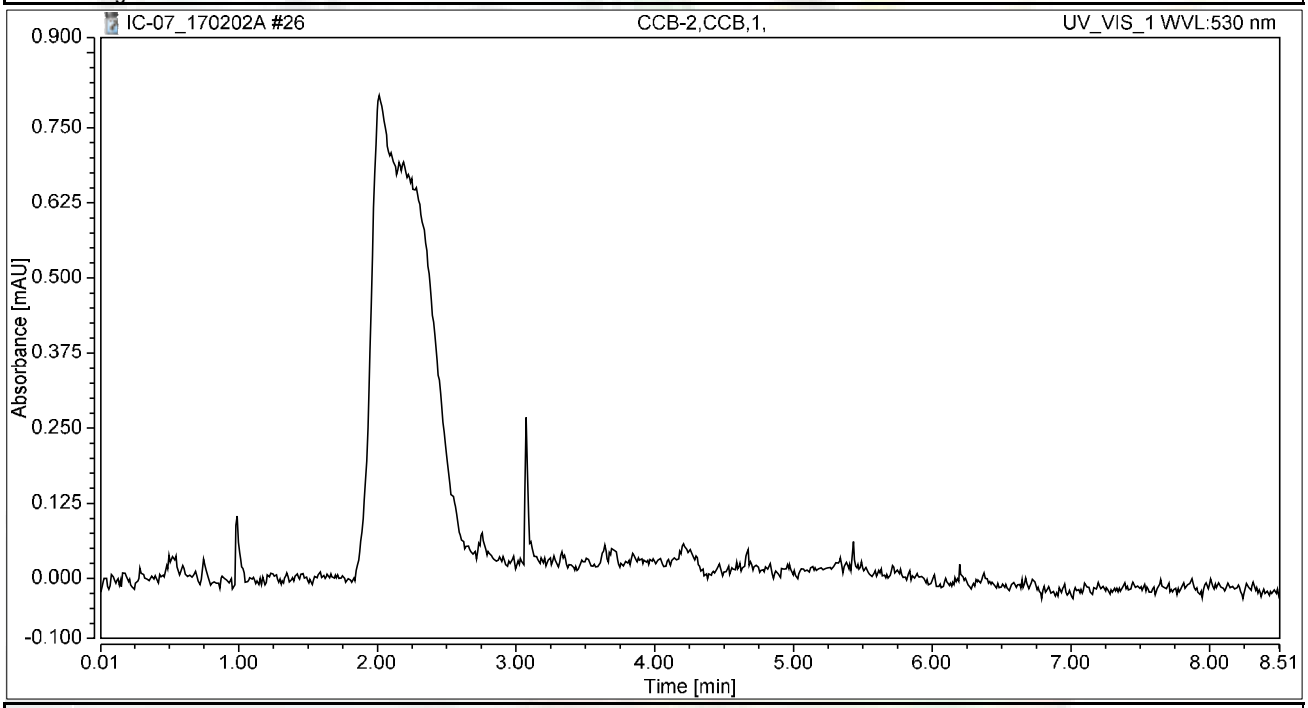
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.651	17.908	100.00	100.00	10.3680
Total:			**2.651**	**17.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

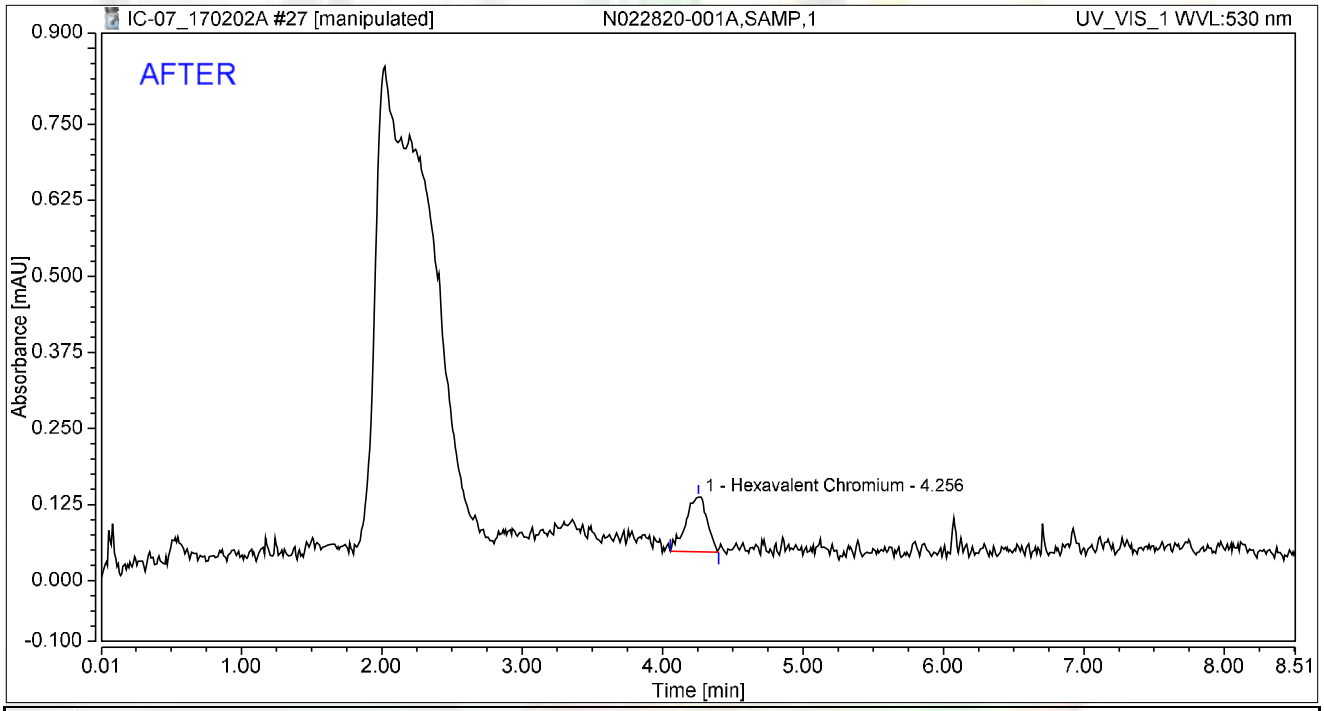
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.016	0.090	100.00	100.00	0.0620
Total:			**0.016**	**0.090**	**100.00**	**100.00**	

rba 2/6/2017

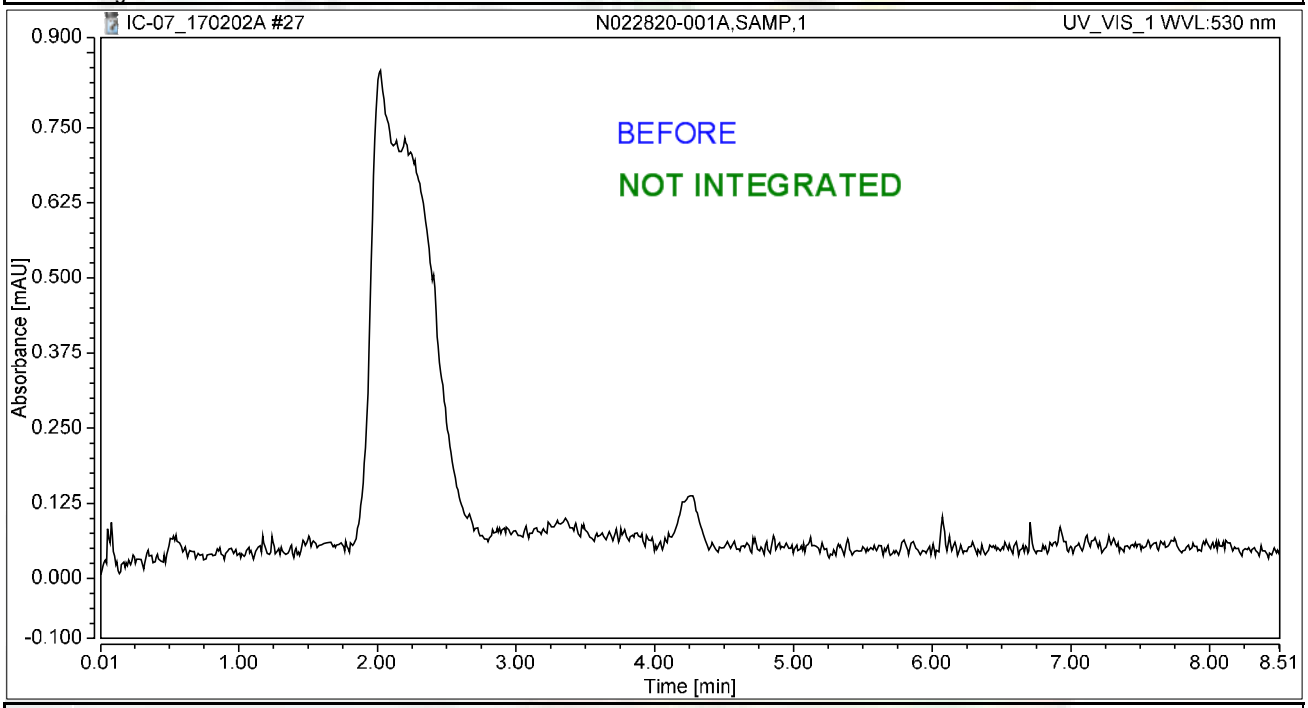
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

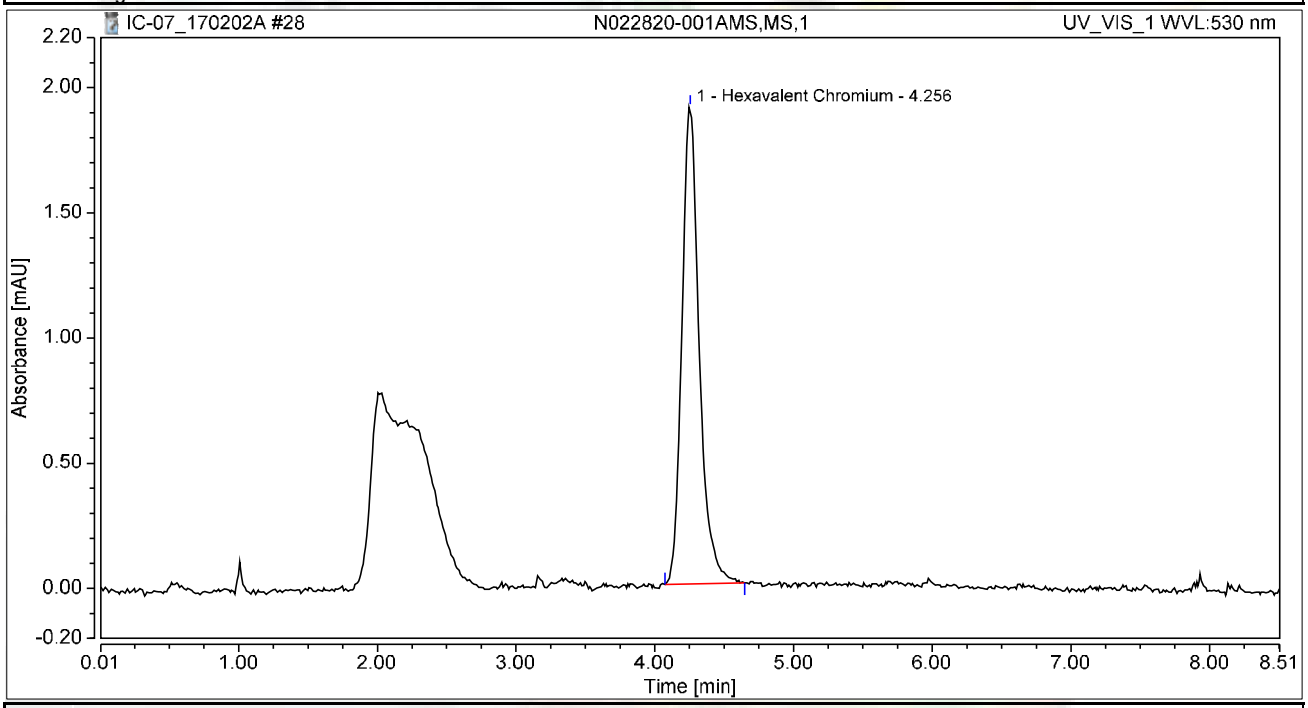
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

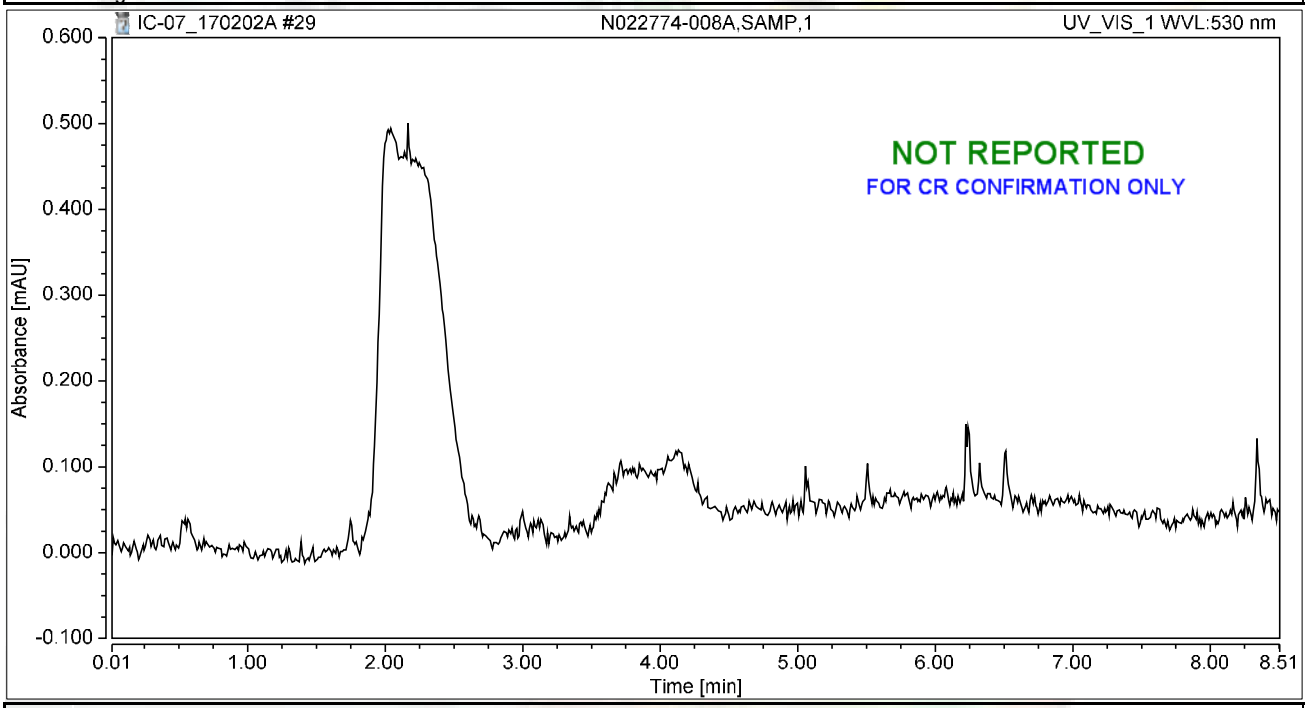
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.277	1.905	100.00	100.00	1.0833
Total:			**0.277**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

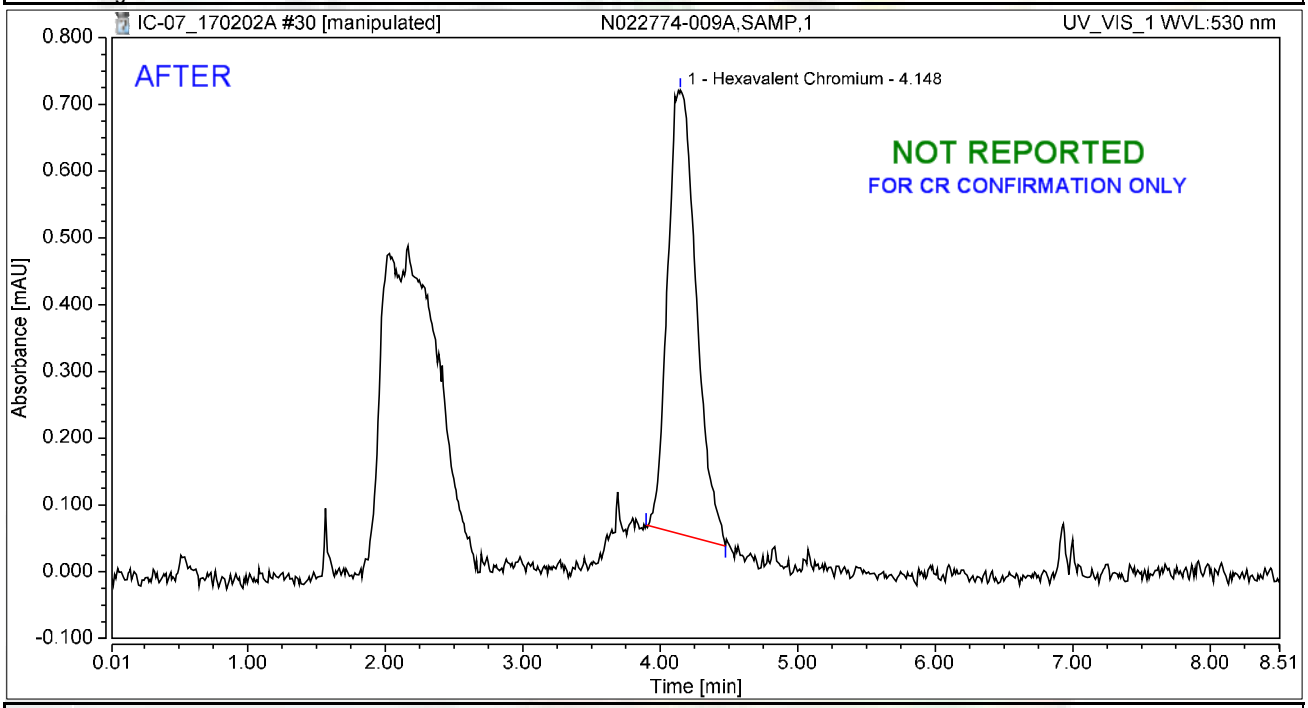
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.160	0.665	100.00	100.00	0.6270
Total:			**0.160**	**0.665**	**100.00**	**100.00**	

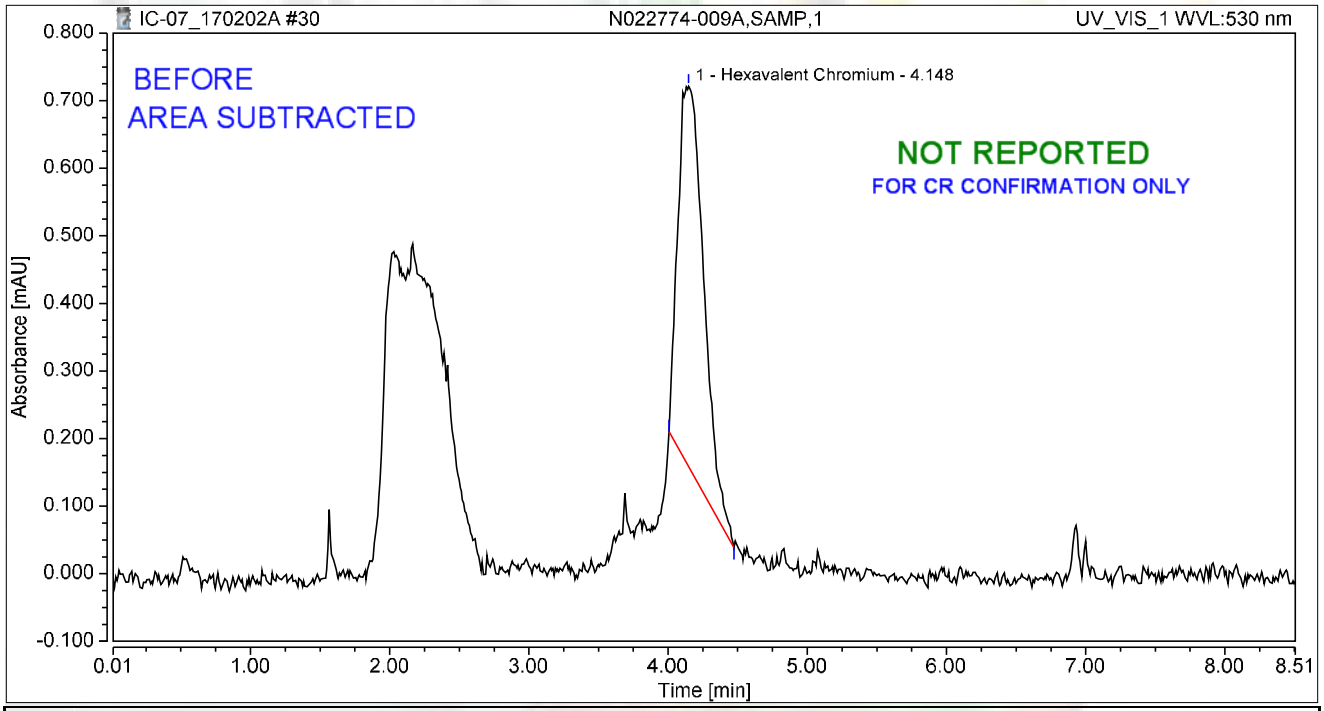
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.122	0.563	100.00	100.00	0.4757
Total:			**0.122**	**0.563**	**100.00**	**100.00**	

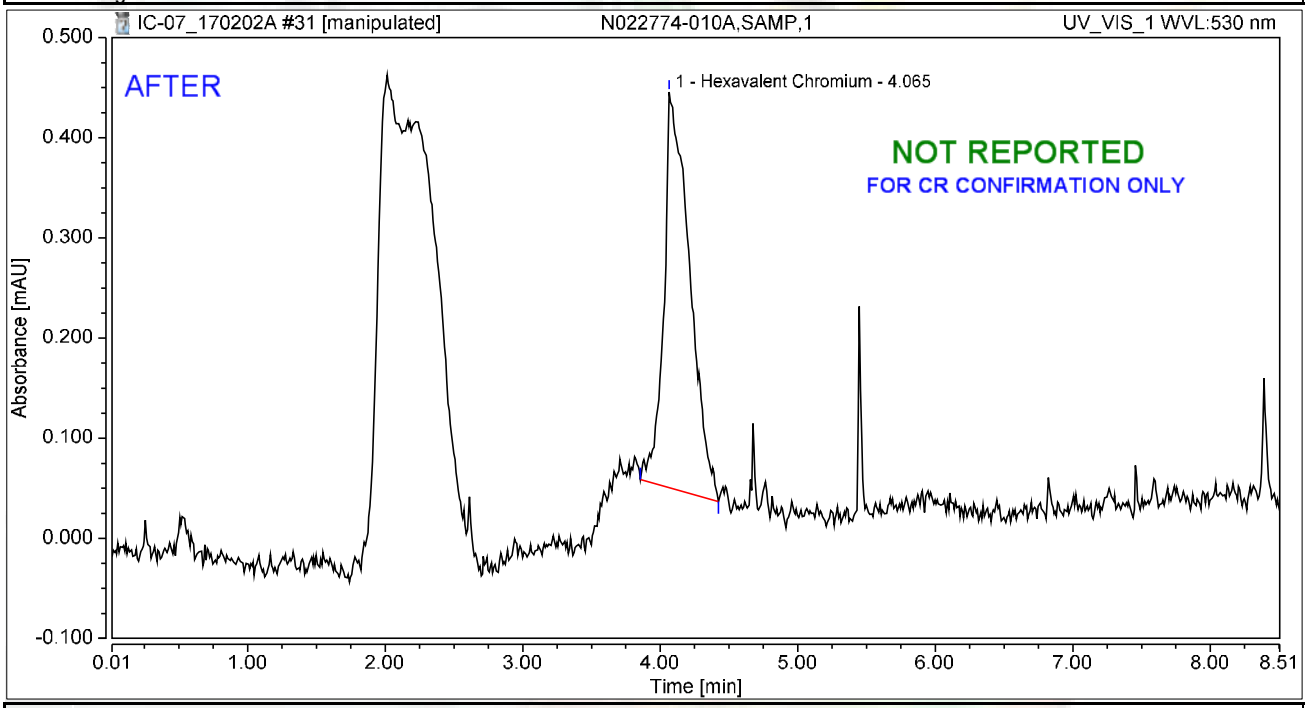
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.086	0.395	100.00	100.00	0.3373
Total:			**0.086**	**0.395**	**100.00**	**100.00**	

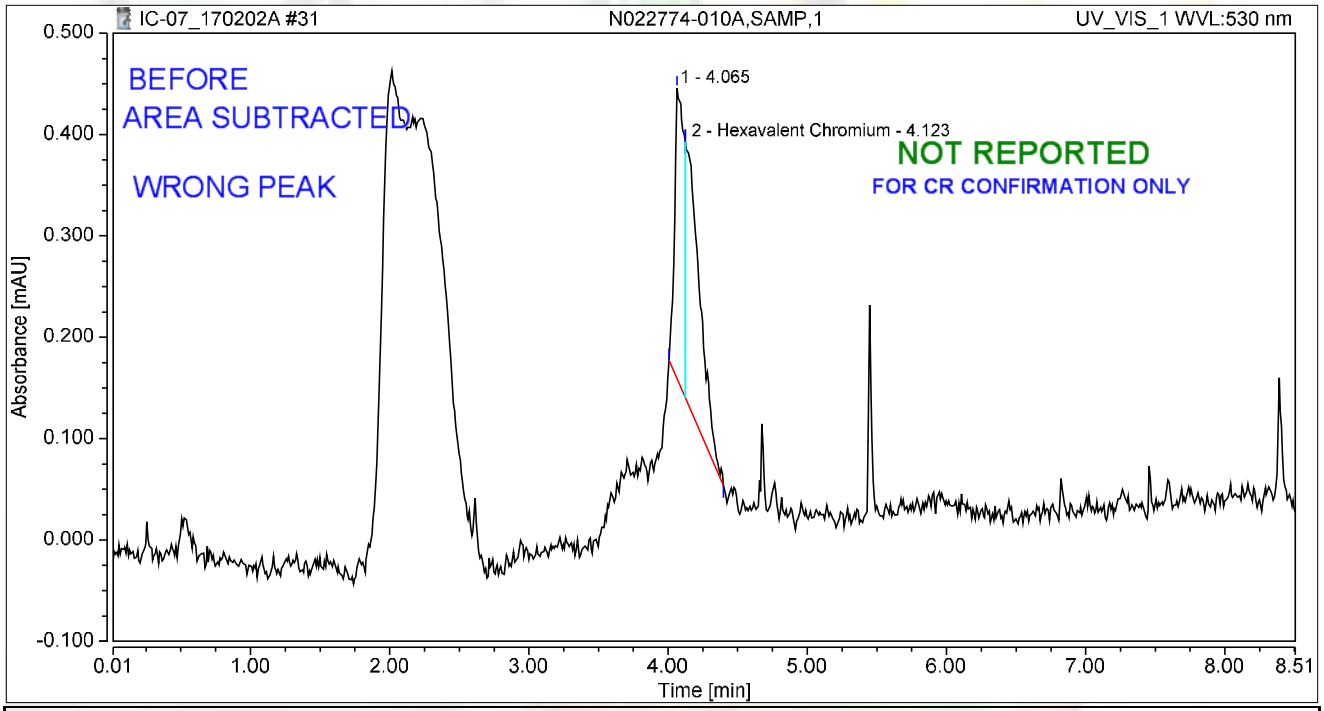
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.065	0.022	0.287	42.13	53.16	n.a.
2	Hexavalent Chromium	4.123	0.030	0.253	57.87	46.84	0.1188
Total:			**0.052**	**0.539**	**100.00**	**100.00**	

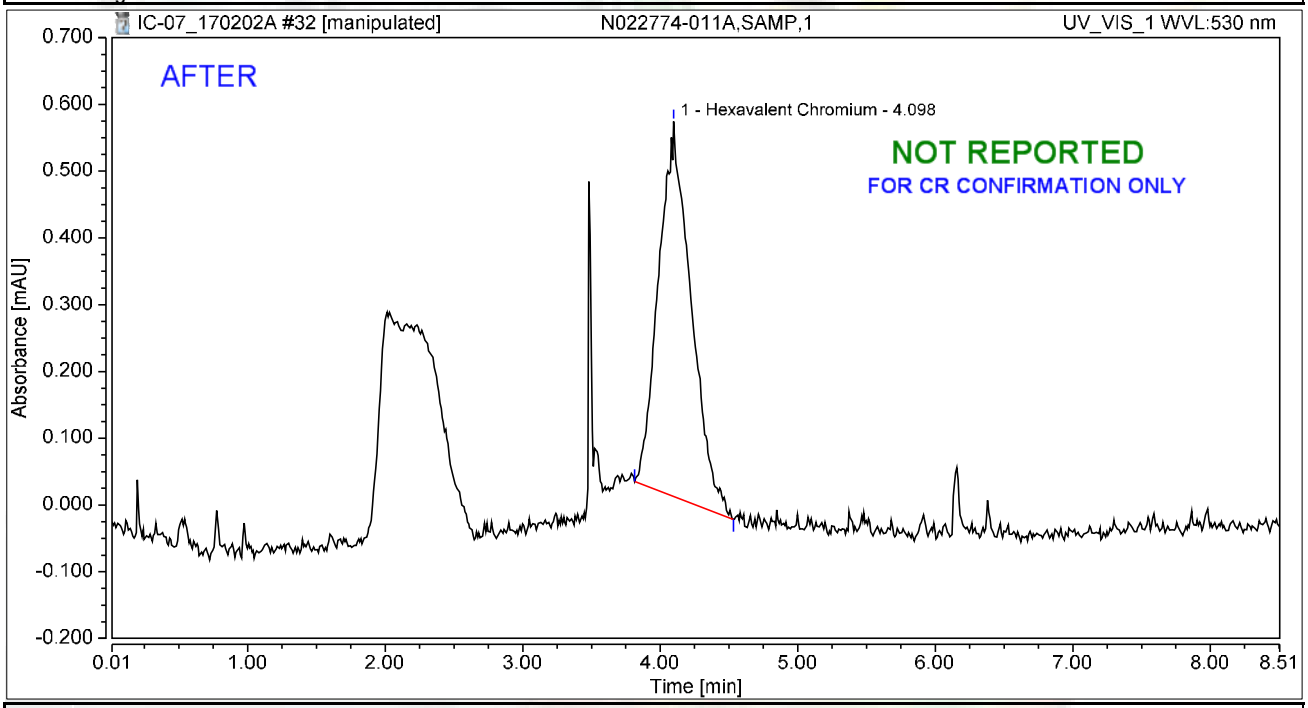
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.153	0.562	100.00	100.00	0.5998
Total:			**0.153**	**0.562**	**100.00**	**100.00**	

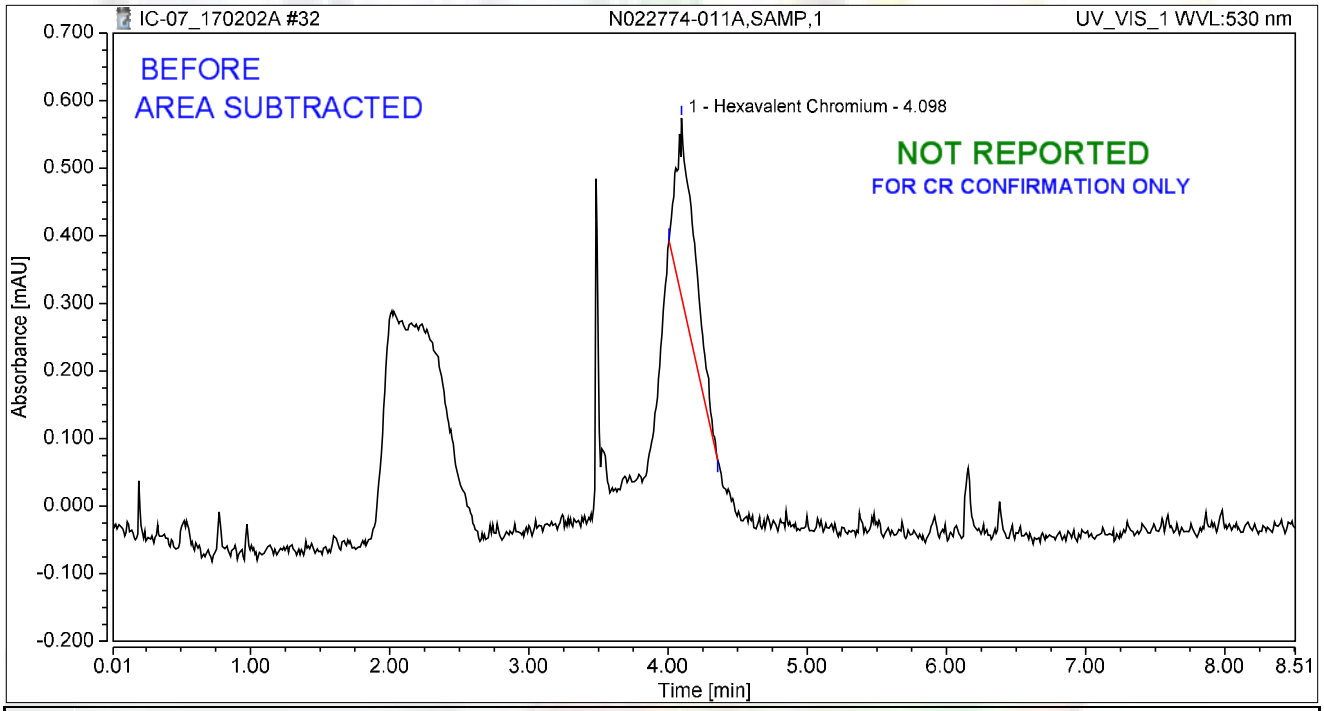
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.042	0.267	100.00	100.00	0.1646
Total:			**0.042**	**0.267**	**100.00**	**100.00**	

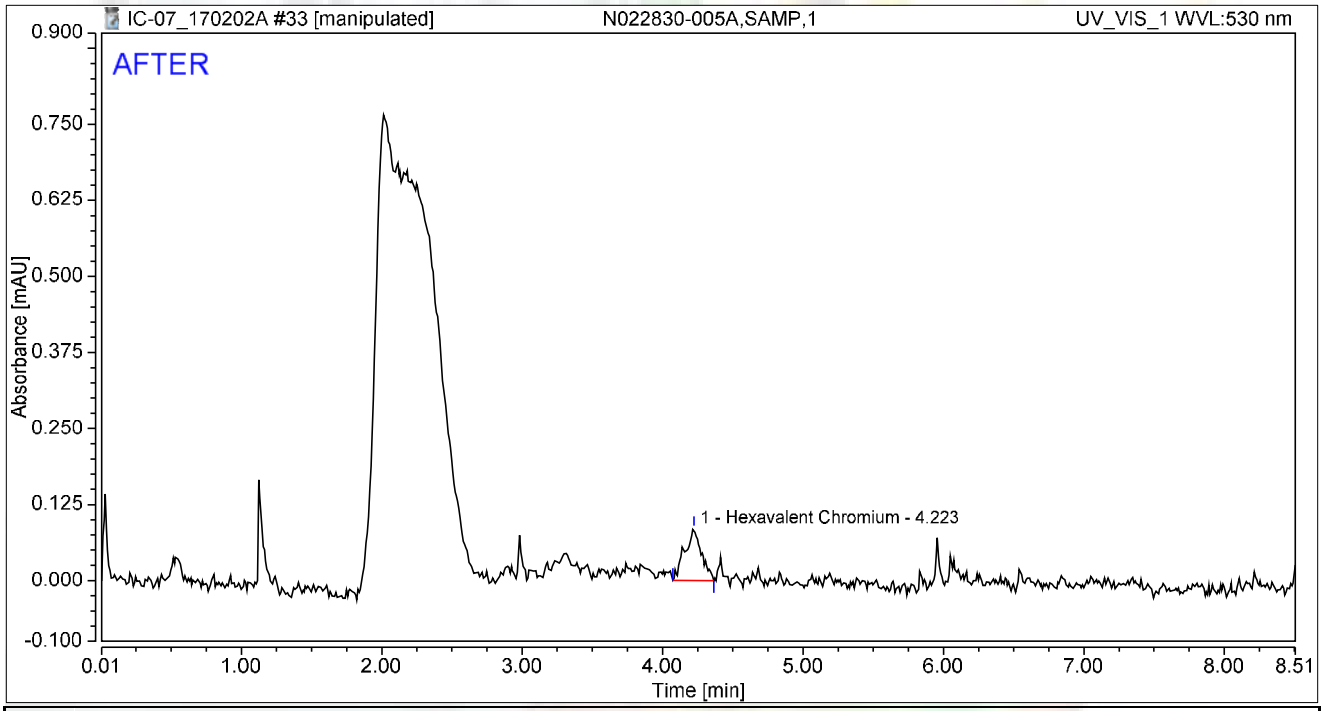
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.012	0.085	100.00	100.00	0.0460
Total:			**0.012**	**0.085**	**100.00**	**100.00**	

rba 2/6/2017

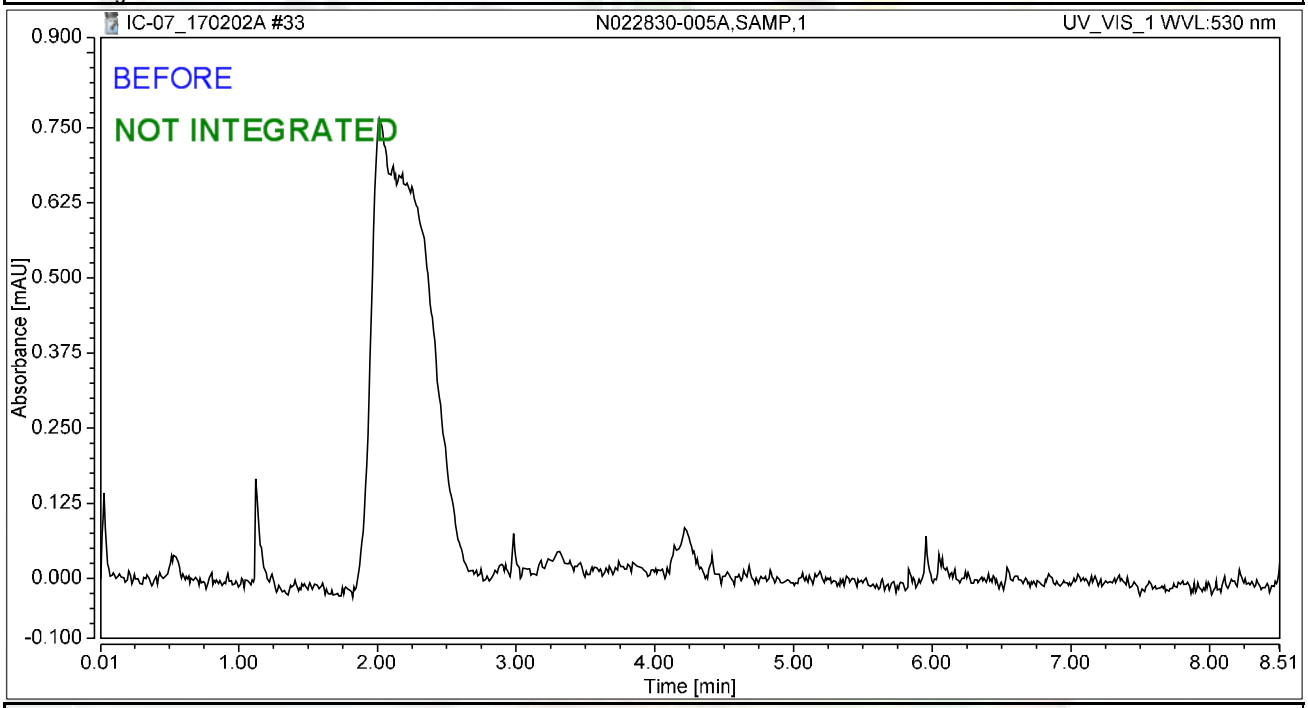
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

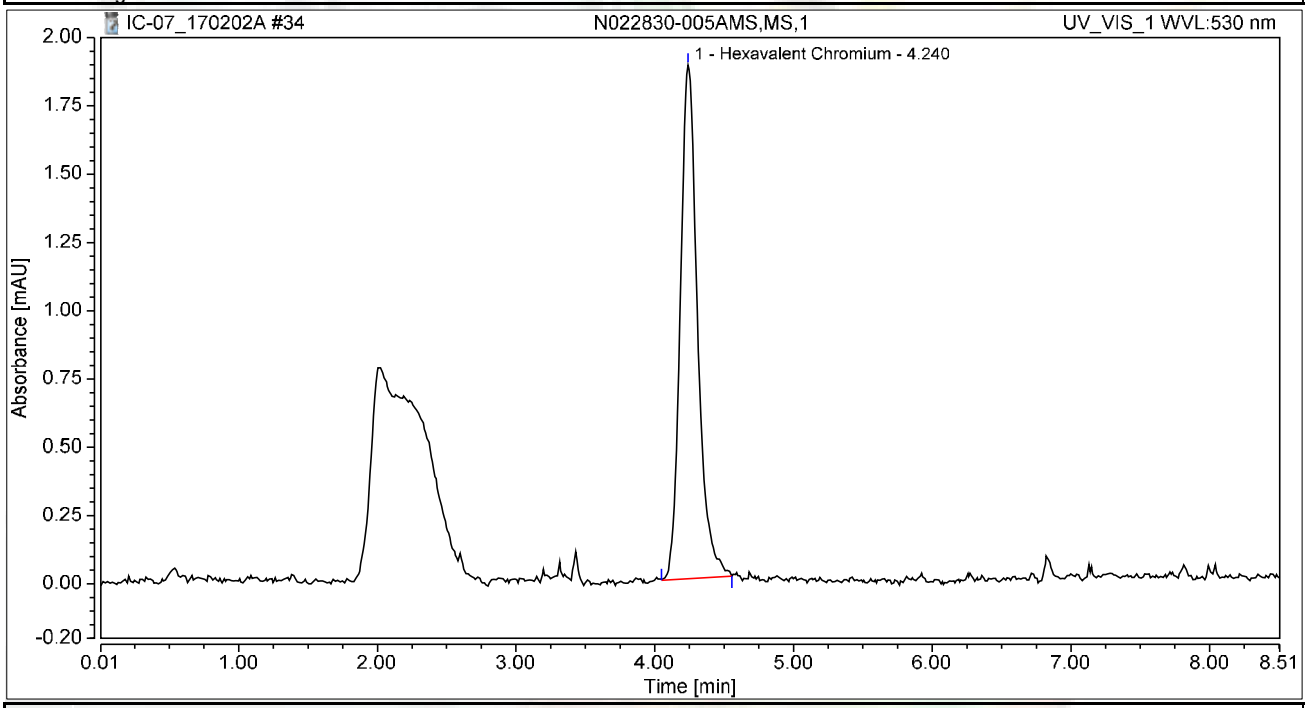
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

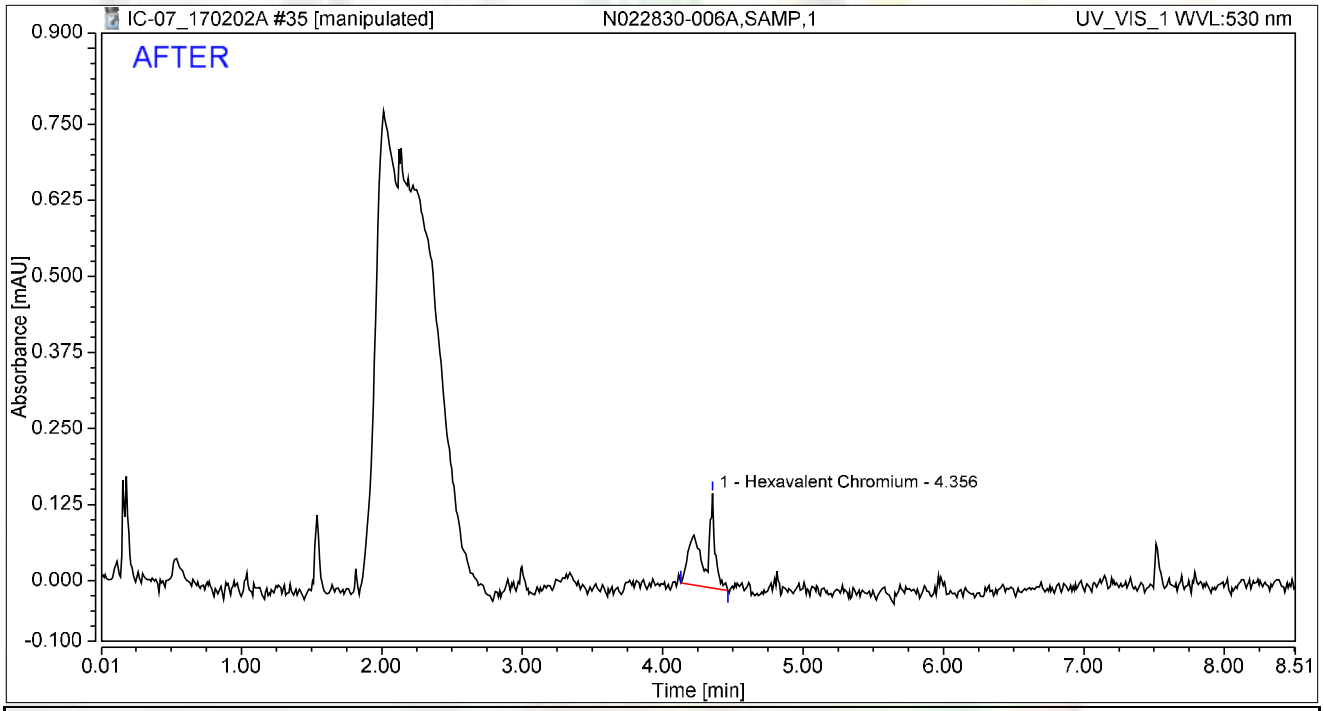
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.880	100.00	100.00	1.0603
Total:			**0.271**	**1.880**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.356	0.016	0.156	100.00	100.00	0.0609
Total:			**0.016**	**0.156**	**100.00**	**100.00**	

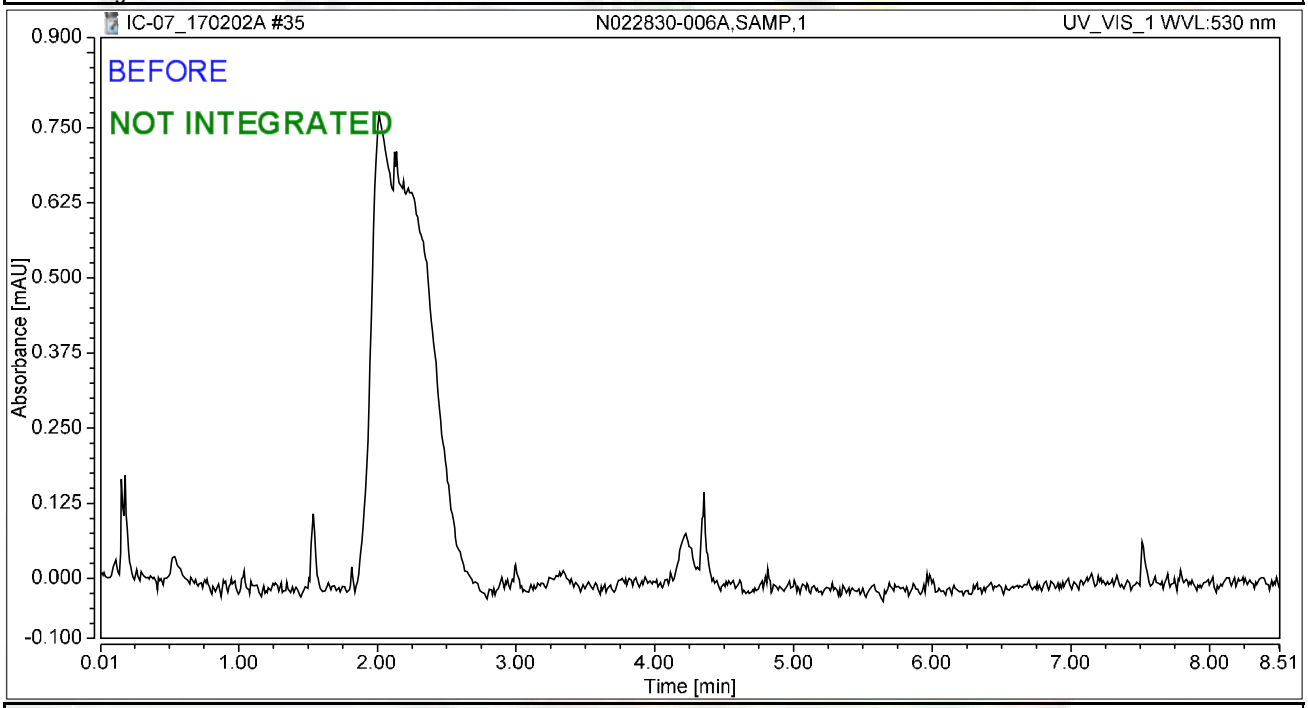
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

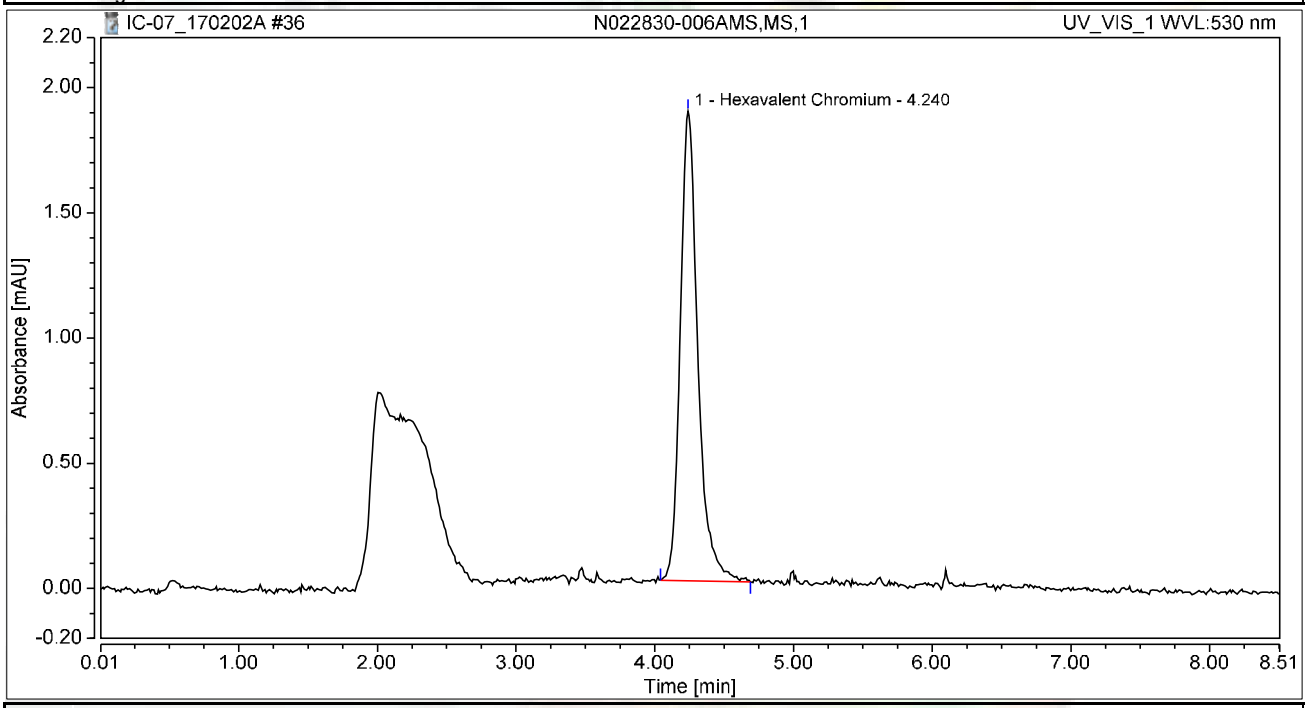
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

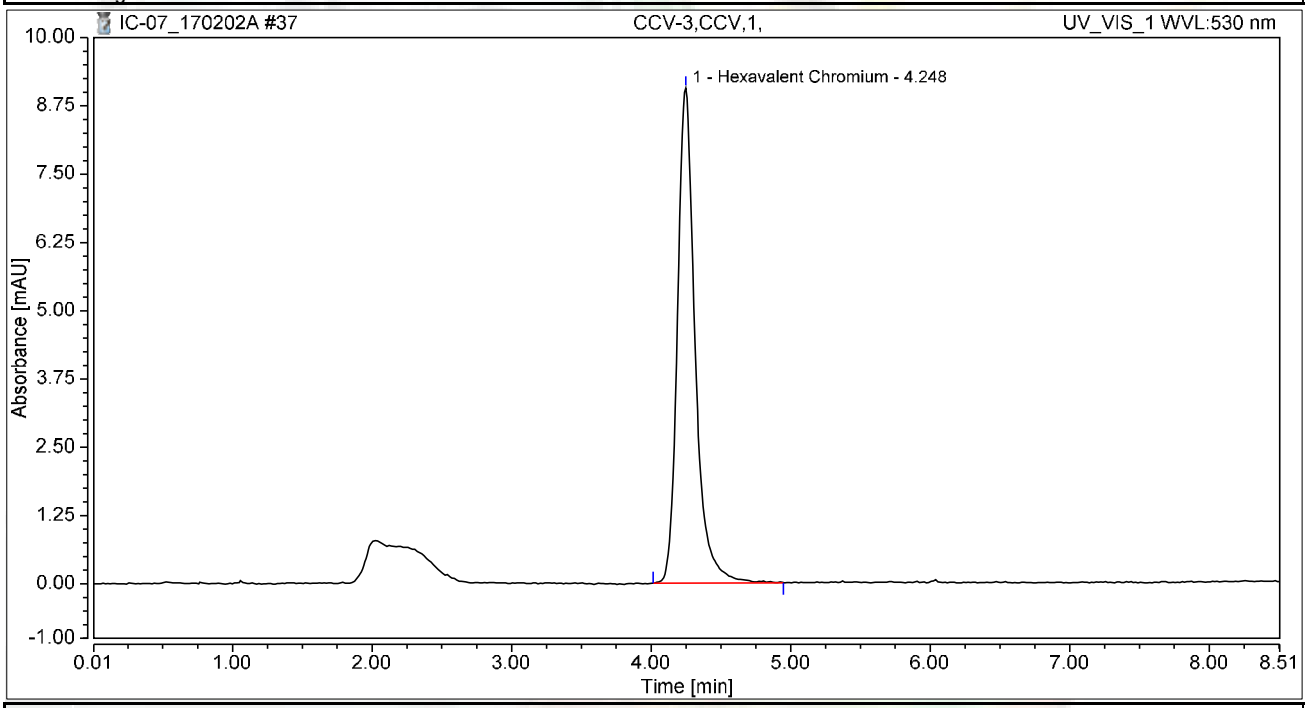
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.275	1.875	100.00	100.00	1.0772
Total:			**0.275**	**1.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

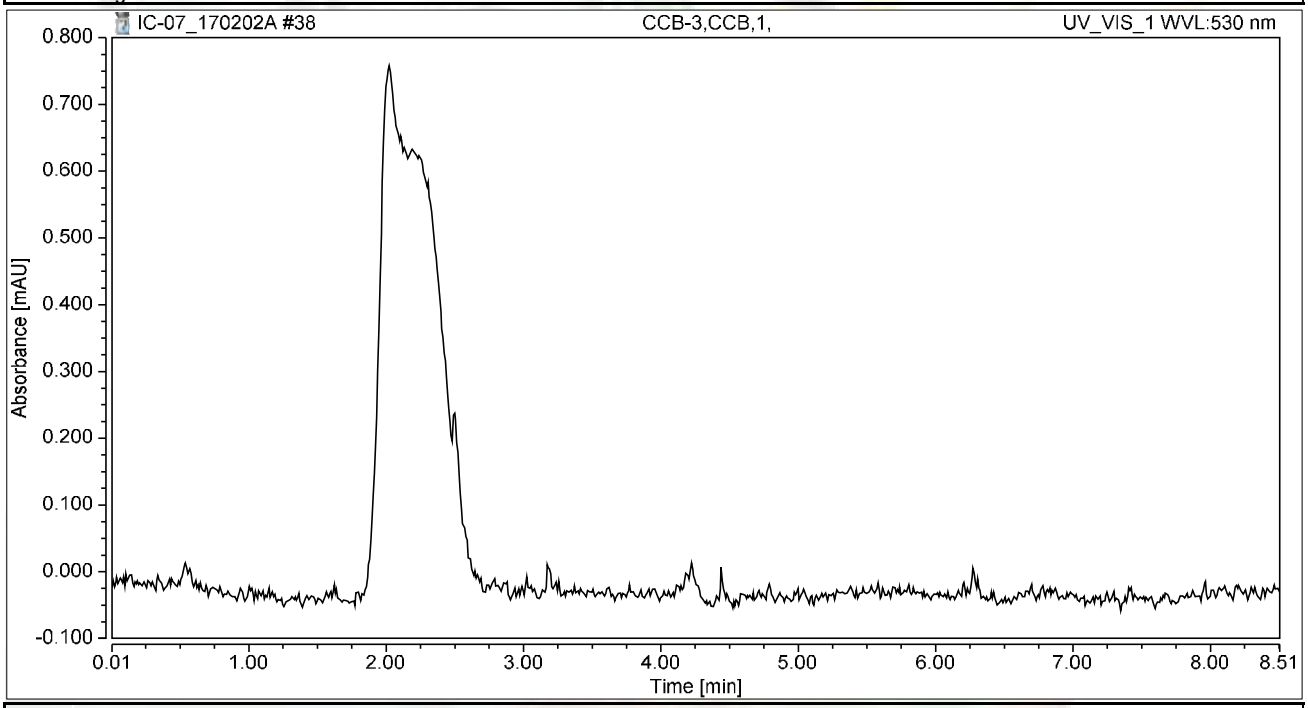
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.331	9.066	100.00	100.00	5.2052
Total:			**1.331**	**9.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

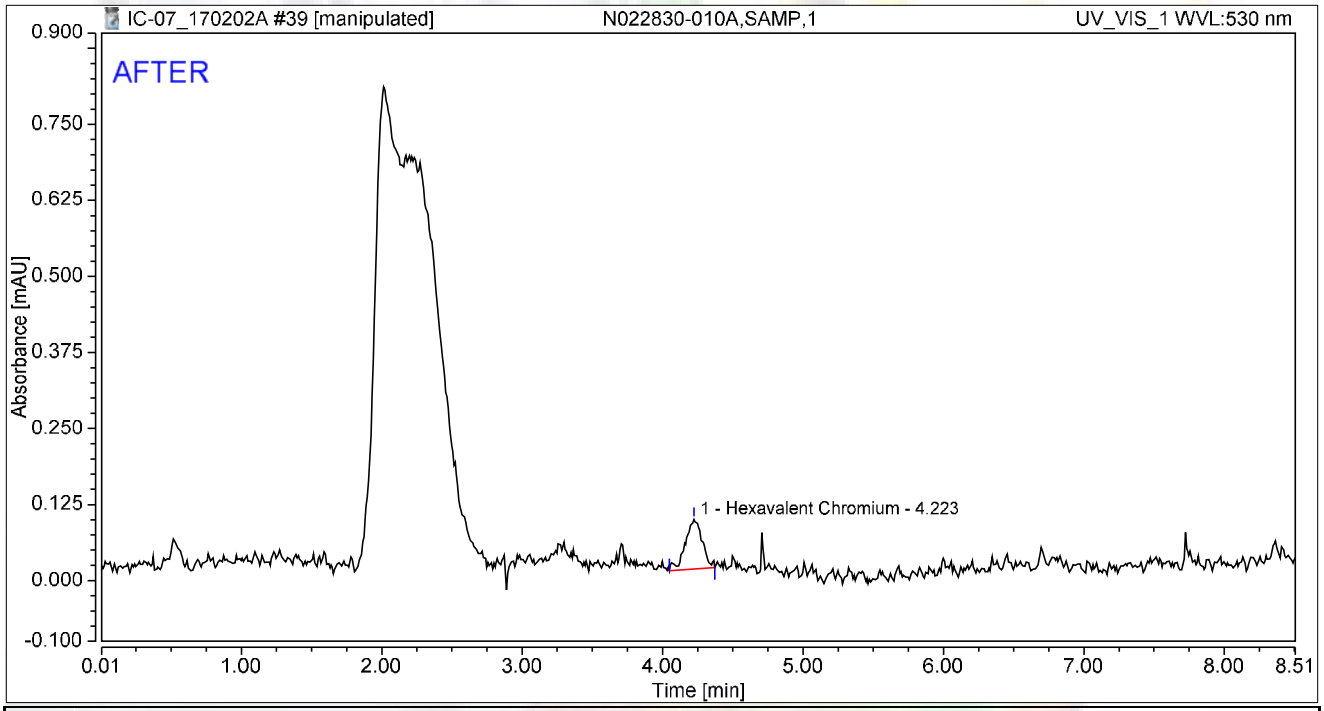
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.011	0.081	100.00	100.00	0.0443
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

Reviewed by: Nancy 2/7/2017

My first report/Integration

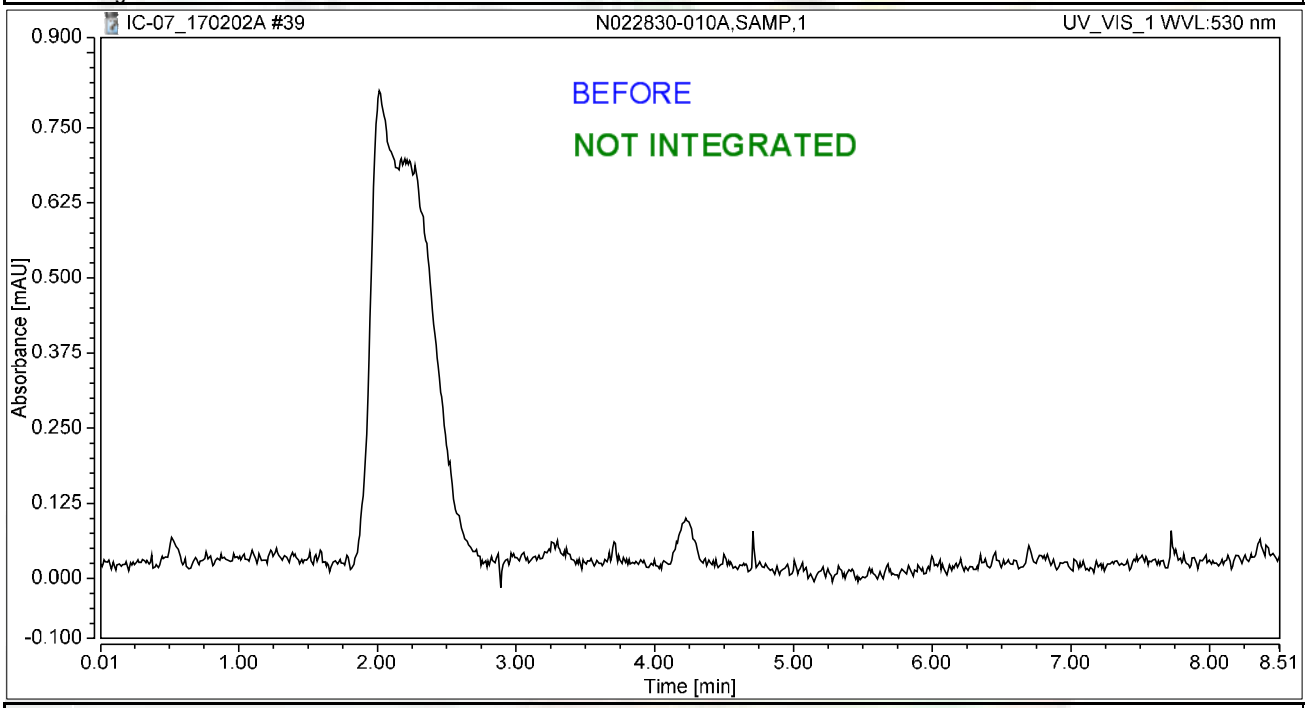
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

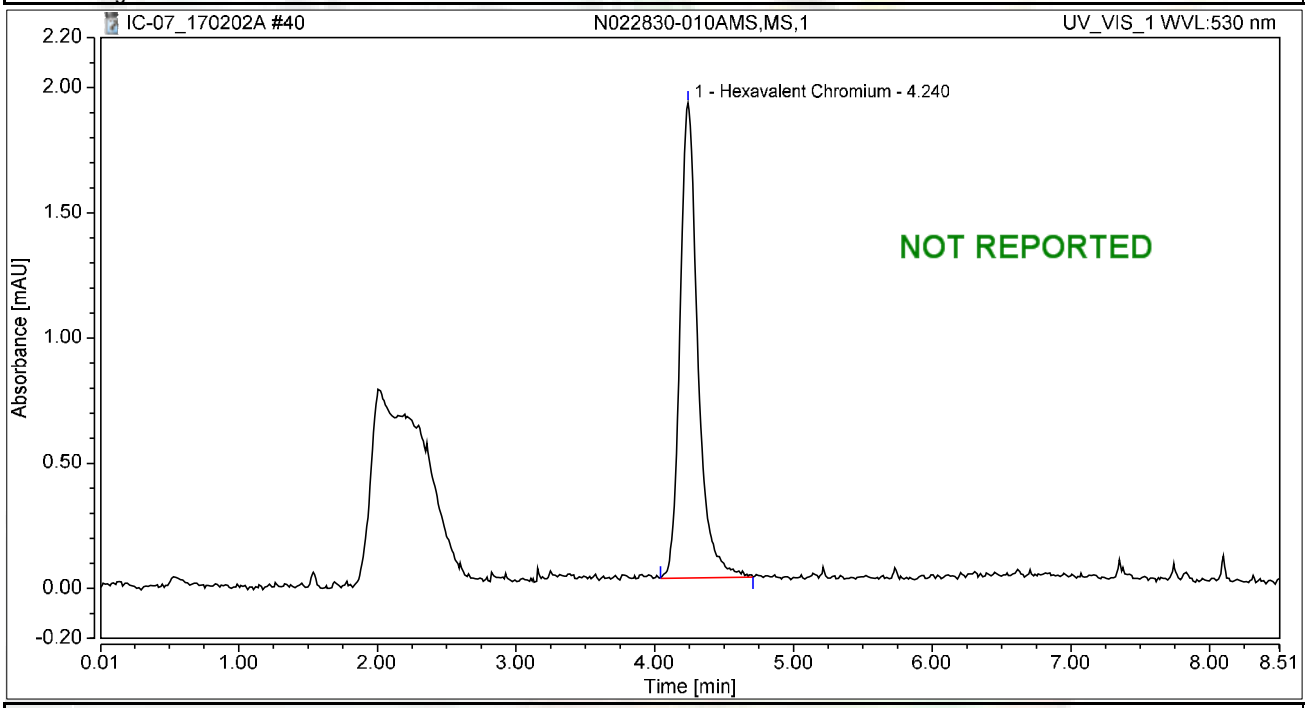
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

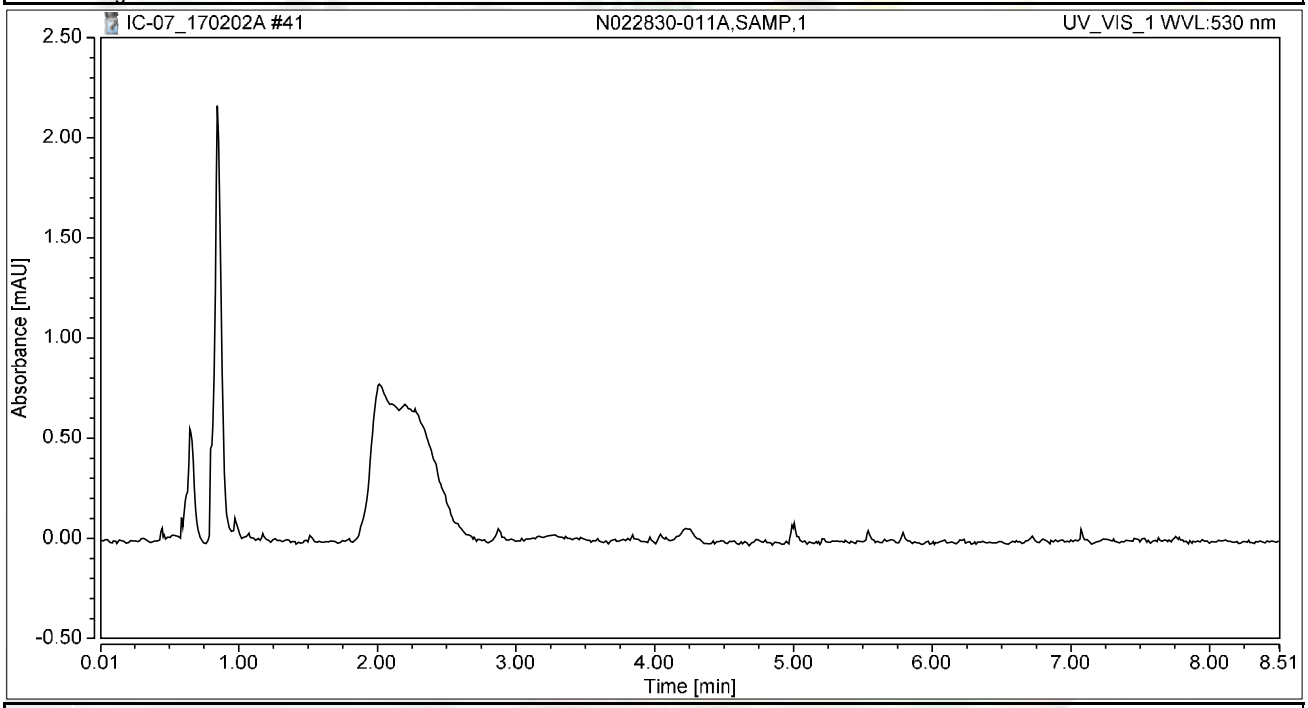
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.898	100.00	100.00	1.1031
Total:			**0.282**	**1.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

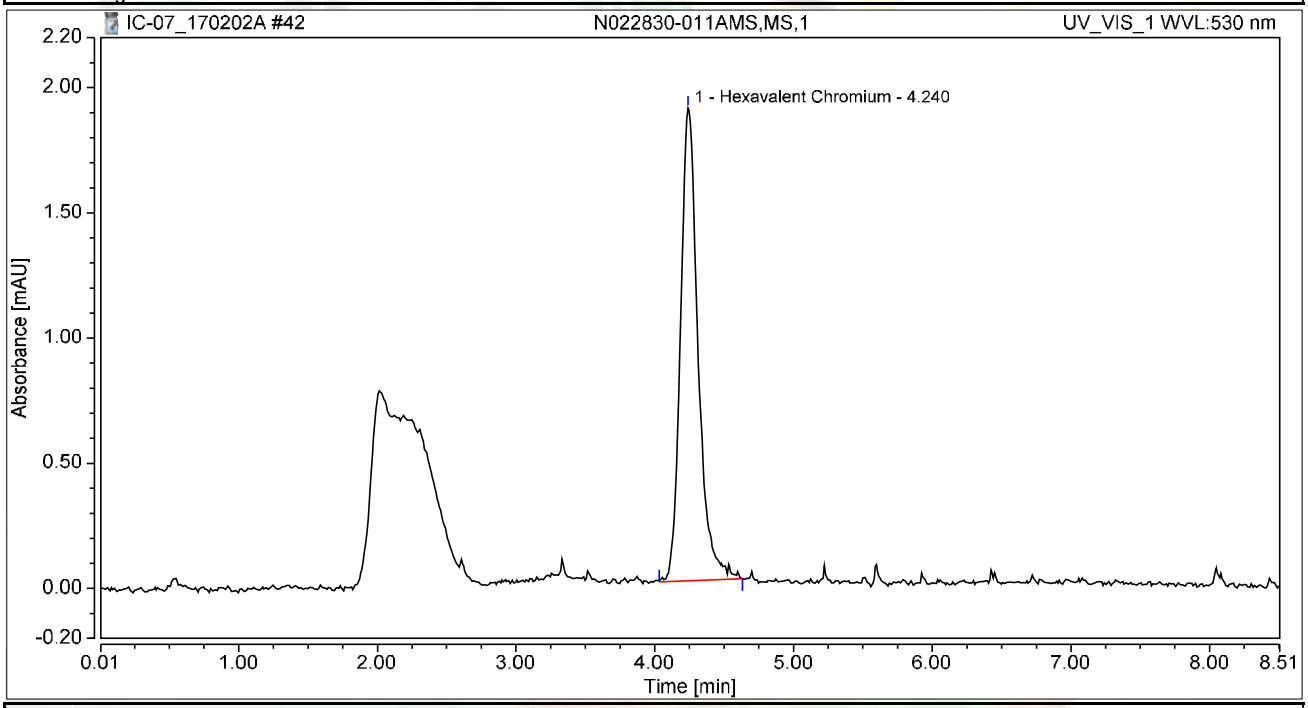
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

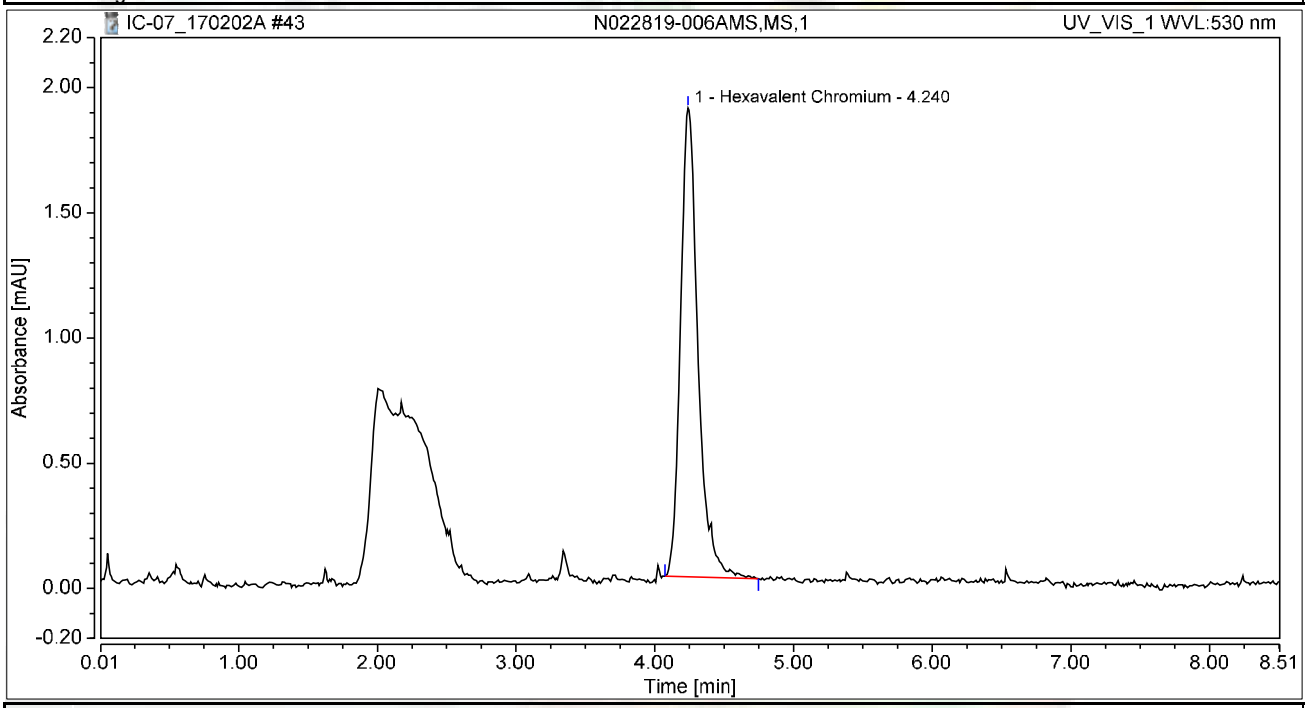
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.277	1.888	100.00	100.00	1.0848
Total:			**0.277**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

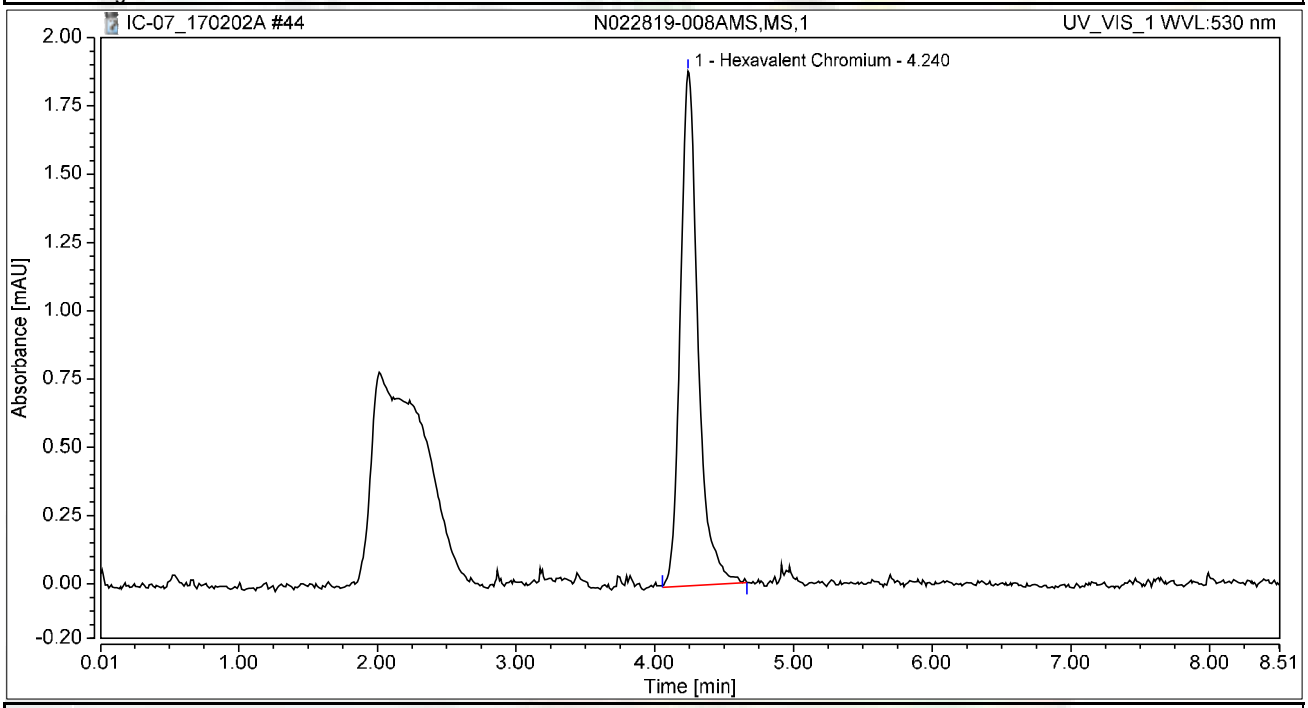
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.274	1.873	100.00	100.00	1.0705
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

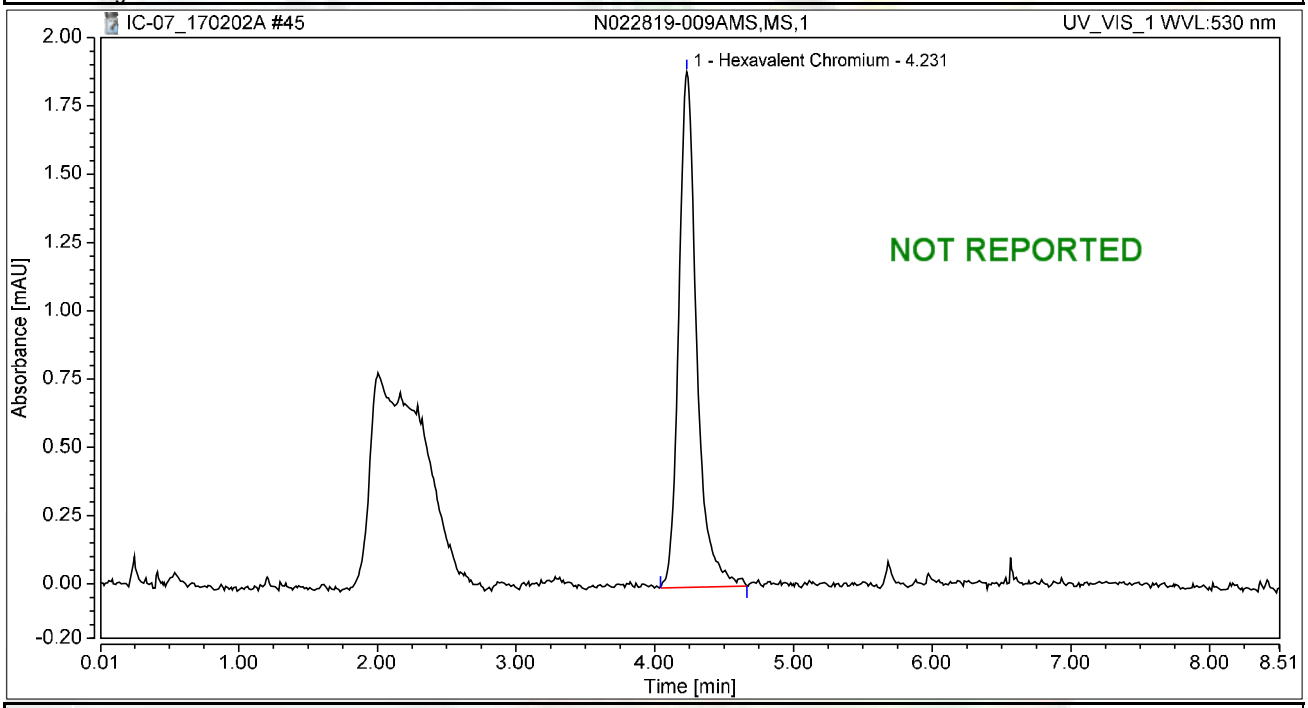
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.279	1.884	100.00	100.00	1.0899
Total:			**0.279**	**1.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

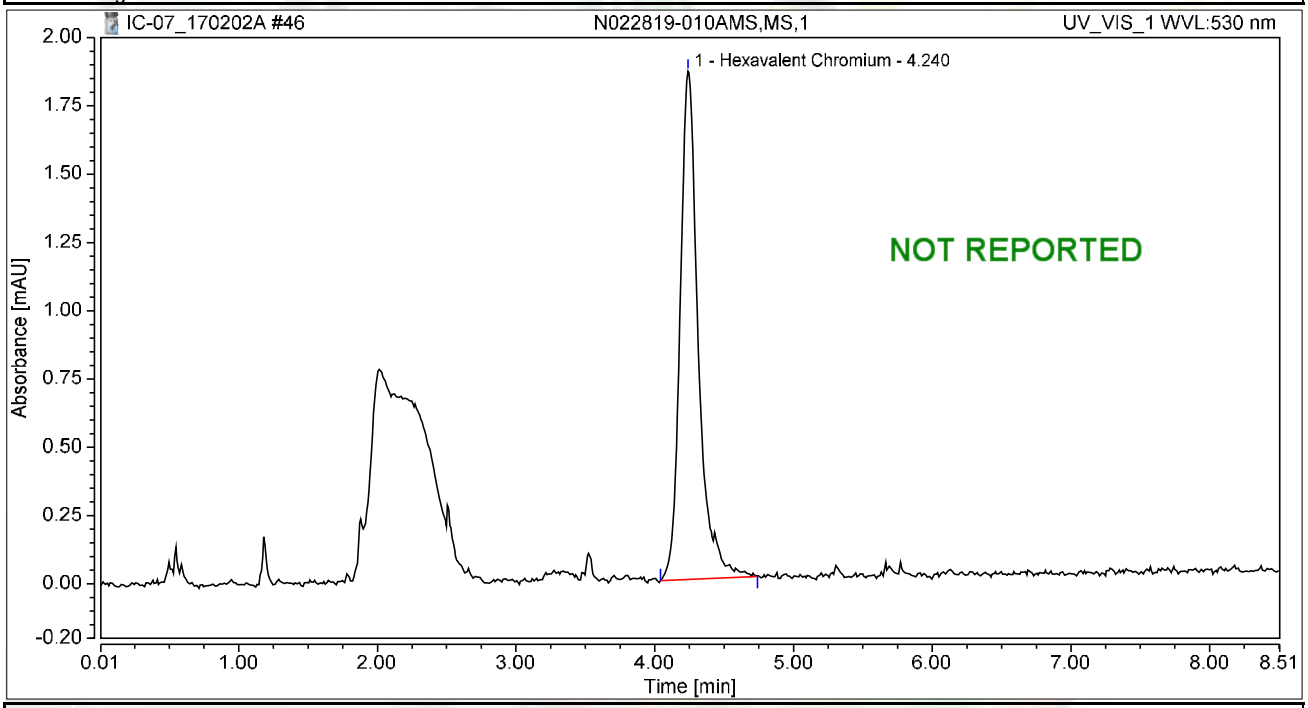
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.283	1.888	100.00	100.00	1.1067
Total:			**0.283**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

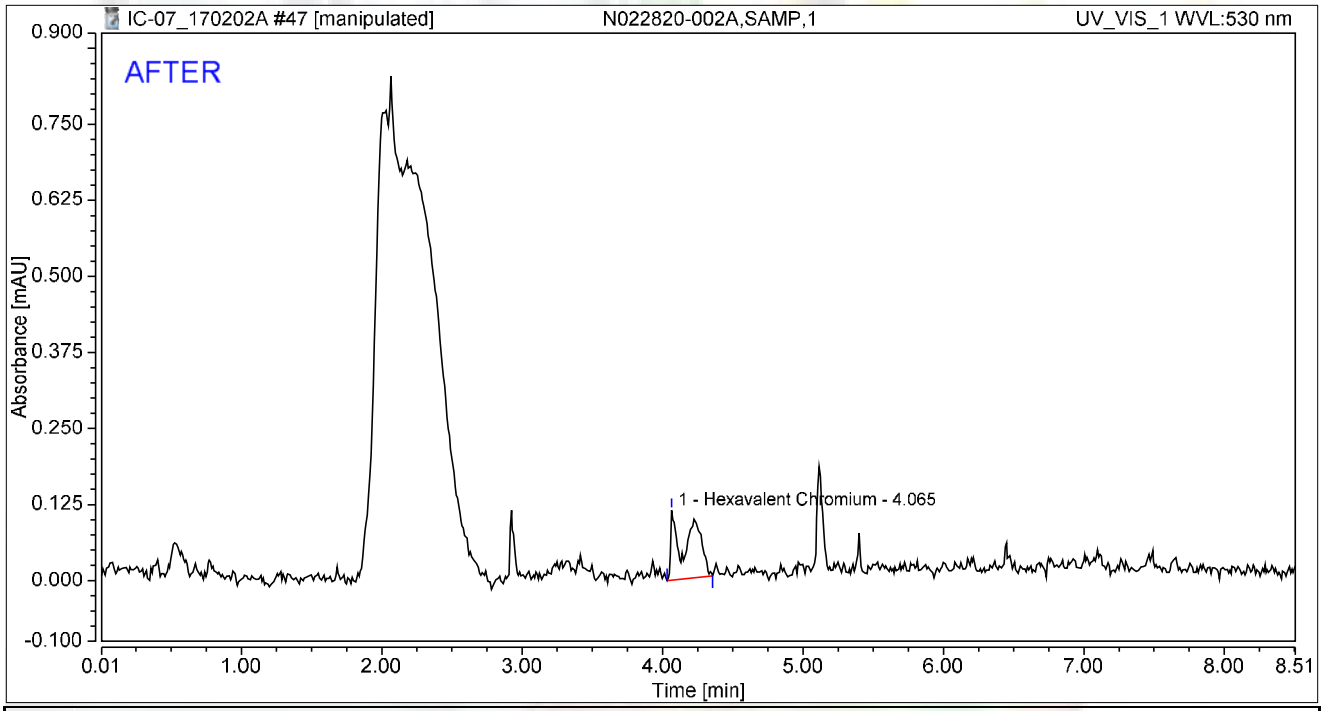
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.861	100.00	100.00	1.1013
Total:			**0.282**	**1.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.017	0.115	100.00	100.00	0.0674
Total:			**0.017**	**0.115**	**100.00**	**100.00**	

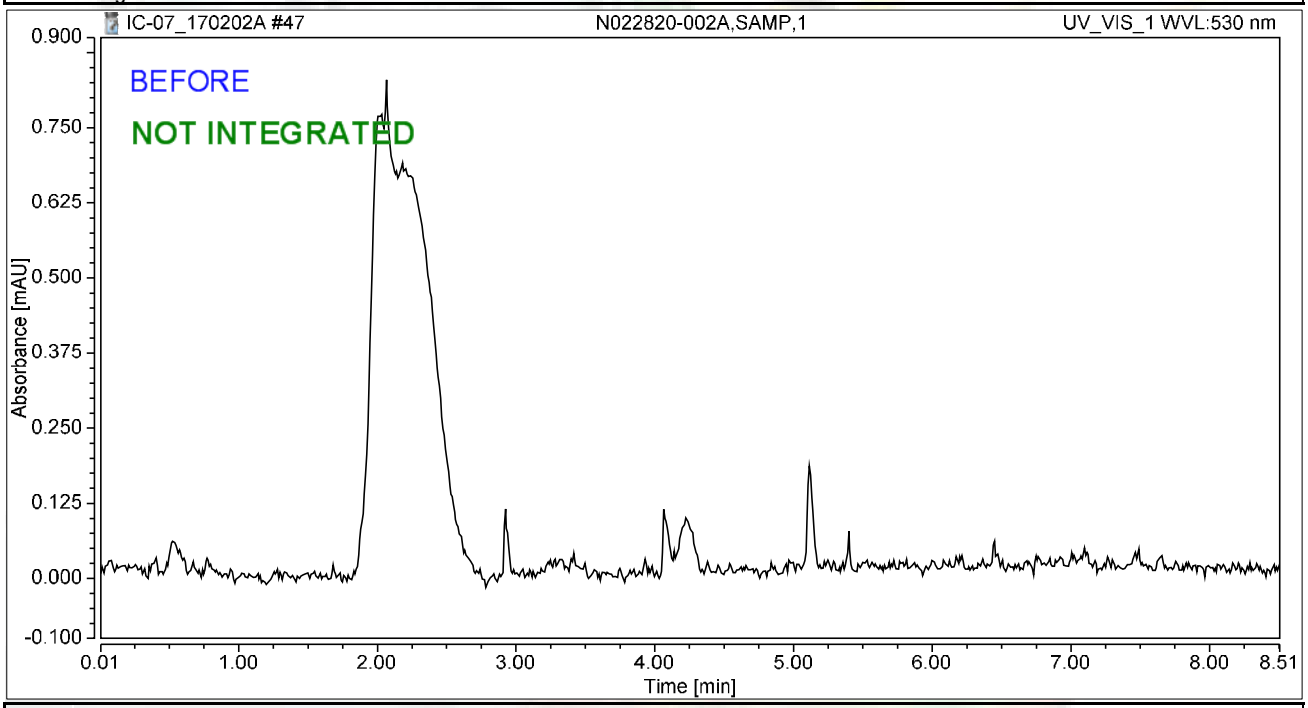
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

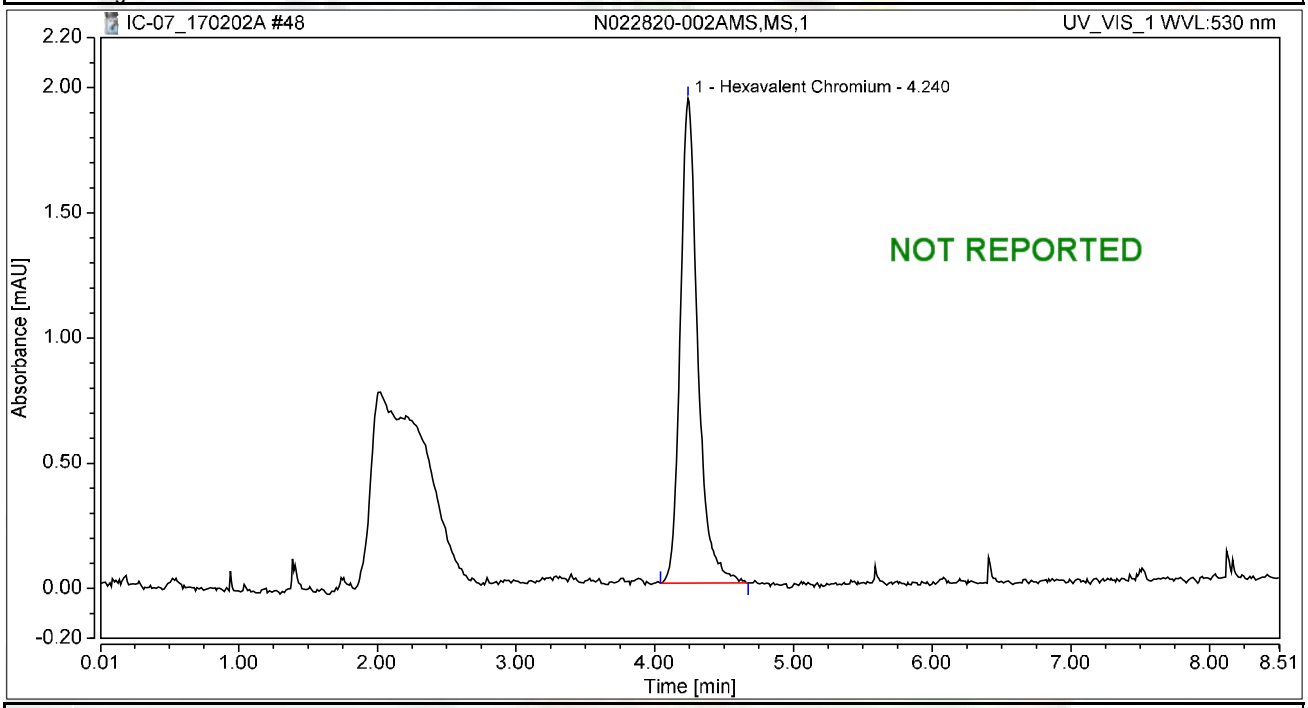
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

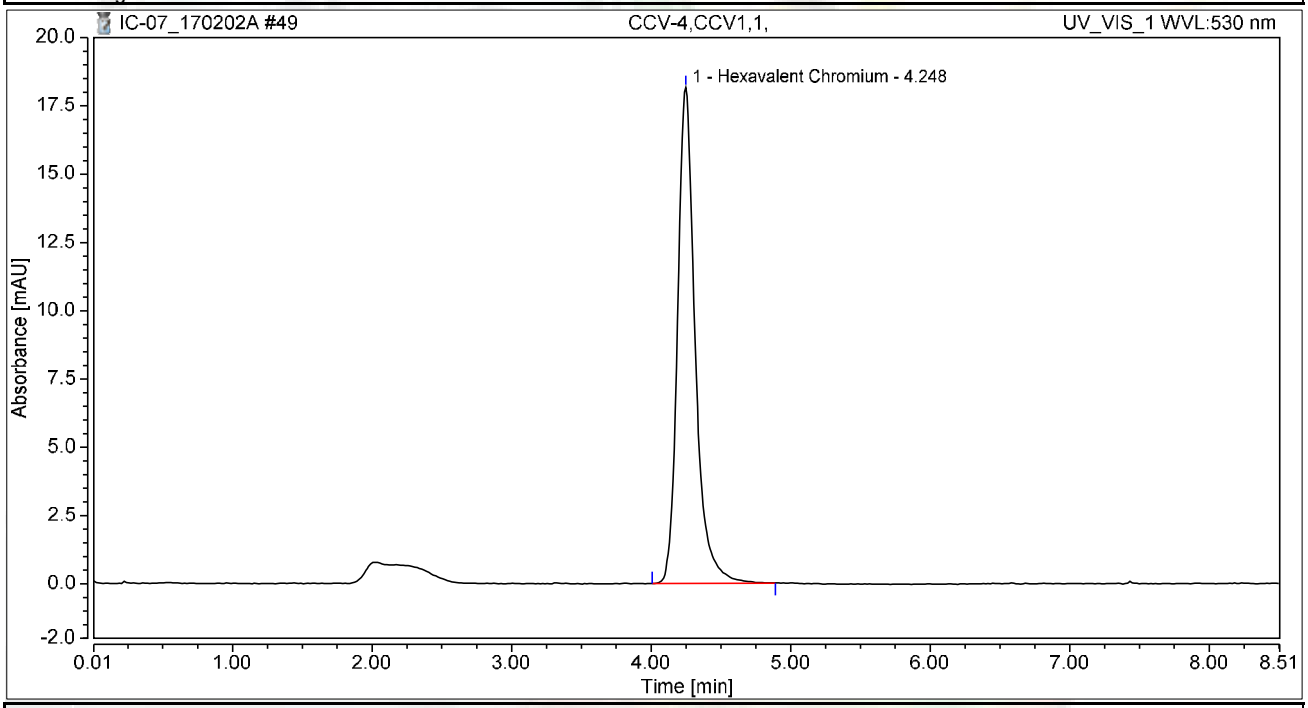
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.284	1.937	100.00	100.00	1.1103
Total:			**0.284**	**1.937**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

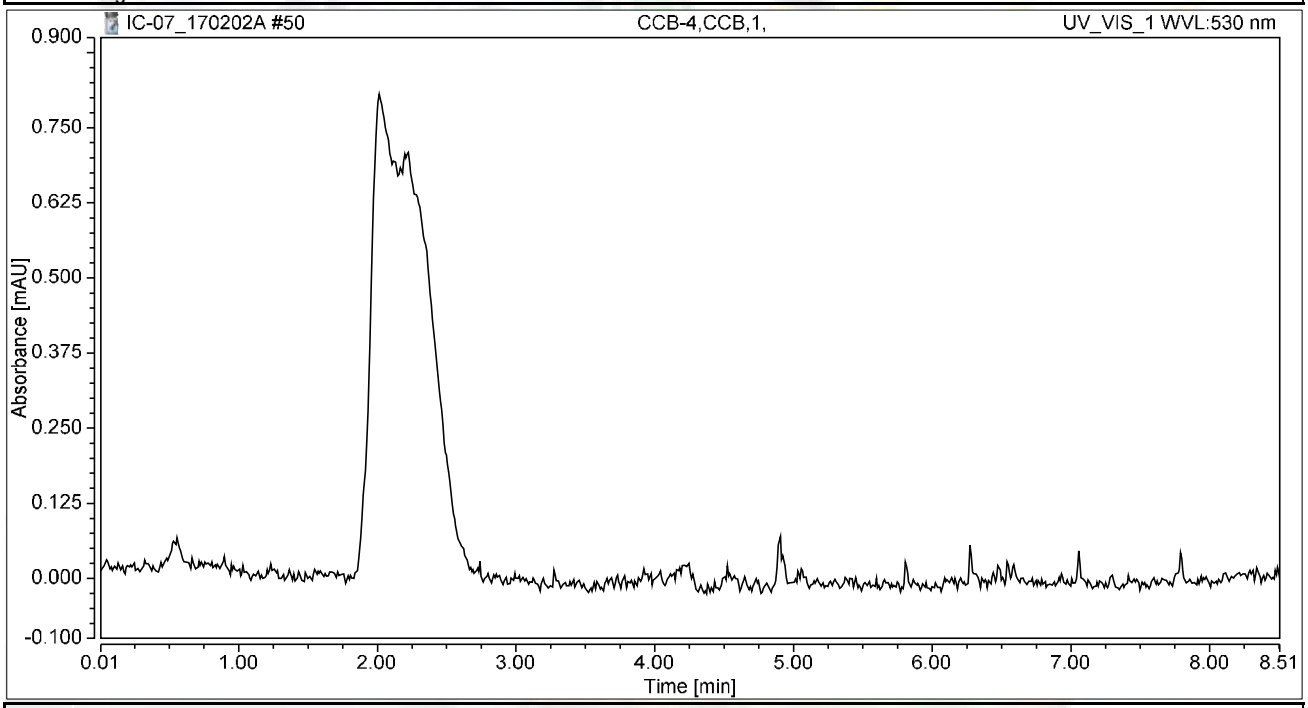
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.658	18.158	100.00	100.00	10.3972
Total:			**2.658**	**18.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

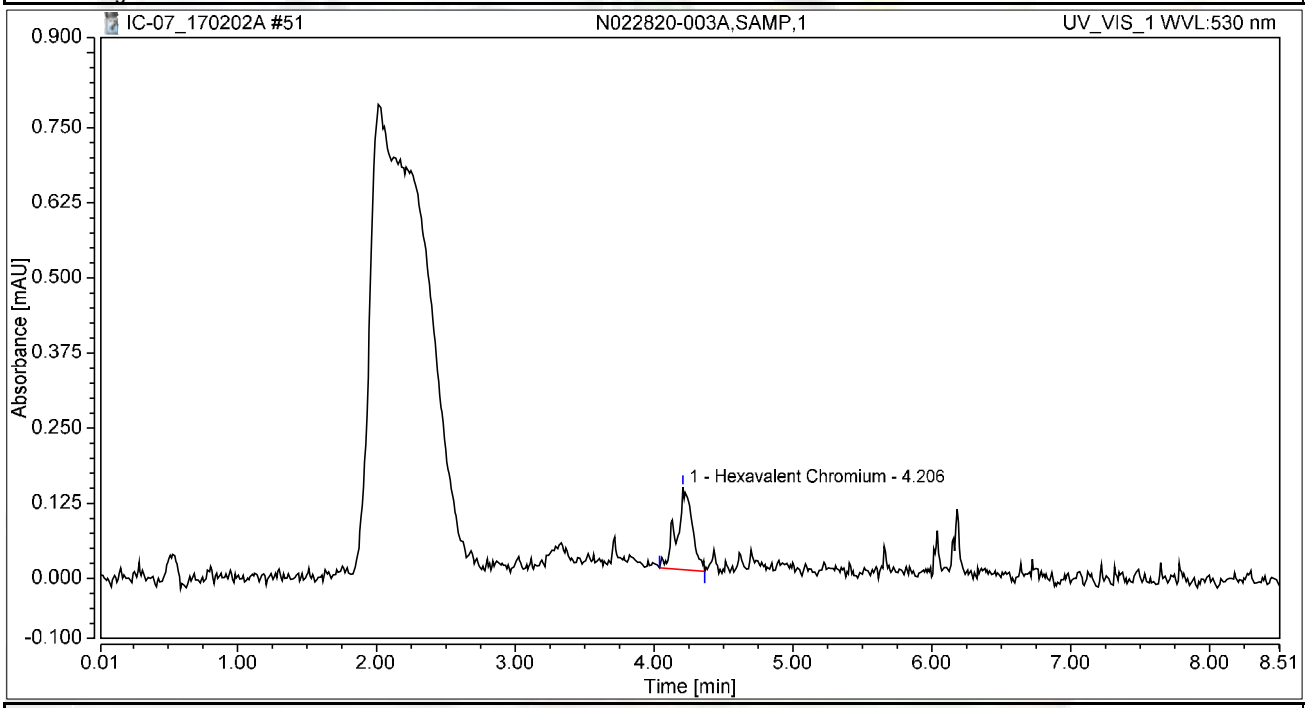
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

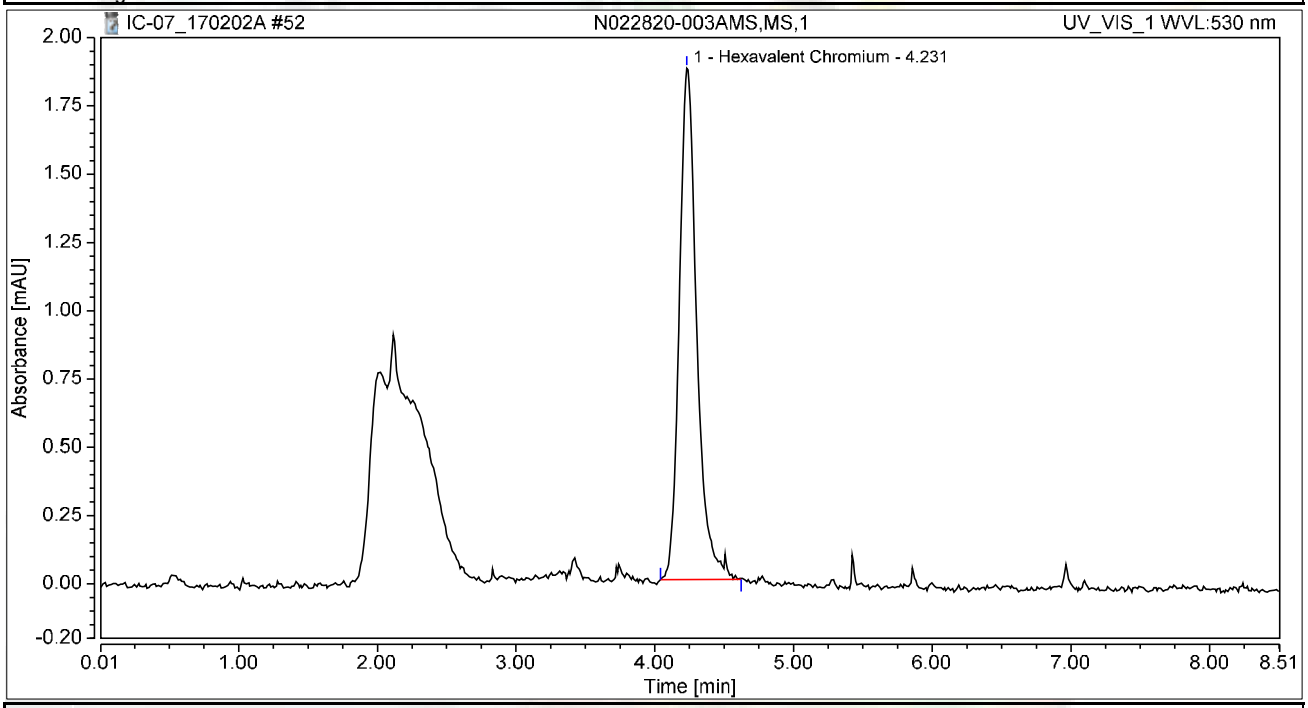
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.017	0.137	100.00	100.00	0.0683
Total:			**0.017**	**0.137**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

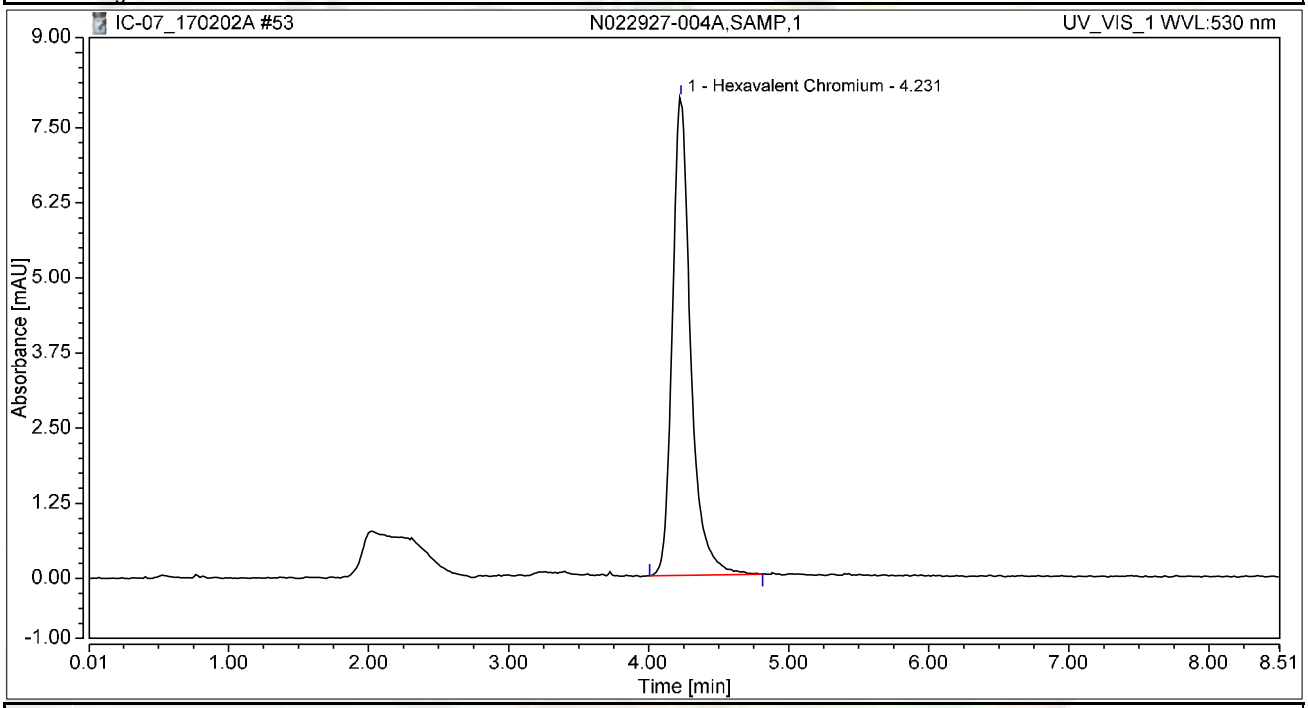
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.274	1.873	100.00	100.00	1.0706
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

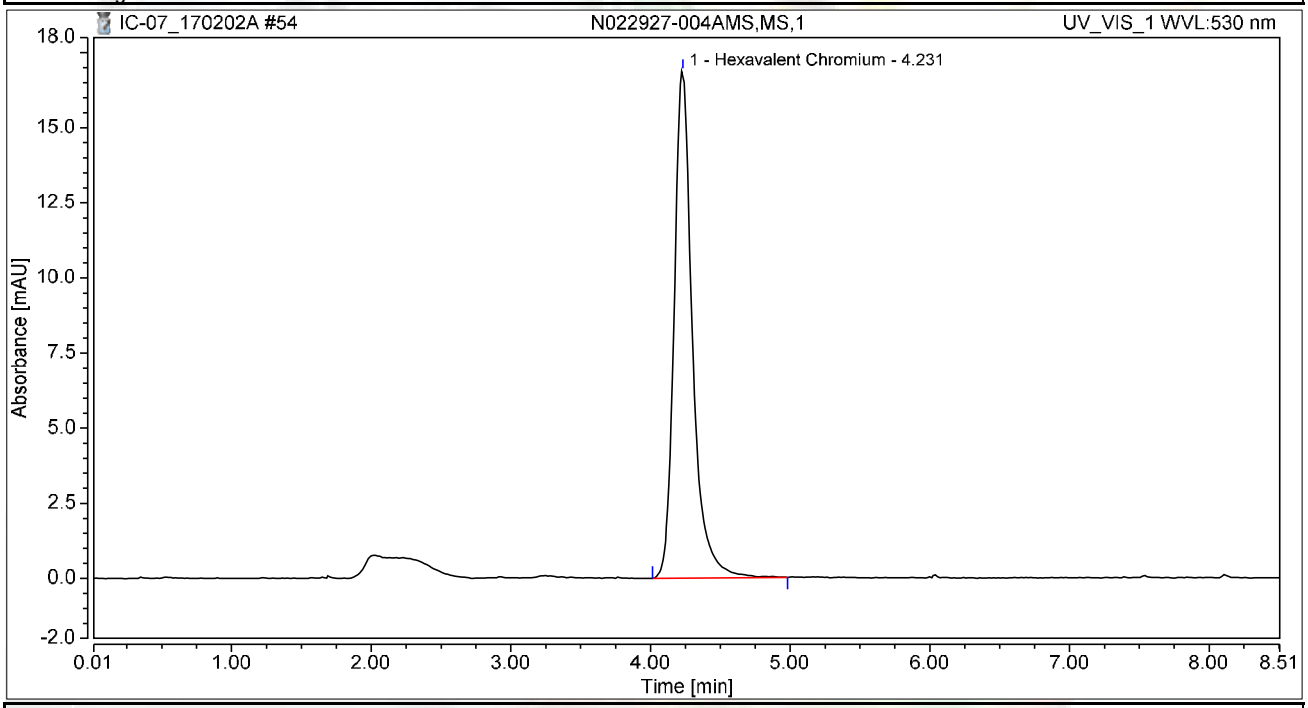
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.209	7.958	100.00	100.00	4.7282
Total:			**1.209**	**7.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

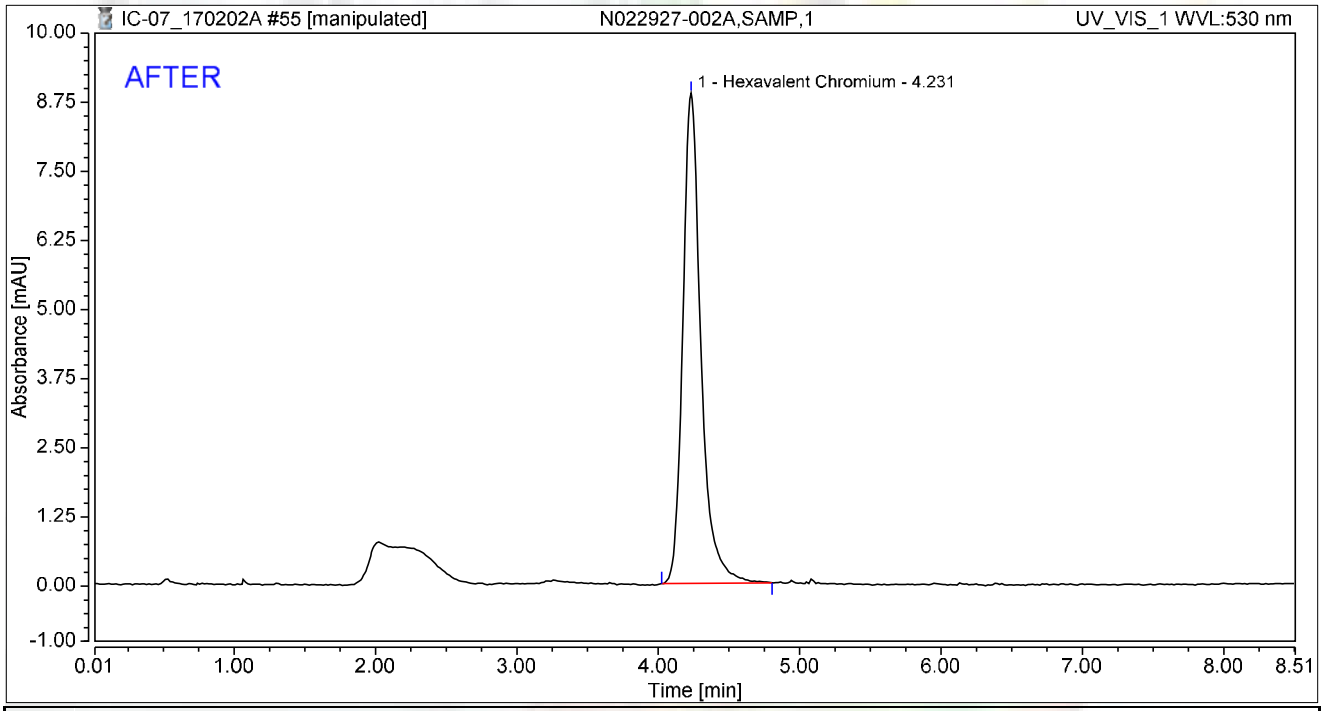
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.569	16.873	100.00	100.00	10.0495
Total:			**2.569**	**16.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.317	8.864	100.00	100.00	5.1516
Total:			**1.317**	**8.864**	**100.00**	**100.00**	

rba 2/6/2017

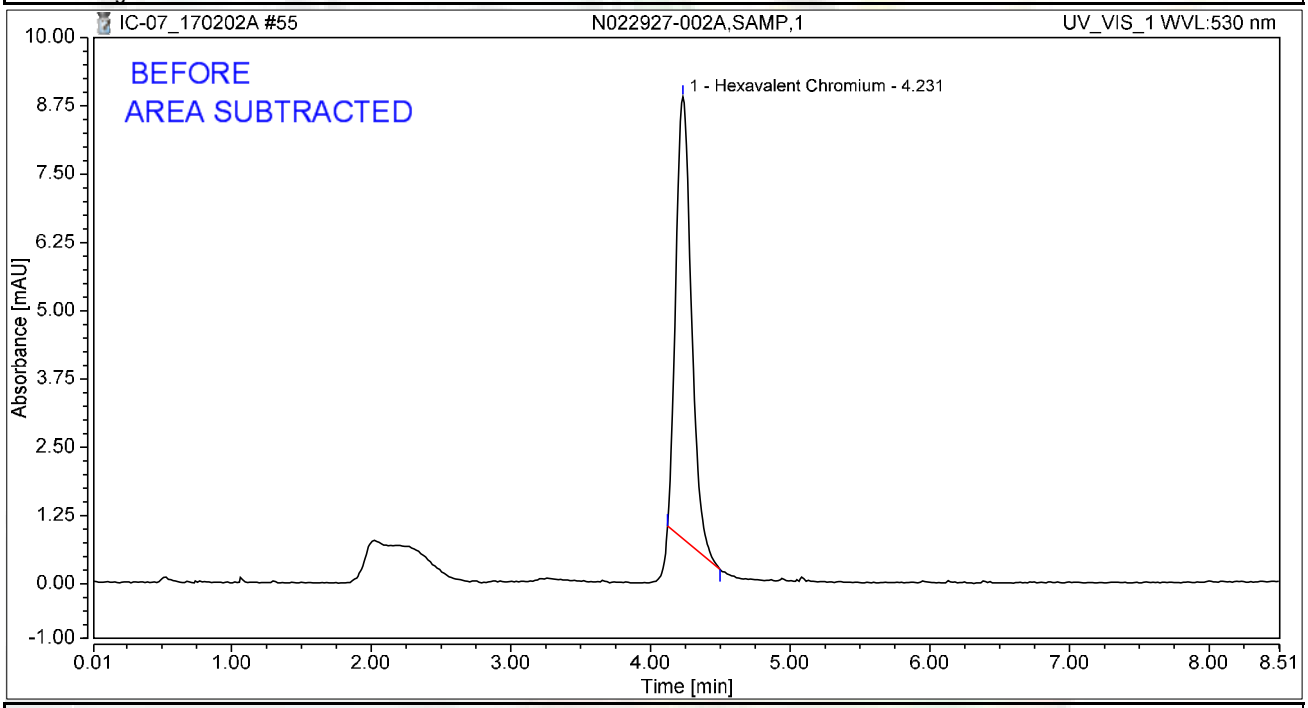
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.046	8.082	100.00	100.00	4.0910
Total:			**1.046**	**8.082**	**100.00**	**100.00**	

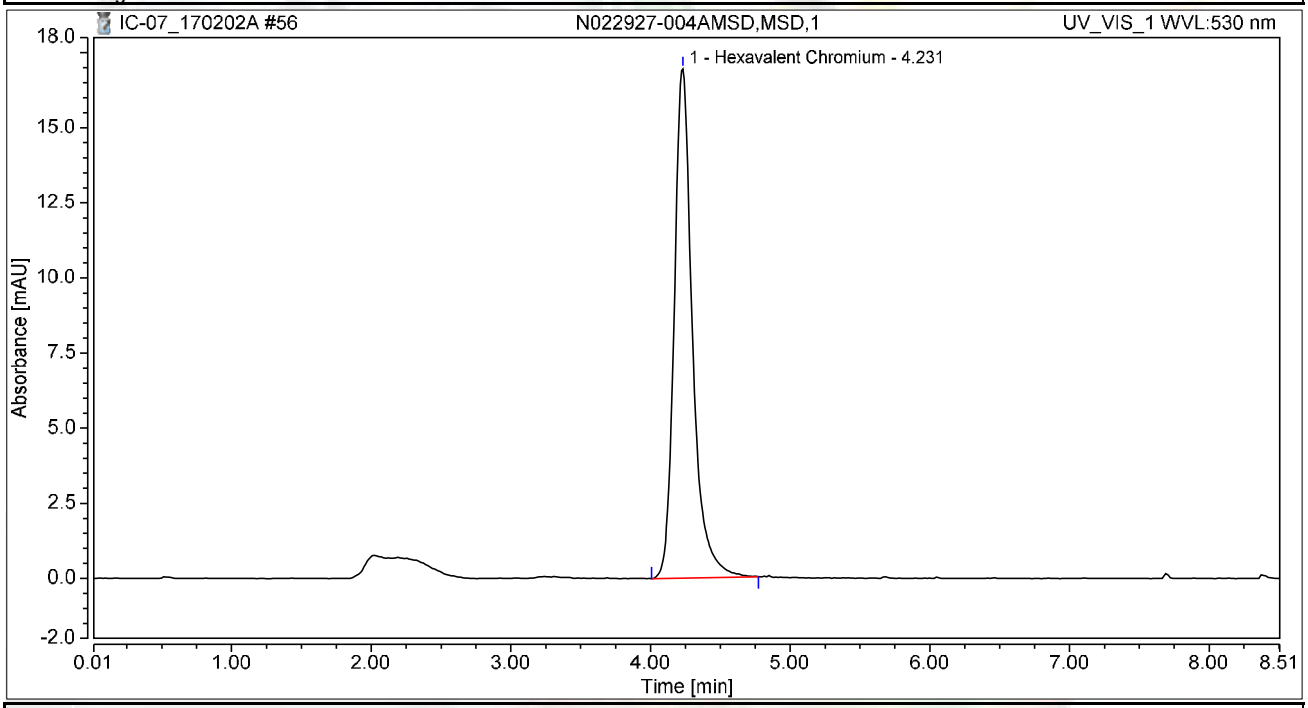
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

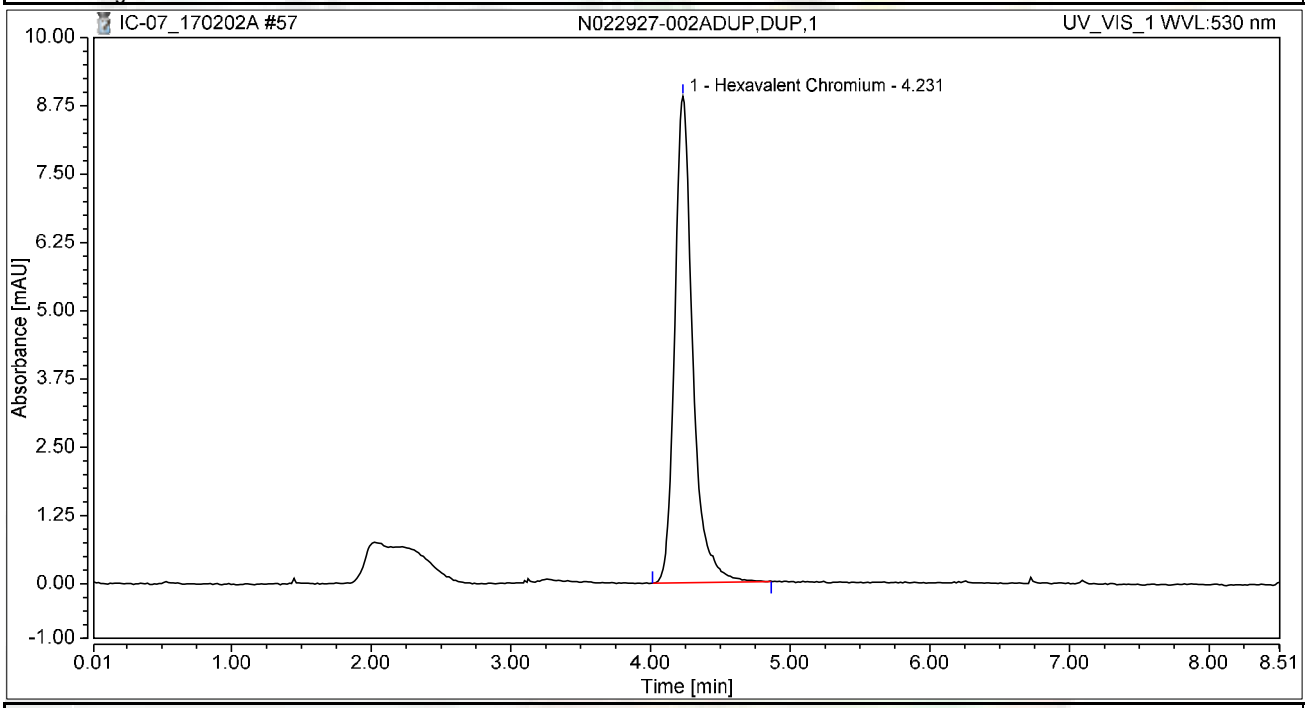
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.566	16.959	100.00	100.00	10.0366
Total:			**2.566**	**16.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

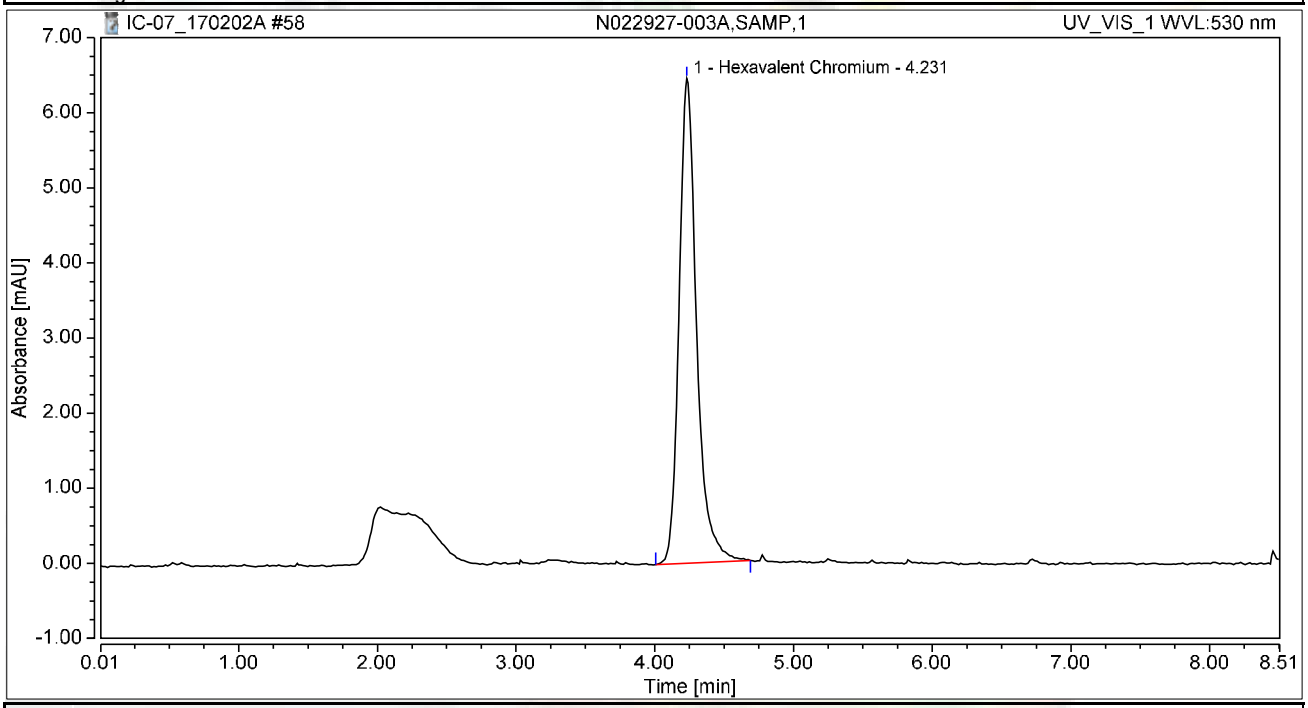
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.329	8.908	100.00	100.00	5.1999
Total:			**1.329**	**8.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

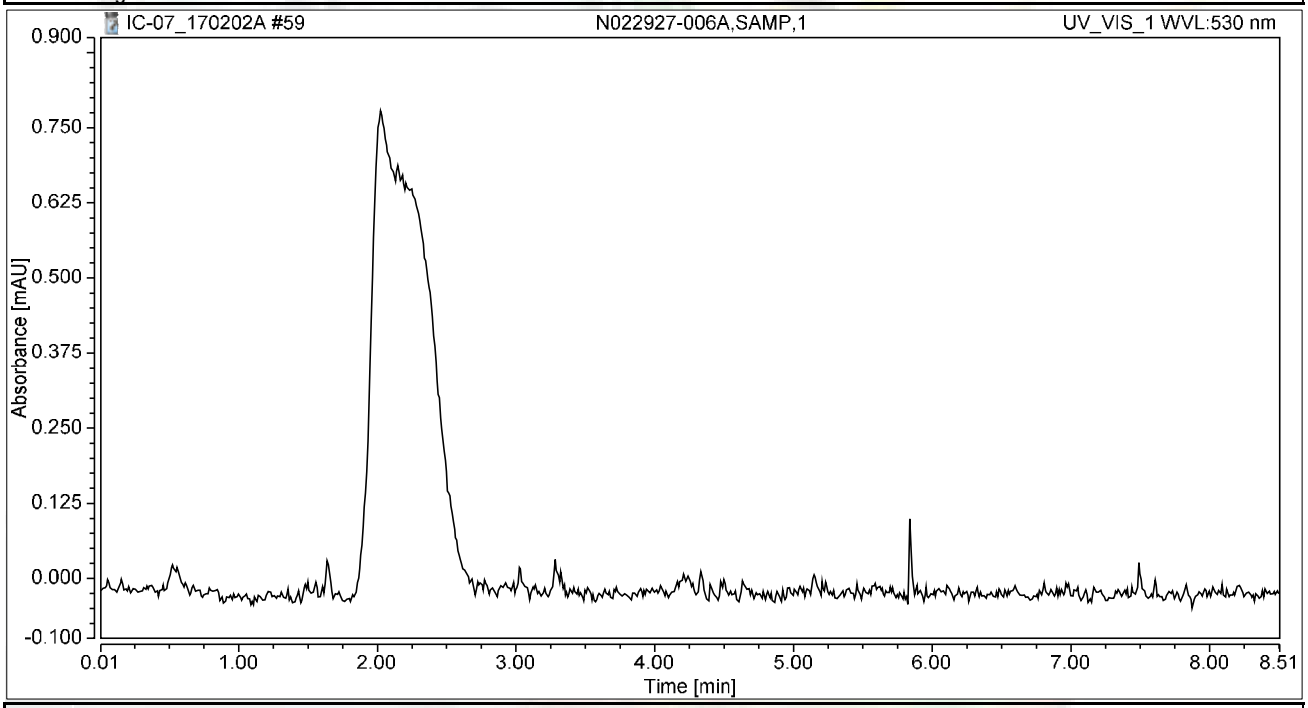
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.942	6.451	100.00	100.00	3.6856
Total:			**0.942**	**6.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

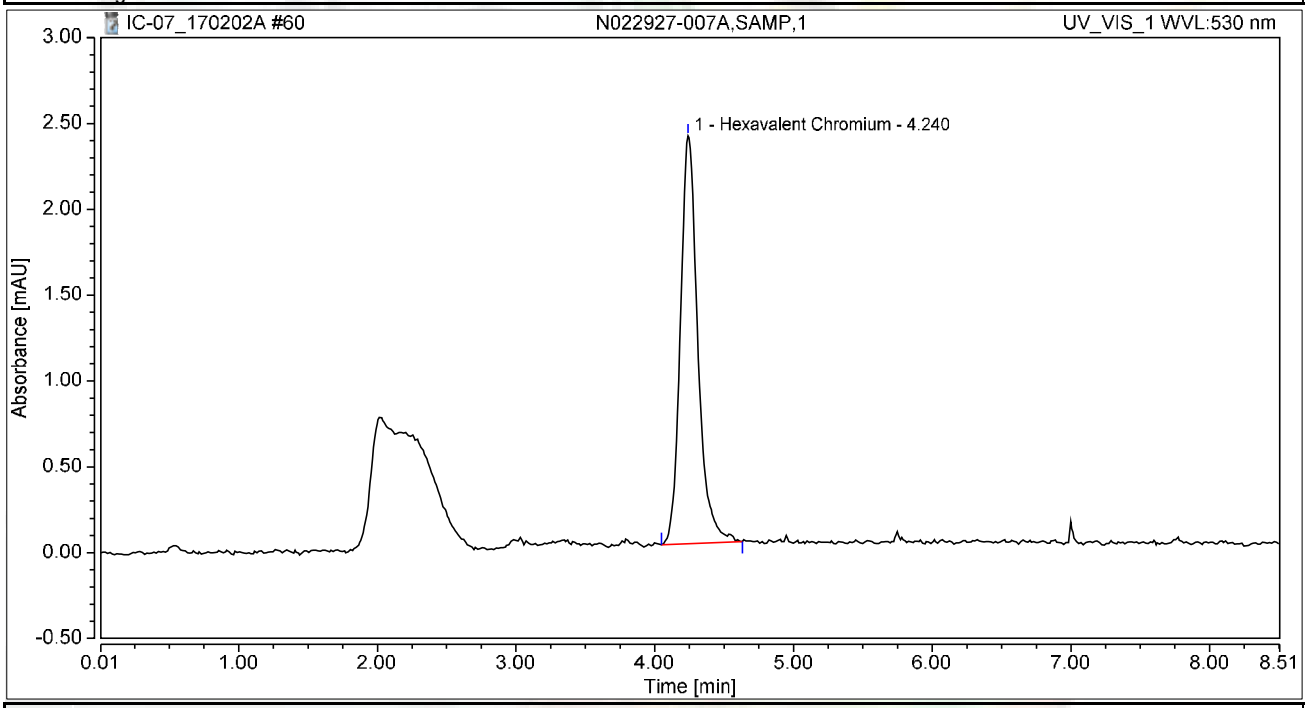
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

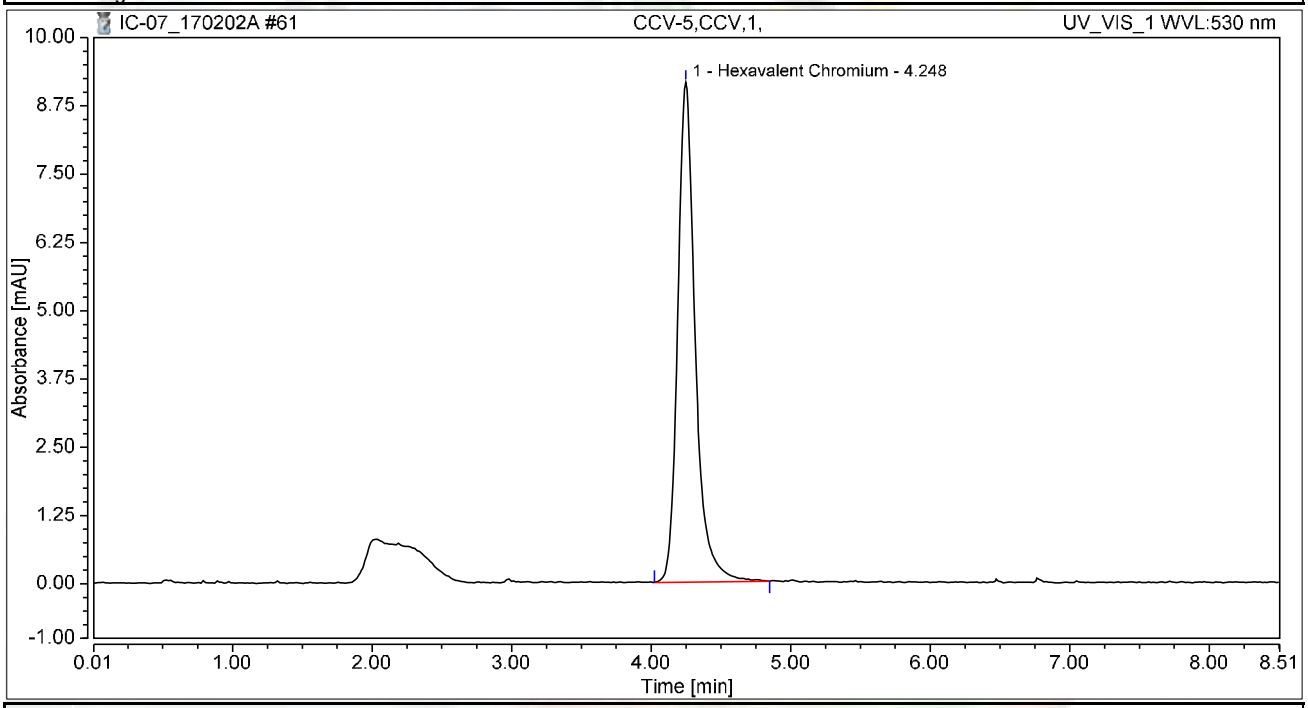
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.346	2.377	100.00	100.00	1.3553
Total:			**0.346**	**2.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

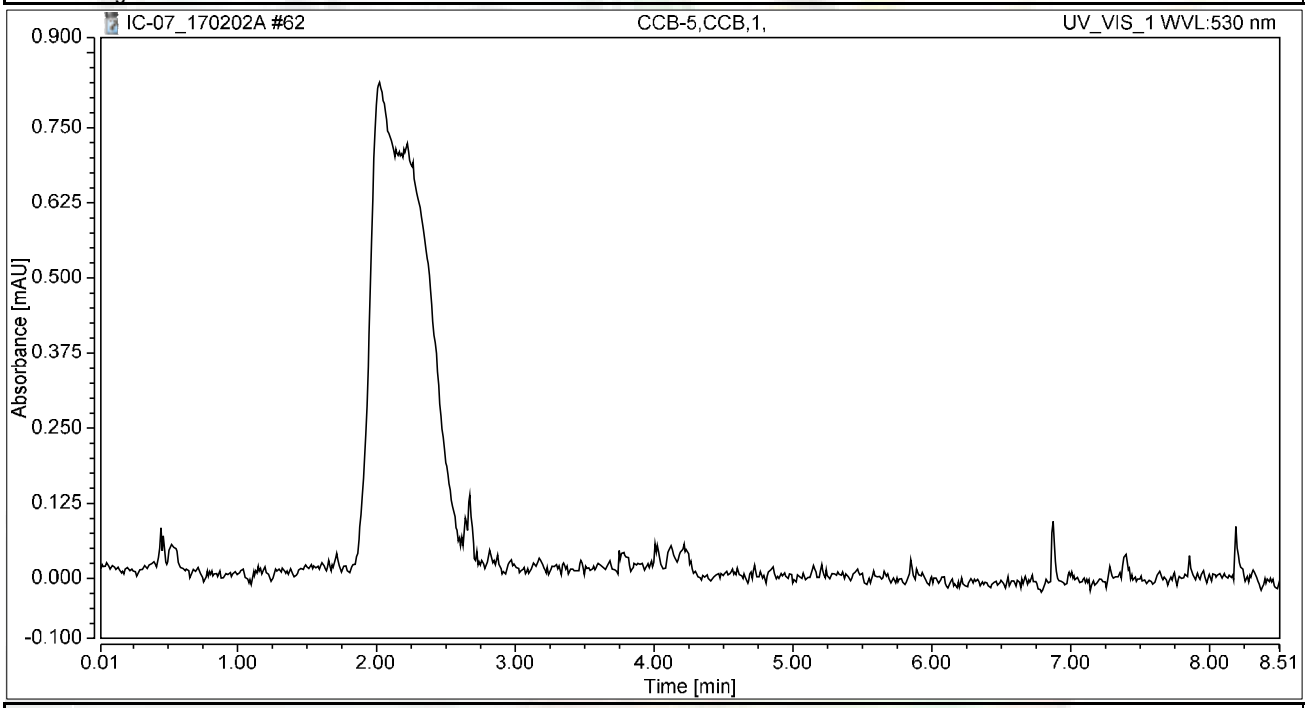
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	9.154	100.00	100.00	5.2123
Total:			**1.333**	**9.154**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

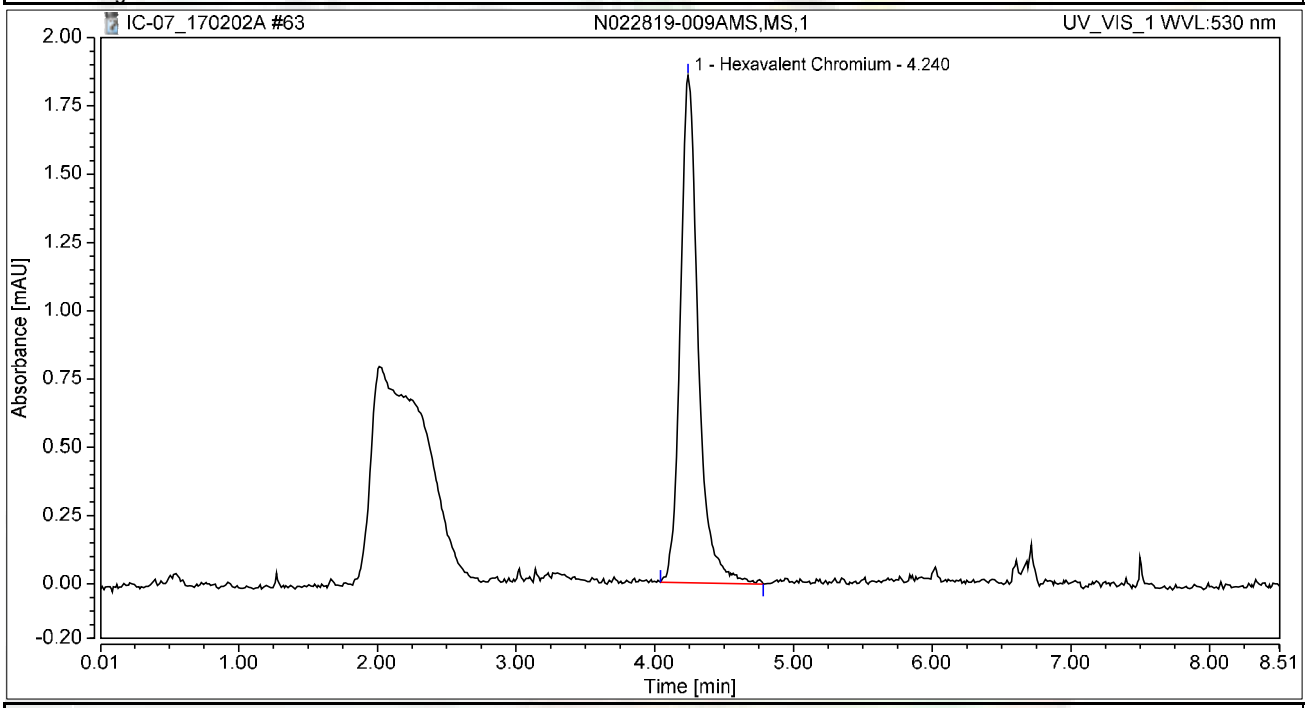
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

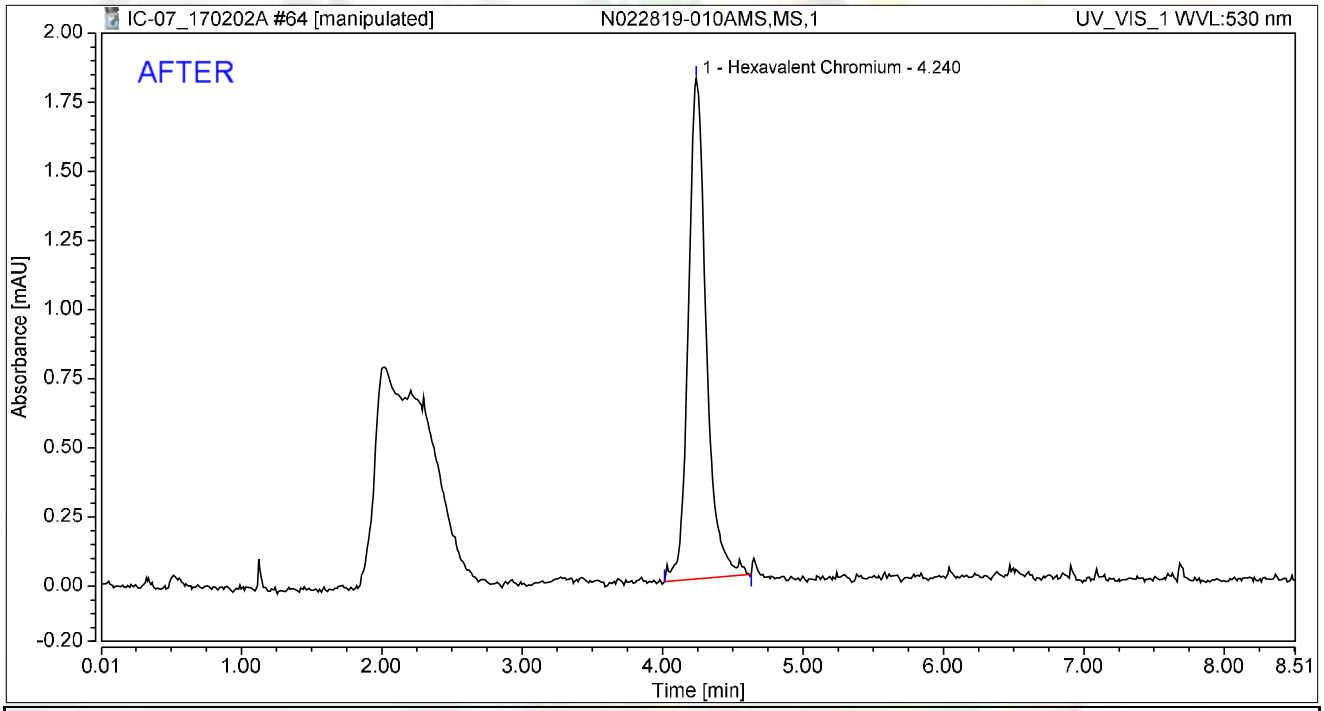
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.278	1.857	100.00	100.00	1.0888
Total:			**0.278**	**1.857**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.269	1.810	100.00	100.00	1.0514
Total:			**0.269**	**1.810**	**100.00**	**100.00**	

rba 2/6/2017

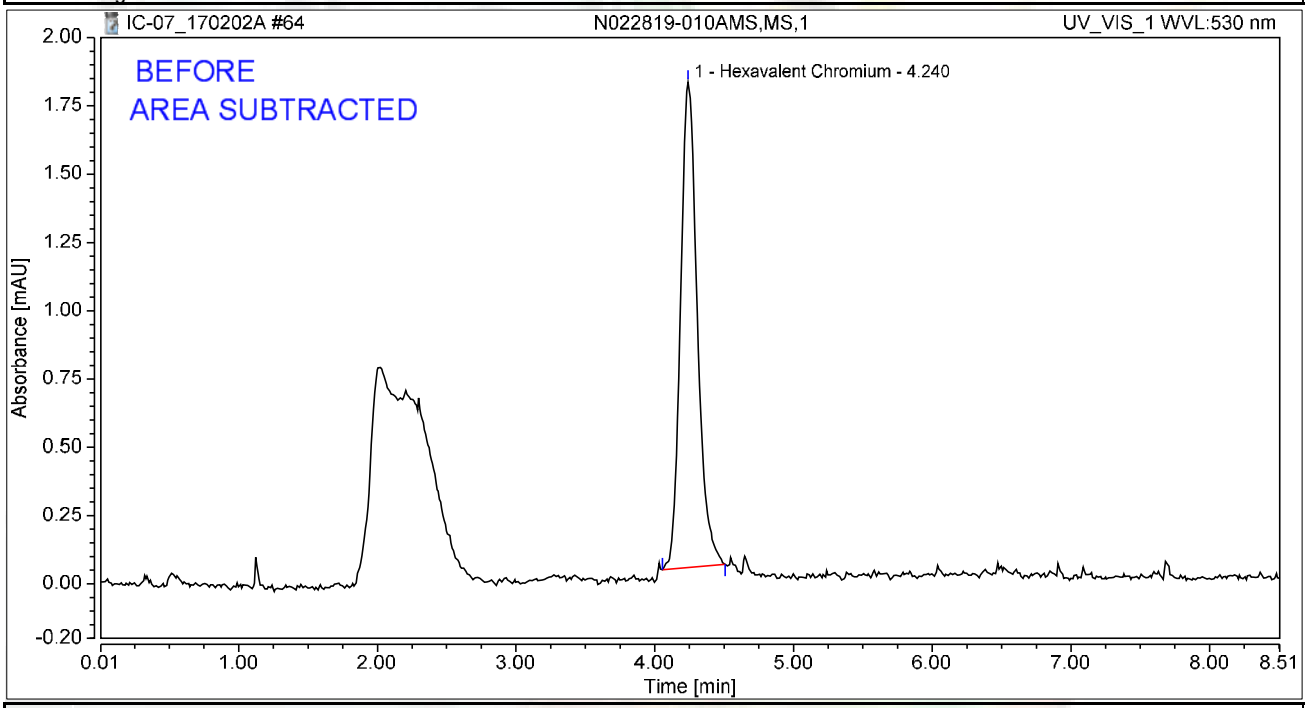
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.250	1.776	100.00	100.00	0.9760
Total:			**0.250**	**1.776**	**100.00**	**100.00**	

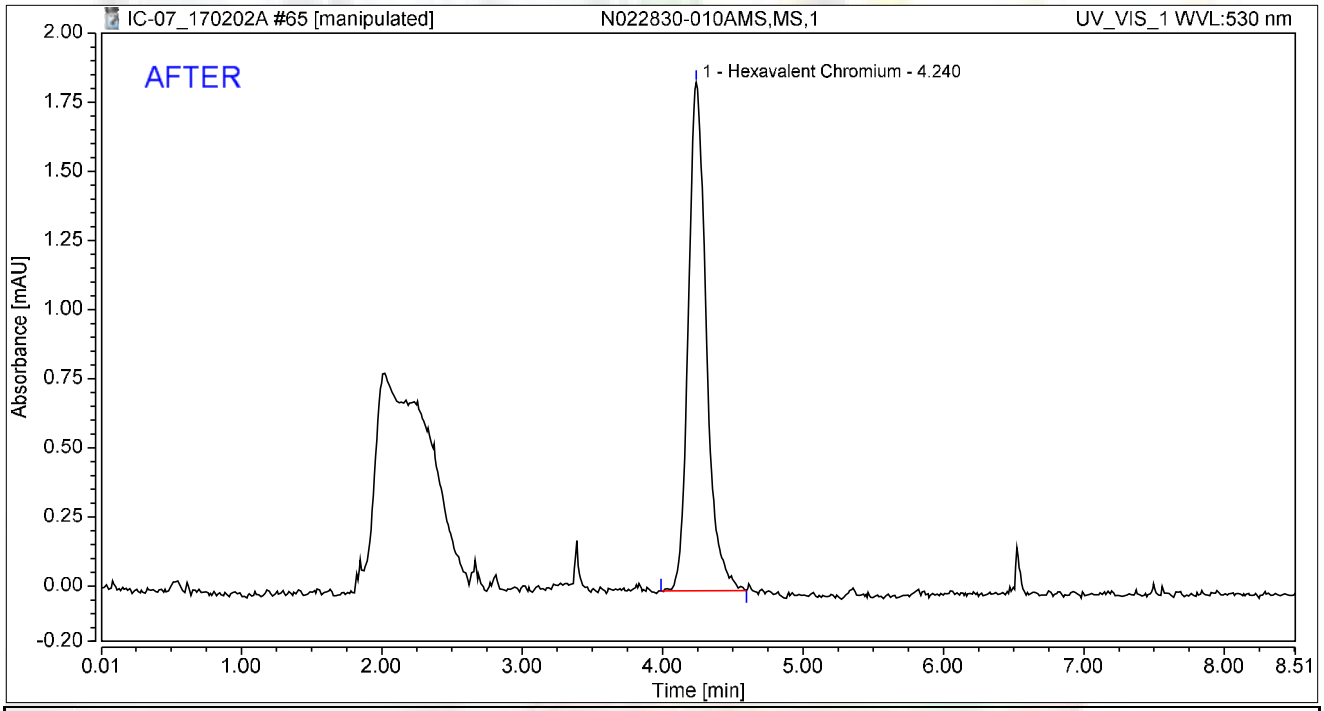
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.273	1.838	100.00	100.00	1.0692
Total:			**0.273**	**1.838**	**100.00**	**100.00**	

rba 2/6/2017

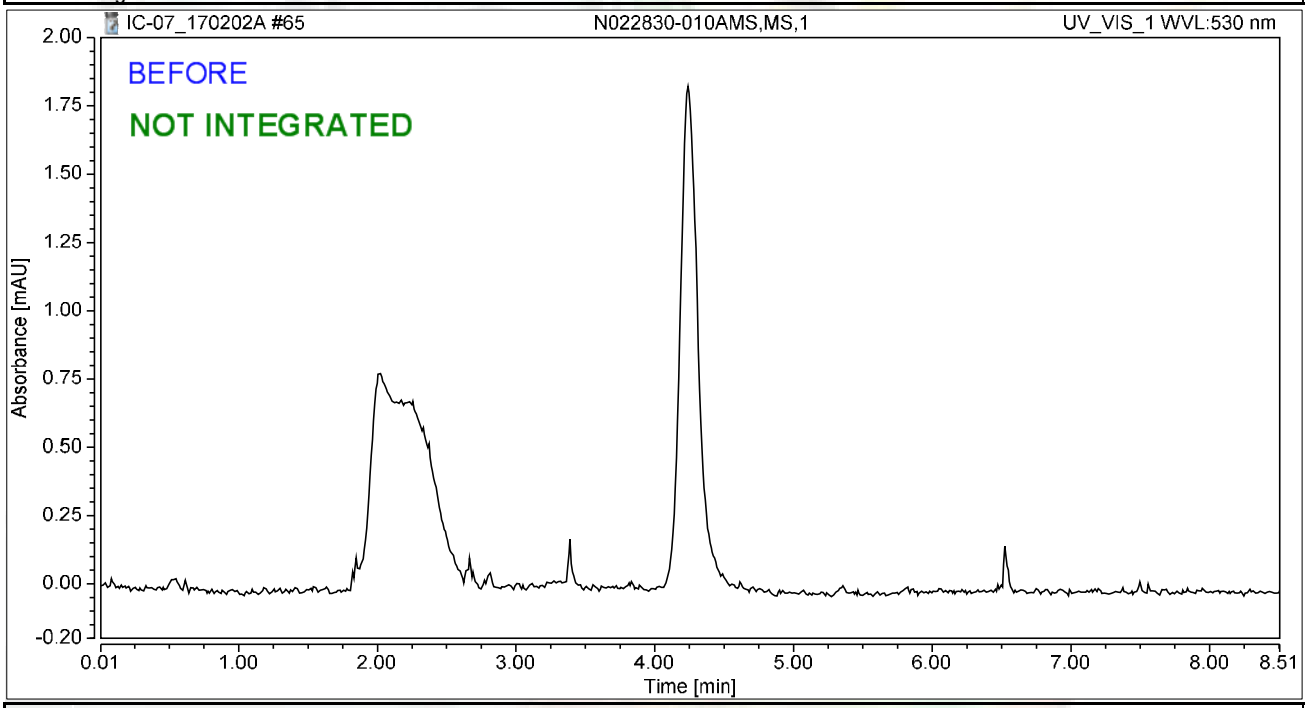
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

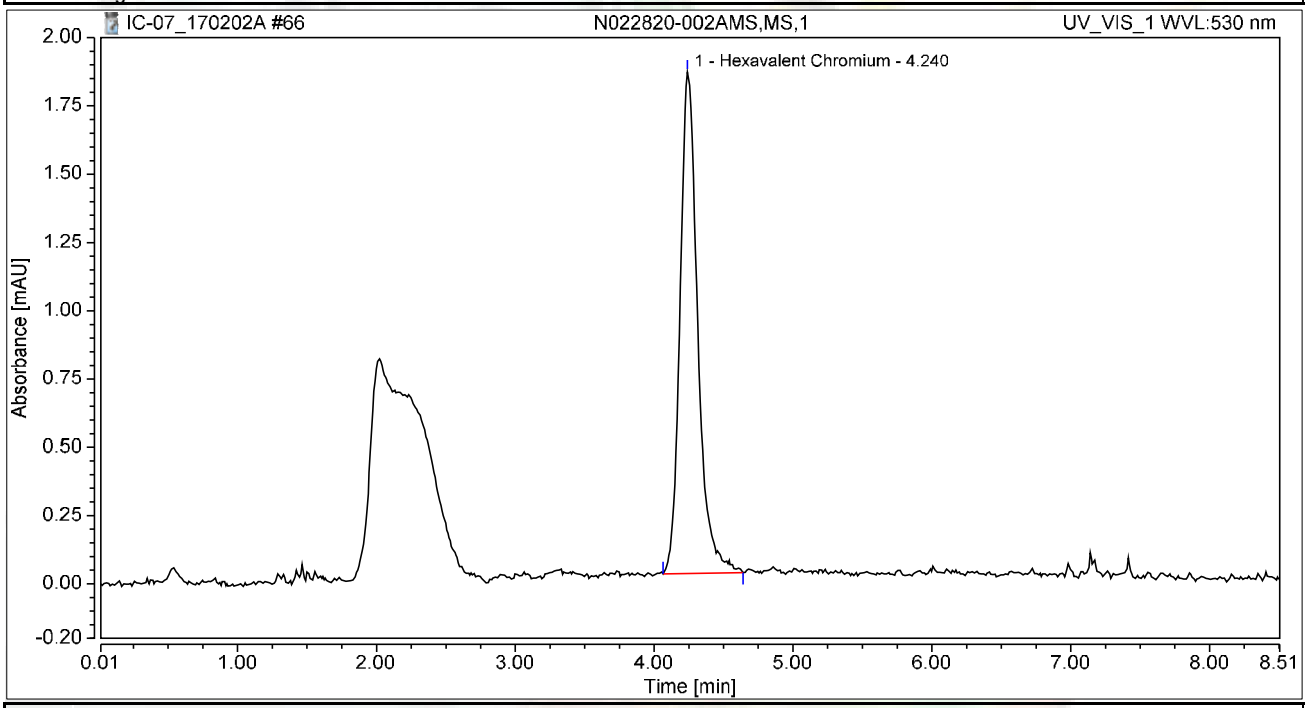
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

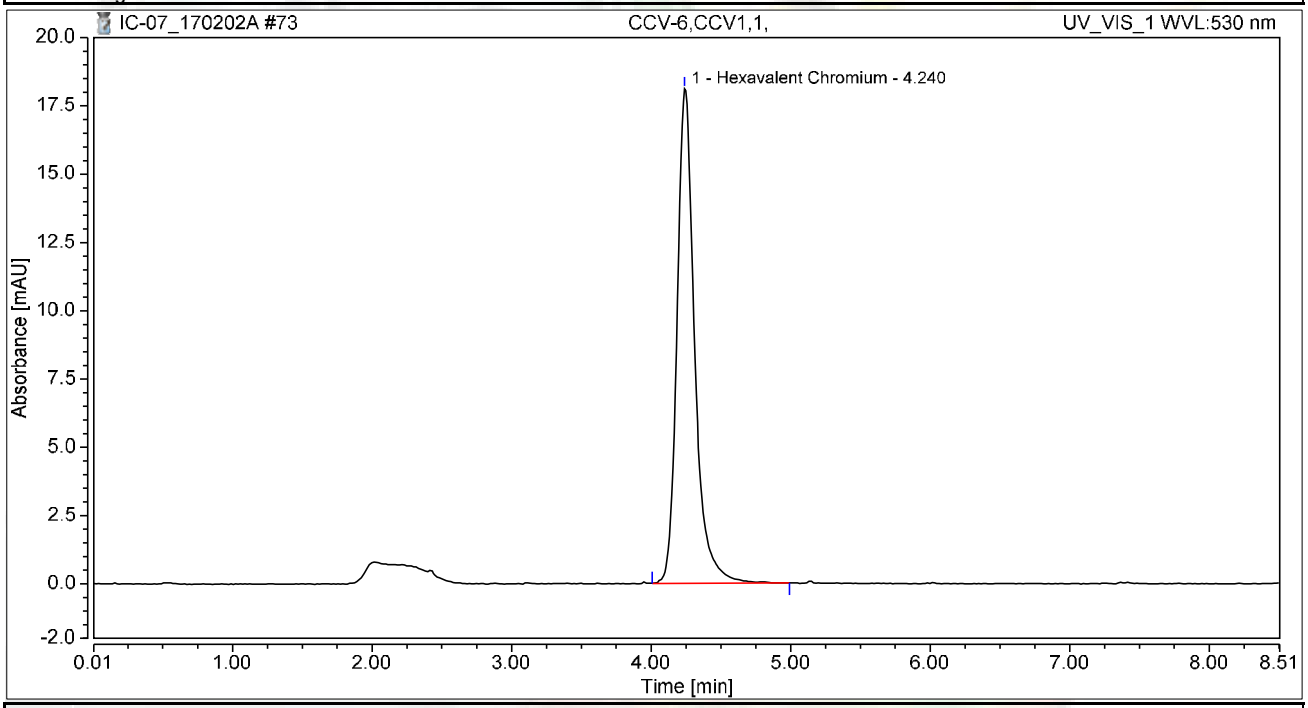
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.836	100.00	100.00	1.0603
Total:			**0.271**	**1.836**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

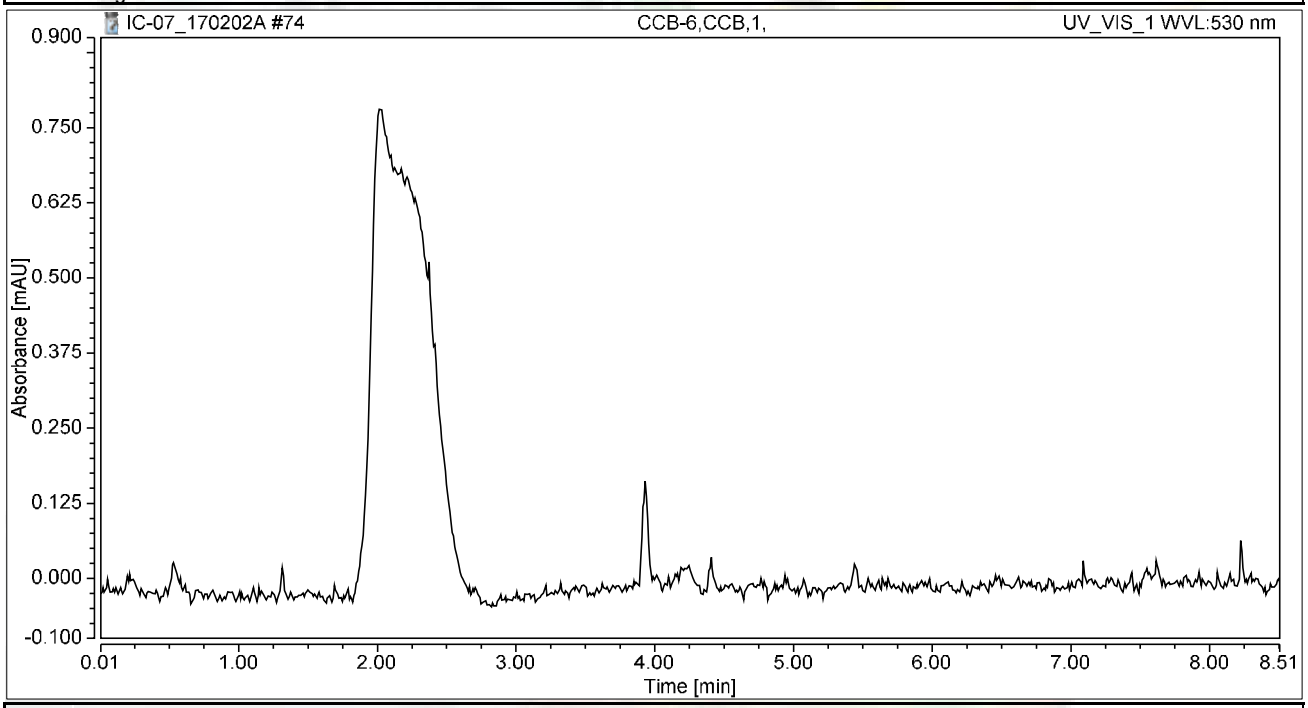
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.648	18.104	100.00	100.00	10.3586
Total:			**2.648**	**18.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113228 **Analyst:** REB

ASSET #: N022820 **Date Analyzed:** 2/1/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.			X			
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/03/17 Date:

2nd Level Reviewer Nancy 2/7/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022820-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4011*1

= 0.4011 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.40

RB 02/03/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

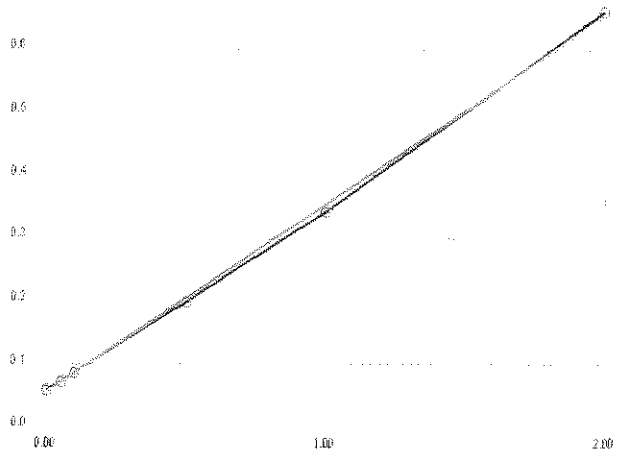
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2987x + 0.0547
Correlation	.999495



Calibrant	Energy	Set	Conc
1	0.0589	0.0000	0.0142
2	0.0728	0.0500	0.0607
3	0.0874	0.1000	0.1096
4	0.1990	0.5000	0.4831
5	0.3408	1.0000	0.9578
6	0.6595	2.0000	2.0246

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/03/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ICV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.518	0.050	0.5000	0	104	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ICB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

-Cil

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-01-2017 14:43
Time end: 02-01-2017 17:38

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:57:44	0.0229		0.0615
2	<BLANK>	16:58:43	0.0165		0.0596
3	<CAL1>	16:59:39	0.0142	[0]	0.0589
4	<CAL2>	17:00:34	0.0607	[0.05]	0.0728
5	<CAL3>	17:01:35	0.1096	[0.1]	0.0874
6	<CAL4>	17:02:29	0.4831	[0.5]	0.1990
7	<CAL5>	17:03:31	0.9578	[1]	0.3408
8	<CAL6>	17:04:26	2.0246	[2]	0.6595
9	,BLANK,BLANK,1,	17:05:20	0.0313		0.0640
10	,ICV,ICV,1,	17:06:22	0.5200		0.2100
11	,ICB,ICB,1,	17:07:17	0.0199		0.0606
12	,MB-H2O,MBLK,1,	17:08:13	0.0075		0.0569
13	,LCS-H2O,LCS,1,	17:09:13	0.5313		0.2134
14	,N022820-001E,SAMP,1,	17:10:08	0.4011		0.1745
15	,N022820-001EDUP,DUP,1,	17:11:04	0.4098		0.1771
16	,N022820-001EMS,MS,1,	17:12:06	0.8718		0.3151
17	,N022820-001EMSD,MSD,1,	17:13:00	0.9464		0.3374
18	,N022820-002E,SAMP,1,	17:13:55	0.4199		0.1801
19	,N022820-003E,SAMP,1,	17:14:57	0.4179		0.1795
20	,N022820-004E,SAMP,1,	17:15:51	0.4058		0.1759
21	,BLANK,BLANK,1	17:16:46	0.0222		0.0613
22	,CCV-1,CCV,1,	17:17:48	0.5417		0.2165
23	,CCB-1,CCB,1,	17:18:43	0.0129		0.0585
24	,N022830-001E,SAMP,1,	17:19:43	0.3904		0.1713
25	,N022830-002E,SAMP,1,	17:20:39	0.4031		0.1751
26	,N022830-003E,SAMP,1,	17:21:34	0.3774		0.1674

2 RB 02/03/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022830-004E,SAMP,1,	17:22:35	0.4008		0.1744
28	,N022830-005E,SAMP,1,	17:23:19	0.4269		0.1822
29	,N022830-006E,SAMP,1,	17:24:08	0.4222		0.1808
30	,N022830-007E,SAMP,1,	17:24:50	0.4112		0.1775
31	,N022830-008E,SAMP,1,	17:25:40	0.3864		0.1701
32	,N022830-009E,SAMP,1,	17:26:22	0.3921		0.1718
33	,BLANK,BLANK,1	17:27:05	0.0179		0.0600
34	,CCV-2,CCV,1,	17:27:53	0.5176		0.2093
35	,CCB-2,CCB,1,	17:28:36	0.0041		0.0559
36	,N022829-001I,SAMP,1,	17:29:20	0.8674		0.3138
37	,N022829-003I,SAMP,1,	17:30:08	0.3094		0.1471
38	,N022829-004I,SAMP,1,	17:30:51	0.0467		0.0686
39	,N022829-005D,SAMP,50,	17:31:33	0.8262		0.3015
40	,N022829-006I,SAMP,5,	17:32:23	0.7007		0.2640
41	,N022829-007I,SAMP,1,	17:33:05	0.0199		0.0606
42	,N022829-002I,SAMP,10,	17:33:48	0.0641		0.0738
43	,BLANK,BLANK,1	17:34:37	-0.0069		0.0526
44	,CCV-3,CCV,1,	17:35:19	0.5006		0.2042
45	,CCV-3,CCV,1, not used	17:36:08	0.5079		0.2064
46	,CCB-3,CCB,1,	17:36:50	0.0038		0.0558

RJB 02/03/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/01/17
Time Analyzed: 02:43 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022820-001E		8.32						
2)	N022820-002E		6.92						
3)	N022820-003E		8.27						
4)	N022820-004E		7.48						
5)	N022829-001I		8.72						
6)	N022829-002I		6.21						
7)	N022829-003I		7.40						
8)	N022829-004I		8.47						
9)	N022829-005D		8.37						
10)	N022829-006I		8.77						
11)	N022829-007I		8.67						
12)	N022830-001E		8.49						
13)	N022830-002E		6.21						
14)	N022830-003E		7.42						
15)	N022830-004E		7.62						
16)	N022830-005E		6.78						
17)	N022830-006E		7.20						
18)	N022830-007E		7.28						
19)	N022830-008E		8.06						
20)	N022830-009E		8.01						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/03/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61046 **Instrument ID:** ICP-02
ASSET #: N022820 **Analyst:** CEI
Method: **Date Analyzed:** 2/3/2017

[X] EPA 6010B / 200.7 Dissolved [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/17 Date:
2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022820-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.04989 * 1 * (25/25) * 1000

Iron , ug/L = 49.89

Reporting results in two significant figures,

Iron , ug/L = 50

% RSD SUMMARY

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	15.2	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.99	15	PASS
Standard3	ICAL	1	Fe	2	0.83	15	PASS
Standard4	ICAL	1	Fe	5	0.38	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.075	15	PASS
Standard7	ICAL	1	Fe	20	0.063	15	PASS
ICV	ICV	1	Fe	10.26	0.83	15	PASS
ICB	ICB	1	Fe	0.00038	151.043	15	<PQL
LLICV	CCV1	1	Fe	0.023	1.52	20	PASS
ICSA1	ICSA	1	Fe	2.034	0.53	15	PASS
ICB	ICB	1	Fe	-0.00017	109.48	15	<PQL
LLICV	CCV1	1	Fe	0.023	4.11	20	PASS
ICSA1	ICSA	1	Fe	193.58	0.22	15	PASS
ICSAB1	ICSAB	1	Fe	184.44	0.4	15	PASS
CCV1	CCV	1	Fe	10.039	0.0051	15	PASS
CCB1	CCB	1	Fe	-0.00009	616.8	15	<PQL
CCV2	CCV	1	Fe	9.97	0.13	15	PASS
CCB2	CCB	1	Fe	0.0052	14.6	15	PASS
CCV3	CCV	1	Fe	9.99	0.1	15	PASS
CCB3	CCB	1	Fe	0.0032	17.81	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.04	20	PASS
ICSA2	ICSA	1	Fe	197.71	0.16	15	PASS
ICSAB2	ICSAB	1	Fe	191.76	0.098	15	PASS
ICSAB2	ICSAB	1	Fe	188	0.051	15	PASS
MB-61046	MBLK	1	Fe	0.0051	21.6	15	<PQL
CCV4	CCV	1	Fe	9.92	0.11	15	PASS
CCB4	CCB	1	Fe	0.0033	19.83	15	<PQL
LCS-61046	LCS	1	Fe	0.11	0.7	15	PASS
N022819-001B	SAMP	1	Fe	0.062	3.5	15	PASS
N022819-001B	SAMP	5	Fe	0.013	3.27	15	PASS
N022819-001B-PS	PS	1	Fe	0.15	1.44	15	PASS
N022819-001B-MS	MS	1	Fe	0.15	1.98	15	PASS
N022819-001B-MSD	MSD	1	Fe	0.15	4.82	15	PASS
N022819-002B	SAMP	1	Fe	0.018	9.84	15	PASS
N022819-003B	SAMP	1	Fe	0.068	5.3	15	PASS
N022819-004B	SAMP	1	Fe	0.0058	5.14	15	PASS
CCV5	CCV	1	Fe	9.97	0.039	15	PASS
CCB5	CCB	1	Fe	0.00046	90.64	15	<PQL
N022819-005B	SAMP	1	Fe	0.0072	4.47	15	PASS
N022819-006B	SAMP	1	Fe	0.0062	4.26	15	PASS

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022819-007B	SAMP	1	Fe	0.0032	7.75	15	PASS
N022819-008B	SAMP	1	Fe	0.0055	5.21	15	PASS
N022819-009B	SAMP	1	Fe	0.017	5.52	15	PASS
N022820-001B	SAMP	1	Fe	0.0076	3.99	15	PASS
N022820-002B	SAMP	1	Fe	0.02	3.78	15	PASS
N022820-003B	SAMP	1	Fe	0.05	0.6	15	PASS
N022819-004B	SAMP	1	Fe	0.033	0.82	15	PASS
CCV6	CCV	1	Fe	9.84	0.053	15	PASS
CCB6	CCB	1	Fe	0.00022	194.78	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.58	20	PASS
ICSA3	ICSA	1	Fe	193.88	0.64	15	PASS
ICSAB3	ICSAB	1	Fe	178.07	0.59	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/03/2017	09:36:11 AM
2	Standard1	ICAL	1	02/03/2017	09:40:34 AM
3	Standard2	ICAL	1	02/03/2017	09:45:24 AM
4	Standard3	ICAL	1	02/03/2017	09:50:13 AM
5	Standard4	ICAL	1	02/03/2017	09:55:05 AM
6	Standard5	ICAL	1	02/03/2017	10:00:58 AM
7	Standard6	ICAL	1	02/03/2017	10:06:50 AM
8	Standard7	ICAL	1	02/03/2017	10:12:15 AM
9	ICV	ICV	1	02/03/2017	10:16:32 AM
1	ICB	ICB	1	02/03/2017	10:22:25 AM
2	LLICV	CCV1	1	02/03/2017	10:27:13 AM
4	ICSA1	ICSA	1	02/03/2017	10:32:03 AM
1	ICB	ICB	1	02/03/2017	10:52:50 AM
2	LLICV	CCV1	1	02/03/2017	10:57:39 AM
4	ICSA1	ICSA	1	02/03/2017	11:02:28 AM
5	ICSAB1	ICSAB	1	02/03/2017	11:08:30 AM
38	MB-61125	MBLK	1	02/03/2017	11:14:33 AM
39	LCS-61125	LCS	1	02/03/2017	11:19:23 AM
40	N022931-002E	SAMP	1	02/03/2017	11:25:14 AM
41	N022931-002E	SAMP	5	02/03/2017	11:31:05 AM
42	N022931-002E-PS	PS	1	02/03/2017	11:35:56 AM
43	N022931-002E-MS	MS	1	02/03/2017	11:41:48 AM
44	N022931-002E-MSD	MSD	1	02/03/2017	11:47:40 AM
45	MB-61083	MBLK	1	02/03/2017	11:53:33 AM
46	LCS1-61083	LCS	1	02/03/2017	11:58:24 AM
45	MB-61083	MBLK	1	02/03/2017	12:10:02 PM
7	CCV1	CCV	1	02/03/2017	12:14:51 PM
1	CCB1	CCB	1	02/03/2017	12:20:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
46	LCS1-61083	LCS	1	02/03/2017	12:25:05 PM
47	N022822-011B	SAMP	1	02/03/2017	12:30:58 PM
48	N022822-011B	SAMP	5	02/03/2017	12:35:49 PM
49	N022822-011B-PS	PS	1	02/03/2017	12:40:41 PM
50	N022822-011B-MS1	MS	1	02/03/2017	12:46:34 PM
51	N022822-011B-MSD1	MSD	1	02/03/2017	12:52:25 PM
52	N022822-014B	SAMP	1	02/03/2017	12:58:17 PM
53	N022846-011A	SAMP	1	02/03/2017	01:03:08 PM
54	N022829-001E	SAMP	1	02/03/2017	01:07:58 PM
55	N022829-002E	SAMP	1	02/03/2017	01:13:50 PM
7	CCV2	CCV	1	02/03/2017	01:19:51 PM
1	CCB2	CCB	1	02/03/2017	01:25:15 PM
56	N022829-003E	SAMP	1	02/03/2017	01:34:46 PM
57	N022829-004E	SAMP	1	02/03/2017	01:40:10 PM
58	N022829-005C	SAMP	1	02/03/2017	01:45:33 PM
59	N022829-006E	SAMP	1	02/03/2017	01:50:57 PM
60	N022829-007E	SAMP	1	02/03/2017	01:55:49 PM
61	N022829-004E	SAMP	5	02/03/2017	02:01:42 PM
62	MB-1	MBLK	1	02/03/2017	02:07:34 PM
63	MB-61119 STLC	MBLK	5	02/03/2017	02:12:26 PM
64	LCS-1	LCS	1	02/03/2017	02:17:17 PM
65	N022646-015A	SAMP	5	02/03/2017	02:22:44 PM
7	CCV3	CCV	1	02/03/2017	02:28:37 PM
1	CCB3	CCB	1	02/03/2017	02:34:02 PM
2	LLCCV1	CCV2	1	02/03/2017	02:42:04 PM
4	ICSA2	ICSA	1	02/03/2017	02:56:52 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:03:22 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:08:33 PM
66	N022646-016A	SAMP	5	02/03/2017	03:14:30 PM
67	N022646-017A	SAMP	5	02/03/2017	03:20:22 PM
68	N022873-001A	SAMP	5	02/03/2017	03:26:16 PM
69	N022873-002A	SAMP	5	02/03/2017	03:32:08 PM
70	N022873-003A	SAMP	5	02/03/2017	03:38:01 PM
97	N022873-003A-DUP	DUP	5	02/03/2017	03:43:54 PM
71	N022873-003A	SAMP	25	02/03/2017	03:49:47 PM
72	N022873-003A-MS	MS	5	02/03/2017	03:54:39 PM
73	N022873-003A-MSD	MSD	5	02/03/2017	04:00:32 PM
98	MB-61046	MBLK	1	02/03/2017	04:06:27 PM
7	CCV4	CCV	1	02/03/2017	04:11:18 PM
1	CCB4	CCB	1	02/03/2017	04:16:43 PM
99	LCS-61046	LCS	1	02/03/2017	04:21:32 PM
100	N022819-001B	SAMP	1	02/03/2017	04:27:25 PM
101	N022819-001B	SAMP	5	02/03/2017	04:32:18 PM
102	N022819-001B-PS	PS	1	02/03/2017	04:37:10 PM
103	N022819-001B-MS	MS	1	02/03/2017	04:43:04 PM
104	N022819-001B-MSD	MSD	1	02/03/2017	04:48:58 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N022819-002B	SAMP	1	02/03/2017	04:54:51 PM
106	N022819-003B	SAMP	1	02/03/2017	04:59:43 PM
118	LCS-61045	LCS	1	02/03/2017	05:04:02 PM
107	N022819-004B	SAMP	1	02/03/2017	05:12:24 PM
7	CCV5	CCV	1	02/03/2017	05:17:16 PM
1	CCB5	CCB	1	02/03/2017	05:22:40 PM
108	N022819-005B	SAMP	1	02/03/2017	05:27:28 PM
109	N022819-006B	SAMP	1	02/03/2017	05:32:21 PM
110	N022819-007B	SAMP	1	02/03/2017	05:37:14 PM
111	N022819-008B	SAMP	1	02/03/2017	05:42:06 PM
112	N022819-009B	SAMP	1	02/03/2017	05:46:58 PM
113	N022820-001B	SAMP	1	02/03/2017	05:52:17 PM
114	N022820-002B	SAMP	1	02/03/2017	05:57:10 PM
115	N022820-003B	SAMP	1	02/03/2017	06:02:03 PM
116	N022819-004B	SAMP	1	02/03/2017	06:06:57 PM
117	MB-61045	MBLK	1	02/03/2017	06:11:49 PM
7	CCV6	CCV	1	02/03/2017	06:16:41 PM
1	CCB6	CCB	1	02/03/2017	06:22:06 PM
2	LLCCV2	CCV2	1	02/03/2017	06:26:54 PM
4	ICSA3	ICSA	1	02/03/2017	06:31:43 PM
5	ICSAB3	ICSAB	1	02/03/2017	06:37:44 PM
118	LCS-61045	LCS	1	02/03/2017	06:43:48 PM
119	N022819-001C	SAMP	1	02/03/2017	06:49:42 PM
120	N022819-001C	SAMP	5	02/03/2017	06:54:36 PM
121	N022819-001C-PS	PS	1	02/03/2017	06:59:27 PM
122	N022819-001C-MS	MS	1	02/03/2017	07:05:21 PM
123	N022819-001C-MSD	MSD	1	02/03/2017	07:11:16 PM
124	N022819-002C	SAMP	1	02/03/2017	07:17:09 PM
125	N022819-003C	SAMP	1	02/03/2017	07:22:02 PM
126	N022819-004C	SAMP	1	02/03/2017	07:26:55 PM
127	N022819-005C	SAMP	1	02/03/2017	07:31:47 PM
7	CCV7	CCV	1	02/03/2017	07:36:41 PM
1	CCB7	CCB	1	02/03/2017	07:42:05 PM
128	N022819-006C	SAMP	1	02/03/2017	07:46:53 PM
129	N022819-007C	SAMP	1	02/03/2017	07:51:46 PM
130	N022819-008C	SAMP	1	02/03/2017	07:56:39 PM
131	N022819-009C	SAMP	1	02/03/2017	08:01:31 PM
132	N022820-001C	SAMP	1	02/03/2017	08:06:25 PM
133	N022820-002C	SAMP	1	02/03/2017	08:11:18 PM
134	N022820-003C	SAMP	1	02/03/2017	08:16:11 PM
135	N022819-004C	SAMP	1	02/03/2017	08:21:05 PM
38	MB-61084	MBLK	1	02/03/2017	08:25:59 PM
39	LCS-61084	LCS	1	02/03/2017	08:30:49 PM
7	CCV8	CCV	1	02/03/2017	08:36:42 PM
1	CCB8	CCB	1	02/03/2017	08:42:06 PM
40	N022830-001C	SAMP	1	02/03/2017	08:46:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N022830-001C	SAMP	5	02/03/2017	08:51:45 PM
42	N022830-001C-PS	PS	1	02/03/2017	08:56:36 PM
43	N022830-001C-MS	MS	1	02/03/2017	09:02:29 PM
44	N022830-001C-MSD	MSD	1	02/03/2017	09:08:20 PM
45	N022830-002C	SAMP	1	02/03/2017	09:14:12 PM
46	N022830-003C	SAMP	1	02/03/2017	09:19:03 PM
47	N022830-004C	SAMP	1	02/03/2017	09:23:56 PM
48	N022830-005C	SAMP	1	02/03/2017	09:28:48 PM
49	N022830-006C	SAMP	1	02/03/2017	09:33:41 PM
7	CCV9	CCV	1	02/03/2017	09:38:34 PM
1	CCB9	CCB	1	02/03/2017	09:43:59 PM
2	LLCCV3	CCV2	1	02/03/2017	09:48:47 PM
4	ICSA4	ICSA	1	02/03/2017	09:53:36 PM
5	ICSAB4	ICSAB	1	02/03/2017	09:59:38 PM
50	N022830-007C	SAMP	1	02/03/2017	10:05:42 PM
51	N022830-008C	SAMP	1	02/03/2017	10:10:33 PM
52	N022830-009C	SAMP	1	02/03/2017	10:15:24 PM
53	N022830-010C	SAMP	1	02/03/2017	10:20:15 PM
54	N022830-011C	SAMP	1	02/03/2017	10:25:06 PM
55	N022830-012C	SAMP	1	02/03/2017	10:30:09 PM
56	N022830-013C	SAMP	1	02/03/2017	10:35:02 PM
7	CCV10	CCV	1	02/03/2017	10:39:53 PM
1	CCB10	CCB	1	02/03/2017	10:45:18 PM
2	LLCCV4	CCV2	1	02/03/2017	10:50:06 PM
4	ICSA5	ICSA	1	02/03/2017	10:54:56 PM
5	ICSAB5	ICSAB	1	02/03/2017	11:00:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:57:50 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61046** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61046	Aqueous		25	☐	0	0	25	1.000		
MB-61046	Aqueous		25	☐	0	0	25	1.000		
N022819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:57:50 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/17

Prep Batch **61046** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-18**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022820-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170203A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/03/2017	09:36:11 AM	Fe	273.953	-115	0.00	mg/L	
Standard1	02/03/2017	09:40:34 AM	Fe	273.953	638	0.0200	mg/L	
Standard2	02/03/2017	09:45:24 AM	Fe	273.953	1611	0.050	mg/L	
Standard3	02/03/2017	09:50:13 AM	Fe	273.953	55940	2.000	mg/L	
Standard4	02/03/2017	09:55:05 AM	Fe	273.953	139157	5.000	mg/L	
Standard5	02/03/2017	10:00:58 AM	Fe	273.953	213525	7.500	mg/L	
Standard6	02/03/2017	10:06:50 AM	Fe	273.953	275662	10.000	mg/L	
Standard7	02/03/2017	10:12:15 AM	Fe	273.953	546752	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10263.962	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.713	20	20.00	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10038.799	20	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9974.098	20	10000	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9990.814	20	10000	0	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.319	20	20.00	0	107	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9920.896	20	10000	0	99.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.432	20	10000	0	99.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9839.474	20	10000	0	98.4	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.618	20	20.00	0	93.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.174296	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.088133	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.224	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.179	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.311	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113277
Client ID:	CCB	Batch ID:	R113277	TestNo:	EPA 6010B			Analysis Date:	2/3/2017	SeqNo:	2554582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.460	20									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113277
Client ID:	CCB	Batch ID:	R113277	TestNo:	EPA 6010B			Analysis Date:	2/3/2017	SeqNo:	2554594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.220	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460033.480	50	500000	0	92.0	80	120				
Calcium	459446.095	500	500000	0	91.9	80	120				
Iron	193578.155	20	200000	0	96.8	80	120				
Magnesium	485934.752	100	500000	0	97.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553675.376	50	500000	0	111	80	120				
Calcium	545836.870	500	500000	0	109	80	120				
Iron	184443.233	20	200000	0	92.2	80	120				
Magnesium	493866.675	100	500000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479168.987	50	500000	0	95.8	80	120				
Calcium	459494.936	500	500000	0	91.9	80	120				
Iron	197710.808	20	200000	0	98.9	80	120				
Magnesium	465996.866	100	500000	0	93.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546002.338	50	500000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	532681.050	500	500000	0	107	80	120				
Iron	188002.655	20	200000	0	94.0	80	120				
Magnesium	503028.516	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	475680.154	50	500000	0	95.1	80	120				
Calcium	456809.811	500	500000	0	91.4	80	120				
Iron	193880.663	20	200000	0	96.9	80	120				
Magnesium	456210.447	100	500000	0	91.2	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535909.119	50	500000	0	107	80	120				
Calcium	511085.094	500	500000	0	102	80	120				
Iron	178068.387	20	200000	0	89.0	80	120				
Magnesium	471025.199	100	500000	0	94.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.019	101.94	65-125	PASS
Standard2	ICAL	1	1.013	101.33	65-125	PASS
Standard3	ICAL	1	1.016	101.65	65-125	PASS
Standard4	ICAL	1	1.0013	100.13	65-125	PASS
Standard5	ICAL	1	1	99.54	65-125	PASS
Standard6	ICAL	1	0.99	98.97	65-125	PASS
Standard7	ICAL	1	0.96	96.38	65-125	PASS
ICV	ICV	1	1	99.92	65-125	PASS
ICB	ICB	1	1.025	102.5	65-125	PASS
LLICV	CCV1	1	1.014	101.44	65-125	PASS
ICSA1	ICSA	1	1.021	102.06	65-125	PASS
ICB	ICB	1	1.024	102.37	65-125	PASS
LLICV	CCV1	1	1.026	102.62	65-125	PASS
ICSA1	ICSA	1	1.1	109.96	65-125	PASS
ICSAB1	ICSAB	1	0.83	82.82	65-125	PASS
CCV1	CCV	1	1.0056	100.56	65-125	PASS
CCB1	CCB	1	1.034	103.37	65-125	PASS
CCV2	CCV	1	1.02	102.01	65-125	PASS
CCB2	CCB	1	1.047	104.66	65-125	PASS
CCV3	CCV	1	0.99	98.77	65-125	PASS
CCB3	CCB	1	1.027	102.7	65-125	PASS
LLCCV1	CCV2	1	1.044	104.36	65-125	PASS
ICSA2	ICSA	1	1.095	109.48	65-125	PASS
ICSAB2	ICSAB	1	0.83	83.49	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.66	65-125	PASS
MB-61046	MBLK	1	1	99.92	65-125	PASS
CCV4	CCV	1	0.99	98.68	65-125	PASS
CCB4	CCB	1	1.009	100.9	65-125	PASS
LCS-61046	LCS	1	1.0007	100.07	65-125	PASS
N022819-001B	SAMP	1	0.96	96.27	65-125	PASS
N022819-001B	SAMP	5	0.97	96.73	65-125	PASS
N022819-001B-PS	PS	1	0.88	88.029	65-125	PASS
N022819-001B-MS	MS	1	0.82	82.42	65-125	PASS
N022819-001B-MSD	MSD	1	0.76	75.66	65-125	PASS
N022819-002B	SAMP	1	0.78	77.97	65-125	PASS
N022819-003B	SAMP	1	0.72	71.72	65-125	PASS
N022819-004B	SAMP	1	1.017	101.67	65-125	PASS
CCV5	CCV	1	1.04	103.99	65-125	PASS
CCB5	CCB	1	1.05	105.05	65-125	PASS
N022819-005B	SAMP	1	1.011	101.13	65-125	PASS

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022819-006B	SAMP	1	1.018	101.81	65-125	PASS
N022819-007B	SAMP	1	1.0068	100.68	65-125	PASS
N022819-008B	SAMP	1	1.027	102.66	65-125	PASS
N022819-009B	SAMP	1	1.027	102.68	65-125	PASS
N022820-001B	SAMP	1	1.013	101.27	65-125	PASS
N022820-002B	SAMP	1	1.018	101.75	65-125	PASS
N022820-003B	SAMP	1	1.018	101.83	65-125	PASS
N022819-004B	SAMP	1	1.019	101.9	65-125	PASS
CCV6	CCV	1	1.031	103.11	65-125	PASS
CCB6	CCB	1	1.042	104.23	65-125	PASS
LLCCV2	CCV2	1	1.062	106.18	65-125	PASS
ICSA3	ICSA	1	1.12	112.08	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.24	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022820
Test Method: EPA 6010B
Analysis Date: 2/3/2017

Matrix: Groundwater
Batch No.: 61046

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001B DT 5X	Iron	ug/L	67.3678	NA	62.35856	8.03%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N022819-001B-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**113277**
Client ID:	**ZZZZZZ**	Batch ID:	**61046**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/3/2017**	SeqNo:	**2554574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	149.085	20	100.0	62.36	86.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61045 **Instrument ID:** ICP-02
ASSET #: N022820 **Analyst:** CEI
Method: **Date Analyzed:** 2/3/2017

[X] EPA 6010B / 200.7 Total [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/17 Date:
2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022820-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.23968 * 1 * (25/25) * 1000

Iron , ug/L = 239.68

Reporting results in two significant figures,

Iron , ug/L = 240

% RSD SUMMARY

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	15.2	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.99	15	PASS
Standard3	ICAL	1	Fe	2	0.83	15	PASS
Standard4	ICAL	1	Fe	5	0.38	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.075	15	PASS
Standard7	ICAL	1	Fe	20	0.063	15	PASS
ICV	ICV	1	Fe	10.26	0.83	15	PASS
ICB	ICB	1	Fe	0.00038	151.043	15	<PQL
LLICV	CCV1	1	Fe	0.023	1.52	20	PASS
ICSA1	ICSA	1	Fe	2.034	0.53	15	PASS
ICB	ICB	1	Fe	-0.00017	109.48	15	<PQL
LLICV	CCV1	1	Fe	0.023	4.11	20	PASS
ICSA1	ICSA	1	Fe	193.58	0.22	15	PASS
ICSAB1	ICSAB	1	Fe	184.44	0.4	15	PASS
CCV1	CCV	1	Fe	10.039	0.0051	15	PASS
CCB1	CCB	1	Fe	-0.00009	616.8	15	<PQL
CCV2	CCV	1	Fe	9.97	0.13	15	PASS
CCB2	CCB	1	Fe	0.0052	14.6	15	PASS
CCV3	CCV	1	Fe	9.99	0.1	15	PASS
CCB3	CCB	1	Fe	0.0032	17.81	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.04	20	PASS
ICSA2	ICSA	1	Fe	197.71	0.16	15	PASS
ICSAB2	ICSAB	1	Fe	191.76	0.098	15	PASS
ICSAB2	ICSAB	1	Fe	188	0.051	15	PASS
CCV4	CCV	1	Fe	9.92	0.11	15	PASS
CCB4	CCB	1	Fe	0.0033	19.83	15	<PQL
CCV5	CCV	1	Fe	9.97	0.039	15	PASS
CCB5	CCB	1	Fe	0.00046	90.64	15	<PQL
MB-61045	MBLK	1	Fe	-0.00052	100.098	15	<PQL
CCV6	CCV	1	Fe	9.84	0.053	15	PASS
CCB6	CCB	1	Fe	0.00022	194.78	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.58	20	PASS
ICSA3	ICSA	1	Fe	193.88	0.64	15	PASS
ICSAB3	ICSAB	1	Fe	178.07	0.59	15	PASS
LCS-61045	LCS	1	Fe	0.11	2.13	15	PASS
N022819-001C	SAMP	1	Fe	0.15	0.42	15	PASS
N022819-001C	SAMP	5	Fe	0.034	2.071	15	PASS
N022819-001C-PS	PS	1	Fe	0.25	0.39	15	PASS
N022819-001C-MS	MS	1	Fe	0.24	0.92	15	PASS
N022819-001C-MSD	MSD	1	Fe	0.24	0.98	15	PASS

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022819-002C	SAMP	1	Fe	0.16	0.75	15	PASS
N022819-003C	SAMP	1	Fe	0.25	0.55	15	PASS
N022819-004C	SAMP	1	Fe	0.21	0.73	15	PASS
N022819-005C	SAMP	1	Fe	0.12	1.26	15	PASS
CCV7	CCV	1	Fe	9.78	0.095	15	PASS
CCB7	CCB	1	Fe	0.00065	63.87	15	<PQL
N022819-006C	SAMP	1	Fe	0.1	0.21	15	PASS
N022819-007C	SAMP	1	Fe	0.11	0.77	15	PASS
N022819-008C	SAMP	1	Fe	0.14	0.63	15	PASS
N022819-009C	SAMP	1	Fe	0.12	1.15	15	PASS
N022820-001C	SAMP	1	Fe	0.24	0.23	15	PASS
N022820-002C	SAMP	1	Fe	0.22	1.22	15	PASS
N022820-003C	SAMP	1	Fe	0.26	0.39	15	PASS
N022819-004C	SAMP	1	Fe	0.21	0.81	15	PASS
CCV8	CCV	1	Fe	9.78	0.06	15	PASS
CCB8	CCB	1	Fe	0.00068	75.93	15	<PQL
CCV9	CCV	1	Fe	9.81	0.11	15	PASS
CCB9	CCB	1	Fe	0.0013	32.83	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.0073	20	PASS
ICSA4	ICSA	1	Fe	195.69	0.63	15	PASS
ICSAB4	ICSAB	1	Fe	177.4	0.14	15	PASS
CCV10	CCV	1	Fe	9.81	0.023	15	PASS
CCB10	CCB	1	Fe	0.0014	32.54	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	6.97	20	PASS
ICSA5	ICSA	1	Fe	195.78	0.33	15	PASS
ICSAB5	ICSAB	1	Fe	184.48	0.057	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/03/2017	09:36:11 AM
2	Standard1	ICAL	1	02/03/2017	09:40:34 AM
3	Standard2	ICAL	1	02/03/2017	09:45:24 AM
4	Standard3	ICAL	1	02/03/2017	09:50:13 AM
5	Standard4	ICAL	1	02/03/2017	09:55:05 AM
6	Standard5	ICAL	1	02/03/2017	10:00:58 AM
7	Standard6	ICAL	1	02/03/2017	10:06:50 AM
8	Standard7	ICAL	1	02/03/2017	10:12:15 AM
9	ICV	ICV	1	02/03/2017	10:16:32 AM
1	ICB	ICB	1	02/03/2017	10:22:25 AM
2	LLICV	CCV1	1	02/03/2017	10:27:13 AM
4	ICSA1	ICSA	1	02/03/2017	10:32:03 AM
1	ICB	ICB	1	02/03/2017	10:52:50 AM
2	LLICV	CCV1	1	02/03/2017	10:57:39 AM
4	ICSA1	ICSA	1	02/03/2017	11:02:28 AM
5	ICSAB1	ICSAB	1	02/03/2017	11:08:30 AM
38	MB-61125	MBLK	1	02/03/2017	11:14:33 AM
39	LCS-61125	LCS	1	02/03/2017	11:19:23 AM
40	N022931-002E	SAMP	1	02/03/2017	11:25:14 AM
41	N022931-002E	SAMP	5	02/03/2017	11:31:05 AM
42	N022931-002E-PS	PS	1	02/03/2017	11:35:56 AM
43	N022931-002E-MS	MS	1	02/03/2017	11:41:48 AM
44	N022931-002E-MSD	MSD	1	02/03/2017	11:47:40 AM
45	MB-61083	MBLK	1	02/03/2017	11:53:33 AM
46	LCS1-61083	LCS	1	02/03/2017	11:58:24 AM
45	MB-61083	MBLK	1	02/03/2017	12:10:02 PM
7	CCV1	CCV	1	02/03/2017	12:14:51 PM
1	CCB1	CCB	1	02/03/2017	12:20:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
46	LCS1-61083	LCS	1	02/03/2017	12:25:05 PM
47	N022822-011B	SAMP	1	02/03/2017	12:30:58 PM
48	N022822-011B	SAMP	5	02/03/2017	12:35:49 PM
49	N022822-011B-PS	PS	1	02/03/2017	12:40:41 PM
50	N022822-011B-MS1	MS	1	02/03/2017	12:46:34 PM
51	N022822-011B-MSD1	MSD	1	02/03/2017	12:52:25 PM
52	N022822-014B	SAMP	1	02/03/2017	12:58:17 PM
53	N022846-011A	SAMP	1	02/03/2017	01:03:08 PM
54	N022829-001E	SAMP	1	02/03/2017	01:07:58 PM
55	N022829-002E	SAMP	1	02/03/2017	01:13:50 PM
7	CCV2	CCV	1	02/03/2017	01:19:51 PM
1	CCB2	CCB	1	02/03/2017	01:25:15 PM
56	N022829-003E	SAMP	1	02/03/2017	01:34:46 PM
57	N022829-004E	SAMP	1	02/03/2017	01:40:10 PM
58	N022829-005C	SAMP	1	02/03/2017	01:45:33 PM
59	N022829-006E	SAMP	1	02/03/2017	01:50:57 PM
60	N022829-007E	SAMP	1	02/03/2017	01:55:49 PM
61	N022829-004E	SAMP	5	02/03/2017	02:01:42 PM
62	MB-1	MBLK	1	02/03/2017	02:07:34 PM
63	MB-61119 STLC	MBLK	5	02/03/2017	02:12:26 PM
64	LCS-1	LCS	1	02/03/2017	02:17:17 PM
65	N022646-015A	SAMP	5	02/03/2017	02:22:44 PM
7	CCV3	CCV	1	02/03/2017	02:28:37 PM
1	CCB3	CCB	1	02/03/2017	02:34:02 PM
2	LLCCV1	CCV2	1	02/03/2017	02:42:04 PM
4	ICSA2	ICSA	1	02/03/2017	02:56:52 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:03:22 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:08:33 PM
66	N022646-016A	SAMP	5	02/03/2017	03:14:30 PM
67	N022646-017A	SAMP	5	02/03/2017	03:20:22 PM
68	N022873-001A	SAMP	5	02/03/2017	03:26:16 PM
69	N022873-002A	SAMP	5	02/03/2017	03:32:08 PM
70	N022873-003A	SAMP	5	02/03/2017	03:38:01 PM
97	N022873-003A-DUP	DUP	5	02/03/2017	03:43:54 PM
71	N022873-003A	SAMP	25	02/03/2017	03:49:47 PM
72	N022873-003A-MS	MS	5	02/03/2017	03:54:39 PM
73	N022873-003A-MSD	MSD	5	02/03/2017	04:00:32 PM
98	MB-61046	MBLK	1	02/03/2017	04:06:27 PM
7	CCV4	CCV	1	02/03/2017	04:11:18 PM
1	CCB4	CCB	1	02/03/2017	04:16:43 PM
99	LCS-61046	LCS	1	02/03/2017	04:21:32 PM
100	N022819-001B	SAMP	1	02/03/2017	04:27:25 PM
101	N022819-001B	SAMP	5	02/03/2017	04:32:18 PM
102	N022819-001B-PS	PS	1	02/03/2017	04:37:10 PM
103	N022819-001B-MS	MS	1	02/03/2017	04:43:04 PM
104	N022819-001B-MSD	MSD	1	02/03/2017	04:48:58 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N022819-002B	SAMP	1	02/03/2017	04:54:51 PM
106	N022819-003B	SAMP	1	02/03/2017	04:59:43 PM
118	LCS-61045	LCS	1	02/03/2017	05:04:02 PM
107	N022819-004B	SAMP	1	02/03/2017	05:12:24 PM
7	CCV5	CCV	1	02/03/2017	05:17:16 PM
1	CCB5	CCB	1	02/03/2017	05:22:40 PM
108	N022819-005B	SAMP	1	02/03/2017	05:27:28 PM
109	N022819-006B	SAMP	1	02/03/2017	05:32:21 PM
110	N022819-007B	SAMP	1	02/03/2017	05:37:14 PM
111	N022819-008B	SAMP	1	02/03/2017	05:42:06 PM
112	N022819-009B	SAMP	1	02/03/2017	05:46:58 PM
113	N022820-001B	SAMP	1	02/03/2017	05:52:17 PM
114	N022820-002B	SAMP	1	02/03/2017	05:57:10 PM
115	N022820-003B	SAMP	1	02/03/2017	06:02:03 PM
116	N022819-004B	SAMP	1	02/03/2017	06:06:57 PM
117	MB-61045	MBLK	1	02/03/2017	06:11:49 PM
7	CCV6	CCV	1	02/03/2017	06:16:41 PM
1	CCB6	CCB	1	02/03/2017	06:22:06 PM
2	LLCCV2	CCV2	1	02/03/2017	06:26:54 PM
4	ICSA3	ICSA	1	02/03/2017	06:31:43 PM
5	ICSAB3	ICSAB	1	02/03/2017	06:37:44 PM
118	LCS-61045	LCS	1	02/03/2017	06:43:48 PM
119	N022819-001C	SAMP	1	02/03/2017	06:49:42 PM
120	N022819-001C	SAMP	5	02/03/2017	06:54:36 PM
121	N022819-001C-PS	PS	1	02/03/2017	06:59:27 PM
122	N022819-001C-MS	MS	1	02/03/2017	07:05:21 PM
123	N022819-001C-MSD	MSD	1	02/03/2017	07:11:16 PM
124	N022819-002C	SAMP	1	02/03/2017	07:17:09 PM
125	N022819-003C	SAMP	1	02/03/2017	07:22:02 PM
126	N022819-004C	SAMP	1	02/03/2017	07:26:55 PM
127	N022819-005C	SAMP	1	02/03/2017	07:31:47 PM
7	CCV7	CCV	1	02/03/2017	07:36:41 PM
1	CCB7	CCB	1	02/03/2017	07:42:05 PM
128	N022819-006C	SAMP	1	02/03/2017	07:46:53 PM
129	N022819-007C	SAMP	1	02/03/2017	07:51:46 PM
130	N022819-008C	SAMP	1	02/03/2017	07:56:39 PM
131	N022819-009C	SAMP	1	02/03/2017	08:01:31 PM
132	N022820-001C	SAMP	1	02/03/2017	08:06:25 PM
133	N022820-002C	SAMP	1	02/03/2017	08:11:18 PM
134	N022820-003C	SAMP	1	02/03/2017	08:16:11 PM
135	N022819-004C	SAMP	1	02/03/2017	08:21:05 PM
38	MB-61084	MBLK	1	02/03/2017	08:25:59 PM
39	LCS-61084	LCS	1	02/03/2017	08:30:49 PM
7	CCV8	CCV	1	02/03/2017	08:36:42 PM
1	CCB8	CCB	1	02/03/2017	08:42:06 PM
40	N022830-001C	SAMP	1	02/03/2017	08:46:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N022830-001C	SAMP	5	02/03/2017	08:51:45 PM
42	N022830-001C-PS	PS	1	02/03/2017	08:56:36 PM
43	N022830-001C-MS	MS	1	02/03/2017	09:02:29 PM
44	N022830-001C-MSD	MSD	1	02/03/2017	09:08:20 PM
45	N022830-002C	SAMP	1	02/03/2017	09:14:12 PM
46	N022830-003C	SAMP	1	02/03/2017	09:19:03 PM
47	N022830-004C	SAMP	1	02/03/2017	09:23:56 PM
48	N022830-005C	SAMP	1	02/03/2017	09:28:48 PM
49	N022830-006C	SAMP	1	02/03/2017	09:33:41 PM
7	CCV9	CCV	1	02/03/2017	09:38:34 PM
1	CCB9	CCB	1	02/03/2017	09:43:59 PM
2	LLCCV3	CCV2	1	02/03/2017	09:48:47 PM
4	ICSA4	ICSA	1	02/03/2017	09:53:36 PM
5	ICSAB4	ICSAB	1	02/03/2017	09:59:38 PM
50	N022830-007C	SAMP	1	02/03/2017	10:05:42 PM
51	N022830-008C	SAMP	1	02/03/2017	10:10:33 PM
52	N022830-009C	SAMP	1	02/03/2017	10:15:24 PM
53	N022830-010C	SAMP	1	02/03/2017	10:20:15 PM
54	N022830-011C	SAMP	1	02/03/2017	10:25:06 PM
55	N022830-012C	SAMP	1	02/03/2017	10:30:09 PM
56	N022830-013C	SAMP	1	02/03/2017	10:35:02 PM
7	CCV10	CCV	1	02/03/2017	10:39:53 PM
1	CCB10	CCB	1	02/03/2017	10:45:18 PM
2	LLCCV4	CCV2	1	02/03/2017	10:50:06 PM
4	ICSA5	ICSA	1	02/03/2017	10:54:56 PM
5	ICSAB5	ICSAB	1	02/03/2017	11:00:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:54:06 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61045** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61045	Aqueous		25	☐	0	0	25	1.000		
MB-61045	Aqueous		25	☐	0	0	25	1.000		
N022819-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/26/2017 7:54:06 A**
Prep End Date: **1/26/2017 1:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61045** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022820-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170203A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/03/2017	09:36:11 AM	Fe	273.953	-115	0.00	mg/L	
Standard1	02/03/2017	09:40:34 AM	Fe	273.953	638	0.0200	mg/L	
Standard2	02/03/2017	09:45:24 AM	Fe	273.953	1611	0.050	mg/L	
Standard3	02/03/2017	09:50:13 AM	Fe	273.953	55940	2.000	mg/L	
Standard4	02/03/2017	09:55:05 AM	Fe	273.953	139157	5.000	mg/L	
Standard5	02/03/2017	10:00:58 AM	Fe	273.953	213525	7.500	mg/L	
Standard6	02/03/2017	10:06:50 AM	Fe	273.953	275662	10.000	mg/L	
Standard7	02/03/2017	10:12:15 AM	Fe	273.953	546752	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10263.962	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.713	20	20.00	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10038.799	20	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9974.098	20	10000	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9990.814	20	10000	0	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.319	20	20.00	0	107	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9920.896	20	10000	0	99.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.432	20	10000	0	99.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9839.474	20	10000	0	98.4	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.618	20	20.00	0	93.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9777.080	20	10000	0	97.8	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9780.883	20	10000	0	97.8	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9807.103	20	10000	0	98.1	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.263	20	20.00	0	96.3	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9812.023	20	10000	0	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV4** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.011	20	20.00	0	95.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.174296	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.088133	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.224	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.179	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.311	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.460	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.220	20									

Sample ID **CCB7** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.650	20									

Sample ID **CCB8** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.682	20									

Sample ID **CCB9** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.336	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB10** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.398	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460033.480	50	500000	0	92.0	80	120				
Calcium	459446.095	500	500000	0	91.9	80	120				
Iron	193578.155	20	200000	0	96.8	80	120				
Magnesium	485934.752	100	500000	0	97.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553675.376	50	500000	0	111	80	120				
Calcium	545836.870	500	500000	0	109	80	120				
Iron	184443.233	20	200000	0	92.2	80	120				
Magnesium	493866.675	100	500000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479168.987	50	500000	0	95.8	80	120				
Calcium	459494.936	500	500000	0	91.9	80	120				
Iron	197710.808	20	200000	0	98.9	80	120				
Magnesium	465996.866	100	500000	0	93.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546002.338	50	500000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	532681.050	500	500000	0	107	80	120				
Iron	188002.655	20	200000	0	94.0	80	120				
Magnesium	503028.516	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	475680.154	50	500000	0	95.1	80	120				
Calcium	456809.811	500	500000	0	91.4	80	120				
Iron	193880.663	20	200000	0	96.9	80	120				
Magnesium	456210.447	100	500000	0	91.2	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535909.119	50	500000	0	107	80	120				
Calcium	511085.094	500	500000	0	102	80	120				
Iron	178068.387	20	200000	0	89.0	80	120				
Magnesium	471025.199	100	500000	0	94.2	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473457.689	50	500000	0	94.7	80	120				
Calcium	461054.232	500	500000	0	92.2	80	120				
Iron	195691.460	20	200000	0	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	477579.044	100	500000	0	95.5	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533737.355	50	500000	0	107	80	120				
Calcium	515514.967	500	500000	0	103	80	120				
Iron	177397.487	20	200000	0	88.7	80	120				
Magnesium	485007.402	100	500000	0	97.0	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	472931.070	50	500000	0	94.6	80	120				
Calcium	460970.478	500	500000	0	92.2	80	120				
Iron	195776.193	20	200000	0	97.9	80	120				
Magnesium	480369.987	100	500000	0	96.1	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533549.111	50	500000	0	107	80	120				
Calcium	515394.609	500	500000	0	103	80	120				
Iron	184484.035	20	200000	0	92.2	80	120				
Magnesium	489540.184	100	500000	0	97.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.019	101.94	65-125	PASS
Standard2	ICAL	1	1.013	101.33	65-125	PASS
Standard3	ICAL	1	1.016	101.65	65-125	PASS
Standard4	ICAL	1	1.0013	100.13	65-125	PASS
Standard5	ICAL	1	1	99.54	65-125	PASS
Standard6	ICAL	1	0.99	98.97	65-125	PASS
Standard7	ICAL	1	0.96	96.38	65-125	PASS
ICV	ICV	1	1	99.92	65-125	PASS
ICB	ICB	1	1.025	102.5	65-125	PASS
LLICV	CCV1	1	1.014	101.44	65-125	PASS
ICSA1	ICSA	1	1.021	102.06	65-125	PASS
ICB	ICB	1	1.024	102.37	65-125	PASS
LLICV	CCV1	1	1.026	102.62	65-125	PASS
ICSA1	ICSA	1	1.1	109.96	65-125	PASS
ICSAB1	ICSAB	1	0.83	82.82	65-125	PASS
CCV1	CCV	1	1.0056	100.56	65-125	PASS
CCB1	CCB	1	1.034	103.37	65-125	PASS
CCV2	CCV	1	1.02	102.01	65-125	PASS
CCB2	CCB	1	1.047	104.66	65-125	PASS
CCV3	CCV	1	0.99	98.77	65-125	PASS
CCB3	CCB	1	1.027	102.7	65-125	PASS
LLCCV1	CCV2	1	1.044	104.36	65-125	PASS
ICSA2	ICSA	1	1.095	109.48	65-125	PASS
ICSAB2	ICSAB	1	0.83	83.49	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.66	65-125	PASS
CCV4	CCV	1	0.99	98.68	65-125	PASS
CCB4	CCB	1	1.009	100.9	65-125	PASS
CCV5	CCV	1	1.04	103.99	65-125	PASS
CCB5	CCB	1	1.05	105.05	65-125	PASS
MB-61045	MBLK	1	1.05	104.98	65-125	PASS
CCV6	CCV	1	1.031	103.11	65-125	PASS
CCB6	CCB	1	1.042	104.23	65-125	PASS
LLCCV2	CCV2	1	1.062	106.18	65-125	PASS
ICSA3	ICSA	1	1.12	112.08	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.24	65-125	PASS
LCS-61045	LCS	1	1.023	102.33	65-125	PASS
N022819-001C	SAMP	1	1.0006	100.06	65-125	PASS
N022819-001C	SAMP	5	1.035	103.47	65-125	PASS
N022819-001C-PS	PS	1	1.0035	100.35	65-125	PASS
N022819-001C-MS	MS	1	1.022	102.19	65-125	PASS

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022819-001C-MSD	MSD	1	1.016	101.59	65-125	PASS
N022819-002C	SAMP	1	1.011	101.06	65-125	PASS
N022819-003C	SAMP	1	1.0099	100.99	65-125	PASS
N022819-004C	SAMP	1	1.022	102.25	65-125	PASS
N022819-005C	SAMP	1	1.013	101.34	65-125	PASS
CCV7	CCV	1	1.036	103.64	65-125	PASS
CCB7	CCB	1	1.059	105.86	65-125	PASS
N022819-006C	SAMP	1	1.0078	100.78	65-125	PASS
N022819-007C	SAMP	1	1.032	103.25	65-125	PASS
N022819-008C	SAMP	1	1.035	103.53	65-125	PASS
N022819-009C	SAMP	1	1.0099	100.99	65-125	PASS
N022820-001C	SAMP	1	1.0022	100.22	65-125	PASS
N022820-002C	SAMP	1	1.033	103.3	65-125	PASS
N022820-003C	SAMP	1	0.99	99.4	65-125	PASS
N022819-004C	SAMP	1	1.022	102.17	65-125	PASS
CCV8	CCV	1	1.036	103.57	65-125	PASS
CCB8	CCB	1	1.059	105.9	65-125	PASS
CCV9	CCV	1	1.033	103.32	65-125	PASS
CCB9	CCB	1	1.052	105.17	65-125	PASS
LLCCV3	CCV2	1	1.056	105.56	65-125	PASS
ICSA4	ICSA	1	1.11	111.04	65-125	PASS
ICSAB4	ICSAB	1	0.86	85.83	65-125	PASS
CCV10	CCV	1	1.036	103.62	65-125	PASS
CCB10	CCB	1	1.052	105.16	65-125	PASS
LLCCV4	CCV2	1	1.058	105.76	65-125	PASS
ICSA5	ICSA	1	1.11	111.2	65-125	PASS
ICSAB5	ICSAB	1	0.86	85.93	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022820
Test Method: EPA 6010B
Analysis Date: 2/3/2017

Matrix: Groundwater
Batch No.: 61045

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001C DT 5X	Iron	ug/L	171.8944	NA	151.7342	13.29%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *05-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N022819-001C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**113277**
Client ID:	**ZZZZZZ**	Batch ID:	**61045**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/3/2017**	SeqNo:	**2554756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	245.994	20	100.0	151.7	94.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61090 **Instrument ID:** ICPMS-02
ASSET #: N022820 **Analyst:** CEI
Method: **Date Analyzed:** 1/31/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in STD 1 & LLCCV2 failed > 15 & 20%. However %RSD of LLICV & %Rec of LLCCV2 passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/17 Date:
2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022820-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.20799 * 1 * (25/25)

Arsenic , ug/L = 2.20799

Reporting results in two significant figures,

Arsenic , ug/L = 2.2

% RSD SUMMARY

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.09	15	PASS	0.097	9.58	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	1.84	15	PASS	0.52	6.49	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	0.79	15	PASS	5.23	1.42	15	PASS
Std4-10/100 ppb	ICAL	1	10.065	1.057	15	PASS	10.19	0.17	15	PASS
Std5-20/200 ppb	ICAL	1	20.16	0.68	15	PASS	20.36	1.11	15	PASS
Std6-40/400 ppb	ICAL	1	39.89	0.52	15	PASS	40.36	0.7	15	PASS
Std7-100/1000 ppb	ICAL	1	101.37	0.88	15	PASS	99.76	1.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.32	0.8	15	PASS	200	0.81	15	PASS
ICV	ICV	1	106.17	1.28	15	PASS	10.21	0.76	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0039	173.74	15	<PQL
LLICV	CCV1	1	1.1	3.14	20	PASS	0.99	1.12	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.16	8.37	15	PASS
ICSAB1	ICSAB	1	19	0.68	15	PASS	19.58	0.68	15	PASS
CCV1	CCV	1	20.13	0.29	15	PASS	20.36	1.65	15	PASS
CCB1	CCB	1	0.0067	74.71	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.99	0.76	15	PASS	20.37	1.64	15	PASS
CCB2	CCB	1	0.0032	54.24	15	<PQL	0.0035	155.95	15	<PQL
LLCCV1	CCV2	1	1.12	0.37	20	PASS	1.049	2.18	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.16	5.98	15	PASS
ICSAB2	ICSAB	1	19.027	0.24	15	PASS	19.47	0.36	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	0.0034	99.58	15	<PQL
LCS-61090	LCS	1	106.58	0.34	15	PASS	10.56	1.75	15	PASS
N022819-001B	SAMP	1	120.93	0.53	15	PASS	0.011	50.28	15	<PQL
N022819-002B	SAMP	1	118.94	1.13	15	PASS	<0.000	N/A	15	<PQL
N022819-003B	SAMP	1	124.69	0.5	15	PASS	0.13	9.86	15	PASS
N022819-004B	SAMP	1	127.21	0.28	15	PASS	<0.000	N/A	15	<PQL
N022819-005B	SAMP	1	129.43	0.49	15	PASS	<0.000	N/A	15	<PQL
N022819-006B	SAMP	1	128.22	0.86	15	PASS	<0.000	N/A	15	<PQL
N022819-007B	SAMP	1	124.94	0.32	15	PASS	<0.000	N/A	15	<PQL
N022819-008B	SAMP	1	128.039	0.87	15	PASS	0.0088	41.32	15	<PQL
CCV3	CCV	1	20.61	0.63	15	PASS	21.044	1.42	15	PASS
CCB3	CCB	1	0.0074	29.56	15	<PQL	0.011	43.76	15	<PQL
N022819-009B	SAMP	1	124.66	0.7	15	PASS	<0.000	N/A	15	<PQL
N022819-010B	SAMP	1	98.87	0.6	15	PASS	<0.000	N/A	15	<PQL
N022819-011B	SAMP	1	128.48	1.13	15	PASS	0.97	1.48	15	PASS
N022820-001B	SAMP	1	125.81	0.26	15	PASS	<0.000	N/A	15	<PQL
N022820-002B	SAMP	1	120.67	1.45	15	PASS	0.0051	44.3	15	<PQL
N022820-003B	SAMP	1	118.7	0.29	15	PASS	<0.000	N/A	15	<PQL
N022820-004B	SAMP	1	121.82	0.57	15	PASS	<0.000	N/A	15	<PQL
N022820-005B	SAMP	1	130.26	0.33	15	PASS	0.035	24.6	15	<PQL

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	130.97	0.37	15	PASS	2.067	1.81	15	PASS
CCV4	CCV	1	20.69	0.45	15	PASS	20.8	2.083	15	PASS
CCB4	CCB	1	0.017	22.15	15	<PQL	0.0003	2049.41	15	<PQL
N022828-002B	SAMP	1	130.24	0.35	15	PASS	0.81	3.31	15	PASS
N022819-001B	SAMP	5	24.62	0.35	15	PASS	0.0031	75.65	15	<PQL
N022819-001B	SAMP	25	4.98	1.09	15	PASS	<0.000	N/A	15	<PQL
N022819-001B-PS	PS	1	216.98	0.65	15	PASS	9.53	0.49	15	PASS
N022819-001B-PS	PS	5	45.01	0.8	15	PASS	1.98	3.25	15	PASS
N022819-001B-MS	MS	1	218.4	0.65	15	PASS	9.39	2.24	15	PASS
N022819-001B-MS	MS	5	46.17	0.38	15	PASS	2.0059	1.84	15	PASS
N022819-001B-MSD	MSD	1	220.65	0.32	15	PASS	9.46	0.87	15	PASS
N022819-001B-MSD	MSD	5	46.079	0.54	15	PASS	2	1.31	15	PASS
N022828-001B	SAMP	10	13.74	0.28	15	PASS	0.27	7.89	15	PASS
CCV5	CCV	1	21.16	0.31	15	PASS	20.62	0.81	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.12	1.42	20	PASS	0.99	2.87	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.15	14.62	15	PASS
ICSAB3	ICSAB	1	19.97	0.11	15	PASS	19.47	0.43	15	PASS
N022828-002B	SAMP	10	13.78	0.36	15	PASS	0.067	4.46	15	PASS
CCV6	CCV	1	20.94	1.0051	15	PASS	20.58	1	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV7	CCV	1	21.26	0.77	15	PASS	20.78	1.9	15	PASS
CCB7	CCB	1	0.000015	11366.74	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	21.42	0.76	15	PASS	20.38	0.61	15	PASS
CCB8	CCB	1	0.012	29.75	15	<PQL	0.012	57.47	15	<PQL
LLCCV3	CCV2	1	1.2	0.9	20	PASS	0.98	2.36	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.16	10.61	15	PASS
ICSAB4	ICSAB	1	20.59	0.52	15	PASS	19.61	0.44	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.0071	15	PASS	0.1	25.73	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.53	3.086	15	PASS	0.54	7.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	1.38	15	PASS	5.11	4.75	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	1.01	15	PASS	9.94	1.53	15	PASS
Std5-20/200 ppb	ICAL	1	20.48	0.55	15	PASS	20.23	0.8	15	PASS
Std6-40/400 ppb	ICAL	1	40.67	1.45	15	PASS	39.97	0.77	15	PASS
Std7-100/1000 ppb	ICAL	1	100.42	1.37	15	PASS	99.98	1.22	15	PASS
Std8-200/2000 ppb	ICAL	1	199.59	0.49	15	PASS	199.99	1.51	15	PASS
ICV	ICV	1	103.65	1.73	15	PASS	10.29	0.96	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.024	27.68	15	<PQL
LLICV	CCV1	1	0.58	4.19	20	PASS	0.1	6.97	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.43	0.2	15	PASS	19.91	0.65	15	PASS
CCV1	CCV	1	20.45	1.58	15	PASS	20.21	2.17	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.014	61.009	15	<PQL
CCV2	CCV	1	20.51	0.76	15	PASS	20.021	0.83	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0085	86.81	15	<PQL
LLCCV1	CCV2	1	0.62	0.49	20	PASS	0.11	11.15	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.36	1.028	15	PASS	19.54	1.44	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	0.0032	468.064	15	<PQL
LCS-61090	LCS	1	105.58	0.84	15	PASS	10.49	2.089	15	PASS
N022819-001B	SAMP	1	1.69	3.15	15	PASS	2.13	4.87	15	PASS
N022819-002B	SAMP	1	0.79	7.94	15	PASS	2.084	1.8	15	PASS
N022819-003B	SAMP	1	2.24	1.62	15	PASS	2.22	3.36	15	PASS
N022819-004B	SAMP	1	0.35	5.28	15	PASS	2.1	0.38	15	PASS
N022819-005B	SAMP	1	0.56	1.1	15	PASS	2.22	4.38	15	PASS
N022819-006B	SAMP	1	0.49	13.0028	15	PASS	2.19	2.019	15	PASS
N022819-007B	SAMP	1	0.47	14.75	15	PASS	2.15	2.43	15	PASS
N022819-008B	SAMP	1	0.78	4.43	15	PASS	2.2	3.041	15	PASS
CCV3	CCV	1	20.92	1.74	15	PASS	20.035	2.12	15	PASS
CCB3	CCB	1	0.0016	316.89	15	<PQL	0.0057	172.31	15	<PQL
N022819-009B	SAMP	1	1.4	3.91	15	PASS	2.14	3.73	15	PASS
N022819-010B	SAMP	1	29.012	2.69	15	PASS	2.12	0.82	15	PASS
N022819-011B	SAMP	1	35.39	1.29	15	PASS	1.73	5.33	15	PASS
N022820-001B	SAMP	1	0.35	23.15	15	<PQL	2.21	2.86	15	PASS
N022820-002B	SAMP	1	0.83	6.23	15	PASS	2.22	1.12	15	PASS
N022820-003B	SAMP	1	0.7	7.41	15	PASS	2.19	5.86	15	PASS
N022820-004B	SAMP	1	0.61	14.48	15	PASS	2.19	0.75	15	PASS
N022820-005B	SAMP	1	28.35	2.081	15	PASS	1.62	2.77	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	1186.91	1.1	15	PASS	0.59	6.36	15	PASS
CCV4	CCV	1	20.057	0.93	15	PASS	20.41	0.33	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0093	126.17	15	<PQL
N022828-002B	SAMP	1	1202.19	0.82	15	PASS	0.51	2.1	15	PASS
N022819-001B	SAMP	5	0.37	4.18	15	PASS	0.43	4.69	15	PASS
N022819-001B	SAMP	25	0.08	19.26	15	<PQL	0.097	1.32	15	PASS
N022819-001B-PS	PS	1	95.63	0.55	15	PASS	12.055	1.37	15	PASS
N022819-001B-PS	PS	5	20.07	2.41	15	PASS	2.44	0.8	15	PASS
N022819-001B-MS	MS	1	93.65	0.55	15	PASS	11.86	2.088	15	PASS
N022819-001B-MS	MS	5	20.043	0.77	15	PASS	2.48	4.69	15	PASS
N022819-001B-MSD	MSD	1	93.71	0.33	15	PASS	12.02	0.8	15	PASS
N022819-001B-MSD	MSD	5	20.087	0.52	15	PASS	2.54	2.31	15	PASS
N022828-001B	SAMP	10	125.66	0.95	15	PASS	0.071	16.52	15	<PQL
CCV5	CCV	1	20.78	2.18	15	PASS	20.32	1.49	15	PASS
CCB5	CCB	1	0.019	35.83	15	<PQL	0.0072	62.93	15	<PQL
LLCCV2	CCV2	1	0.64	3.41	20	PASS	0.11	20.51	20	FAILED
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.18	0.42	15	PASS	20.092	0.52	15	PASS
N022828-002B	SAMP	10	127.98	1.35	15	PASS	0.063	20.31	15	<PQL
CCV6	CCV	1	20.7	0.86	15	PASS	20.3	2.31	15	PASS
CCB6	CCB	1	0.0011	364.016	15	<PQL	0.026	51.49	15	<PQL
CCV7	CCV	1	20.34	1.68	15	PASS	20.38	1.051	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0085	69.49	15	<PQL
CCV8	CCV	1	20.39	0.7	15	PASS	20.62	1.14	15	PASS
CCB8	CCB	1	0.13	13.74	15	PASS	0.0066	76.2	15	<PQL
LLCCV3	CCV2	1	0.62	7.38	20	PASS	0.099	22.06	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.43	0.6	15	PASS	19.7	1.11	15	PASS

%RSD of As of LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.081	33.12	15	<PQL	0.076	14.89	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.43	1.93	15	PASS	0.45	6.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.16	3.52	15	PASS	4.73	2.96	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	2.022	15	PASS	9.63	0.74	15	PASS
Std5-20/200 ppb	ICAL	1	20.097	2.78	15	PASS	19.37	1.49	15	PASS
Std6-40/400 ppb	ICAL	1	39.87	1.32	15	PASS	39.51	1.084	15	PASS
Std7-100/1000 ppb	ICAL	1	100.35	1.38	15	PASS	100.38	2.13	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.49	15	PASS	199.29	1.14	15	PASS
ICV	ICV	1	10.43	2.27	15	PASS	10.99	0.68	15	PASS
ICB	ICB	1	0.031	109.058	15	<PQL	0.22	3.91	15	PASS
LLICV	CCV1	1	0.47	14.4	20	PASS	0.5	4.2	20	PASS
ICSA1	ICSA	1	0.017	98.94	15	<PQL	0.065	21.41	15	<PQL
ICSAB1	ICSAB	1	18.26	4.59	15	PASS	22.87	1.15	15	PASS
CCV1	CCV	1	20.65	0.48	15	PASS	19.61	1.63	15	PASS
CCB1	CCB	1	0.034	52.43	15	<PQL	0.11	5.75	15	PASS
CCV2	CCV	1	20.64	2.74	15	PASS	19.45	2.084	15	PASS
CCB2	CCB	1	0.0042	446.91	15	<PQL	0.1	12.28	15	PASS
LLCCV1	CCV2	1	0.57	19.55	20	PASS	0.52	0.71	20	PASS
ICSA2	ICSA	1	0.038	72.95	15	<PQL	0.028	41.89	15	<PQL
ICSAB2	ICSAB	1	18.34	3.082	15	PASS	22.91	0.83	15	PASS
MB-61090	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61090	LCS	1	9.76	1.64	15	PASS	9.9	0.73	15	PASS
N022819-001B	SAMP	1	1.47	9.04	15	PASS	5.035	2.95	15	PASS
N022819-002B	SAMP	1	1.39	11.36	15	PASS	4.96	2.19	15	PASS
N022819-003B	SAMP	1	1.61	8.69	15	PASS	5.17	0.76	15	PASS
N022819-004B	SAMP	1	1.49	9.064	15	PASS	5.48	1.15	15	PASS
N022819-005B	SAMP	1	1.51	10.62	15	PASS	5.31	0.76	15	PASS
N022819-006B	SAMP	1	1.56	10.099	15	PASS	5.41	1.45	15	PASS
N022819-007B	SAMP	1	1.47	2.3	15	PASS	5.11	0.19	15	PASS
N022819-008B	SAMP	1	1.6	10.23	15	PASS	5.38	0.29	15	PASS
CCV3	CCV	1	20.47	3.15	15	PASS	19.051	0.07	15	PASS
CCB3	CCB	1	0.011	34.76	15	<PQL	0.041	21.87	15	<PQL
N022819-009B	SAMP	1	1.66	3.064	15	PASS	5.31	2.28	15	PASS
N022819-010B	SAMP	1	0.38	15.65	15	<PQL	4.021	1.94	15	PASS
N022819-011B	SAMP	1	0.47	23.31	15	<PQL	4.42	1.25	15	PASS
N022820-001B	SAMP	1	1.74	14.44	15	PASS	5.34	2.36	15	PASS
N022820-002B	SAMP	1	1.72	9.22	15	PASS	5.65	1.28	15	PASS
N022820-003B	SAMP	1	1.53	9.33	15	PASS	5.14	0.82	15	PASS
N022820-004B	SAMP	1	1.61	8.71	15	PASS	5.15	1.84	15	PASS
N022820-005B	SAMP	1	0.4	6.19	15	PASS	4.51	1.43	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022828-001B	SAMP	1	<0.000	N/A	15	<PQL	4.27	2.25	15	PASS
CCV4	CCV	1	21.18	0.63	15	PASS	19.65	0.75	15	PASS
CCB4	CCB	1	0.033	57.077	15	<PQL	0.1	15.51	15	<PQL
N022828-002B	SAMP	1	0.0015	1132.19	15	<PQL	4.26	0.71	15	PASS
N022819-001B	SAMP	5	0.35	11.35	15	PASS	0.98	1.3	15	PASS
N022819-001B	SAMP	25	0.043	64.33	15	<PQL	0.17	9.69	15	PASS
N022819-001B-PS	PS	1	10.71	1.52	15	PASS	16.038	1.19	15	PASS
N022819-001B-PS	PS	5	2.39	0.57	15	PASS	3.087	0.26	15	PASS
N022819-001B-MS	MS	1	10.86	2.72	15	PASS	16.36	3.19	15	PASS
N022819-001B-MS	MS	5	2.39	7.96	15	PASS	3.06	2.85	15	PASS
N022819-001B-MSD	MSD	1	10.97	1.17	15	PASS	16.25	0.39	15	PASS
N022819-001B-MSD	MSD	5	2.53	8.31	15	PASS	3.14	0.63	15	PASS
N022828-001B	SAMP	10	0.018	170.93	15	<PQL	0.59	10.19	15	PASS
CCV5	CCV	1	20.67	3.08	15	PASS	20.08	1.44	15	PASS
CCB5	CCB	1	0.024	52.64	15	<PQL	0.083	18.54	15	<PQL
LLCCV2	CCV2	1	0.46	4.29	20	PASS	0.49	4.59	20	PASS
ICSA3	ICSA	1	0.0088	274.25	15	<PQL	0.015	50.38	15	<PQL
ICSAB3	ICSAB	1	18.98	3.4	15	PASS	23.7	1.03	15	PASS
N022828-002B	SAMP	10	0.031	103.28	15	<PQL	0.49	4.15	15	PASS
CCV6	CCV	1	20.5	1.11	15	PASS	19.84	1.67	15	PASS
CCB6	CCB	1	0.02	34.39	15	<PQL	0.1	5.69	15	PASS
CCV7	CCV	1	21.13	3.35	15	PASS	20	0.99	15	PASS
CCB7	CCB	1	0.025	99.26	15	<PQL	0.097	10.41	15	PASS
CCV8	CCV	1	21.7	1.57	15	PASS	19.97	1.52	15	PASS
CCB8	CCB	1	0.03	30.14	15	<PQL	0.1	7.32	15	PASS
LLCCV3	CCV2	1	0.5	14.26	20	PASS	0.43	2.76	20	PASS
ICSA4	ICSA	1	0.018	97.66	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	18.97	2.24	15	PASS	23.67	1.56	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131001.D	RINSE	RINSE	1	01/31/17 11:19 AM
B0131002.D	Cal Blank	IBLK	1	01/31/17 11:25 AM
B0131003.D	Std1-0.1/1 ppb	ICAL	1	01/31/17 11:31 AM
B0131004.D	Std2-0.5/5 ppb	ICAL	1	01/31/17 11:37 AM
B0131005.D	Std3-5/50 ppb	ICAL	1	01/31/17 11:43 AM
B0131006.D	Std4-10/100 ppb	ICAL	1	01/31/17 11:49 AM
B0131007.D	Std5-20/200 ppb	ICAL	1	01/31/17 11:55 AM
B0131008.D	Std6-40/400 ppb	ICAL	1	01/31/17 12:01 PM
B0131009.D	Std7-100/1000 ppb	ICAL	1	01/31/17 12:07 PM
B0131010.D	Std8-200/2000 ppb	ICAL	1	01/31/17 12:14 PM
B0131011.D	ICV	ICV	1	01/31/17 12:20 PM
B0131012.D	ICB	ICB	1	01/31/17 12:26 PM
B0131013.D	LLICV	CCV1	1	01/31/17 12:32 PM
B0131014.D	ICSA1	ICSA	1	01/31/17 12:37 PM
B0131015.D	ICSAB1	ICSAB	1	01/31/17 12:43 PM
B0131016.D	N022702-011B	SAMP	5	01/31/17 12:49 PM
B0131017.D	N022702-012B	SAMP	1	01/31/17 12:55 PM
B0131018.D	N022702-012A	SAMP	1	01/31/17 1:00 PM
B0131019.D	MB-61017	MBLK	1	01/31/17 1:06 PM
B0131020.D	LCS-61017	LCS	1	01/31/17 1:12 PM
B0131021.D	N022713-001B	SAMP	5	01/31/17 1:18 PM
B0131022.D	N022713-001B	SAMP	25	01/31/17 1:23 PM
B0131023.D	N022713-001B-PS	PS	5	01/31/17 1:29 PM
B0131024.D	N022713-001B-MS	MS	5	01/31/17 1:35 PM
B0131025.D	N022713-001B-MSD	MSD	5	01/31/17 1:41 PM
B0131026.D	CCV1	CCV	1	01/31/17 1:47 PM
B0131027.D	CCB1	CCB	1	01/31/17 1:53 PM
B0131028.D	N022713-002B	SAMP	5	01/31/17 1:59 PM
B0131029.D	N022713-003B	SAMP	5	01/31/17 2:06 PM
B0131030.D	N022713-004B	SAMP	5	01/31/17 2:12 PM
B0131031.D	CCV2	CCV	1	01/31/17 2:18 PM
B0131032.D	CCB2	CCB	1	01/31/17 2:24 PM
B0131033.D	LLCCV1	CCV2	1	01/31/17 2:32 PM
B0131034.D	ICSA2	ICSA	1	01/31/17 2:38 PM
B0131035.D	ICSAB2	ICSAB	1	01/31/17 2:44 PM
B0131036.D	MB-61090	MBLK	1	01/31/17 3:09 PM
B0131037.D	LCS-61090	LCS	1	01/31/17 3:15 PM
B0131038.D	N022819-001B	SAMP	1	01/31/17 3:20 PM
B0131039.D	N022819-002B	SAMP	1	01/31/17 3:26 PM
B0131040.D	N022819-003B	SAMP	1	01/31/17 3:31 PM
B0131041.D	N022819-004B	SAMP	1	01/31/17 3:37 PM
B0131042.D	N022819-005B	SAMP	1	01/31/17 3:42 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131043.D	N022819-006B	SAMP	1	01/31/17 3:48 PM
B0131044.D	N022819-007B	SAMP	1	01/31/17 3:53 PM
B0131045.D	N022819-008B	SAMP	1	01/31/17 3:59 PM
B0131046.D	CCV3	CCV	1	01/31/17 4:05 PM
B0131047.D	CCB3	CCB	1	01/31/17 4:11 PM
B0131048.D	N022819-009B	SAMP	1	01/31/17 4:17 PM
B0131049.D	N022819-010B	SAMP	1	01/31/17 4:23 PM
B0131050.D	N022819-011B	SAMP	1	01/31/17 4:29 PM
B0131051.D	N022820-001B	SAMP	1	01/31/17 4:35 PM
B0131052.D	N022765-001A	SAMP	1	01/31/17 4:42 PM
B0131053.D	N022820-002B	SAMP	1	01/31/17 4:48 PM
B0131054.D	N022820-003B	SAMP	1	01/31/17 4:55 PM
B0131055.D	N022820-004B	SAMP	1	01/31/17 5:01 PM
B0131056.D	N022820-005B	SAMP	1	01/31/17 5:07 PM
B0131057.D	N022828-001B	SAMP	1	01/31/17 5:13 PM
B0131058.D	CCV4	CCV	1	01/31/17 5:20 PM
B0131059.D	CCB4	CCB	1	01/31/17 5:26 PM
B0131060.D	N022828-002B	SAMP	1	01/31/17 5:32 PM
B0131061.D	N022819-001B	SAMP	5	01/31/17 5:38 PM
B0131062.D	N022819-001B	SAMP	25	01/31/17 5:44 PM
B0131063.D	N022819-001B-PS	PS	1	01/31/17 5:51 PM
B0131064.D	N022819-001B-PS	PS	5	01/31/17 5:57 PM
B0131065.D	N022819-001B-MS	MS	1	01/31/17 6:03 PM
B0131066.D	N022819-001B-MS	MS	5	01/31/17 6:11 PM
B0131067.D	N022819-001B-MSD	MSD	1	01/31/17 6:17 PM
B0131068.D	N022819-001B-MSD	MSD	5	01/31/17 6:23 PM
B0131069.D	N022828-001B	SAMP	10	01/31/17 6:27 PM
B0131070.D	CCV5	CCV	1	01/31/17 6:33 PM
B0131071.D	CCB5	CCB	1	01/31/17 6:39 PM
B0131072.D	LLCCV2	CCV2	1	01/31/17 6:45 PM
B0131073.D	ICSA3	ICSA	1	01/31/17 6:52 PM
B0131074.D	ICSAB3	ICSAB	1	01/31/17 6:58 PM
B0131075.D	N022828-002B	SAMP	10	01/31/17 7:04 PM
B0131076.D	MB-61101	MBLK	1	01/31/17 7:10 PM
B0131077.D	LCS-61101	LCS	1	01/31/17 7:17 PM
B0131078.D	N022830-001B	SAMP	1	01/31/17 7:23 PM
B0131079.D	N022830-001B	SAMP	5	01/31/17 7:30 PM
B0131080.D	N022830-001B	SAMP	25	01/31/17 7:36 PM
B0131081.D	N022830-001B-PS	PS	1	01/31/17 7:41 PM
B0131082.D	N022830-001B-PS	PS	5	01/31/17 7:47 PM
B0131083.D	N022830-001B-MS	MS	1	01/31/17 7:54 PM
B0131084.D	N022830-001B-MS	MS	5	01/31/17 8:00 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131085.D	CCV6	CCV	1	01/31/17 8:06 PM
B0131086.D	CCB6	CCB	1	01/31/17 8:12 PM
B0131087.D	N022830-001B-MSD	MSD	1	01/31/17 8:19 PM
B0131088.D	N022830-001B-MSD	MSD	5	01/31/17 8:25 PM
B0131089.D	N022830-002B	SAMP	1	01/31/17 8:31 PM
B0131090.D	N022830-003B	SAMP	1	01/31/17 8:37 PM
B0131091.D	N022830-004B	SAMP	1	01/31/17 8:43 PM
B0131092.D	N022830-005B	SAMP	1	01/31/17 8:49 PM
B0131093.D	N022830-006B	SAMP	1	01/31/17 8:56 PM
B0131094.D	N022830-007B	SAMP	1	01/31/17 9:02 PM
B0131095.D	N022830-008B	SAMP	1	01/31/17 9:08 PM
B0131096.D	N022830-009B	SAMP	1	01/31/17 9:14 PM
B0131097.D	CCV7	CCV	1	01/31/17 9:20 PM
B0131098.D	CCB7	CCB	1	01/31/17 9:27 PM
B0131099.D	N022830-010B	SAMP	1	01/31/17 9:33 PM
B0131100.D	N022830-011B	SAMP	1	01/31/17 9:39 PM
B0131101.D	N022830-012B	SAMP	1	01/31/17 9:45 PM
B0131102.D	N022830-013B	SAMP	1	01/31/17 9:51 PM
B0131103.D	N022866-001B	SAMP	1	01/31/17 9:58 PM
B0131104.D	N022866-002B	SAMP	1	01/31/17 10:04 PM
B0131105.D	N022866-003B	SAMP	1	01/31/17 10:10 PM
B0131106.D	N022866-004B	SAMP	1	01/31/17 10:16 PM
B0131107.D	N022866-005B	SAMP	1	01/31/17 10:23 PM
B0131108.D	N022869-001B	SAMP	1	01/31/17 10:29 PM
B0131109.D	CCV8	CCV	1	01/31/17 10:35 PM
B0131110.D	CCB8	CCB	1	01/31/17 10:41 PM
B0131111.D	LLCCV3	CCV2	1	01/31/17 10:46 PM
B0131112.D	ICSA4	ICSA	1	01/31/17 10:52 PM
B0131113.D	ICSAB4	ICSAB	1	01/31/17 10:59 PM
B0131114.D	RINSE	RINSE	1	01/31/17 11:05 PM
B0131115.D	RINSE	RINSE	1	01/31/17 11:11 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 5:37:44 P**
Prep End Date: **1/30/2017 10:00:00**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61090** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61090	Aqueous		25	☐	0	0	25	1.000		
MB-61090	Aqueous		25	☐	0	0	25	1.000		
N022819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022819-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 5:37:44 P**
Prep End Date: **1/30/2017 10:00:00**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/17

Prep Batch **61090** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022819-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022820-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022828-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022828-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 31 Jan 2017 04:01:54 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	131611.00	0.00	
24 Mg	638961.00	0.00	
25 Mg	85332.30	0.00	
26 Mg	99587.20	0.00	
59 Co	1051940.00	0.00	
115 In	1763610.00	0.00	
206 Pb	408165.00	0.00	
207 Pb	356161.00	0.00	
208 Pb	871166.00	0.00	

RSD (%)

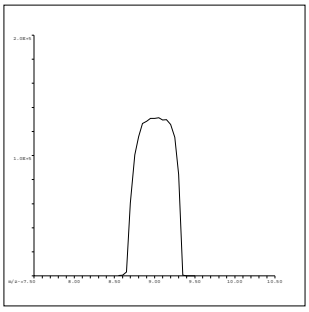
Element	Actual	Required	Flag
9 Be	0.79	5.00	
24 Mg	0.67	5.00	
25 Mg	1.60	5.00	
26 Mg	0.77	5.00	
59 Co	0.26	5.00	
115 In	1.17	5.00	
206 Pb	0.70	5.00	
207 Pb	0.78	5.00	
208 Pb	1.14	5.00	

Ion Ratio

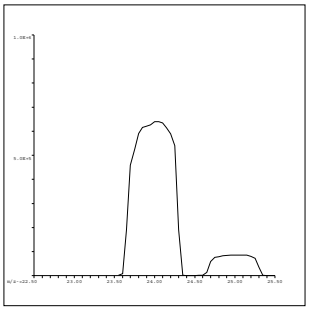
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

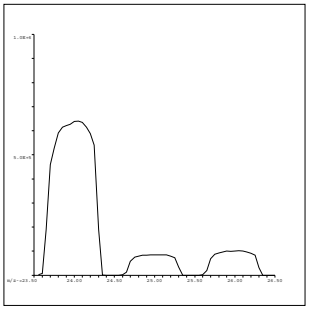
Element	Actual	Required	Flag



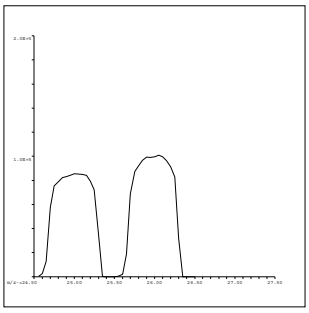
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



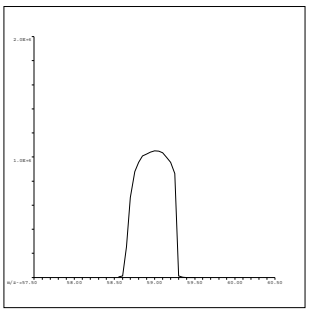
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



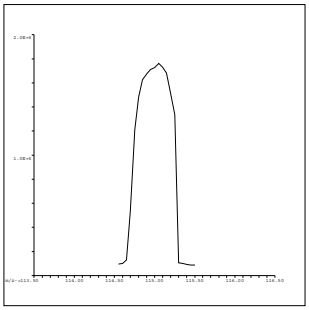
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



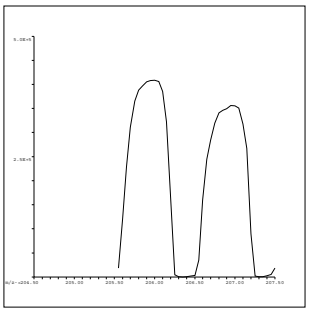
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



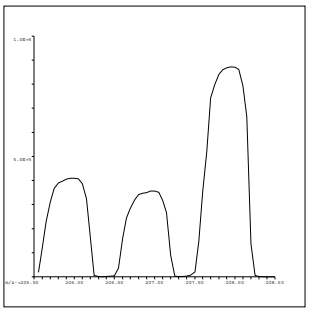
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



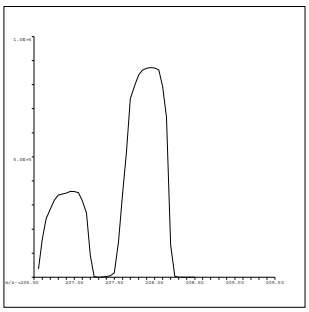
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170131B

Instrument ID: ICPMS-02

Analyte	Data File	B0131002.D	B0131003.D	B0131004.D	B0131005.D	B0131006.D	B0131007.D	B0131008.D	B0131009.D	B0131010.D	
	Acq. Date-Time	01/31/2017 11:25 AM	01/31/2017 11:31 AM	01/31/2017 11:37 AM	01/31/2017 11:43 AM	01/31/2017 11:49 AM	01/31/2017 11:55 AM	01/31/2017 12:01 PM	01/31/2017 12:07 PM	01/31/2017 12:14 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	115641.6		111759.4	109659.2	111454.2	109672.4	110666.9	109640	108137.5	
55 Mn [2]	CPS	192.3		2815	25416.3	51109.5	100548.8	201287.8	492134.9	964700.6	1.0000
52 Cr [2]	CPS	334.4		5067.6	46987	92737.2	182033.3	363831.2	890396.2	1760595.8	1.0000
72 Ge (ISTD) [1]	CPS	119129.6		118555.4	117753.1	118443.8	115207.4	117526.3	114837.2	113955.7	
78 Se [1]	CPS	8.9		231.1	2631.4	5175.5	9996.8	20223.3	49717	98236.2	1.0000
72 Ge (ISTD) [2]	CPS	86650.6	86828.6	85526.1	84109.1	85664.4	83615.3	84373.7	83251.3	81836.4	
75 As [2]	CPS	17.3	116	530.7	4825.2	9540.2	18936.9	37741.7	93131.7	183099.2	1.0000
103 Rh (ISTD) [2]	CPS	2797828.2		2762455	2752620.4	2748370.7	2731148.9	2709646.6	2657339.1	2617508.9	
95 Mo [2]	CPS	265.6		3083.8	29869.9	60383.5	120496.4	243546.6	606391.1	1185819.6	1.0000
159 Tb (ISTD) [3]	CPS	10020482.6		10003866.8	9983591.8	9979748.6	9926777.7	9925572.8	9862566	9824120.2	
137 Ba [3]	CPS	654.1		10250.5	86843.5	169686.1	337356.4	666969.9	1683188.6	3295940.6	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.292	0.10	10.00	0	103	90	110				
Barium	106.172	1.0	100.0	0	106	90	110				
Manganese	103.645	0.50	100.0	0	104	90	110				
Molybdenum	10.990	0.50	10.00	0	110	90	110				
Selenium	10.430	0.50	10.00	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.100	0.10	0.1000	0	99.6	80	120				
Barium	1.103	1.0	1.000	0	110	80	120				
Manganese	0.581	0.50	0.5000	0	116	80	120				
Molybdenum	0.496	0.50	0.5000	0	99.1	80	120				
Selenium	0.471	0.50	0.5000	0	94.2	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.215	0.10	20.00	0	101	90	110				
Barium	20.135	1.0	20.00	0	101	90	110				
Manganese	20.447	0.50	20.00	0	102	90	110				
Molybdenum	19.611	0.50	20.00	0	98.1	90	110				
Selenium	20.654	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.021	0.10	20.00	0	100	90	110				
Barium	19.988	1.0	20.00	0	99.9	90	110				
Manganese	20.507	0.50	20.00	0	103	90	110				
Molybdenum	19.449	0.50	20.00	0	97.2	90	110				
Selenium	20.642	0.50	20.00	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Barium	1.121	1.0	1.000	0	112	70	130				
Manganese	0.624	0.50	0.5000	0	125	70	130				
Molybdenum	0.518	0.50	0.5000	0	104	70	130				
Selenium	0.568	0.50	0.5000	0	114	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.035	0.10	20.00	0	100	90	110				
Barium	20.611	1.0	20.00	0	103	90	110				
Manganese	20.924	0.50	20.00	0	105	90	110				
Molybdenum	19.051	0.50	20.00	0	95.3	90	110				
Selenium	20.471	0.50	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.411	0.10	20.00	0	102	90	110				
Barium	20.692	1.0	20.00	0	103	90	110				
Manganese	20.057	0.50	20.00	0	100	90	110				
Molybdenum	19.646	0.50	20.00	0	98.2	90	110				
Selenium	21.185	0.50	20.00	0	106	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.319	0.10	20.00	0	102	90	110				
Barium	21.165	1.0	20.00	0	106	90	110				
Manganese	20.783	0.50	20.00	0	104	90	110				
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	20.671	0.50	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Barium	1.123	1.0	1.000	0	112	70	130				
Manganese	0.635	0.50	0.5000	0	127	70	130				
Molybdenum	0.488	0.50	0.5000	0	97.6	70	130				
Selenium	0.463	0.50	0.5000	0	92.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.301	0.10	20.00	0	102	90	110				
Barium	20.943	1.0	20.00	0	105	90	110				
Manganese	20.697	0.50	20.00	0	103	90	110				
Molybdenum	19.839	0.50	20.00	0	99.2	90	110				
Selenium	20.498	0.50	20.00	0	102	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.381	0.10	20.00	0	102	90	110				
Barium	21.255	1.0	20.00	0	106	90	110				
Manganese	20.336	0.50	20.00	0	102	90	110				
Molybdenum	19.995	0.50	20.00	0	100	90	110				
Selenium	21.128	0.50	20.00	0	106	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.619	0.10	20.00	0	103	90	110				
Barium	21.418	1.0	20.00	0	107	90	110				
Manganese	20.391	0.50	20.00	0	102	90	110				
Molybdenum	19.972	0.50	20.00	0	99.9	90	110				
Selenium	21.696	0.50	20.00	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	99.0	70	130				
Barium	1.199	1.0	1.000	0	120	70	130				
Manganese	0.618	0.50	0.5000	0	124	70	130				
Molybdenum	0.428	0.50	0.5000	0	85.5	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.210	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.990	1.0	1.000	0	99.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.362	1.0	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.369	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.049	1.0	1.000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.044	1.0	20.00	0	105	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.801	1.0	20.00	0	104	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.618	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.987	1.0	1.000	0	98.7	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.575	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV7	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCV	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549892

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.778	1.0	20.00	0	104	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCV	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549904

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.377	1.0	20.00	0	102	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ZZZZZZ	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.216	0.50									
Selenium	0.031	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	0.034	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.101	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.103	0.50									
Selenium	0.033	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB6	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.026	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.100	0.50									
Selenium	ND	0.50									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.097	0.50									
Selenium	ND	0.50									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2550008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	0.129	0.50									
Molybdenum	0.103	0.50									
Selenium	0.030	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549893

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	CCB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.065	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.908	0.10	20.00	0	99.5	80	120				
Barium	18.998	1.0	20.00	0	95.0	80	120				
Manganese	19.426	0.50	20.00	0	97.1	80	120				
Molybdenum	22.873	0.50	20.00	0	114	80	120				
Selenium	18.260	0.50	20.00	0	91.3	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.038	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.542	0.10	20.00	0	97.7	80	120				
Barium	19.027	1.0	20.00	0	95.1	80	120				
Manganese	19.359	0.50	20.00	0	96.8	80	120				
Molybdenum	22.906	0.50	20.00	0	115	80	120				
Selenium	18.342	0.50	20.00	0	91.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.092	0.10	20.00	0	100	80	120				
Barium	19.972	1.0	20.00	0	99.9	80	120				
Manganese	20.179	0.50	20.00	0	101	80	120				
Molybdenum	23.699	0.50	20.00	0	118	80	120				
Selenium	18.981	0.50	20.00	0	94.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.704	0.10	20.00	0	98.5	80	120				
Barium	20.592	1.0	20.00	0	103	80	120				
Manganese	20.428	0.50	20.00	0	102	80	120				
Molybdenum	23.674	0.50	20.00	0	118	80	120				
Selenium	18.970	0.50	20.00	0	94.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.158	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.582	1.0	20.00	0	97.9	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.160	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.466	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.148	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSAB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.465	1.0	20.00	0	97.3	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSA	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.155	1.0									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSAB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549908

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.611	1.0	20.00	0	98.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	10020482.6	10020482.6	100	PASS	70-125	115641.6	115641.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	10053104.1	10020482.6	100.33	PASS	70-125	115171.3	115641.6	99.59	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	10003866.8	10020482.6	99.83	PASS	70-125	111759.4	115641.6	96.64	PASS	70-125
Std3-5/50 ppb	ICAL	1	9983591.8	10020482.6	99.63	PASS	70-125	109659.2	115641.6	94.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	9979748.6	10020482.6	99.59	PASS	70-125	111454.2	115641.6	96.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	9926777.7	10020482.6	99.065	PASS	70-125	109672.4	115641.6	94.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	9925572.8	10020482.6	99.053	PASS	70-125	110666.9	115641.6	95.7	PASS	70-125
Std7-100/1000 ppb	ICAL	1	9862566	10020482.6	98.42	PASS	70-125	109640	115641.6	94.81	PASS	70-125
Std8-200/2000 ppb	ICAL	1	9824120.2	10020482.6	98.04	PASS	70-125	108137.5	115641.6	93.51	PASS	70-125
ICV	ICV	1	9804283.1	10020482.6	97.84	PASS	70-125	106355.6	115641.6	91.97	PASS	70-125
ICB	ICB	1	10073009.6	10020482.6	100.52	PASS	70-125	106153.2	115641.6	91.79	PASS	70-125
LLICV	CCV1	1	10732899.8	10020482.6	107.11	PASS	70-125	123572.2	115641.6	106.86	PASS	70-125
ICSA1	ICSA	1	9289624.2	10020482.6	92.71	PASS	70-125	118531.5	115641.6	102.5	PASS	70-125
ICSAB1	ICSAB	1	9507913.7	10020482.6	94.88	PASS	70-125	132732.4	115641.6	114.78	PASS	70-125
CCV1	CCV	1	9934727.1	10020482.6	99.14	PASS	70-125	106383.8	115641.6	91.99	PASS	70-125
CCB1	CCB	1	9967357.5	10020482.6	99.47	PASS	70-125	104859.8	115641.6	90.68	PASS	70-125
CCV2	CCV	1	9844606.3	10020482.6	98.24	PASS	70-125	102664.5	115641.6	88.78	PASS	70-125
CCB2	CCB	1	9829258.7	10020482.6	98.092	PASS	70-125	99374.5	115641.6	85.93	PASS	70-125
LLCCV1	CCV2	1	9858625.2	10020482.6	98.38	PASS	70-125	98006.8	115641.6	84.75	PASS	70-125
ICSA2	ICSA	1	9258985.2	10020482.6	92.4	PASS	70-125	114165.4	115641.6	98.72	PASS	70-125
ICSAB2	ICSAB	1	9615935.3	10020482.6	95.96	PASS	70-125	129066.5	115641.6	111.61	PASS	70-125
MB-61090	MBLK	1	9962840.5	10020482.6	99.42	PASS	70-125	107021.2	115641.6	92.55	PASS	70-125
LCS-61090	LCS	1	10083915.9	10020482.6	100.63	PASS	70-125	108912.1	115641.6	94.18	PASS	70-125
N022819-001B	SAMP	1	9516637.1	10020482.6	94.97	PASS	70-125	109608.2	115641.6	94.78	PASS	70-125
N022819-002B	SAMP	1	9629741.9	10020482.6	96.1	PASS	70-125	112760.7	115641.6	97.51	PASS	70-125
N022819-003B	SAMP	1	9507048.9	10020482.6	94.88	PASS	70-125	113150.2	115641.6	97.85	PASS	70-125
N022819-004B	SAMP	1	9664690.9	10020482.6	96.45	PASS	70-125	114070.5	115641.6	98.64	PASS	70-125
N022819-005B	SAMP	1	9538260	10020482.6	95.19	PASS	70-125	112689.7	115641.6	97.45	PASS	70-125
N022819-006B	SAMP	1	9883831.2	10020482.6	98.64	PASS	70-125	115193.8	115641.6	99.61	PASS	70-125
N022819-007B	SAMP	1	9854444.1	10020482.6	98.34	PASS	70-125	115519.5	115641.6	99.89	PASS	70-125
N022819-008B	SAMP	1	9976004.6	10020482.6	99.56	PASS	70-125	116952.5	115641.6	101.13	PASS	70-125
CCV3	CCV	1	10632956.5	10020482.6	106.11	PASS	70-125	117248.8	115641.6	101.39	PASS	70-125
CCB3	CCB	1	10309530.1	10020482.6	102.88	PASS	70-125	112825.1	115641.6	97.56	PASS	70-125
N022819-009B	SAMP	1	9749163.3	10020482.6	97.29	PASS	70-125	112820.7	115641.6	97.56	PASS	70-125
N022819-010B	SAMP	1	9871309	10020482.6	98.51	PASS	70-125	113407	115641.6	98.068	PASS	70-125
N022819-011B	SAMP	1	9841227.8	10020482.6	98.21	PASS	70-125	112409.7	115641.6	97.21	PASS	70-125
N022820-001B	SAMP	1	10110616	10020482.6	100.9	PASS	70-125	115693.5	115641.6	100.05	PASS	70-125
N022820-002B	SAMP	1	9926315.5	10020482.6	99.06	PASS	70-125	98782.1	115641.6	85.42	PASS	70-125
N022820-003B	SAMP	1	9895204.6	10020482.6	98.75	PASS	70-125	102568.7	115641.6	88.7	PASS	70-125
N022820-004B	SAMP	1	10311788.5	10020482.6	102.91	PASS	70-125	108260	115641.6	93.62	PASS	70-125
N022820-005B	SAMP	1	10326610.3	10020482.6	103.06	PASS	70-125	112174.7	115641.6	97.002	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	10063255.8	10020482.6	100.43	PASS	70-125	108173.1	115641.6	93.54	PASS	70-125
CCV4	CCV	1	10919281.4	10020482.6	108.97	PASS	70-125	113102.9	115641.6	97.8	PASS	70-125
CCB4	CCB	1	10537319.4	10020482.6	105.16	PASS	70-125	105071.5	115641.6	90.86	PASS	70-125
N022828-002B	SAMP	1	9806084.6	10020482.6	97.86	PASS	70-125	101901.5	115641.6	88.12	PASS	70-125
N022819-001B	SAMP	5	9904648.1	10020482.6	98.84	PASS	70-125	100959.3	115641.6	87.3	PASS	70-125
N022819-001B	SAMP	25	9830140.6	10020482.6	98.1	PASS	70-125	98017.2	115641.6	84.76	PASS	70-125
N022819-001B-PS	PS	1	9732572.6	10020482.6	97.13	PASS	70-125	100675	115641.6	87.058	PASS	70-125
N022819-001B-PS	PS	5	9938456	10020482.6	99.18	PASS	70-125	102714.6	115641.6	88.82	PASS	70-125
N022819-001B-MS	MS	1	10066090.3	10020482.6	100.46	PASS	70-125	105831.4	115641.6	91.52	PASS	70-125
N022819-001B-MS	MS	5	10142929.9	10020482.6	101.22	PASS	70-125	105588.9	115641.6	91.31	PASS	70-125
N022819-001B-MSD	MSD	1	10076928.1	10020482.6	100.56	PASS	70-125	105967.7	115641.6	91.63	PASS	70-125
N022819-001B-MSD	MSD	5	10131104.8	10020482.6	101.1	PASS	70-125	103009.6	115641.6	89.077	PASS	70-125
N022828-001B	SAMP	10	10643144.6	10020482.6	106.21	PASS	70-125	105268.7	115641.6	91.03	PASS	70-125
CCV5	CCV	1	10770414	10020482.6	107.48	PASS	70-125	110236.4	115641.6	95.33	PASS	70-125
CCB5	CCB	1	10255698.5	10020482.6	102.35	PASS	70-125	102201.4	115641.6	88.38	PASS	70-125
LLCCV2	CCV2	1	10279482.4	10020482.6	102.58	PASS	70-125	100963.9	115641.6	87.31	PASS	70-125
ICSA3	ICSA	1	9405000.8	10020482.6	93.86	PASS	70-125	112168.4	115641.6	97	PASS	70-125
ICSAB3	ICSAB	1	9568124.4	10020482.6	95.49	PASS	70-125	122390.1	115641.6	105.84	PASS	70-125
N022828-002B	SAMP	10	9658296.7	10020482.6	96.39	PASS	70-125	104548.1	115641.6	90.41	PASS	70-125
CCV6	CCV	1	9908022.9	10020482.6	98.88	PASS	70-125	101073.4	115641.6	87.4	PASS	70-125
CCB6	CCB	1	9685679.7	10020482.6	96.66	PASS	70-125	95721.1	115641.6	82.77	PASS	70-125
CCV7	CCV	1	10392425.3	10020482.6	103.71	PASS	70-125	110331.7	115641.6	95.41	PASS	70-125
CCB7	CCB	1	10103658.7	10020482.6	100.83	PASS	70-125	106064.2	115641.6	91.72	PASS	70-125
CCV8	CCV	1	10150045.4	10020482.6	101.29	PASS	70-125	106783.4	115641.6	92.34	PASS	70-125
CCB8	CCB	1	9800453	10020482.6	97.8	PASS	70-125	100083.1	115641.6	86.55	PASS	70-125
LLCCV3	CCV2	1	9826397.4	10020482.6	98.063	PASS	70-125	95323.6	115641.6	82.43	PASS	70-125
ICSA4	ICSA	1	8528649.5	10020482.6	85.11	PASS	70-125	94431.8	115641.6	81.66	PASS	70-125
ICSAB4	ICSAB	1	8681534.8	10020482.6	86.64	PASS	70-125	104320.1	115641.6	90.21	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	86650.6	86650.6	100	PASS	70-125	119129.6	119129.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	86828.6	86650.6	100.21	PASS	70-125	120519.3	119129.6	101.17	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	85526.1	86650.6	98.7	PASS	70-125	118555.4	119129.6	99.52	PASS	70-125
Std3-5/50 ppb	ICAL	1	84109.1	86650.6	97.067	PASS	70-125	117753.1	119129.6	98.84	PASS	70-125
Std4-10/100 ppb	ICAL	1	85664.4	86650.6	98.86	PASS	70-125	118443.8	119129.6	99.42	PASS	70-125
Std5-20/200 ppb	ICAL	1	83615.3	86650.6	96.5	PASS	70-125	115207.4	119129.6	96.71	PASS	70-125
Std6-40/400 ppb	ICAL	1	84373.7	86650.6	97.37	PASS	70-125	117526.3	119129.6	98.65	PASS	70-125
Std7-100/1000 ppb	ICAL	1	83251.3	86650.6	96.077	PASS	70-125	114837.2	119129.6	96.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	81836.4	86650.6	94.44	PASS	70-125	113955.7	119129.6	95.66	PASS	70-125
ICV	ICV	1	81640.7	86650.6	94.22	PASS	70-125	112487.7	119129.6	94.42	PASS	70-125
ICB	ICB	1	82942.7	86650.6	95.72	PASS	70-125	117295.1	119129.6	98.46	PASS	70-125
LLICV	CCV1	1	92019.1	86650.6	106.2	PASS	70-125	123404	119129.6	103.59	PASS	70-125
ICSA1	ICSA	1	81922.3	86650.6	94.54	PASS	70-125	105532	119129.6	88.59	PASS	70-125
ICSAB1	ICSAB	1	88377.8	86650.6	101.99	PASS	70-125	116783.2	119129.6	98.03	PASS	70-125
CCV1	CCV	1	81692.3	86650.6	94.28	PASS	70-125	112612.8	119129.6	94.53	PASS	70-125
CCB1	CCB	1	81896.6	86650.6	94.51	PASS	70-125	110931.5	119129.6	93.12	PASS	70-125
CCV2	CCV	1	79707.1	86650.6	91.99	PASS	70-125	109401.4	119129.6	91.83	PASS	70-125
CCB2	CCB	1	79914.7	86650.6	92.23	PASS	70-125	107547.8	119129.6	90.28	PASS	70-125
LLCCV1	CCV2	1	74912.2	86650.6	86.45	PASS	70-125	99434	119129.6	83.47	PASS	70-125
ICSA2	ICSA	1	77372.4	86650.6	89.29	PASS	70-125	96982.8	119129.6	81.41	PASS	70-125
ICSAB2	ICSAB	1	85742.9	86650.6	98.95	PASS	70-125	111380.1	119129.6	93.49	PASS	70-125
MB-61090	MBLK	1	80894.6	86650.6	93.36	PASS	70-125	107230.8	119129.6	90.012	PASS	70-125
LCS-61090	LCS	1	82423.1	86650.6	95.12	PASS	70-125	117403.8	119129.6	98.55	PASS	70-125
N022819-001B	SAMP	1	78164.1	86650.6	90.21	PASS	70-125	106450	119129.6	89.36	PASS	70-125
N022819-002B	SAMP	1	80325.4	86650.6	92.7	PASS	70-125	110036.1	119129.6	92.37	PASS	70-125
N022819-003B	SAMP	1	80825	86650.6	93.28	PASS	70-125	108078.4	119129.6	90.72	PASS	70-125
N022819-004B	SAMP	1	79512.6	86650.6	91.76	PASS	70-125	105949.1	119129.6	88.94	PASS	70-125
N022819-005B	SAMP	1	79473.3	86650.6	91.72	PASS	70-125	107662.6	119129.6	90.37	PASS	70-125
N022819-006B	SAMP	1	82260.7	86650.6	94.93	PASS	70-125	110158.6	119129.6	92.47	PASS	70-125
N022819-007B	SAMP	1	82727	86650.6	95.47	PASS	70-125	109235.7	119129.6	91.69	PASS	70-125
N022819-008B	SAMP	1	82819.8	86650.6	95.58	PASS	70-125	109567.4	119129.6	91.97	PASS	70-125
CCV3	CCV	1	90983.9	86650.6	105	PASS	70-125	124453.1	119129.6	104.47	PASS	70-125
CCB3	CCB	1	85690.1	86650.6	98.89	PASS	70-125	118080.7	119129.6	99.12	PASS	70-125
N022819-009B	SAMP	1	80074.3	86650.6	92.41	PASS	70-125	105935.5	119129.6	88.92	PASS	70-125
N022819-010B	SAMP	1	79999.7	86650.6	92.32	PASS	70-125	105208.3	119129.6	88.31	PASS	70-125
N022819-011B	SAMP	1	76648.2	86650.6	88.46	PASS	70-125	99112.5	119129.6	83.2	PASS	70-125
N022820-001B	SAMP	1	81918.9	86650.6	94.54	PASS	70-125	104436.3	119129.6	87.67	PASS	70-125
N022820-002B	SAMP	1	71641	86650.6	82.68	PASS	70-125	89906.8	119129.6	75.47	PASS	70-125
N022820-003B	SAMP	1	73519.3	86650.6	84.85	PASS	70-125	91689.5	119129.6	76.97	PASS	70-125
N022820-004B	SAMP	1	77665	86650.6	89.63	PASS	70-125	96640.5	119129.6	81.12	PASS	70-125
N022820-005B	SAMP	1	78525.8	86650.6	90.62	PASS	70-125	98132.8	119129.6	82.37	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	77761.3	86650.6	89.74	PASS	70-125	97145.7	119129.6	81.55	PASS	70-125
CCV4	CCV	1	85665.9	86650.6	98.86	PASS	70-125	111621.8	119129.6	93.7	PASS	70-125
CCB4	CCB	1	81976	86650.6	94.61	PASS	70-125	107424.1	119129.6	90.17	PASS	70-125
N022828-002B	SAMP	1	74621.8	86650.6	86.12	PASS	70-125	96048.2	119129.6	80.62	PASS	70-125
N022819-001B	SAMP	5	77313	86650.6	89.22	PASS	70-125	101884.5	119129.6	85.52	PASS	70-125
N022819-001B	SAMP	25	78194	86650.6	90.24	PASS	70-125	103013.1	119129.6	86.47	PASS	70-125
N022819-001B-PS	PS	1	73691.2	86650.6	85.044	PASS	70-125	95308.2	119129.6	80.004	PASS	70-125
N022819-001B-PS	PS	5	78429.5	86650.6	90.51	PASS	70-125	102834	119129.6	86.32	PASS	70-125
N022819-001B-MS	MS	1	76923.7	86650.6	88.77	PASS	70-125	97871.3	119129.6	82.16	PASS	70-125
N022819-001B-MS	MS	5	80314.3	86650.6	92.69	PASS	70-125	104699	119129.6	87.89	PASS	70-125
N022819-001B-MSD	MSD	1	76297.4	86650.6	88.052	PASS	70-125	98631.4	119129.6	82.79	PASS	70-125
N022819-001B-MSD	MSD	5	77816.7	86650.6	89.81	PASS	70-125	101992.7	119129.6	85.61	PASS	70-125
N022828-001B	SAMP	10	82038.2	86650.6	94.68	PASS	70-125	109401.5	119129.6	91.83	PASS	70-125
CCV5	CCV	1	88530.9	86650.6	102.17	PASS	70-125	121640.2	119129.6	102.11	PASS	70-125
CCB5	CCB	1	82518.7	86650.6	95.23	PASS	70-125	111911.2	119129.6	93.94	PASS	70-125
LLCCV2	CCV2	1	81416.8	86650.6	93.96	PASS	70-125	112011	119129.6	94.024	PASS	70-125
ICSA3	ICSA	1	78303.6	86650.6	90.37	PASS	70-125	99333.7	119129.6	83.38	PASS	70-125
ICSAB3	ICSAB	1	83837.1	86650.6	96.75	PASS	70-125	111367.5	119129.6	93.48	PASS	70-125
N022828-002B	SAMP	10	81394.1	86650.6	93.93	PASS	70-125	113475	119129.6	95.25	PASS	70-125
CCV6	CCV	1	79904.7	86650.6	92.21	PASS	70-125	109233.8	119129.6	91.69	PASS	70-125
CCB6	CCB	1	75962.5	86650.6	87.67	PASS	70-125	103028.2	119129.6	86.48	PASS	70-125
CCV7	CCV	1	85041.3	86650.6	98.14	PASS	70-125	111786.2	119129.6	93.84	PASS	70-125
CCB7	CCB	1	82740	86650.6	95.49	PASS	70-125	108286.3	119129.6	90.9	PASS	70-125
CCV8	CCV	1	82137.6	86650.6	94.79	PASS	70-125	108607.1	119129.6	91.17	PASS	70-125
CCB8	CCB	1	79493.8	86650.6	91.74	PASS	70-125	104186.6	119129.6	87.46	PASS	70-125
LLCCV3	CCV2	1	74766.1	86650.6	86.28	PASS	70-125	98224.8	119129.6	82.45	PASS	70-125
ICSA4	ICSA	1	66722.5	86650.6	77.002	PASS	70-125	86685.5	119129.6	72.77	PASS	70-125
ICSAB4	ICSAB	1	72819.4	86650.6	84.038	PASS	70-125	94150.6	119129.6	79.032	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2797828.2	2797828.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2805376.1	2797828.2	100.27	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2762455	2797828.2	98.74	PASS	70-125
Std3-5/50 ppb	ICAL	1	2752620.4	2797828.2	98.38	PASS	70-125
Std4-10/100 ppb	ICAL	1	2748370.7	2797828.2	98.23	PASS	70-125
Std5-20/200 ppb	ICAL	1	2731148.9	2797828.2	97.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	2709646.6	2797828.2	96.85	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2657339.1	2797828.2	94.98	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2617508.9	2797828.2	93.56	PASS	70-125
ICV	ICV	1	2652600.7	2797828.2	94.81	PASS	70-125
ICB	ICB	1	2717451.5	2797828.2	97.13	PASS	70-125
LLICV	CCV1	1	2998384.4	2797828.2	107.17	PASS	70-125
ICSA1	ICSA	1	2385775.1	2797828.2	85.27	PASS	70-125
ICSAB1	ICSAB	1	2542331.7	2797828.2	90.87	PASS	70-125
CCV1	CCV	1	2674762.6	2797828.2	95.6	PASS	70-125
CCB1	CCB	1	2656966.9	2797828.2	94.97	PASS	70-125
CCV2	CCV	1	2614872	2797828.2	93.46	PASS	70-125
CCB2	CCB	1	2600393.7	2797828.2	92.94	PASS	70-125
LLCCV1	CCV2	1	2546810.5	2797828.2	91.028	PASS	70-125
ICSA2	ICSA	1	2312772.1	2797828.2	82.66	PASS	70-125
ICSAB2	ICSAB	1	2521638.1	2797828.2	90.13	PASS	70-125
MB-61090	MBLK	1	2650121.1	2797828.2	94.72	PASS	70-125
LCS-61090	LCS	1	2698730.9	2797828.2	96.46	PASS	70-125
N022819-001B	SAMP	1	2322355.7	2797828.2	83.006	PASS	70-125
N022819-002B	SAMP	1	2380920	2797828.2	85.099	PASS	70-125
N022819-003B	SAMP	1	2407627.4	2797828.2	86.053	PASS	70-125
N022819-004B	SAMP	1	2364944.1	2797828.2	84.53	PASS	70-125
N022819-005B	SAMP	1	2370719	2797828.2	84.73	PASS	70-125
N022819-006B	SAMP	1	2431397.2	2797828.2	86.9	PASS	70-125
N022819-007B	SAMP	1	2466456.9	2797828.2	88.16	PASS	70-125
N022819-008B	SAMP	1	2480784.9	2797828.2	88.67	PASS	70-125
CCV3	CCV	1	2931609.3	2797828.2	104.78	PASS	70-125
CCB3	CCB	1	2803351.9	2797828.2	100.2	PASS	70-125
N022819-009B	SAMP	1	2387431.3	2797828.2	85.33	PASS	70-125
N022819-010B	SAMP	1	2409251.6	2797828.2	86.11	PASS	70-125
N022819-011B	SAMP	1	2404219.5	2797828.2	85.93	PASS	70-125
N022820-001B	SAMP	1	2500782.3	2797828.2	89.38	PASS	70-125
N022820-002B	SAMP	1	2290586.9	2797828.2	81.87	PASS	70-125
N022820-003B	SAMP	1	2342124.1	2797828.2	83.71	PASS	70-125
N022820-004B	SAMP	1	2451231.3	2797828.2	87.61	PASS	70-125
N022820-005B	SAMP	1	2440652.6	2797828.2	87.23	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N022828-001B	SAMP	1	2432459.8	2797828.2	86.94	PASS	70-125
CCV4	CCV	1	2887714.1	2797828.2	103.21	PASS	70-125
CCB4	CCB	1	2749885.5	2797828.2	98.29	PASS	70-125
N022828-002B	SAMP	1	2333419.1	2797828.2	83.4	PASS	70-125
N022819-001B	SAMP	5	2506281.2	2797828.2	89.58	PASS	70-125
N022819-001B	SAMP	25	2554702.8	2797828.2	91.31	PASS	70-125
N022819-001B-PS	PS	1	2287612.9	2797828.2	81.76	PASS	70-125
N022819-001B-PS	PS	5	2508714.1	2797828.2	89.67	PASS	70-125
N022819-001B-MS	MS	1	2357275.2	2797828.2	84.25	PASS	70-125
N022819-001B-MS	MS	5	2569879.8	2797828.2	91.85	PASS	70-125
N022819-001B-MSD	MSD	1	2383317.5	2797828.2	85.18	PASS	70-125
N022819-001B-MSD	MSD	5	2535002.7	2797828.2	90.61	PASS	70-125
N022828-001B	SAMP	10	2606495.3	2797828.2	93.16	PASS	70-125
CCV5	CCV	1	2879092.5	2797828.2	102.9	PASS	70-125
CCB5	CCB	1	2716176	2797828.2	97.082	PASS	70-125
LLCCV2	CCV2	1	2653245.6	2797828.2	94.83	PASS	70-125
ICSA3	ICSA	1	2297724.7	2797828.2	82.13	PASS	70-125
ICSAB3	ICSAB	1	2437034.8	2797828.2	87.1	PASS	70-125
N022828-002B	SAMP	10	2527991.9	2797828.2	90.36	PASS	70-125
CCV6	CCV	1	2621609.7	2797828.2	93.7	PASS	70-125
CCB6	CCB	1	2523095.8	2797828.2	90.18	PASS	70-125
CCV7	CCV	1	2777302.3	2797828.2	99.27	PASS	70-125
CCB7	CCB	1	2691696.7	2797828.2	96.21	PASS	70-125
CCV8	CCV	1	2675179.7	2797828.2	95.62	PASS	70-125
CCB8	CCB	1	2547880	2797828.2	91.066	PASS	70-125
LLCCV3	CCV2	1	2450913.3	2797828.2	87.6	PASS	70-125
ICSA4	ICSA	1	1976676.7	2797828.2	70.65	PASS	70-125
ICSAB4	ICSAB	1	2093965	2797828.2	74.84	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022820
Test Method: EPA 6020
Analysis Date: 1/31/2017

Matrix: Groundwater
Batch No.: 61090

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022819-001B DT 5X	Arsenic	ug/L	2.146159	NA	2.131533	0.69%	10
N022819-001B DT 25X	Barium	ug/L	124.6075	PASS	123.0992	1.23%	10
N022819-001B DT 5X	Chromium	ug/L	0	NA	0		10
N022819-001B DT 5X	Manganese	ug/L	1.851783	NA	1.694529	9.28%	10
N022819-001B DT 5X	Molybdenum	ug/L	4.899097	NA	5.034545	2.69%	10
N022819-001B DT 5X	Selenium	ug/L	1.73384	NA	1.465781	18.29%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N022819-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549961

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.055	0.10	10.00	2.132	99.2	80	120				
Manganese	95.634	0.50	100.0	1.695	93.9	80	120				
Molybdenum	16.038	0.50	10.00	5.035	110	80	120				
Selenium	10.712	0.50	10.00	1.466	92.5	80	120				

Sample ID	N022819-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	ZZZZZZ	Batch ID:	61090	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/31/2017	SeqNo:	2549962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	225.050	5.0	100.0	123.1	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N022819-001B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**113195**
Client ID:	**ZZZZZZ**	Batch ID:	**61090**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**1/31/2017**		SeqNo:	**2549858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.526	1.0	10.00	0	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

February 08, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022830

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 25, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liberman for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *08-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-001A	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001B	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001C	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001D	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001E	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-002A	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002B	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002C	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002D	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002E	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-003A	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003B	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003C	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003D	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003E	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-004A	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004B	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004C	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004D	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004E	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-005A	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005B	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005C	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005D	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005E	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-006A	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006B	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006C	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006D	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-006E	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-007A	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007B	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007C	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007D	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007E	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-008A	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008B	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008C	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008D	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008E	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-009A	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009B	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009C	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009D	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009E	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-010A	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010B	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010C	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010D	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010E	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-011A	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011B	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011C	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011D	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011E	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-012A	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012B	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012C	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012D	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-012E	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-013A	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013B	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013C	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013D	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013E	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-014A	AB3-Q117L	Groundwater	1/25/2017 9:20:00 AM	1/25/2017	2/8/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022830-010DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113107**
Client ID: **ZZZZZZ** Batch ID: **R113107** TestNo: **EPA 120.1** Analysis Date: **1/26/2017** SeqNo: **2545473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	969.000	0.10						965.0	0.414	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022830-013DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113108**
Client ID: **ZZZZZZ** Batch ID: **R113108** TestNo: **EPA 120.1** Analysis Date: **1/26/2017** SeqNo: **2545477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	997.000	0.10						992.0	0.503	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.1	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.0	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C** QC Batch: **R113106**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C** QC Batch: **R113106**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C** QC Batch: **R113106**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022830-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113105**
Client ID: **ZZZZZZ** Batch ID: **R113105** TestNo: **SM4500-H+B** Analysis Date: **1/26/2017** SeqNo: **2545424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.150	0.10						8.120	0.369	10	H
Temp. at time of pH Analysis	16.500	0.10						16.50	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022830-011DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113106**
Client ID: **ZZZZZZ** Batch ID: **R113106** TestNo: **SM4500-H+B** Analysis Date: **1/26/2017** SeqNo: **2545451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.190	0.10						8.150	0.490	10	H
Temp. at time of pH Analysis	17.700	0.10						17.70	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170130B** QC Batch: **61082** PrepDate **1/30/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	41	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61082	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	LCSW	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548132

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	935.000	10	1000	0	93.5	80	120				

Sample ID	MB-61082	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	PBW	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022820-002D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	ZZZZZZ	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61099** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **LCSW** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID **MB-61099** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **PBW** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N022830-008D-DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **ZZZZZZ** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 10:56 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 07:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:17 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:36 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:55 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 02:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 02:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:49 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 03:10 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 03:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:04 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113219** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **LCSW** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	90	110				

Sample ID **MB-R113219** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **PBW** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N022830-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022830-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID **N022830-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022830-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID **N022830-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022830-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N022830-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID **N022830-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022887-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2152.880	40	1000	1164	98.9	90	110				

Sample ID **N022887-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2173.300	40	1000	1164	101	90	110	2153	0.944	20	

Sample ID **N022887-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.512	0.20						5.454	1.06	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61101** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **PBW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61101** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **LCSW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.658	1.0	10.00	0	96.6	85	115				

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.366	1.0	10.00	0	93.7	75	125				

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.185	1.0	10.00	0	91.9	75	125	9.366	1.95	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113228** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **PBW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113228** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **LCSW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.531	0.050	0.5000	0	106	85	115				

Sample ID **N022820-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.410	0.050						0.4011	2.15	20	

Sample ID **N022820-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.872	0.050	0.5000	0.4011	94.1	75	125				

Sample ID **N022820-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.946	0.050	0.5000	0.4011	109	75	125	0.8718	8.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113333** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **PBW** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113333** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **LCSW** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.536	0.050	0.5000	0	107	85	115				

Sample ID **N022830-010EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.407	0.050						0.4126	1.27	20	

Sample ID **N022830-010EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.859	0.050	0.5000	0.4126	89.3	75	125				

Sample ID **N022830-010EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.861	0.050	0.5000	0.4126	89.7	75	125	0.8591	0.244	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N022829-002IMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.716	0.25	2.500	0	109	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:07 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	63	1.8	20		ug/L	1	2/3/2017 08:46 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:35 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	58	1.8	20		ug/L	1	2/3/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:50 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	560	1.8	20		ug/L	1	2/3/2017 09:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	2/7/2017 02:55 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	890	1.8	20		ug/L	1	2/3/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	75	1.8	20		ug/L	1	2/3/2017 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:05 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/3/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	77	1.8	20		ug/L	1	2/3/2017 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	58	1.8	20		ug/L	1	2/3/2017 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:19 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	60	1.8	20		ug/L	1	2/3/2017 10:15 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:24 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	52	1.8	20		ug/L	1	2/3/2017 10:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	45	1.8	20		ug/L	1	2/3/2017 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:34 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	36	1.8	20		ug/L	1	2/3/2017 10:30 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:49 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	38	1.8	20		ug/L	1	2/3/2017 10:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-61094	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/31/2017	RunNo:	113332
Client ID:	PBW	Batch ID:	61094	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/7/2017	SeqNo:	2557938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-61094	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/31/2017	RunNo:	113332
Client ID:	LCSW	Batch ID:	61094	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/7/2017	SeqNo:	2557939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.046	20	100.0	0	113	85	115				

Sample ID	N022830-001B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/31/2017	RunNo:	113332
Client ID:	ZZZZZZ	Batch ID:	61094	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/7/2017	SeqNo:	2557943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.707	20	100.0	4.978	109	75	125				

Sample ID	N022830-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/31/2017	RunNo:	113332
Client ID:	ZZZZZZ	Batch ID:	61094	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/7/2017	SeqNo:	2557944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.747	20	100.0	4.978	109	75	125	113.7	0.0347	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-61084** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **PBW** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61084** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **LCSW** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.352	20	100.0	0	103	85	115				

Sample ID **N022830-001C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	159.711	20	100.0	62.81	96.9	75	125				

Sample ID **N022830-001C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	158.937	20	100.0	62.81	96.1	75	125	159.7	0.486	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 07:23 PM
Barium	130	0.35	5.0		µg/L	5	1/31/2017 07:30 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 07:23 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 07:23 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 07:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:31 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:31 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:31 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 08:31 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 08:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 08:37 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 08:37 PM
Manganese	43	0.056	0.50		µg/L	1	1/31/2017 08:37 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 08:37 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/31/2017 08:37 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	1/31/2017 08:43 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 08:43 PM
Manganese	69	0.056	0.50		µg/L	1	1/31/2017 08:43 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 08:43 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 08:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:49 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:49 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:49 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 08:49 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:56 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:56 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:56 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 08:56 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	1/31/2017 09:02 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:02 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:02 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 09:02 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 09:08 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:08 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:08 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 09:08 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	1/31/2017 09:14 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:14 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:14 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 09:14 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 09:33 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:33 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:33 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 09:33 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 09:39 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:39 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:39 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 09:39 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 09:45 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:45 PM
Manganese	0.60	0.056	0.50		µg/L	1	1/31/2017 09:45 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 09:45 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**				PrepDate	**1/31/2017**	Analyst: **CEI**
Arsenic	2.4	0.025	0.10		µg/L	1	1/31/2017 09:51 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:51 PM
Manganese	0.57	0.056	0.50		µg/L	1	1/31/2017 09:51 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 09:51 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61101** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61101** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.781	0.10	10.00	0	97.8	85	115				
Barium	103.672	1.0	100.0	0	104	85	115				
Manganese	98.554	0.50	100.0	0	98.6	85	115				
Molybdenum	9.818	0.50	10.00	0	98.2	85	115				
Selenium	9.412	0.50	10.00	0	94.1	85	115				

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.664	0.10	10.00	2.211	94.5	75	125				
Manganese	93.028	0.50	100.0	0.1083	92.9	75	125				
Molybdenum	16.348	0.50	10.00	5.383	110	75	125				
Selenium	10.599	0.50	10.00	1.601	90.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.989	5.0	100.0	126.6	107	75	125				

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.817	0.10	10.00	2.211	96.1	75	125	11.66	1.30	20	
Manganese	92.951	0.50	100.0	0.1083	92.8	75	125	93.03	0.0833	20	
Molybdenum	16.471	0.50	10.00	5.383	111	75	125	16.35	0.748	20	
Selenium	10.893	0.50	10.00	1.601	92.9	75	125	10.60	2.74	20	

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.466	5.0	100.0	126.6	107	75	125	234.0	0.224	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 3

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Jason Mahn
Title:
Signature: Date: 1/25/17
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com, daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/25/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	/	
2. Headspace		
3. Container Intact	/	
4. Seal Present		/
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.1°C / 2.8°C / 3.3°C		
Courier:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
~~1~~		~~C-BNS-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS
2	N022830 - 01	C-CON-D-0117L	1/25/17	0955		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
3	- 02	C-CON-S-0117L	↓	1015		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
~~4~~		~~C-I-3-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
		~~MW-905-Q117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
6		~~C-I-3-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
7	- 03	C-MAR-D-0117L	1/25/17	0835		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
8	- 04	C-MAR-S-0117L		0820		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
9	- 05	C-NR1-D-0117L		1045		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
	- 06	C-NR1-S-0117L		1055		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
11	- 07	C-NR3-D-0117L		1115		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
12	- 08	C-NR3-S-0117L		1135		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
13	- 09	MW-906-Q117L		1145		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
14	- 10	C-NR4-D-0117L	↓	1220		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @1408	MBCARTIN	1/25/17 @1408
	1/25/17 @1651	Leandra Rodriguez	1/25/17 1651

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 / Fax:		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	✓	
Others	✓	LEVEL III		4. Seal Present		✓
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: Ice		
		Specify State:		Sample Temp: 2.1°C / 2.8°C / 3.3°C		

Signature: Date: 1/25/17

I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Jason Mahn

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature: Date: 1/25/17

Project Name: PG&E Topock - RMP

Project Number: RC000753.0801

Courier:

Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022830 - 11	C-NR4-S-0117L	1/25/17	1245		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~2~~		~~C-R22A-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~3~~		~~C-R22A-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~4~~		~~C-R27-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~5~~		~~C-R27-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
		~~C-TAZ-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~7~~		~~MW-907-Q117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~8~~		~~C-TAZ-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
9	- 12	R-19-0117L	1/25/17	0905		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~10~~		~~R-28-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~11~~		~~R63-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
12	- 13	RRB-0117L	1/25/17	0925		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~13~~		~~SW1-0117L~~				X		X					X	X					E	~~7~~	P	BNS
14		SW2-0117L				X		X					X	X					E	7	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @ 1408		1/25/17 @ 1408
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @ 1651	Joanna Rodriguez	1/25/17
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
			16:57

Turn Around Time (TAT)

- [ ] A < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Jason Mahn
Title:
Signature: Date: 1/25/17
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/25/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	✓	
6. Method of Cooling: 2.1°C/2.8°C/3.3°C		
Sample Temp:		

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~MW-908-Q117L~~				~~X~~		~~X~~					~~X~~	~~X~~					~~E~~	~~7~~	~~P~~	~~BN~~
		~~AB1-Q117L~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~
		~~AB2-Q117L~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~
	N022830 - 14	AB3-Q117L	1/25/17	0920			X												E	1	P	BN

Relinquished by (Signature and Printed Name): Date/Time: 1/25/17 @1408
Relinquished by (Signature and Printed Name): Date/Time: 1/25/17 @1408
Relinquished by (Signature and Printed Name): Date/Time: 1/25/17 @1405
Relinquished by (Signature and Printed Name): Date/Time: 1/25/17 10:51
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/25/2017	Workorder:	N022830
Rep sample Temp (Deg C):	2.1/2.8/3.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 1/26/2017

Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-001A	C-CON-D-0117L	1/25/2017 9:55:00 AM	2/8/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-001B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-001C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-001D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-001E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-002A	C-CON-S-0117L	1/25/2017 10:15:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-002B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-002C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-002D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-002D	C-CON-S-0117L	1/25/2017 10:15:00 AM	2/8/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-002E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-003A	C-MAR-D-0117L	1/25/2017 8:35:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-003B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-003C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-003D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-003E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-004A	C-MAR-S-0117L	1/25/2017 8:20:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-004B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-004B	C-MAR-S-0117L	1/25/2017 8:20:00 AM	2/8/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-004C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-004D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-004E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-005A	C-NR1-D-0117L	1/25/2017 10:45:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-005B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-005C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-005D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-005E	C-NR1-D-0117L	1/25/2017 10:45:00 AM	2/8/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-006A	C-NR1-S-0117L	1/25/2017 10:55:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-006B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-006C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-006D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-006E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-007A	C-NR3-D-0117L	1/25/2017 11:15:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-007B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-007C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-007C	C-NR3-D-0117L	1/25/2017 11:15:00 AM	2/8/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-007D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-007E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-008A	C-NR3-S-0117L	1/25/2017 11:35:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-008B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-008C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-008D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-008E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-009A	MW-906-Q117L	1/25/2017 11:45:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-009B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-009B	MW-906-Q117L	1/25/2017 11:45:00 AM	2/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-009C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-009D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-009E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-010A	C-NR4-D-0117L	1/25/2017 12:20:00 PM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-010B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-010C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-010D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-010D	C-NR4-D-0117L	1/25/2017 12:20:00 PM	2/8/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N022830-010E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-011A	C-NR4-S-0117L	1/25/2017 12:45:00 PM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-011B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-011C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-011D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-011E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-012A	R-19-0117L	1/25/2017 9:05:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-012B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-012C	R-19-0117L	1/25/2017 9:05:00 AM	2/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-012D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-012E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-013A	RRB-0117L	1/25/2017 9:25:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-013B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-013C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-013D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-013E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-014A	AB3-Q117L	1/25/2017 9:20:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-015A	FOLDER	2/8/2017	2/8/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/8/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N022830

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022830

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-120
Sample Receiving Items	121-134
List of Analysts	135
Raw Data	
EPA 120.1	136-139
SM 4500-H+B	140-143
SM 2540D	144-158
EPA 218.6	159-388
SM 4500-NO3F	389-408
EPA 6010B_Dissolved	409-442
EPA 6010B	443-481
EPA 6020_Dissolved	482-540

February 08, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022830

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 25, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liberman for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *08-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-001A	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001B	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001C	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001D	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-001E	C-CON-D-0117L	Groundwater	1/25/2017 9:55:00 AM	1/25/2017	2/8/2017
N022830-002A	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002B	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002C	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002D	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-002E	C-CON-S-0117L	Groundwater	1/25/2017 10:15:00 AM	1/25/2017	2/8/2017
N022830-003A	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003B	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003C	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003D	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-003E	C-MAR-D-0117L	Groundwater	1/25/2017 8:35:00 AM	1/25/2017	2/8/2017
N022830-004A	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004B	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004C	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004D	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-004E	C-MAR-S-0117L	Groundwater	1/25/2017 8:20:00 AM	1/25/2017	2/8/2017
N022830-005A	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005B	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005C	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005D	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-005E	C-NR1-D-0117L	Groundwater	1/25/2017 10:45:00 AM	1/25/2017	2/8/2017
N022830-006A	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006B	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006C	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-006D	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-006E	C-NR1-S-0117L	Groundwater	1/25/2017 10:55:00 AM	1/25/2017	2/8/2017
N022830-007A	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007B	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007C	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007D	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-007E	C-NR3-D-0117L	Groundwater	1/25/2017 11:15:00 AM	1/25/2017	2/8/2017
N022830-008A	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008B	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008C	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008D	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-008E	C-NR3-S-0117L	Groundwater	1/25/2017 11:35:00 AM	1/25/2017	2/8/2017
N022830-009A	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009B	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009C	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009D	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-009E	MW-906-Q117L	Groundwater	1/25/2017 11:45:00 AM	1/25/2017	2/8/2017
N022830-010A	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010B	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010C	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010D	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-010E	C-NR4-D-0117L	Groundwater	1/25/2017 12:20:00 PM	1/25/2017	2/8/2017
N022830-011A	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011B	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011C	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011D	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-011E	C-NR4-S-0117L	Groundwater	1/25/2017 12:45:00 PM	1/25/2017	2/8/2017
N022830-012A	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012B	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012C	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-012D	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N022830
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022830-012E	R-19-0117L	Groundwater	1/25/2017 9:05:00 AM	1/25/2017	2/8/2017
N022830-013A	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013B	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013C	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013D	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-013E	RRB-0117L	Groundwater	1/25/2017 9:25:00 AM	1/25/2017	2/8/2017
N022830-014A	AB3-Q117L	Groundwater	1/25/2017 9:20:00 AM	1/25/2017	2/8/2017

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	970	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126D**	QC Batch: **R113107**			PrepDate			Analyst: **RB**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170126E**	QC Batch: **R113108**			PrepDate			Analyst: **RB**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/26/2017 03:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022830-010DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113107**
Client ID: **ZZZZZZ** Batch ID: **R113107** TestNo: **EPA 120.1** Analysis Date: **1/26/2017** SeqNo: **2545473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	969.000	0.10						965.0	0.414	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022830-013DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113108**
Client ID: **ZZZZZZ** Batch ID: **R113108** TestNo: **EPA 120.1** Analysis Date: **1/26/2017** SeqNo: **2545477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	997.000	0.10						992.0	0.503	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.1	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.0	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.3	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B**	QC Batch: **R113105**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126B** QC Batch: **R113105**				PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C**	QC Batch: **R113106**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C**	QC Batch: **R113106**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170126C**	QC Batch: **R113106**			PrepDate			Analyst: **RB**
pH	8.2	0.10	0.10	H	pH Units	1	1/26/2017 03:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	1/26/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022830-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113105**
Client ID: **ZZZZZZ** Batch ID: **R113105** TestNo: **SM4500-H+B** Analysis Date: **1/26/2017** SeqNo: **2545424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.150	0.10						8.120	0.369	10	H
Temp. at time of pH Analysis	16.500	0.10						16.50	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022830-011DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113106**
Client ID: **ZZZZZZ** Batch ID: **R113106** TestNo: **SM4500-H+B** Analysis Date: **1/26/2017** SeqNo: **2545451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.190	0.10						8.150	0.490	10	H
Temp. at time of pH Analysis	17.700	0.10						17.70	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170130B** QC Batch: **61082** PrepDate **1/30/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170130B** QC Batch: **61082** PrepDate **1/30/2017** Analyst: **QBM**							
Suspended Solids (Residue, Non-Filterable)	41	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170130B**	QC Batch: **61082**				PrepDate	**1/30/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/30/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170131B**	QC Batch: **61099**				PrepDate	**1/31/2017**	Analyst: **QBM**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/31/2017 10:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61082	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	LCSW	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548132

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	935.000	10	1000	0	93.5	80	120				

Sample ID	MB-61082	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	PBW	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N022820-002D-DUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/30/2017	RunNo:	113171
Client ID:	ZZZZZZ	Batch ID:	61082	TestNo:	SM2540D			Analysis Date:	1/30/2017	SeqNo:	2548135

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61099** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **LCSW** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID **MB-61099** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **PBW** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N022830-008D-DUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **1/31/2017** RunNo: **113199**
Client ID: **ZZZZZZ** Batch ID: **61099** TestNo: **SM2540D** Analysis Date: **1/31/2017** SeqNo: **2550403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 10:56 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 07:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:17 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:36 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 11:55 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A** QC Batch: **R113260**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 02:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate		**1/31/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170202A**	QC Batch: **R113260**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 02:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170131D**	QC Batch: **61101**			PrepDate		**1/31/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 01:49 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 03:10 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170202A** QC Batch: **R113260** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/2/2017 03:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170131D** QC Batch: **61101** PrepDate **1/31/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:04 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131D** QC Batch: **61101**				PrepDate	**1/31/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/31/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170131A** QC Batch: **R113219** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	1/31/2017 03:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113219** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **LCSW** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	90	110				

Sample ID **MB-R113219** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **PBW** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N022830-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N022830-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID **N022830-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N022830-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID **N022830-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N022830-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N022830-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID **N022830-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022887-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2152.880	40	1000	1164	98.9	90	110				

Sample ID **N022887-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2173.300	40	1000	1164	101	90	110	2153	0.944	20	

Sample ID **N022887-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.512	0.20						5.454	1.06	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R113260** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **LCSW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.151	0.20	5.000	0	103	90	110				

Sample ID **MB-R113260** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **PBW** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N022820-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N022830-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N022830-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022830-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N022819-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N022819-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N022820-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0.06830	100	90	110				

Sample ID **N022927-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	5.000	4.728	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022927-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.037	0.20	5.000	4.728	106	90	110	10.05	0.128	20	

Sample ID **N022927-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.200	0.20						5.152	0.933	20	

Sample ID **N022819-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N022819-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID **N022830-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022820-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.06740	99.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61101** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **PBW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61101** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **LCSW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.658	1.0	10.00	0	96.6	85	115				

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.366	1.0	10.00	0	93.7	75	125				

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.185	1.0	10.00	0	91.9	75	125	9.366	1.95	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170201A** QC Batch: **R113228** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/1/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170206D** QC Batch: **R113333** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	2/6/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113228** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **PBW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113228** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **LCSW** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.531	0.050	0.5000	0	106	85	115				

Sample ID **N022820-001EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.410	0.050						0.4011	2.15	20	

Sample ID **N022820-001EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.872	0.050	0.5000	0.4011	94.1	75	125				

Sample ID **N022820-001EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ZZZZZZ** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.946	0.050	0.5000	0.4011	109	75	125	0.8718	8.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113333** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **PBW** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113333** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **LCSW** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.536	0.050	0.5000	0	107	85	115				

Sample ID **N022830-010EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.407	0.050						0.4126	1.27	20	

Sample ID **N022830-010EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.859	0.050	0.5000	0.4126	89.3	75	125				

Sample ID **N022830-010EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.861	0.050	0.5000	0.4126	89.7	75	125	0.8591	0.244	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **N022829-002IMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ZZZZZZ** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.716	0.25	2.500	0	109	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:07 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	63	1.8	20		ug/L	1	2/3/2017 08:46 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**			PrepDate		**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:35 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**			PrepDate		**1/30/2017**	Analyst: **CEI**
Iron	58	1.8	20		ug/L	1	2/3/2017 09:14 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 02:50 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	560	1.8	20		ug/L	1	2/3/2017 09:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	2/7/2017 02:55 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	890	1.8	20		ug/L	1	2/3/2017 09:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	75	1.8	20		ug/L	1	2/3/2017 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:05 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/3/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	77	1.8	20		ug/L	1	2/3/2017 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**			PrepDate		**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**			PrepDate		**1/30/2017**	Analyst: **CEI**
Iron	58	1.8	20		ug/L	1	2/3/2017 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:19 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	60	1.8	20		ug/L	1	2/3/2017 10:15 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:24 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	52	1.8	20		ug/L	1	2/3/2017 10:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**			PrepDate		**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**			PrepDate		**1/30/2017**	Analyst: **CEI**
Iron	45	1.8	20		ug/L	1	2/3/2017 10:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**				PrepDate	**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:34 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**				PrepDate	**1/30/2017**	Analyst: **CEI**
Iron	36	1.8	20		ug/L	1	2/3/2017 10:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170206K**	QC Batch: **61094**			PrepDate		**1/31/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/7/2017 03:49 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170203D**	QC Batch: **61084**			PrepDate		**1/30/2017**	Analyst: **CEI**
Iron	38	1.8	20		ug/L	1	2/3/2017 10:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61094** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/31/2017** RunNo: **113332**
Client ID: **PBW** Batch ID: **61094** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/7/2017** SeqNo: **2557938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61094** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/31/2017** RunNo: **113332**
Client ID: **LCSW** Batch ID: **61094** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/7/2017** SeqNo: **2557939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.046	20	100.0	0	113	85	115				

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/31/2017** RunNo: **113332**
Client ID: **ZZZZZZ** Batch ID: **61094** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/7/2017** SeqNo: **2557943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.707	20	100.0	4.978	109	75	125				

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **1/31/2017** RunNo: **113332**
Client ID: **ZZZZZZ** Batch ID: **61094** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/7/2017** SeqNo: **2557944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.747	20	100.0	4.978	109	75	125	113.7	0.0347	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-61084** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **PBW** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61084** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **LCSW** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.352	20	100.0	0	103	85	115				

Sample ID **N022830-001C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	159.711	20	100.0	62.81	96.9	75	125				

Sample ID **N022830-001C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **1/30/2017** RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **61084** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/3/2017** SeqNo: **2554781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	158.937	20	100.0	62.81	96.1	75	125	159.7	0.486	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 07:23 PM
Barium	130	0.35	5.0		µg/L	5	1/31/2017 07:30 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 07:23 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 07:23 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 07:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:31 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:31 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:31 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 08:31 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 08:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 08:37 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 08:37 PM
Manganese	43	0.056	0.50		µg/L	1	1/31/2017 08:37 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 08:37 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/31/2017 08:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	1/31/2017 08:43 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 08:43 PM
Manganese	69	0.056	0.50		µg/L	1	1/31/2017 08:43 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 08:43 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 08:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:49 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:49 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:49 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 08:49 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/31/2017 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 08:56 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 08:56 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 08:56 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 08:56 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	1/31/2017 09:02 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:02 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:02 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 09:02 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 09:08 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:08 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:08 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 09:08 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	1/31/2017 09:14 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:14 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:14 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/31/2017 09:14 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 09:33 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:33 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:33 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/31/2017 09:33 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	1/31/2017 09:39 PM
Barium	120	0.070	1.0		µg/L	1	1/31/2017 09:39 PM
Manganese	ND	0.056	0.50		µg/L	1	1/31/2017 09:39 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/31/2017 09:39 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/31/2017 09:45 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:45 PM
Manganese	0.60	0.056	0.50		µg/L	1	1/31/2017 09:45 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/31/2017 09:45 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/31/2017 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0117L
Lab Order:	N022830	**Collection Date:**	1/25/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N022830-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170131E**	QC Batch: **61101**			PrepDate	**1/31/2017**		Analyst: **CEI**
Arsenic	2.4	0.025	0.10		µg/L	1	1/31/2017 09:51 PM
Barium	130	0.070	1.0		µg/L	1	1/31/2017 09:51 PM
Manganese	0.57	0.056	0.50		µg/L	1	1/31/2017 09:51 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/31/2017 09:51 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/31/2017 09:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61101** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **PBW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61101** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **LCSW** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.781	0.10	10.00	0	97.8	85	115				
Barium	103.672	1.0	100.0	0	104	85	115				
Manganese	98.554	0.50	100.0	0	98.6	85	115				
Molybdenum	9.818	0.50	10.00	0	98.2	85	115				
Selenium	9.412	0.50	10.00	0	94.1	85	115				

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.664	0.10	10.00	2.211	94.5	75	125				
Manganese	93.028	0.50	100.0	0.1083	92.9	75	125				
Molybdenum	16.348	0.50	10.00	5.383	110	75	125				
Selenium	10.599	0.50	10.00	1.601	90.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022830-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.989	5.0	100.0	126.6	107	75	125				

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.817	0.10	10.00	2.211	96.1	75	125	11.66	1.30	20	
Manganese	92.951	0.50	100.0	0.1083	92.8	75	125	93.03	0.0833	20	
Molybdenum	16.471	0.50	10.00	5.383	111	75	125	16.35	0.748	20	
Selenium	10.893	0.50	10.00	1.601	92.9	75	125	10.60	2.74	20	

Sample ID **N022830-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **1/31/2017** RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.466	5.0	100.0	126.6	107	75	125	234.0	0.224	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Jason Mahn
Title:
Signature: Date: 1/25/17
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/25/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	/	
2. Headspace		
3. Container Intact	/	
4. Seal Present		/
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.1°C / 2.8°C / 3.3°C		
Courier:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
~~1~~		~~C-BNS-0117L~~				X		X		X	X		X	X			X	X	E	9	P	BNS
2	N022830 - 01	C-CON-D-0117L	1/25/17	0955		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
3	- 02	C-CON-S-0117L	↓	1015		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
~~4~~		~~C-I-3-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
		~~MW-905-Q117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
6		~~C-I-3-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
7	- 03	C-MAR-D-0117L	1/25/17	0835		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
8	- 04	C-MAR-S-0117L		0820		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
9	- 05	C-NR1-D-0117L		1045		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
	- 06	C-NR1-S-0117L		1055		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
11	- 07	C-NR3-D-0117L		1115		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
12	- 08	C-NR3-S-0117L		1135		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
13	- 09	MW-906-Q117L		1145		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7
14	- 10	C-NR4-D-0117L	↓	1220		X		X		X	X		X	X			X	X	E	~~9~~	P	BNS 7

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
[signature]	1/25/17 @1408	MBCARTIN [signature]	1/25/17 @1408
[signature]	1/25/17 @1651	Yolanda Rodriguez	1/25/17
			1651

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 2 of 3

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 / Fax:		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	✓	
Others	✓	LEVEL III		4. Seal Present		✓
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: Ice		
		Specify State:				

Sample Temp: 2.1°C / 2.8°C / 3.3°C

Courier:

Tracking No.:

Signature: Date: 1/25/17

I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Jason Mahn

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature: Date: 1/25/17

Project Name: PG&E Topock - RMP

Project Number: RC000753.0801

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022830 - 11	C-NR4-S-0117L	1/25/17	1245		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~2~~		~~C-R22A-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~3~~		~~C-R22A-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~4~~		~~C-R27-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~5~~		~~C-R27-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
		~~C-TAZ-D-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~7~~		~~MW-907-Q117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~8~~		~~C-TAZ-S-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
9	- 12	R-19-0117L	1/25/17	0905		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~10~~		~~R-28-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
~~11~~		~~R63-0117L~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
12	- 13	RRB-0117L	1/25/17	0925		X		X		X	X		X	X			X	X	E	~~9~~ 7	P	BNS
~~13~~		~~SW1-0117L~~				X		X					X	X					E	~~7~~	P	BNS
14		SW2-0117L				X		X					X	X					E	7	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @ 1408		1/25/17 @ 1408
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @ 1651	Joanna Rodriguez	1/25/17
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
			16:57

Turn Around Time (TAT)

- [ ] A < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Jason Mahn
Title:
Signature: Date: 1/25/17
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 1/25/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact	✓	
4. Seal Present		✓
5. IR number		
6. Method of Cooling: 2.1°C/2.8°C/3.3°C		
Sample Temp:		

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~MW-908-Q117L~~				~~X~~		~~X~~					~~X~~	~~X~~					~~E~~	~~7~~	~~P~~	~~BN~~
		~~AB1-Q117L~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~
		~~AB2-Q117L~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~
	N022830 - 14	AB3-Q117L	1/25/17	0920			X												E	1	P	BN

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @1408		1/25/17 @1408
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	1/25/17 @1605	Joan Ann Rodriguez	1/25/17 1605
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/25/2017	Workorder:	N022830
Rep sample Temp (Deg C):	2.1/2.8/3.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 1/26/2017

Reviewed By: MBC 1/30/2017

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-001A	C-CON-D-0117L	1/25/2017 9:55:00 AM	2/8/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-001B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-001C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-001D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-001E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-002A	C-CON-S-0117L	1/25/2017 10:15:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-002B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-002C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-002D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-002D	C-CON-S-0117L	1/25/2017 10:15:00 AM	2/8/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-002E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-003A	C-MAR-D-0117L	1/25/2017 8:35:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-003B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-003C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-003D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-003E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-004A	C-MAR-S-0117L	1/25/2017 8:20:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-004B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-004B	C-MAR-S-0117L	1/25/2017 8:20:00 AM	2/8/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-004C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-004D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-004E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-005A	C-NR1-D-0117L	1/25/2017 10:45:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-005B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-005C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-005D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-005E	C-NR1-D-0117L	1/25/2017 10:45:00 AM	2/8/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-006A	C-NR1-S-0117L	1/25/2017 10:55:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-006B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-006C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-006D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-006E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-007A	C-NR3-D-0117L	1/25/2017 11:15:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-007B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-007C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-007C	C-NR3-D-0117L	1/25/2017 11:15:00 AM	2/8/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-007D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-007E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-008A	C-NR3-S-0117L	1/25/2017 11:35:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-008B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-008C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-008D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-008E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-009A	MW-906-Q117L	1/25/2017 11:45:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-009B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-009B	MW-906-Q117L	1/25/2017 11:45:00 AM	2/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-009C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-009D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-009E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-010A	C-NR4-D-0117L	1/25/2017 12:20:00 PM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-010B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-010C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-010D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-010D	C-NR4-D-0117L	1/25/2017 12:20:00 PM	2/8/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N022830-010E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-011A	C-NR4-S-0117L	1/25/2017 12:45:00 PM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-011B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-011C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-011D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-011E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-012A	R-19-0117L	1/25/2017 9:05:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-012B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-012C	R-19-0117L	1/25/2017 9:05:00 AM	2/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-012D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-012E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-013A	RRB-0117L	1/25/2017 9:25:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022830-013B			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022830-013C			2/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N022830-013D			2/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			2/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N022830-013E			2/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022830-014A	AB3-Q117L	1/25/2017 9:20:00 AM	2/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

25-Jan-17

WorkOrder: N022830

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/25/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022830-015A	FOLDER	2/8/2017	2/8/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/8/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022830**

NAME	TEST METHOD
Quennie Manimtim	SM 2540D
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	EPA 120.1, SM 4500-NO3F, SM 4500-H+B
Ria Abes	EPA 218.6

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113107, R113108 **Analyst:** REB

ASSET #: N022830 **Date Analyzed:** 1/26/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 2/8/17 Date:

2nd Level Reviewer 2/8/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/26/17 @ 1500
Analyst: KEB

Standard	Std ID	Reading	Comments
10.43 us/cm	CIW 161025C	10.47 us/cm @ 20.0°C	% Rec: (90-110%)
1413	160902A	1414 us/cm @ 20.0°C	
10043	161220I	10030 @ 20.0°C	
99938	161220J	100400 @ 19.9°C	

	Sample ID	Matrix	Reading	Comments
1	N022830-001D	H_2O	964 us/cm @ 17.9°C	
2	2D		954 @ 17.6°C	
3	3D		1006 @ 17.9°C	
4	4D		1012 @ 17.9°C	
5	5D		963 @ 17.9°C	
6	6D		973 @ 17.3°C	
7	7D		970 @ 17.5°C	
8	8D		974 @ 17.9°C	
9	9D		974 @ 18.1°C	
10	10D		965 @ 18.3°C	
Dup	10D DUP		969 @ 18.1°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:
Analyst: CONT'D

Standard	Std ID	Reading	Comments
1413 us/cm	CIW 160929A	1438 us/cm @ 19.5°C	% Rec: (90-110%)
10043	160929C	10230 @ 19.5°C	
99899	161104A	103300 @ 19.5°C	

	Sample ID	Matrix	Reading	Comments
1	N022830-011D	H_2O	976 us/cm @ 18.3°C	
2	12D		993 @ 18.2°C	
3	13D		992 @ 18.7°C	
4	13D DUP		997 @ 18.5°C	
5				
6				
7	1413 us/cm	CIW 160929A	1444 us/cm KEB 1/26/17 @ ~~18~~ 19.3°C	
8	10093	160929C	10300 @ 19.3°C	
9	99899	161104A	104700 @ 19.3°C	
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113105, R113106 **Analyst:** REB

ASSET #: N022830 **Date Analyzed:** 1/26/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.		X	~~X~~			
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/~~MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/6/2017

2nd Level Reviewer 2/8/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/26/17 @ 1500
Analyst: KCB

Standard	Std ID	pH	Comments
Buffer 4	CIM-16B1025B	4.02 @ 20.4°C	SLOPE : 98.9%
Buffer 7	16B1025A	6.99 @ 20.3°C	
Buffer 10	161214A	9.99 @ 20.3°C	

	Sample ID	Matrix	pH	Comments
1	N022830-001D	H_2O	8.12 @ 16.5°C	
2	2D		8.23 @ 16.3°C	
3	3D		8.15 @ 16.5°C	
4	4D		8.05 @ 16.3°C	
5	5D		8.24 @ 16.5°C	
6	6D		8.26 @ 16.4°C	
7	7D		8.24 @ 16.5°C	
8	8D		8.25 @ 17.1°C	
9	9D		8.22 @ 17.2°C	
10	10D		8.20 @ 17.3°C	
Dup	001DUP		8.15 @ 16.5°C	Accept: 10% water, 20% soil
	Buffer 4 (7) 10	CIM-161010A	6.95 @ 20.0°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date:
Analyst: Cont'd

Standard	Std ID	pH	Comments
Buffer 4			
Buffer 7			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	N022830-011D	H_2O	8.15 @ 17.7°C	
2	11DDUP		8.19 @ 17.7°C	
3	12D		8.18 @ 17.9°C	
4	13D		8.18 @ 18.3°C	
5	N022816-004C		7.44 @ 17.7°C	
6	5C		7.45 @ 17.2°C	
7	N022812-005C		7.35 @ 16.6°C	
8	6C		7.20 @ 16.8°C	
9	7C		7.29 @ 16.6°C	Julia Ramit
10	8C		7.51 @ 16.2°C	2/6/2017
~~Dup~~	9C		7.36 @ 16.5°C	Accept: 10% water, 20% soil
	Buffer 4 (7) 10	CIM-161010A	6.98 @ 19.7°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Logbook #10

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61082/61099 **Analyst:** QBM

ASSET #: N022830 **Date Analyzed:** 1/30&1/31/17

Method: 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)	X					
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/2017 Date:

2nd Level Reviewer 2/8/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N022830-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4210 - 1.4207)*1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

2/7/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 10:25:39**
Prep End Date: **1/30/2017 6:00:00 P**

Reviewed/ Date: 2/8/2017
Initials/ Date: 2/7/2017

Prep Batch **61082** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61082	Water		100	☐	0	0	100	1.000		
MB-61082	Water		100	☐	0	0	100	1.000		
N022820-002D	Groundwater		100	☐	0	0	100	1.000		
N022820-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N022820-003D	Groundwater		100	☐	0	0	100	1.000		
N022820-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-001D	Groundwater		100	☐	0	0	100	1.000		
N022830-002D	Groundwater		100	☐	0	0	100	1.000		
N022830-003D	Groundwater		100	☐	0	0	100	1.000		
N022830-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-005D	Groundwater		100	☐	0	0	100	1.000		
N022830-006D	Groundwater		100	☐	0	0	100	1.000		
N022830-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8832	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 1/30/2017 10:25:39
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: _____

Prep Batch 61082 Prep Code: 160.2_W_PRE Technician: Quennie Manimtim

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61082	Water	1WST701180	100	☐	0	0	100	1.000		
MB-61082	Water		100	☐	0	0	100	1.000		
N022820-002D	Groundwater		100	☐	0	0	100	1.000		
N022820-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N022820-003D	Groundwater		100	☐	0	0	100	1.000		
N022820-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-001D	Groundwater		100	☐	0	0	100	1.000		
N022830-002D	Groundwater		100	☐	0	0	100	1.000		
N022830-003D	Groundwater		100	☐	0	0	100	1.000		
N022830-004D	Groundwater		100	☐	0	0	100	1.000		
N022830-005D	Groundwater		100	☐	0	0	100	1.000		
N022830-006D	Groundwater		100	☐	0	0	100	1.000		
N022830-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

#8832

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/31/2017 10:21:49**
Prep End Date: **1/31/2017 5:30:00 P**

Reviewed/ Date: _____
Initials/ Date: 2 2/7/2017

Prep Factor Units
mL / mL

Prep Batch **61099** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61099	Water		100	☐	0	0	100	1.000		
MB-61099	Water		100	☐	0	0	100	1.000		
N022830-008D	Groundwater		100	☐	0	0	100	1.000		
N022830-008D-DU	Groundwater		100	☐	0	0	100	1.000		
N022830-009D	Groundwater		100	☐	0	0	100	1.000		
N022830-010D	Groundwater		100	☐	0	0	100	1.000		
N022830-011D	Groundwater		100	☐	0	0	100	1.000		
N022830-012D	Groundwater		100	☐	0	0	100	1.000		
N022830-013D	Groundwater		100	☐	0	0	100	1.000		
N022892-001A	Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name	
8832	Glass Fiber Filter, 47mm	

Spk ID	Spike Name	SampType	AmtAdd	
IWST170118A	1000 ppm Talc	LCS	100	

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 1/31/2017 10:21:49
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: _____

Prep Batch **61099** Prep Code: **160.2_W_PRE** Technician: **Quennie Manimtim**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61099	Water	WST170118A	100	☐	0	0	100	1.000		
MB-61099	Water		100	☐	0	0	100	1.000		
N022830-008D	Groundwater		100	☐	0	0	100	1.000		
N022830-008D-DU	Groundwater		100	☐	0	0	100	1.000		
N022830-009D	Groundwater		100	☐	0	0	100	1.000		
N022830-010D	Groundwater		100	☐	0	0	100	1.000		
N022830-011D	Groundwater		100	☐	0	0	100	1.000		
N022830-012D	Groundwater		100	☐	0	0	100	1.000		
N022830-013D	Groundwater		100	☐	0	0	100	1.000		
N022892-001A	Water		100	☐	0	0	100	1.000		

#8672

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/30/2017							
MB-61082	100	1.4124	1.4123	-1.0000	1.00	-1	MBLK
LCS-61082	100	1.4164	1.5099	935.0000	1.00	935	LCS
N022820-002D	100	1.4009	1.4017	8.0000	1.00	8	SAMP
N022820-002D-DUP	100	1.3912	1.3918	6.0000	1.00	6	DUP
N022820-003D	100	1.4105	1.4114	9.0000	1.00	9	SAMP
N022820-004D	100	1.388	1.3886	6.0000	1.00	6	SAMP
N022830-001D	100	1.4207	1.421	3.0000	1.00	3	SAMP
N022830-002D	100	1.4151	1.4152	1.0000	1.00	1	SAMP
N022830-003D	100	1.4147	1.4156	9.0000	1.00	9	SAMP
N022830-004D	100	1.4104	1.4145	41.0000	1.00	41	SAMP
N022830-005D	100	1.4112	1.4115	3.0000	1.00	3	SAMP
N022830-006D	100	1.4185	1.4186	1.0000	1.00	1	SAMP
N022830-007D	100	1.4075	1.4078	3.0000	1.00	3	SAMP

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/30/17	MB-61082	100	1.4126 1.4124	1.4124 1.4123	
	LCS-61082	100	1.4164 1.4164	1.5101 1.5099	
	N022820-002D	100	1.4009 1.4009	1.4018 ~~1.4018~~ 2 1.4017	
	2DDUP	100	1.3913 1.3912	1.3918 1.3918	
	3D	100	1.4108 1.4105	1.4115 1.4114	
	4D	100	1.3882 1.3880	1.3887 1.3886	
	N022830-001D	100	1.4210 1.4207	1.4211 ~~1.4209~~ 2 1.4210	
	2D	100	1.4152 1.4151	1.4153 1.4152	
	3D	100	1.4149 1.4147	1.4157 1.4156	
	4D	100	1.4105 1.4104	1.4147 1.4145	

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
	N022830-0050	100	1.4114 1.4112	1.4115 1.4115	
	60	100	1.4185 1.4185	1.4185 1.4186	
	70	100	1.4078 1.4075	1.4077 1.4078	

ASSET Laboratories

Logbook#5

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/31/2017							
MB-61099	100	1.4075	1.4076	1.0000	1.00	1	MBLK
LCS-61099	100	1.4245	1.5172	927.0000	1.00	927	LCS
N022830-008D	100	1.4061	1.4063	2.0000	1.00	2	SAMP
N022830-008D-DUP	100	1.3893	1.3894	1.0000	1.00	1	DUP
N022830-009D	100	1.4051	1.4051	0.0000	1.00	0	SAMP
N022830-010D	100	1.4086	1.4087	1.0000	1.00	1	SAMP
N022830-011D	100	1.4057	1.4059	2.0000	1.00	2	SAMP
N022830-012D	100	1.4178	1.4179	1.0000	1.00	1	SAMP
N022830-013D	100	1.4082	1.4083	1.0000	1.00	1	SAMP
N022892-001A	100	1.3989	1.4022	33.0000	1.00	33	SAMP

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/31/17	MB-61096	100	1.4075 1.4075	1.4075 1.4076	
	US-61096	100	1.4246 1.4245	1.5171 1.5172	
	NU22830-005D	100	1.4063 1.4061	1.4065 1.4063	
	8DAMP	100	1.3893 1.3893	1.3895 1.3894	
	9D	100	1.4051 1.4051	1.4051 1.4051	
	10D	100	1.4087 1.4086	1.4086 1.4087	
	11D	100	1.4059 1.4057	1.4059 1.4059	
	12D	100	1.4179 1.4178	1.4179 1.4179	
	13D	100	1.4084 1.4082	1.4082 1.4083	
	NU22892-001A	100	1.3993 1.3989	1.4023 1.4022	

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113219
ASSET #: N022830

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/31/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer 2/8/2017 Date:

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113260
ASSET #: N022830

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/2/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/6/2017

2nd Level Reviewer Nancy 2/8/2017 Date: ——

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N022830-004A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0329 * 1$$

$$Cr^{+6}, \mu g/L = 0.033$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}, \mu g/L = ND}$$

rba 2/6/2017

ANALYSIS RUN LOG

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMP	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMP	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMP	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMP	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMP	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMP	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMP	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMP	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMP	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMP	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMP	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMP	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMP	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMP	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMP	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMP	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMP	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMP	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMP	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMP	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMP	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMP	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMP	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMP	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMP	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMP	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMP	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMP	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170131A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/31/17 9:29 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/31/17 9:40 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/31/17 9:50 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/31/17 9:59 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/31/17 10:09 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	01/31/17 10:18 AM	Not Reported
16	LCS-R113219	LCS	1	Hexavalent Chromium	01/31/17 10:27 AM	Reported
17	MB-R113219	MBLK	1	Hexavalent Chromium	01/31/17 10:39 AM	Reported
18	N022830-001A	SAMP	1	Hexavalent Chromium	01/31/17 10:56 AM	Reported
19	N022830-001AMS	MS	1	Hexavalent Chromium	01/31/17 11:08 AM	Reported
20	N022830-002A	SAMP	1	Hexavalent Chromium	01/31/17 11:17 AM	Reported
21	N022830-002AMS	MS	1	Hexavalent Chromium	01/31/17 11:27 AM	Reported
22	N022830-003A	SAMP	1	Hexavalent Chromium	01/31/17 11:36 AM	Reported
23	N022830-003AMS	MS	1	Hexavalent Chromium	01/31/17 11:46 AM	Reported
24	N022830-004A	SAMP	1	Hexavalent Chromium	01/31/17 11:55 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/31/17 12:05 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/31/17 12:14 PM	Reported
27	N022830-004AMS	MS	1	Hexavalent Chromium	01/31/17 12:24 PM	Reported
28	N022830-005A	SAMP	1	Hexavalent Chromium	01/31/17 12:33 PM	Not Reported
29	N022830-005AMS	MS	1	Hexavalent Chromium	01/31/17 12:43 PM	Not Reported
30	N022830-006A	SAMP	1	Hexavalent Chromium	01/31/17 12:52 PM	Not Reported
31	N022830-006AMS	MS	1	Hexavalent Chromium	01/31/17 1:01 PM	Not Reported
32	N022830-007A	SAMP	1	Hexavalent Chromium	01/31/17 1:11 PM	Reported
33	N022830-007AMS	MS	1	Hexavalent Chromium	01/31/17 1:20 PM	Reported
34	N022830-008A	SAMP	1	Hexavalent Chromium	01/31/17 1:30 PM	Reported
35	N022830-008AMS	MS	1	Hexavalent Chromium	01/31/17 1:39 PM	Reported
36	N022830-009A	SAMP	1	Hexavalent Chromium	01/31/17 1:49 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/31/17 1:58 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/31/17 2:08 PM	Reported
39	N022830-009AMS	MS	1	Hexavalent Chromium	01/31/17 2:17 PM	Reported
40	N022830-010A	SAMP	1	Hexavalent Chromium	01/31/17 2:27 PM	Not Reported
41	N022830-010AMS	MS	1	Hexavalent Chromium	01/31/17 2:36 PM	Not Reported
42	N022830-011A	SAMP	1	Hexavalent Chromium	01/31/17 2:46 PM	Not Reported

INJECTION LOG: 170131A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022830-011AMS	MS	1	Hexavalent Chromium	01/31/17 2:55 PM	Not Reported
44	N022830-012A	SAMP	1	Hexavalent Chromium	01/31/17 3:04 PM	Reported
45	N022830-012AMS	MS	1	Hexavalent Chromium	01/31/17 3:14 PM	Reported
46	N022830-013A	SAMP	1	Hexavalent Chromium	01/31/17 3:23 PM	Reported
47	N022830-013AMS	MS	1	Hexavalent Chromium	01/31/17 3:33 PM	Reported
48	N022830-014A	SAMP	1	Hexavalent Chromium	01/31/17 3:42 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/31/17 3:52 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/31/17 4:01 PM	Reported
51	N022830-014AMS	MS	1	Hexavalent Chromium	01/31/17 4:11 PM	Reported
52	N022887-003A	SAMP	200	Hexavalent Chromium	01/31/17 4:20 PM	Reported
53	N022887-003AMS	MS	200	Hexavalent Chromium	01/31/17 4:30 PM	Reported
54	N022887-003AMSD	MSD	200	Hexavalent Chromium	01/31/17 4:39 PM	Reported
55	N022887-001A	SAMP	1	Hexavalent Chromium	01/31/17 4:48 PM	Reported
56	N022887-002A	SAMP	20	Hexavalent Chromium	01/31/17 4:58 PM	Not Reported
57	N022887-004A	SAMP	1	Hexavalent Chromium	01/31/17 5:07 PM	Reported
58	N022887-005A	SAMP	1	Hexavalent Chromium	01/31/17 5:20 PM	Not Reported
59	N022887-006A	SAMP	1	Hexavalent Chromium	01/31/17 5:31 PM	Not Reported
60	N022887-001ADUP	DUP	1	Hexavalent Chromium	01/31/17 5:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/31/17 5:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/31/17 6:02 PM	Reported
63	N022887-002A	SAMP	50	Hexavalent Chromium	01/31/17 6:11 PM	Reported
64	N022887-005A	SAMP	100	Hexavalent Chromium	01/31/17 6:21 PM	Reported
65	N022887-006A	SAMP	100	Hexavalent Chromium	01/31/17 6:30 PM	Reported
66	LCS-R113220	LCS	1	Hexavalent Chromium	01/31/17 6:39 PM	Reported
67	MB-R113220	MBLK	1	Hexavalent Chromium	01/31/17 6:49 PM	Reported
68	N022885-001A	SAMP	1	Hexavalent Chromium	01/31/17 6:58 PM	Reported
69	N022885-001AMS	MS	1	Hexavalent Chromium	01/31/17 7:08 PM	Reported
70	N022885-001AMSD	MSD	1	Hexavalent Chromium	01/31/17 7:17 PM	Reported
71	N022885-004A	SAMP	1	Hexavalent Chromium	01/31/17 7:27 PM	Reported
72	N022885-004AMS	MS	1	Hexavalent Chromium	01/31/17 7:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/31/17 7:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/31/17 7:55 PM	Reported
75	N022885-002A	SAMP	1	Hexavalent Chromium	01/31/17 8:05 PM	Reported
76	N022885-002ADUP	DUP	1	Hexavalent Chromium	01/31/17 8:14 PM	Reported
77	N022885-003A	SAMP	1	Hexavalent Chromium	01/31/17 8:24 PM	Reported
78	N022885-005A	SAMP	1	Hexavalent Chromium	01/31/17 8:33 PM	Reported
79	N022885-006A	SAMP	1	Hexavalent Chromium	01/31/17 8:42 PM	Reported
80	N022885-007A	SAMP	1	Hexavalent Chromium	01/31/17 8:52 PM	Reported
81	N022885-008A	SAMP	1	Hexavalent Chromium	01/31/17 9:02 PM	Reported
82	N022885-009A	SAMP	1	Hexavalent Chromium	01/31/17 9:11 PM	Reported
83	N022885-010A	SAMP	1	Hexavalent Chromium	01/31/17 9:20 PM	Reported
84	N022885-011A	SAMP	1	Hexavalent Chromium	01/31/17 9:30 PM	Reported

INJECTION LOG: 170131A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	01/31/17 9:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	01/31/17 9:49 PM	Reported
87	N022885-012A	SAMP	1	Hexavalent Chromium	01/31/17 9:58 PM	Reported
88	N022885-013A	SAMP	1	Hexavalent Chromium	01/31/17 10:08 PM	Reported
89	N022886-001A	SAMP	1	Hexavalent Chromium	01/31/17 10:17 PM	Reported
90	N022664-002A	SAMP	1	Hexavalent Chromium	01/31/17 10:27 PM	Not Reported
91	N022664-002AMS	MS	1	Hexavalent Chromium	01/31/17 10:36 PM	Not Reported
92	CCV-8	CCV1	1	Hexavalent Chromium	01/31/17 10:45 PM	Reported
93	CCB-8	CCB	1	Hexavalent Chromium	01/31/17 10:55 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170131A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**31/Jan/17 23:25:44**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/31/2017 09:29	Finished	
11	BLANK	2	1000	Unknown		01/31/2017 09:40	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/31/2017 09:50	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/31/2017 09:59	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/31/2017 10:09	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/31/2017 10:18	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/31/2017 10:27	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	9	1000	Unknown		01/31/2017 10:39	Finished	MB R170112D
18	N022830-001A,SAMF	11	1000	Unknown		01/31/2017 10:56	Finished	SAMP, 10mL
19	N022830-001AMS,MS	12	1000	Unknown		01/31/2017 11:08	Finished	MS (1ppb), IWST-161114D,10
20	N022830-002A,SAMF	13	1000	Unknown		01/31/2017 11:17	Finished	SAMP, 10mL
21	N022830-002AMS,MS	14	1000	Unknown		01/31/2017 11:27	Finished	MS (1ppb), IWST-161114D,10
22	N022830-003A,SAMF	15	1000	Unknown		01/31/2017 11:36	Finished	SAMP, 10mL
23	N022830-003AMS,MS	16	1000	Unknown		01/31/2017 11:46	Finished	MS (1ppb), IWST-161114D,10
24	N022830-004A,SAMF	17	1000	Unknown		01/31/2017 11:55	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	18	1000	Unknown		01/31/2017 12:05	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	19	1000	Unknown		01/31/2017 12:14	Finished	CCB R170112D
27	N022830-004AMS,MS	20	1000	Unknown		01/31/2017 12:24	Finished	MS (1ppb), IWST-161114D,10
28	N022830-005A,SAMF	21	1000	Unknown		01/31/2017 12:33	Finished	SAMP, 10mL
29	N022830-005AMS,MS	22	1000	Unknown		01/31/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
30	N022830-006A,SAMF	23	1000	Unknown		01/31/2017 12:52	Finished	SAMP, 10mL
31	N022830-006AMS,MS	24	1000	Unknown		01/31/2017 13:01	Finished	MS (1ppb), IWST-161114D,10
32	N022830-007A,SAMF	25	1000	Unknown		01/31/2017 13:11	Finished	SAMP, 10mL
33	N022830-007AMS,MS	26	1000	Unknown		01/31/2017 13:20	Finished	MS (1ppb), IWST-161114D,10
34	N022830-008A,SAMF	27	1000	Unknown		01/31/2017 13:30	Finished	SAMP, 10mL
35	N022830-008AMS,MS	28	1000	Unknown		01/31/2017 13:39	Finished	MS (1ppb), IWST-161114D,10
36	N022830-009A,SAMF	29	1000	Unknown		01/31/2017 13:49	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	30	1000	Unknown		01/31/2017 13:58	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	31	1000	Unknown		01/31/2017 14:08	Finished	CCB R170112D
39	N022830-009AMS,MS	32	1000	Unknown		01/31/2017 14:17	Finished	MS (1ppb), IWST-161114D,10
40	N022830-010A,SAMF	33	1000	Unknown		01/31/2017 14:27	Finished	SAMP, 10mL
41	N022830-010AMS,MS	34	1000	Unknown		01/31/2017 14:36	Finished	MS (1ppb), IWST-161114D,10
42	N022830-011A,SAMF	35	1000	Unknown		01/31/2017 14:46	Finished	SAMP, 10mL
43	N022830-011AMS,MS	36	1000	Unknown		01/31/2017 14:55	Finished	MS (1ppb), IWST-161114D,10
44	N022830-012A,SAMF	37	1000	Unknown		01/31/2017 15:04	Finished	SAMP, 10mL
45	N022830-012AMS,MS	38	1000	Unknown		01/31/2017 15:14	Finished	MS (1ppb), IWST-161114D,10
46	N022830-013A,SAMF	39	1000	Unknown		01/31/2017 15:23	Finished	SAMP, 10mL
47	N022830-013AMS,MS	40	1000	Unknown		01/31/2017 15:33	Finished	MS (1ppb), IWST-161114D,10
48	N022820-04A,SAMP,	41	1000	Unknown		01/31/2017 15:42	Finished	SAMP, 10mL
49	CCV-4,CCV1,1,	42	1000	Unknown		01/31/2017 15:52	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	43	1000	Unknown		01/31/2017 16:01	Finished	CCB R170103B
51	N022830-014AMS,MS	44	1000	Unknown		01/31/2017 16:11	Finished	MS (1ppb), IWST-161114D,10
52	N022887-003A,SAMF	45	1000	Unknown		01/31/2017 16:20	Finished	SAMP, 0.05>10mL
53	N022887-003AMS,MS	46	1000	Unknown		01/31/2017 16:30	Finished	MS (5ppb), IWST-161114D,0.0
54	N022887-003AMSD,M	47	1000	Unknown		01/31/2017 16:39	Finished	MSD (5ppb), IWST-161114D,0
55	N022887-001A,SAMF	48	1000	Unknown		01/31/2017 16:48	Finished	SAMP, 10mL
56	N022887-002A,SAMF	49	1000	Unknown		01/31/2017 16:58	Finished	SAMP, 0.5>10mL
57	N022887-004A,SAMF	50	1000	Unknown		01/31/2017 17:07	Finished	SAMP, 10mL
58	N022887-005A,SAMF	1	1000	Unknown		01/31/2017 17:20	Finished	SAMP, 10mL
59	N022887-006A,SAMF	2	1000	Unknown		01/31/2017 17:31	Finished	SAMP, 10mL
60	N022887-001ADUP,D	3	1000	Unknown		01/31/2017 17:41	Finished	DUP, 10mL

61	CCV-5,CCV,1,	4	1000	Unknown		01/31/2017 17:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	5	1000	Unknown		01/31/2017 18:02	Finished	CCB R170112D
63	N022887-002A,SAMF	6	1000	Unknown		01/31/2017 18:11	Finished	SAMP, 0.2>10mL
64	N022887-005A,SAMF	7	1000	Unknown		01/31/2017 18:21	Finished	SAMP, 0.1>10mL
65	N022887-006A,SAMF	8	1000	Unknown		01/31/2017 18:30	Finished	SAMP, 0.1>10mL
66	LCS-2,LCS,1	9	1000	Unknown		01/31/2017 18:39	Finished	LCS, IWST-161114D
67	MB-2,MBLK,1	10	1000	Unknown		01/31/2017 18:49	Finished	MB R170112D
68	N022885-001A,SAMF	11	1000	Unknown		01/31/2017 18:58	Finished	SAMP, 10mL
69	N022885-001AMS,MS	12	1000	Unknown		01/31/2017 19:08	Finished	MS (5ppb), IWST-161114D,10
70	N022885-001AMSD,M	13	1000	Unknown		01/31/2017 19:17	Finished	MSD (5ppb), IWST-161114D,1
71	N022885-004A,SAMF	14	1000	Unknown		01/31/2017 19:27	Finished	SAMP, 10mL
72	N022885-004AMS,MS	15	1000	Unknown		01/31/2017 19:36	Finished	MS (5ppb), IWST-161114D,10
73	CCV-6,CCV1,1,	16	1000	Unknown		01/31/2017 19:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	17	1000	Unknown		01/31/2017 19:55	Finished	CCB R170103B
75	N022885-002A,SAMF	18	1000	Unknown		01/31/2017 20:05	Finished	SAMP, 10mL
76	N022885-002ADUP,D	19	1000	Unknown		01/31/2017 20:14	Finished	DUP, 10mL
77	N022885-003A,SAMF	20	1000	Unknown		01/31/2017 20:24	Finished	SAMP, 10mL
78	N022885-005A,SAMF	21	1000	Unknown		01/31/2017 20:33	Finished	SAMP, 10mL
79	N022885-006A,SAMF	22	1000	Unknown		01/31/2017 20:42	Finished	SAMP, 10mL
80	N022885-007A,SAMF	23	1000	Unknown		01/31/2017 20:52	Finished	SAMP, 10mL
81	N022885-008A,SAMF	24	1000	Unknown		01/31/2017 21:02	Finished	SAMP, 10mL
82	N022885-009A,SAMF	25	1000	Unknown		01/31/2017 21:11	Finished	SAMP, 10mL
83	N022885-010A,SAMF	26	1000	Unknown		01/31/2017 21:20	Finished	SAMP, 10mL
84	N022885-011A,SAMF	27	1000	Unknown		01/31/2017 21:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	28	1000	Unknown		01/31/2017 21:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	29	1000	Unknown		01/31/2017 21:49	Finished	CCB R170112D
87	N022885-012A,SAMF	30	1000	Unknown		01/31/2017 21:58	Finished	SAMP, 10mL
88	N022885-013A,SAMF	31	1000	Unknown		01/31/2017 22:08	Finished	SAMP, 10mL
89	N022886-001A,SAMF	32	1000	Unknown		01/31/2017 22:17	Finished	SAMP, 10mL
90	N022664-002A,SAMF	33	1000	Unknown		01/31/2017 22:27	Finished	SAMP, 10mL
91	N022664-002AMS,MS	34	1000	Unknown		01/31/2017 22:36	Finished	MS (5ppb), IWST-161114D,10
92	CCV-8,CCV1,1,	35	1000	Unknown		01/31/2017 22:45	Finished	CCV @10ppb, IWST-161114C
93	CCB-8,CCB,1,	36	1000	Unknown		01/31/2017 22:55	Finished	CCB R170103B
94	SHUTDOWN	37	1000	Unknown		01/31/2017 23:05	Finished	
95	Eluent: R170131A	38	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170131B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMP	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMP	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMP	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMP	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMP	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMP	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMP	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMP	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMP	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMP	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMP	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMP	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMP	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMP	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMP	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMP	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMP	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMP	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMP	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMP	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-16012A
NH4OH + NH4SO4 eluent: R170130A / R170131A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022830 - 13A	9.55	–	~250mL	~250mL		R170112D
2)	14A	9.55	–				
3)	N022830 - 1A	9.65	–				1/3
4)	1A	9.63	–				2/3
5)	1A	9.63	–				3/3
6)	2A	9.62	–				1/3
7)	2A	9.60	–				2/3
8)	2A	9.65	–				3/3
9)	3A	9.66	–				1/3
10)	3A	9.67	–				2/3
11)	3A	9.62	–				3/3
12)	4A	9.62	–				1/3
13)	4A	9.65	–				2/3
14)	4A	9.66	–				3/3
15)	5A	9.64	–				1/3
	5A	9.65	–				2/3

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 915
Prepared By: MG

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-16012A
NH4OH + NH4SO4 eluent: R170131A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022830 - 5A	9.62	–	~250 mL	~250mL		3/3 R170112D
2)	6A	9.64	–				1/3
3)	6A	9.64	–				2/3
4)	6A	9.61	–				3/3
5)	7A	9.64	–				1/3
6)	7A	9.64	–				2/3
7)	7A	9.65	–				3/3
8)	8A	9.65	–				1/3
9)	8A	9.64	–				2/3
10)	8A	9.63	–				3/3
11)	9A	9.62	–				1/3
12)	9A	9.60	–				2/3
13)	9A	9.58	–				3/3
14)	10A	9.60	–				1/3
15)	10A	9.57	–				2/3
	10A	9.56	–				3/3

Logbook No. 12

rba 2/6/2017

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 9:15
Prepared By: MG

COPT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170125A / R170131A / R170202A
NH4OH + NH4SO4 buffer: R170112D

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022830 - 11A	9.56	–	~250 mL	~250 mL		1/3 R170112D
2)	11A	9.55	–				2/3
3)	11A	9.58	–				3/3
4)	12A	9.59	–				1/3
5)	12A	9.55	–				2/3
6)	12A	9.60	–				3/3
7)	13A	9.55	–				1/3
8)	13A	9.56	–				2/3
9)	13A	9.55	–				3/3
10)	14A	9.55	–				
11)	N022828 - 1A	9.12	9.36			4 drops 6N NaOH	R170112D
12)	2A	9.15	9.33			4 drops "	
13)							
14)							
15)							

Sample Preparation

Date Prepared: 1/26/17
Time Prepared: 8:35 PM
Prepared By: KKA

Reagent ID:
Sulfuric Acid: ~~CIN~~ 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170125A
NH4OH + NH4SO4 buffer: R170103B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022850 - 001A	7.32	9.39	~250 mL	~250 mL	+5 mL R170103B	
2)	2A	7.52	9.41				
3)	3A	7.68	9.48				
4)	4A	7.37	9.40				
5)	5A	7.96	9.48				
6)	6A	7.05	9.30				
7)	7A	7.15	9.36				
8)	8A	8.04	9.45			+45 mL R170103B	
9)	13A	3.46	4.33			+5 mL R170103B (green ppt formed)	
10)	14A	7.98	9.41				
11)	15A	8.89	9.43			+4 mL R170103B	
12)	16A	2.01	2.35			+5 " "	
13)							
14)							
15)							

Logbook No. 12

rba 2/6/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/9/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0502	0.2519	1.2883	2.5528	3.8621	5.0920	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ICV** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2551357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2551358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **CCV** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.049	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.196	0.20	0.2000	0	97.8	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.267	0.20	10.00	0	103	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **CCV** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.117	0.20	5.000	0	102	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.176	0.20	10.00	0	102	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **CCV** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.073	0.20	5.000	0	101	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113219**
Client ID: **ZZZZZZ** Batch ID: **R113219** TestNo: **EPA 218.6** Analysis Date: **1/31/2017** SeqNo: **2551410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.174	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.887	0.20	5.000	0	97.7	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.178	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.203	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.368	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.205	0.20	5.000	0	104	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.397	0.20	10.00	0	104	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCV** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.212	0.20	5.000	0	104	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ZZZZZZ** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.359	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**218.6_WPGE**	**µg/L**		**113219**
Client ID: **ICB**	Batch ID: **R113219**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2017**	SeqNo: **2551359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-1	**CCB**	**218.6_WPGE**	**µg/L**		**113219**
Client ID: **CCB**	Batch ID: **R113219**	TestNo: **EPA 218.6**		Analysis Date: **1/31/2017**	SeqNo: **2551362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-2	**CCB**	**218.6_WPGE**	**µg/L**		**113219**
Client ID: **CCB**	Batch ID: **R113219**	TestNo: **EPA 218.6**		Analysis Date: **1/31/2017**	SeqNo: **2551373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**218.6_WPGE**	**µg/L**		**113219**
Client ID: **CCB**	Batch ID: **R113219**	TestNo: **EPA 218.6**		Analysis Date: **1/31/2017**	SeqNo: **2551385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-4	**CCB**	**218.6_WPGE**	**µg/L**		**113219**
Client ID: **CCB**	Batch ID: **R113219**	TestNo: **EPA 218.6**		Analysis Date: **1/31/2017**	SeqNo: **2551397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113219
Client ID:	CCB	Batch ID:	R113219	TestNo:	EPA 218.6			Analysis Date:	1/31/2017	SeqNo:	2551406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113219
Client ID:	CCB	Batch ID:	R113219	TestNo:	EPA 218.6			Analysis Date:	1/31/2017	SeqNo:	2551411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **ICB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **1/9/2017** SeqNo: **2553834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113260**
Client ID: **CCB** Batch ID: **R113260** TestNo: **EPA 218.6** Analysis Date: **2/2/2017** SeqNo: **2553862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113260
Client ID:	CCB	Batch ID:	R113260	TestNo:	EPA 218.6			Analysis Date:	2/2/2017	SeqNo:	2553880

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/31/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.265	
CCV-3	4.265	
CCV-4	4.256	
CCV-5	4.248	
CCV-6	4.256	
CCV-7	4.256	
CCV-8	4.256	

Average	4.257
Actual RT Window	4.177 - 4.337
Applied RT Window	4.057 - 4.457

MB-H2O	~~4.215~~	~~PASS~~	not reported
LCS-R113219	4.265	PASS	
MB-R113219	N.A.	N.A.	
N022830-001A	4.256	PASS	
N022830-001AMS	4.256	PASS	
N022830-002A	4.248	PASS	
N022830-002AMS	4.256	PASS	
N022830-003A	4.256	PASS	
N022830-003AMS	4.256	PASS	
N022830-004A	4.256	PASS	
N022830-004AMS	4.256	PASS	
N022830-005A	4.265	PASS	
N022830-005AMS	4.256	PASS	
N022830-006A	4.248	PASS	
N022830-006AMS	4.256	PASS	
N022830-007A	4.248	PASS	
N022830-007AMS	4.256	PASS	
N022830-008A	4.248	PASS	
N022830-008AMS	4.256	PASS	
N022830-009A	4.215	PASS	
N022830-009AMS	4.256	PASS	

JP
02/08/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/31/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.265	
CCV-3	4.265	
CCV-4	4.256	
CCV-5	4.248	
CCV-6	4.256	
CCV-7	4.256	
CCV-8	4.256	

Average	4.257
Actual RT Window	4.177 - 4.337
Applied RT Window	4.057 - 4.457

N022830-010A	4.248	PASS
N022830-010AMS	4.256	PASS
N022830-011A	4.240	PASS
N022830-011AMS	4.256	PASS
N022830-012A	4.240	PASS
N022830-012AMS	4.256	PASS
N022830-013A	4.231	PASS
N022830-013AMS	4.256	PASS
N022830-014A	N.A.	N.A.
N022830-014AMS	4.265	PASS
N022887-003A	4.265	PASS
N022887-003AMS	4.265	PASS
N022887-003AMSD	4.265	PASS
N022887-001A	4.256	PASS
N022887-002A	4.265	PASS
N022887-004A	N.A.	N.A.
N022887-005A	4.248	PASS
N022887-006A	4.240	PASS
N022887-001ADUP	4.256	PASS
N022887-002A	4.265	PASS
N022887-005A	4.265	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/31/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.265	
CCV-3	4.265	
CCV-4	4.256	
CCV-5	4.248	
CCV-6	4.256	
CCV-7	4.256	
CCV-8	4.256	

Average	4.257
Actual RT Window	4.177 - 4.337
Applied RT Window	4.057 - 4.457

N022887-006A	4.265	PASS
LCS-R113220	4.256	PASS
MB-R113220	N.A.	N.A.
N022885-001A	4.256	PASS
N022885-001AMS	4.256	PASS
N022885-001AMSD	4.256	PASS
N022885-004A	4.256	PASS
N022885-004AMS	4.256	PASS
N022885-002A	4.256	PASS
N022885-002ADUP	4.256	PASS
N022885-003A	4.256	PASS
N022885-005A	4.256	PASS
N022885-006A	4.248	PASS
N022885-007A	N.A.	N.A.
N022885-008A	4.256	PASS
N022885-009A	4.256	PASS
N022885-010A	4.256	PASS
N022885-011A	4.248	PASS
N022885-012A	N.A.	N.A.
N022885-013A	N.A.	N.A.
N022886-001A	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/31/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.265	
CCV-3	4.265	
CCV-4	4.256	
CCV-5	4.248	
CCV-6	4.256	
CCV-7	4.256	
CCV-8	4.256	
Average	4.257	
Actual RT Window	4.177 - 4.337	
Applied RT Window	4.057 - 4.457	
N022664-002A	N.A.	N.A.
N022664-002AMS	4.198	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

MB-H2O	~~4.281~~	~~PASS~~	not reported
LCS-R113260	4.256	PASS	
MB-R113260	N.A.	N.A.	
N022819-006A	4.248	PASS	
N022819-008A	4.256	PASS	
N022819-008AMS	4.256	PASS	
N022819-009A	4.256	PASS	
N022819-009AMS	4.256	PASS	
N022819-010A	4.256	PASS	
N022819-010AMS	4.256	PASS	
N022820-001A	4.256	PASS	
N022820-001AMS	4.256	PASS	
N022774-008A	N.A.	N.A.	
N022774-009A	4.148	PASS	
N022774-010A	4.065	PASS	
N022774-011A	4.098	PASS	
N022830-005A	4.223	PASS	
N022830-005AMS	4.240	PASS	
N022830-006A	4.356	PASS	
N022830-006AMS	4.240	PASS	
N022830-010A	4.223	PASS	

02/08/2017

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022830-011A	N.A.	N.A.
N022830-011AMS	4.240	PASS
N022819-006AMS	4.240	PASS
N022819-008AMS	4.240	PASS
N022819-009AMS	4.231	PASS
N022819-010AMS	4.240	PASS
N022820-002A	4.065	PASS
N022820-002AMS	4.240	PASS
N022820-003A	4.206	PASS
N022820-003AMS	4.231	PASS
N022927-004A	4.231	PASS
N022927-004AMS	4.231	PASS
N022927-002A	4.231	PASS
N022927-004AMSD	4.231	PASS
N022927-002ADUP	4.231	PASS
N022927-003A	4.231	PASS
N022927-006A	N.A.	N.A.
N022927-007A	4.240	PASS
N022819-009AMS	4.240	PASS
N022819-010AMS	4.240	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	

Average	4.249
Actual RT Window	4.169 - 4.329
Applied RT Window	4.049 - 4.449

N022830-010AMS	4.240	PASS
N022820-002AMS	4.240	PASS
LCS-R113261	4.248	PASS
MB-R113261	N.A.	N.A.
N022922-005A	4.248	PASS
N022922-005AMS	4.248	PASS
N022922-005AMSD	4.240	PASS
N022922-013A	4.248	PASS
N022922-013AMS	4.248	PASS
N022922-004A	4.240	PASS
N022922-004ADUP	4.240	PASS
N022922-001A	4.248	PASS
N022922-002A	N.A.	N.A.
N022922-003A	4.240	PASS
N022922-006A	4.248	PASS
N022922-007A	4.248	PASS
N022922-008A	N.A.	N.A.
N022922-009A	4.240	PASS
N022922-010A	4.248	PASS
N022922-011A	N.A.	N.A.
N022922-012A	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/2/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.240	
CCV-7	4.248	
CCV-8	4.248	
Average	4.249	
Actual RT Window	4.169 - 4.329	
Applied RT Window	4.049 - 4.449	
N022922-014A	4.248	PASS
N022922-003A	4.240	PASS
N022922-009AMS	4.240	PASS
N022922-009AMSD	4.248	PASS
N022922-009A	4.240	PASS
N022828-001AMS	N.A.	N.A.
N022828-001AMS	4.240	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/17 11:16 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/17 11:34 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/17 11:45 AM	Reported
13	MB-R112763	MBLK	1	Hexavalent Chromium	01/09/17 11:55 AM	Reported
14	LCS-R112763	LCS	1	Hexavalent Chromium	01/09/17 12:05 PM	Reported
15	N022505-001A	SAMP	1	Hexavalent Chromium	01/09/17 12:24 PM	Reported
16	N022505-002A	SAMP	10	Hexavalent Chromium	01/09/17 12:35 PM	Reported
17	N022505-003A	SAMP	1	Hexavalent Chromium	01/09/17 12:45 PM	Reported
18	N022505-004A	SAMP	1	Hexavalent Chromium	01/09/17 12:54 PM	Reported
19	N022505-005A	SAMP	1	Hexavalent Chromium	01/09/17 1:04 PM	Reported
20	N022505-006A	SAMP	1	Hexavalent Chromium	01/09/17 1:16 PM	Reported
21	N022505-007A	SAMP	1	Hexavalent Chromium	01/09/17 1:27 PM	Reported
22	N022505-008A	SAMP	1	Hexavalent Chromium	01/09/17 1:37 PM	Reported
23	CCV-2	CCV1	1	Hexavalent Chromium	01/09/17 1:46 PM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	01/09/17 1:56 PM	Reported
25	N022505-009A	SAMP	1	Hexavalent Chromium	01/09/17 2:05 PM	Reported
26	N022505-010A	SAMP	1	Hexavalent Chromium	01/09/17 2:15 PM	Reported
27	N022505-011A	SAMP	100	Hexavalent Chromium	01/09/17 2:24 PM	Reported
28	N022505-012A	SAMP	1	Hexavalent Chromium	01/09/17 2:33 PM	Reported
29	N022505-013A	SAMP	100	Hexavalent Chromium	01/09/17 2:43 PM	Reported
30	N022505-014A	SAMP	1	Hexavalent Chromium	01/09/17 2:52 PM	Reported
31	N022505-015A	SAMP	1	Hexavalent Chromium	01/09/17 3:02 PM	Reported
32	N022505-016A	SAMP	10	Hexavalent Chromium	01/09/17 3:11 PM	Reported
33	N022505-003ADUP	DUP	1	Hexavalent Chromium	01/09/17 3:21 PM	Reported
34	CCV-3	CCV	1	Hexavalent Chromium	01/09/17 3:30 PM	Reported
35	CCB-3	CCB	1	Hexavalent Chromium	01/09/17 3:40 PM	Reported
36	N022505-002AMS	MS	10	Hexavalent Chromium	01/09/17 3:49 PM	Reported
37	N022505-002AMSD	MSD	10	Hexavalent Chromium	01/09/17 3:59 PM	Reported
38	N022505-007AMS	MS	1	Hexavalent Chromium	01/09/17 4:08 PM	Reported
39	LCS-R112764	LCS	1	Hexavalent Chromium	01/09/17 4:27 PM	Reported
40	MB-R112764	MBLK	1	Hexavalent Chromium	01/09/17 4:39 PM	Reported
41	N022507-001A	SAMP	1	Hexavalent Chromium	01/09/17 4:53 PM	Reported
42	N022507-001AMS	MS	1	Hexavalent Chromium	01/09/17 5:04 PM	Reported

rba 1/15/2017

1/16/2017

INJECTION LOG: 170109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022507-001AMSD	MSD	1	Hexavalent Chromium	01/09/17 5:13 PM	Reported
44	N022507-003A	SAMP	1	Hexavalent Chromium	01/09/17 5:23 PM	Reported
45	N022507-003AMS	MS	1	Hexavalent Chromium	01/09/17 5:32 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	01/09/17 5:42 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	01/09/17 5:51 PM	Reported
48	N022507-005A	SAMP	1	Hexavalent Chromium	01/09/17 6:01 PM	Reported
49	N022507-005ADUP	DUP	1	Hexavalent Chromium	01/09/17 6:10 PM	Reported
50	N022507-002A	SAMP	1	Hexavalent Chromium	01/09/17 6:20 PM	Reported
51	N022507-004A	SAMP	1	Hexavalent Chromium	01/09/17 6:29 PM	Reported
52	N022507-006A	SAMP	1	Hexavalent Chromium	01/09/17 6:39 PM	Reported
53	N022507-007A	SAMP	1	Hexavalent Chromium	01/09/17 6:48 PM	Reported
54	N022507-008A	SAMP	1	Hexavalent Chromium	01/09/17 6:58 PM	Reported
55	N022507-009A	SAMP	1	Hexavalent Chromium	01/09/17 7:07 PM	Reported
56	N022507-010A	SAMP	1	Hexavalent Chromium	01/09/17 7:16 PM	Reported
57	N022507-011A	SAMP	1	Hexavalent Chromium	01/09/17 7:26 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	01/09/17 7:35 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	01/09/17 7:45 PM	Reported
60	N022507-014A	SAMP	1	Hexavalent Chromium	01/09/17 7:54 PM	Reported
61	CCV-6	CCV1	1	Hexavalent Chromium	01/09/17 8:04 PM	Reported
62	CCB-6	CCB	1	Hexavalent Chromium	01/09/17 8:13 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Jan/17 20:44:02**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		01/09/2017 11:16	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/09/2017 11:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/09/2017 11:45	Finished	ICB R161221B
13	MB-H2O,MBLK,1	14	1000	Unknown		01/09/2017 11:55	Finished	MB R170103B
14	LCS-H2O,LCS,1	15	1000	Unknown		01/09/2017 12:05	Finished	LCS, IWST-161114D
15	N022505-001A,SAMF	17	1000	Unknown		01/09/2017 12:24	Finished	SAMP, 10mL
16	N022505-002A,SAMF	18	1000	Unknown		01/09/2017 12:35	Finished	SAMP, 1>10mL
17	N022505-003A,SAMF	19	1000	Unknown		01/09/2017 12:45	Finished	SAMP, 10mL
18	N022505-004A,SAMF	20	1000	Unknown		01/09/2017 12:54	Finished	SAMP, 10mL
19	N022505-005A,SAMF	21	1000	Unknown		01/09/2017 13:04	Finished	SAMP, 10mL
20	N022505-006A,SAMF	23	1000	Unknown		01/09/2017 13:16	Finished	SAMP, 10mL
21	N022505-007A,SAMF	24	1000	Unknown		01/09/2017 13:27	Finished	SAMP, 10mL
22	N022505-008A,SAMF	25	1000	Unknown		01/09/2017 13:37	Finished	SAMP, 10mL
23	CCV-2,CCV1,1,	26	1000	Unknown		01/09/2017 13:46	Finished	CCV @10ppb, IWST-161114C
24	CCB-2,CCB,1,	27	1000	Unknown		01/09/2017 13:56	Finished	CCB R161221B
25	N022505-009A,SAMF	28	1000	Unknown		01/09/2017 14:05	Finished	SAMP, 10mL
26	N022505-010A,SAMF	29	1000	Unknown		01/09/2017 14:15	Finished	SAMP, 10mL
27	N022505-011A,SAMF	30	1000	Unknown		01/09/2017 14:24	Finished	SAMP,0.1> 10mL
28	N022505-012A,SAMF	31	1000	Unknown		01/09/2017 14:33	Finished	SAMP, 10mL
29	N022505-013A,SAMF	32	1000	Unknown		01/09/2017 14:43	Finished	SAMP,0.1> 10mL
30	N022505-014A,SAMF	33	1000	Unknown		01/09/2017 14:52	Finished	MSD (5ppb), IWST-161114D,1
31	N022505-015A,SAMF	34	1000	Unknown		01/09/2017 15:02	Finished	SAMP, 10mL
32	N022505-016A,SAMF	35	1000	Unknown		01/09/2017 15:11	Finished	SAMP, 1>10mL
33	N022505-003ADUP,D	36	1000	Unknown		01/09/2017 15:21	Finished	DUP, 10mL
34	CCV-3,CCV,1,	37	1000	Unknown		01/09/2017 15:30	Finished	CCV @5ppb, IWST-161114C
35	CCB-3,CCB,1,	38	1000	Unknown		01/09/2017 15:40	Finished	CCB R170103B
36	N022505-002AMS,MS	39	1000	Unknown		01/09/2017 15:49	Finished	MS (5ppb), IWST-161114D,1>1
37	N022505-002AMSD,M	40	1000	Unknown		01/09/2017 15:59	Finished	MSD (5ppb), IWST-161114D,1
38	N022505-007AMS,MS	41	1000	Unknown		01/09/2017 16:08	Finished	MS (1ppb), IWST-161114D,10
39	LCS-2,LCS,1	43	1000	Unknown		01/09/2017 16:27	Finished	LCS, IWST-161114D
40	MB-2,MBLK,1	44	1000	Unknown		01/09/2017 16:39	Finished	MB R170103B
41	N022507-001A,SAMF	1	1000	Unknown		01/09/2017 16:53	Finished	SAMP, 10mL
42	N022507-001AMS,MS	2	1000	Unknown		01/09/2017 17:04	Finished	MS (5ppb), IWST-161114D,10
43	N022507-001AMSD,M	3	1000	Unknown		01/09/2017 17:13	Finished	MSD (5ppb), IWST-161114D,1
44	N022507-003A,SAMF	4	1000	Unknown		01/09/2017 17:23	Finished	SAMP, 10mL
45	N022507-003AMS,MS	5	1000	Unknown		01/09/2017 17:32	Finished	MS (5ppb), IWST-161114D,10
46	CCV-4,CCV1,1,	6	1000	Unknown		01/09/2017 17:42	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	7	1000	Unknown		01/09/2017 17:51	Finished	CCB R161221B
48	N022507-005A,SAMF	8	1000	Unknown		01/09/2017 18:01	Finished	SAMP, 10mL
49	N022507-005ADUP,D	9	1000	Unknown		01/09/2017 18:10	Finished	DUP, 10mL
50	N022507-002A,SAMF	10	1000	Unknown		01/09/2017 18:20	Finished	SAMP, 10mL
51	N022507-004A,SAMF	11	1000	Unknown		01/09/2017 18:29	Finished	SAMP, 10mL
52	N022507-006A,SAMF	12	1000	Unknown		01/09/2017 18:39	Finished	SAMP, 10mL
53	N022507-007A,SAMF	13	1000	Unknown		01/09/2017 18:48	Finished	SAMP, 10mL
54	N022507-008A,SAMF	14	1000	Unknown		01/09/2017 18:58	Finished	SAMP, 10mL
55	N022507-009A,SAMF	15	1000	Unknown		01/09/2017 19:07	Finished	SAMP, 10mL
56	N022507-010A,SAMF	16	1000	Unknown		01/09/2017 19:16	Finished	SAMP, 10mL
57	N022507-011A,SAMF	17	1000	Unknown		01/09/2017 19:26	Finished	SAMP, 10mL
58	CCV-5,CCV,1,	18	1000	Unknown		01/09/2017 19:35	Finished	CCV @5ppb, IWST-161114C
59	CCB-5,CCB,1,	19	1000	Unknown		01/09/2017 19:45	Finished	CCB R170103B
60	N022507-014A,SAMF	20	1000	Unknown		01/09/2017 19:54	Finished	SAMP, 10mL

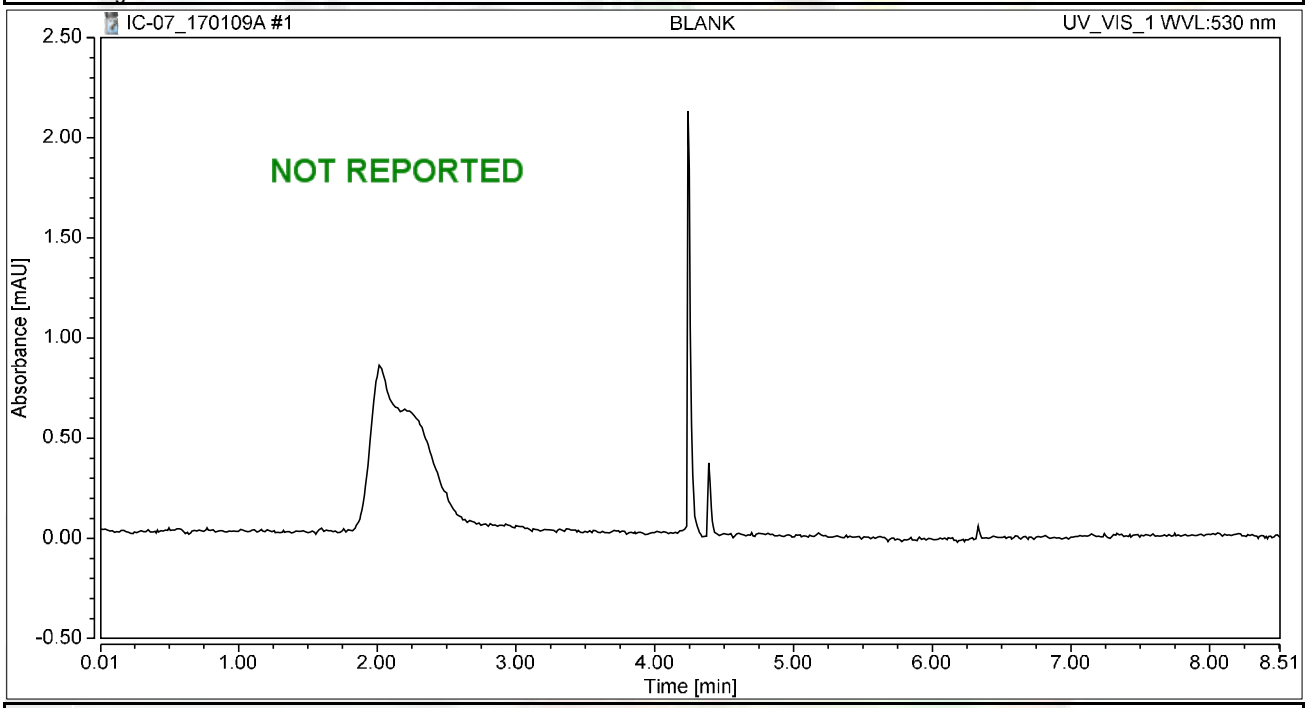
61	CCV-6,CCV1,1,	21	1000	Unknown		01/09/2017 20:04	Finished	CCV @10ppb, IWST-161114C
62	CCB-6,CCB,1,	22	1000	Unknown		01/09/2017 20:13	Finished	CCB R161221B
63	SHUTDOWN	23	1000	Unknown		01/09/2017 20:23	Finished	
64	Eluent: R170107A	24	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170109A	25	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

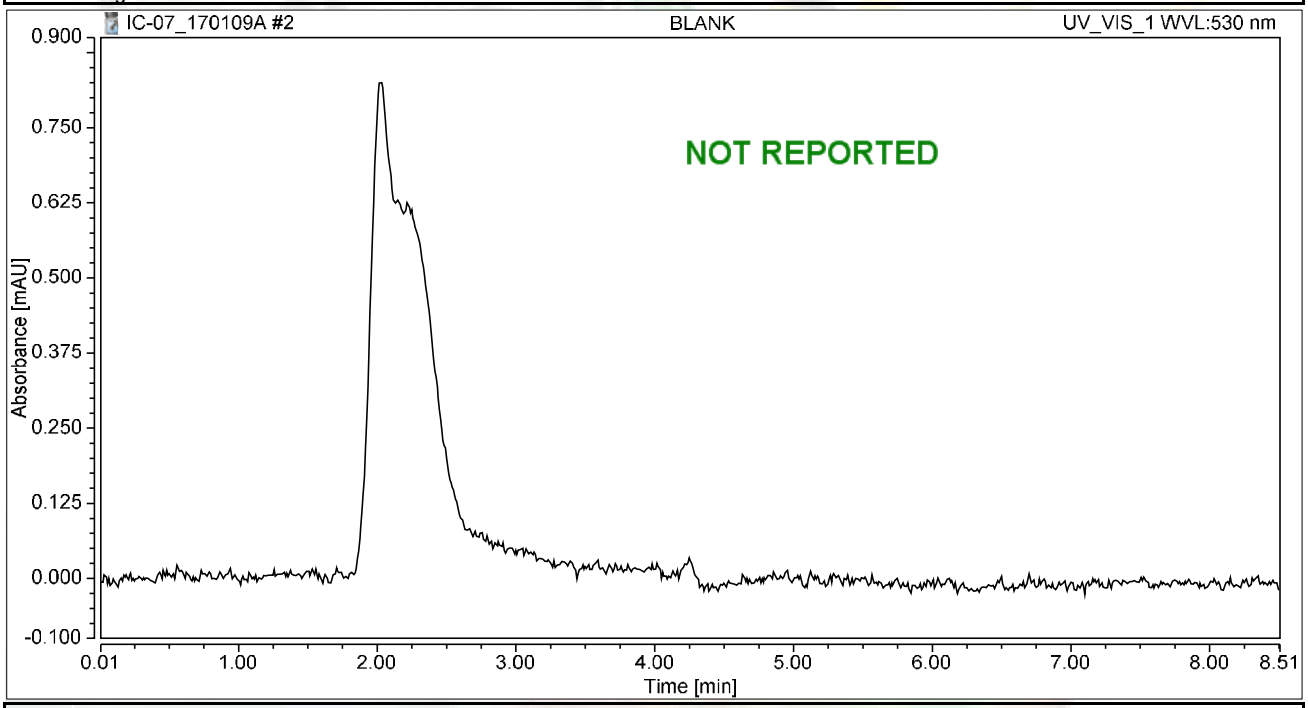
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

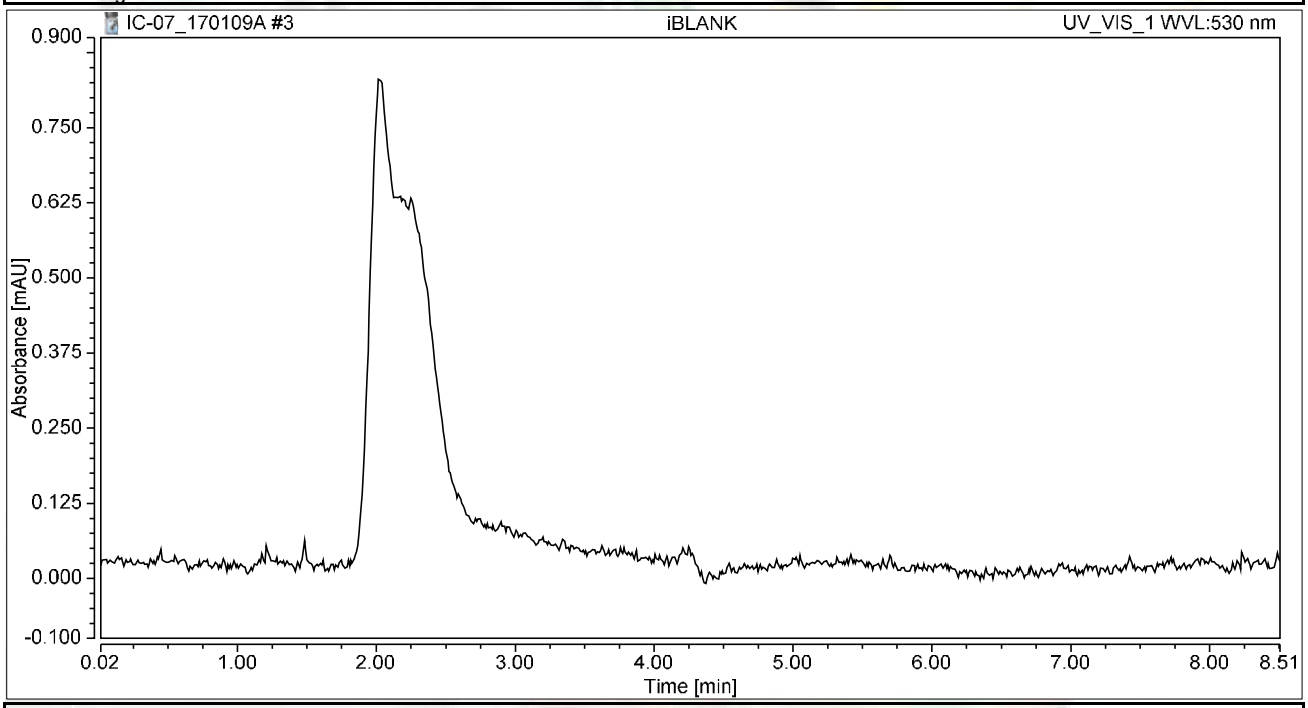
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

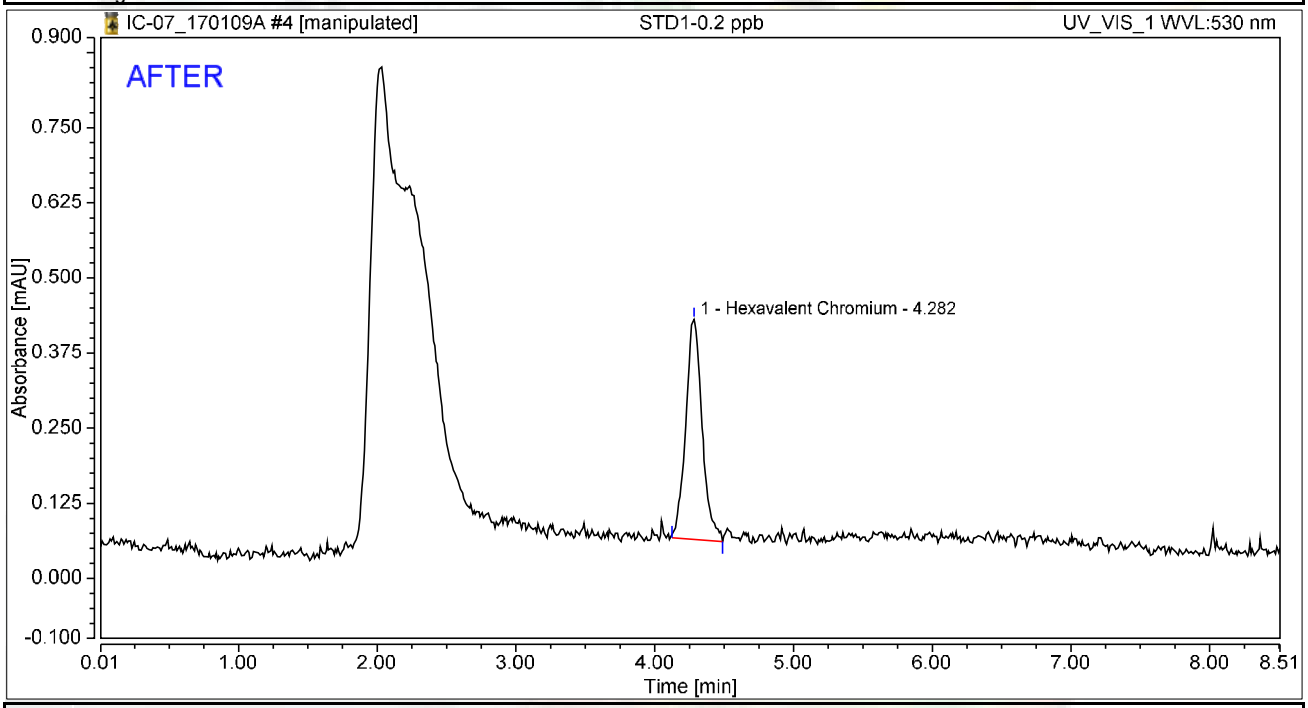
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.050	0.367	100.00	100.00	0.1965
Total:			**0.050**	**0.367**	**100.00**	**100.00**	

rba 1/15/2017

Reviewed by: 1/13/2017

My first report/integration

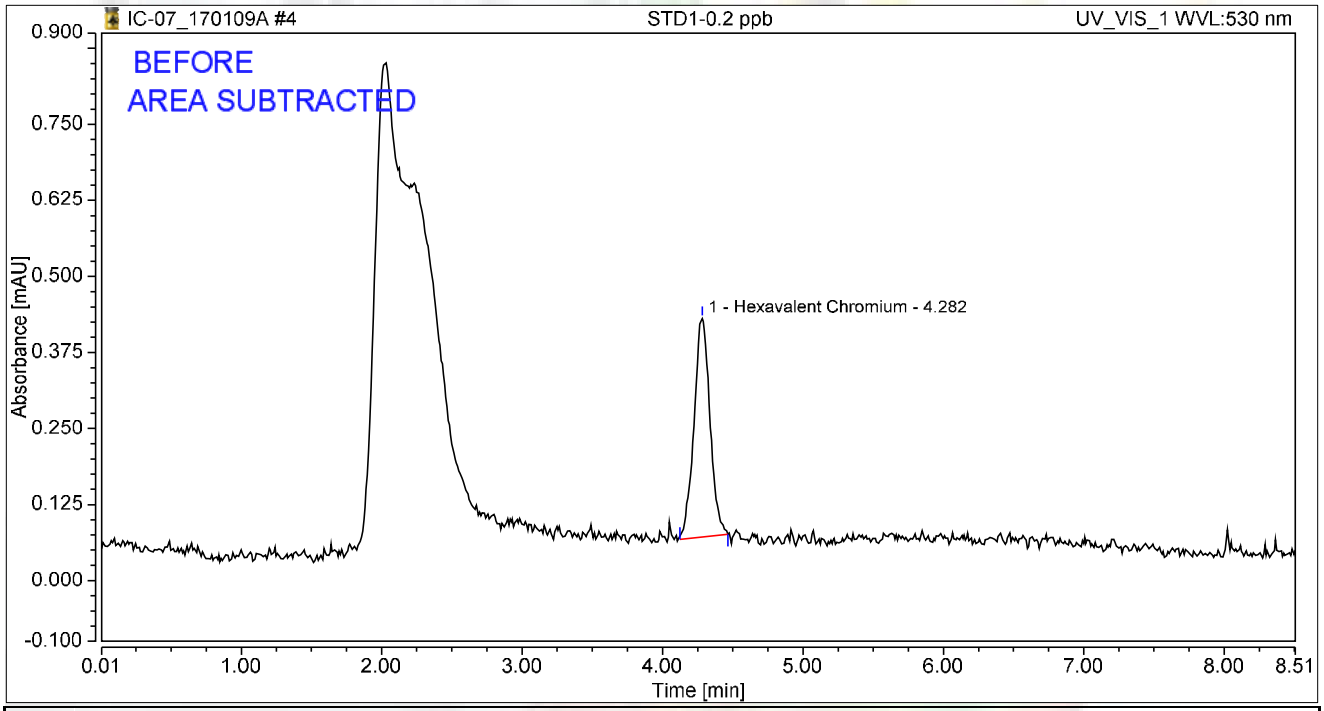
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.047	0.360	100.00	100.00	0.1857
Total:			**0.047**	**0.360**	**100.00**	**100.00**	

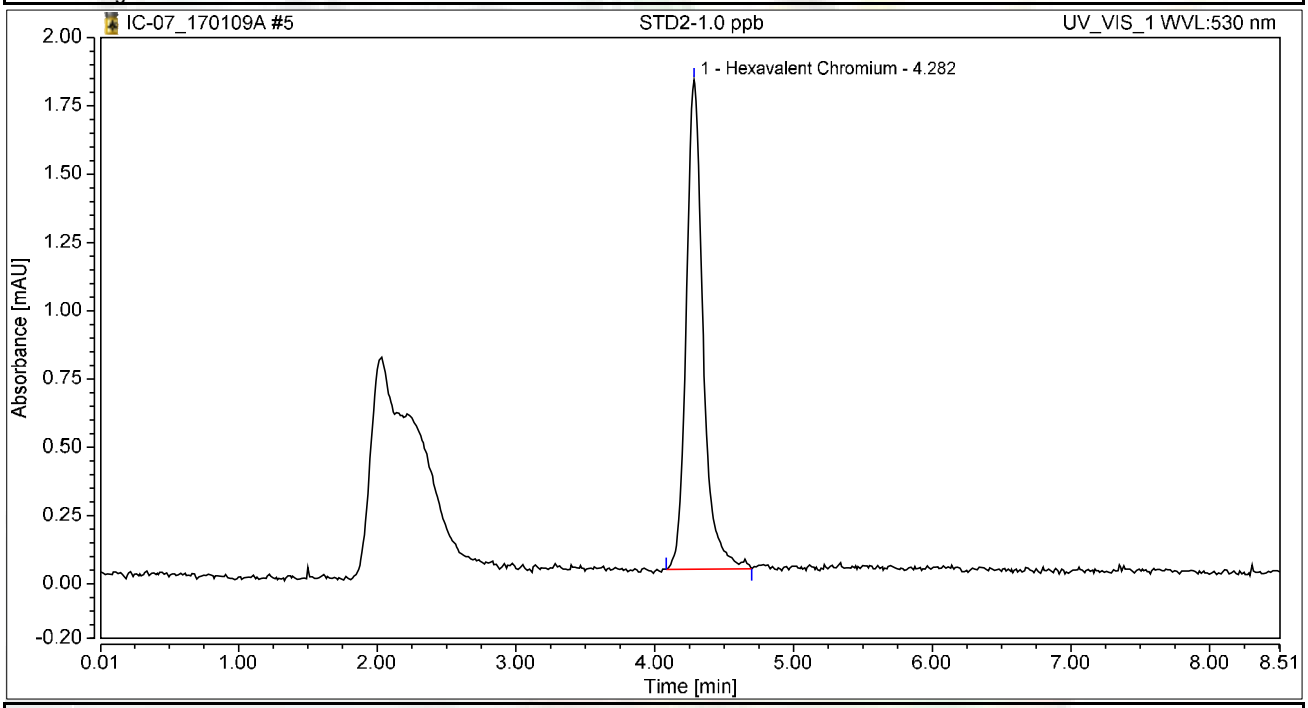
rba 1/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

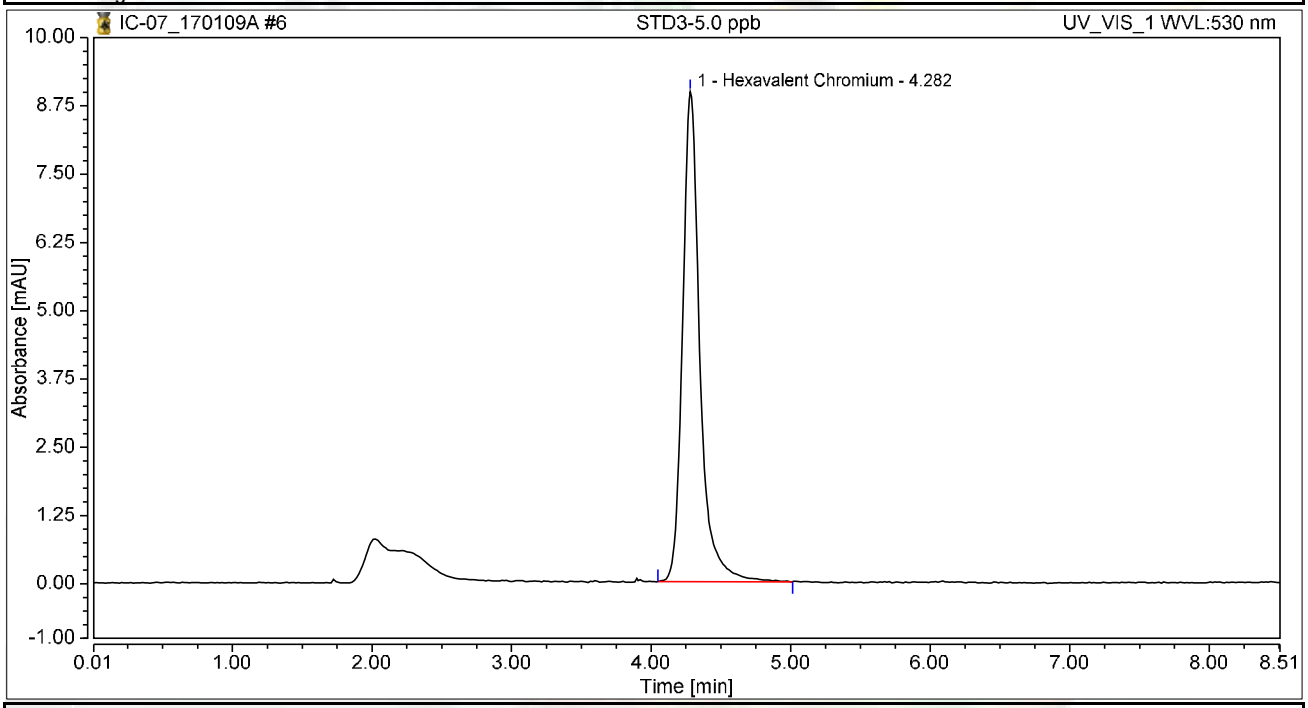
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.252	1.792	100.00	100.00	0.9852
Total:			**0.252**	**1.792**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

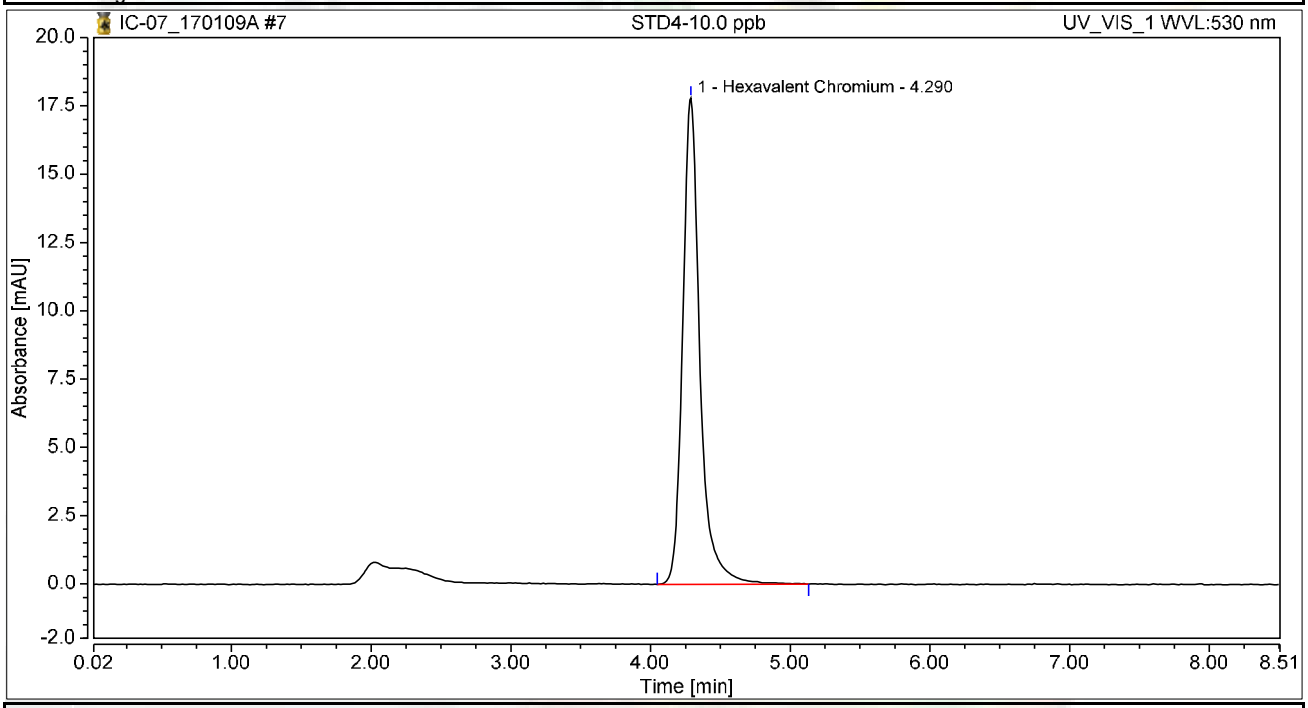
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	1.288	8.975	100.00	100.00	5.0392
Total:			**1.288**	**8.975**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

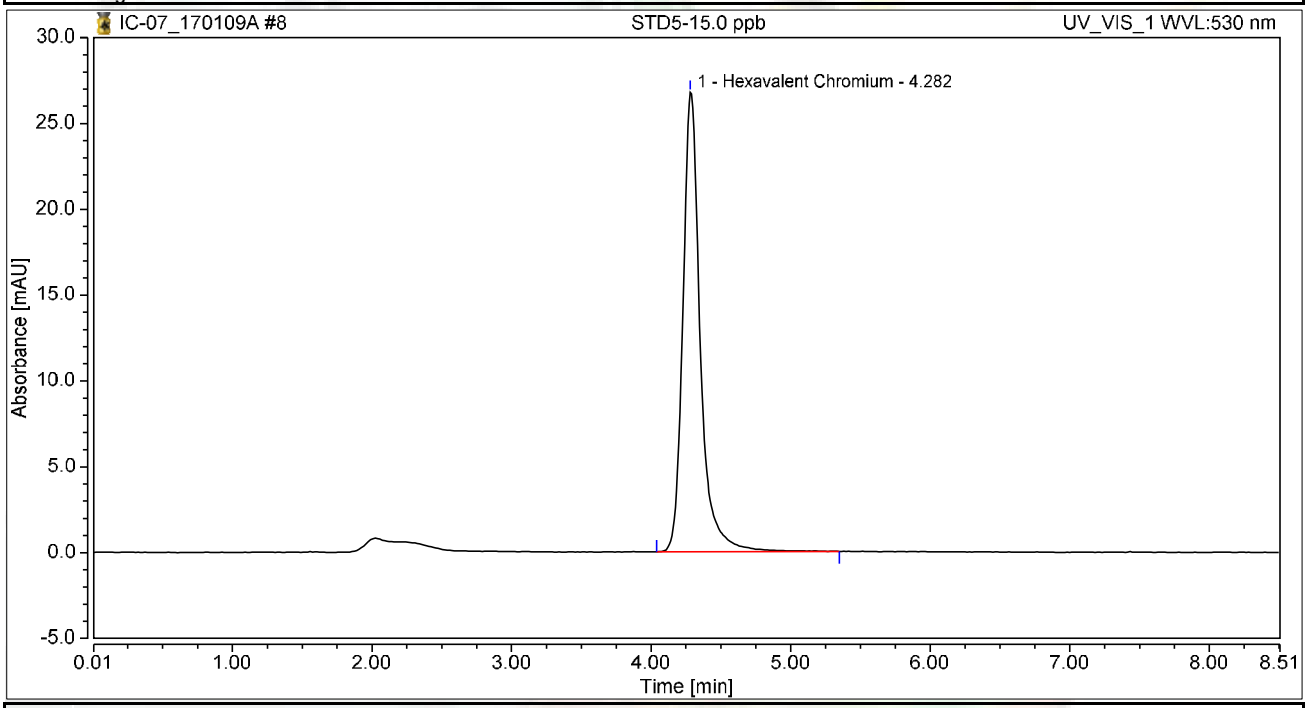
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	2.553	17.802	100.00	100.00	9.9856
Total:			**2.553**	**17.802**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

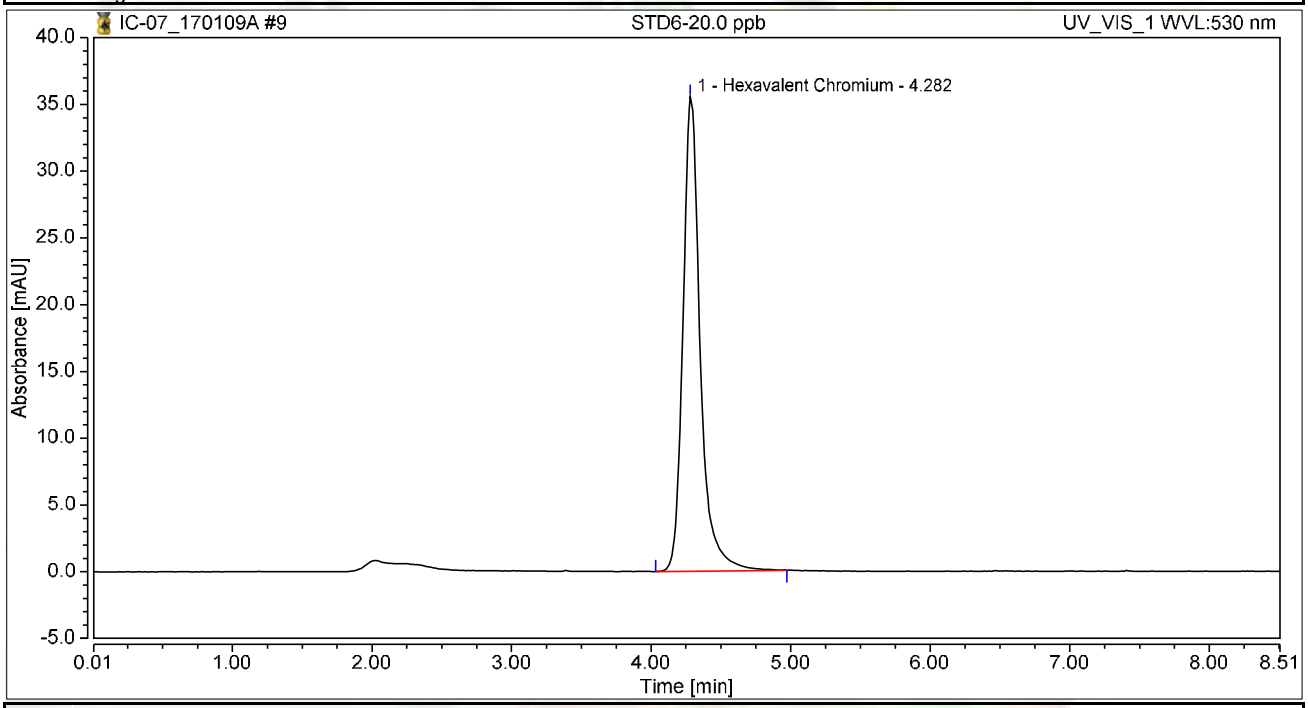
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	3.862	26.764	100.00	100.00	15.1070
Total:			**3.862**	**26.764**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



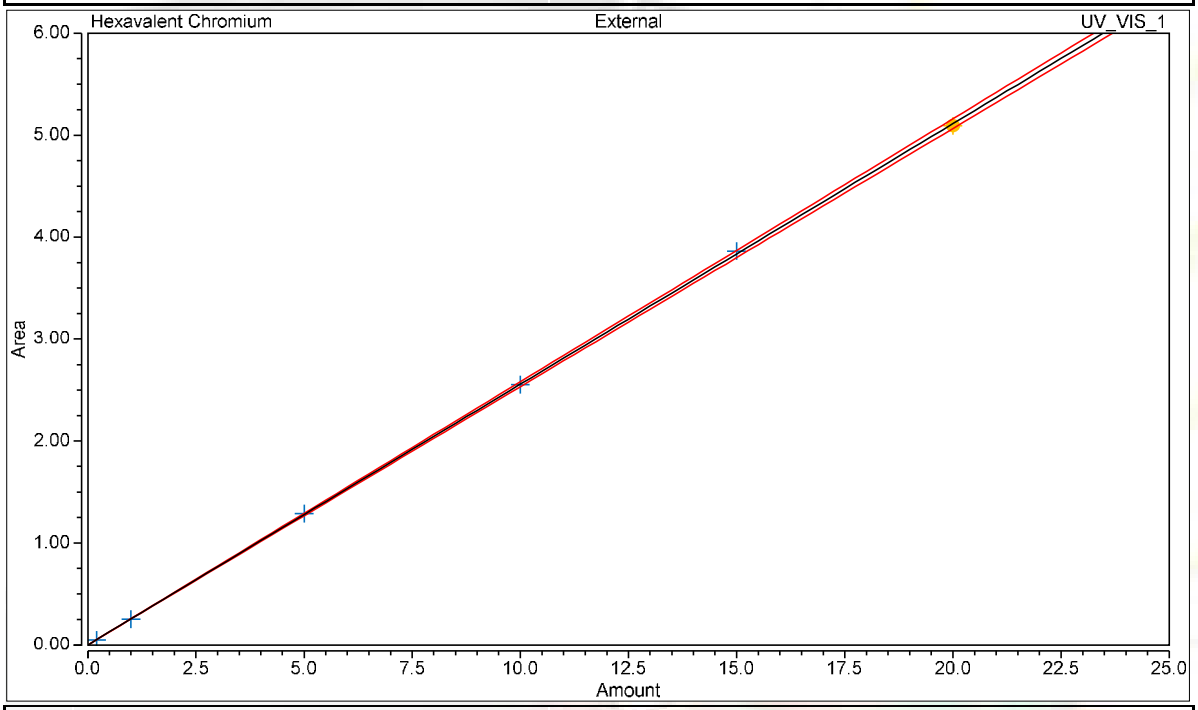
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	5.092	35.542	100.00	100.00	19.9179
Total:			**5.092**	**35.542**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2556
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99994

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

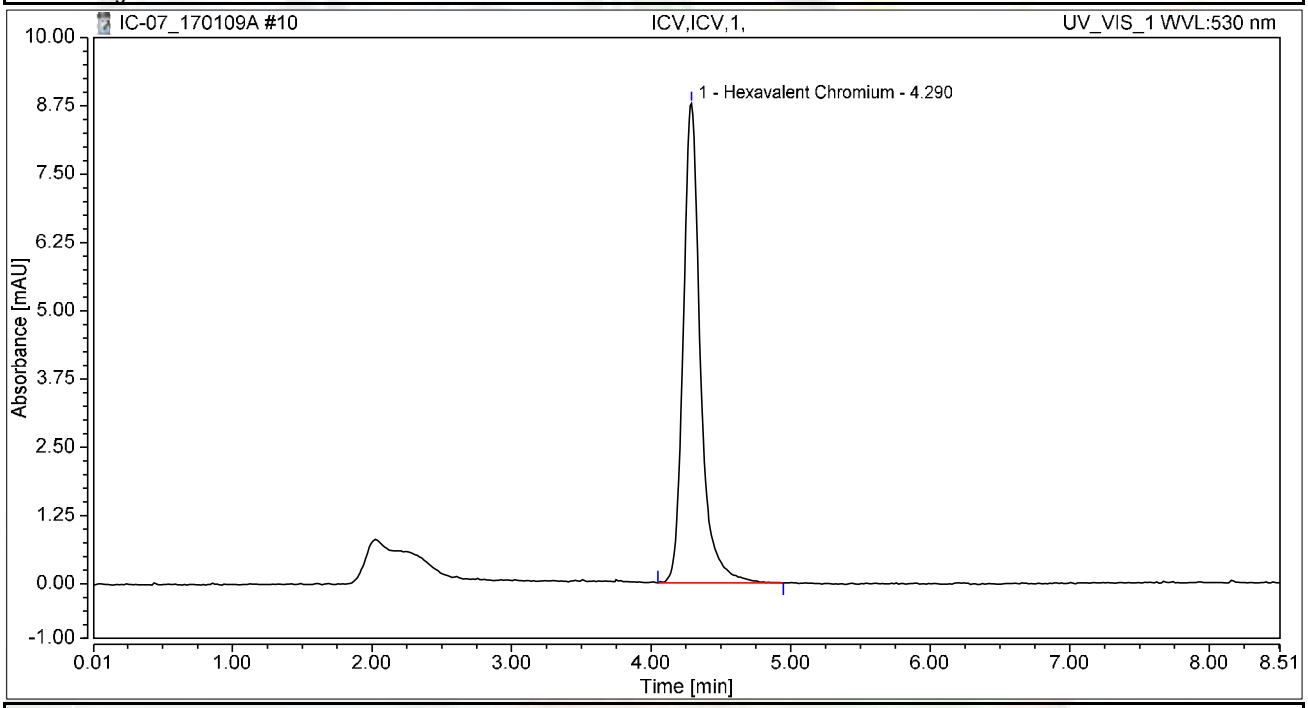
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0502	0.050	0.367
5	STD2-1.0 ppb	02	1.0000	0.2519	0.252	1.792
6	STD3-5.0 ppb	03	5.0000	1.2883	1.288	8.975
7	STD4-10.0 ppb	04	10.0000	2.5528	2.553	17.802
8	STD5-15.0 ppb	05	15.0000	3.8621	3.862	26.764
9	STD6-20.0 ppb	06	20.0000	5.0920	5.092	35.542

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

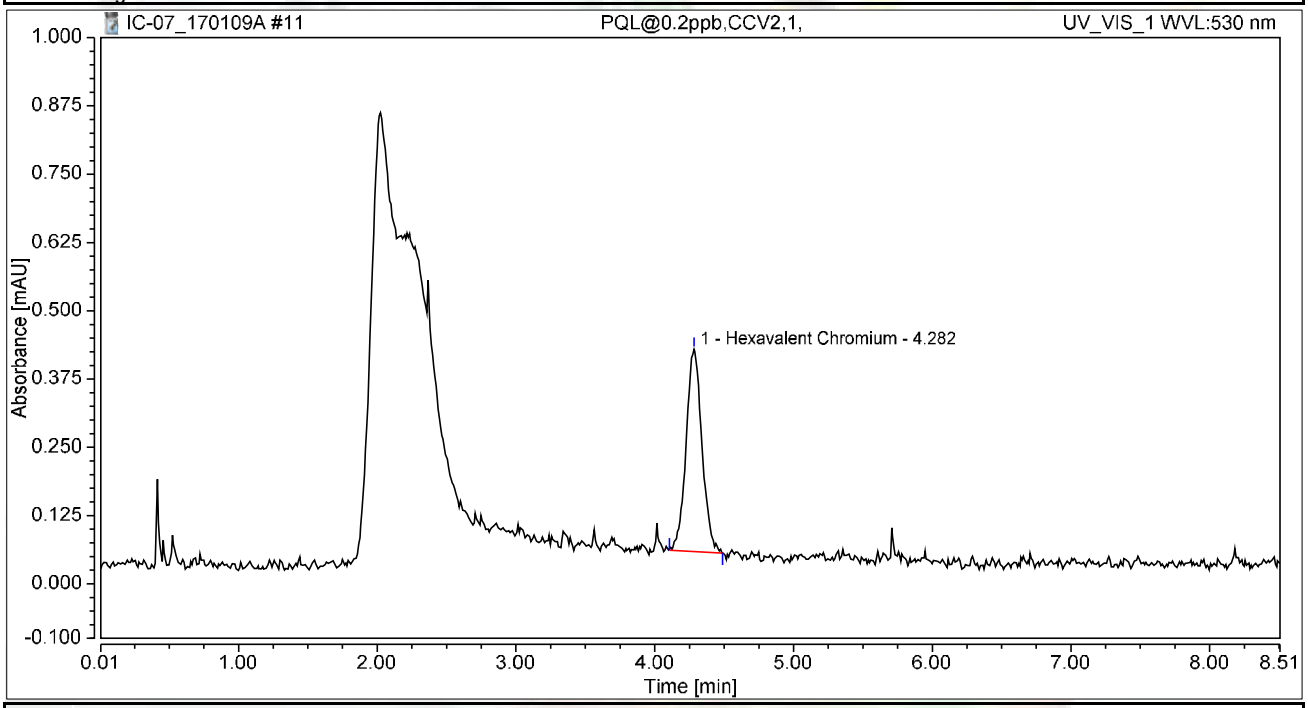
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.290	1.249	8.772	100.00	100.00	4.8871
Total:			**1.249**	**8.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

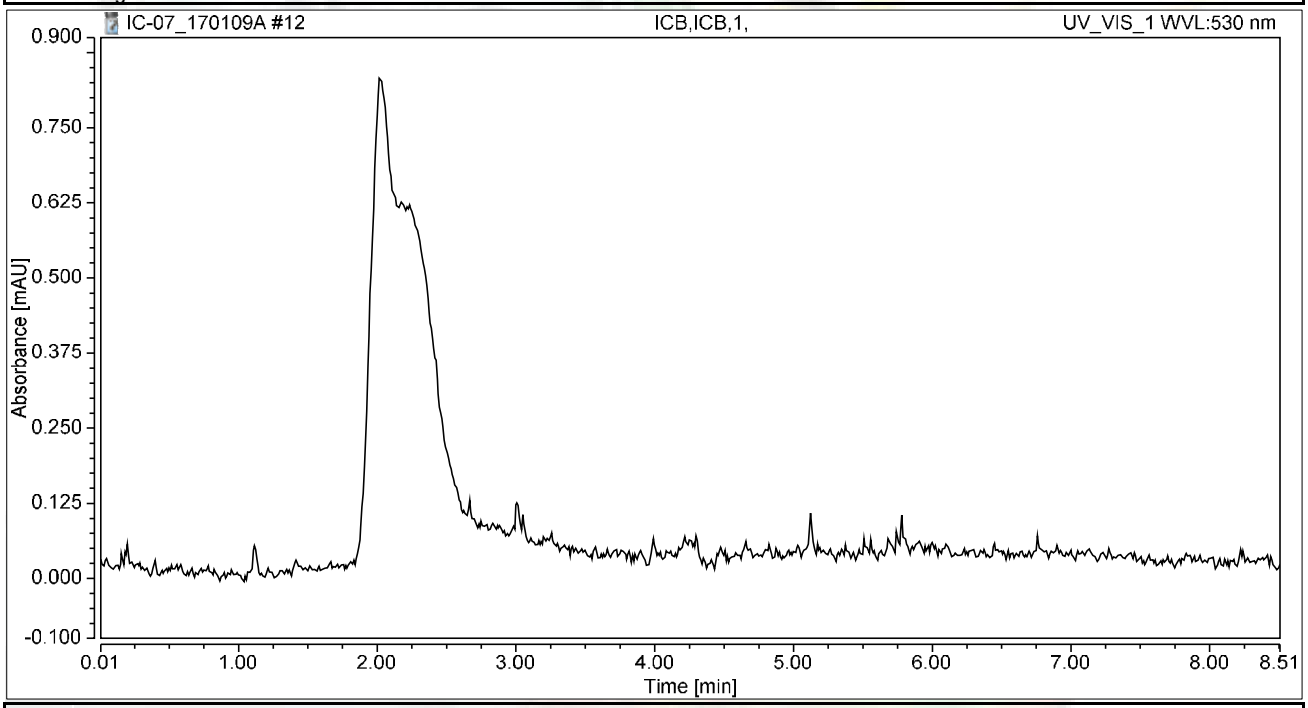
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.282	0.049	0.370	100.00	100.00	0.1914
Total:			**0.049**	**0.370**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170131A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/31/17 9:29 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/31/17 9:40 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/31/17 9:50 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/31/17 9:59 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/31/17 10:09 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	01/31/17 10:18 AM	Not Reported
16	LCS-R113219	LCS	1	Hexavalent Chromium	01/31/17 10:27 AM	Reported
17	MB-R113219	MBLK	1	Hexavalent Chromium	01/31/17 10:39 AM	Reported
18	N022830-001A	SAMP	1	Hexavalent Chromium	01/31/17 10:56 AM	Reported
19	N022830-001AMS	MS	1	Hexavalent Chromium	01/31/17 11:08 AM	Reported
20	N022830-002A	SAMP	1	Hexavalent Chromium	01/31/17 11:17 AM	Reported
21	N022830-002AMS	MS	1	Hexavalent Chromium	01/31/17 11:27 AM	Reported
22	N022830-003A	SAMP	1	Hexavalent Chromium	01/31/17 11:36 AM	Reported
23	N022830-003AMS	MS	1	Hexavalent Chromium	01/31/17 11:46 AM	Reported
24	N022830-004A	SAMP	1	Hexavalent Chromium	01/31/17 11:55 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/31/17 12:05 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/31/17 12:14 PM	Reported
27	N022830-004AMS	MS	1	Hexavalent Chromium	01/31/17 12:24 PM	Reported
28	N022830-005A	SAMP	1	Hexavalent Chromium	01/31/17 12:33 PM	Not Reported
29	N022830-005AMS	MS	1	Hexavalent Chromium	01/31/17 12:43 PM	Not Reported
30	N022830-006A	SAMP	1	Hexavalent Chromium	01/31/17 12:52 PM	Not Reported
31	N022830-006AMS	MS	1	Hexavalent Chromium	01/31/17 1:01 PM	Not Reported
32	N022830-007A	SAMP	1	Hexavalent Chromium	01/31/17 1:11 PM	Reported
33	N022830-007AMS	MS	1	Hexavalent Chromium	01/31/17 1:20 PM	Reported
34	N022830-008A	SAMP	1	Hexavalent Chromium	01/31/17 1:30 PM	Reported
35	N022830-008AMS	MS	1	Hexavalent Chromium	01/31/17 1:39 PM	Reported
36	N022830-009A	SAMP	1	Hexavalent Chromium	01/31/17 1:49 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/31/17 1:58 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/31/17 2:08 PM	Reported
39	N022830-009AMS	MS	1	Hexavalent Chromium	01/31/17 2:17 PM	Reported
40	N022830-010A	SAMP	1	Hexavalent Chromium	01/31/17 2:27 PM	Not Reported
41	N022830-010AMS	MS	1	Hexavalent Chromium	01/31/17 2:36 PM	Not Reported
42	N022830-011A	SAMP	1	Hexavalent Chromium	01/31/17 2:46 PM	Not Reported
43	N022830-011AMS	MS	1	Hexavalent Chromium	01/31/17 2:55 PM	Not Reported
44	N022830-012A	SAMP	1	Hexavalent Chromium	01/31/17 3:04 PM	Reported
45	N022830-012AMS	MS	1	Hexavalent Chromium	01/31/17 3:14 PM	Reported
46	N022830-013A	SAMP	1	Hexavalent Chromium	01/31/17 3:23 PM	Reported
47	N022830-013AMS	MS	1	Hexavalent Chromium	01/31/17 3:33 PM	Reported
48	N022830-014A	SAMP	1	Hexavalent Chromium	01/31/17 3:42 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/31/17 3:52 PM	Reported

INJECTION LOG: 170131A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-4	CCB	1	Hexavalent Chromium	01/31/17 4:01 PM	Reported
51	N022830-014AMS	MS	1	Hexavalent Chromium	01/31/17 4:11 PM	Reported
52	N022887-003A	SAMP	200	Hexavalent Chromium	01/31/17 4:20 PM	Reported
53	N022887-003AMS	MS	200	Hexavalent Chromium	01/31/17 4:30 PM	Reported
54	N022887-003AMSD	MSD	200	Hexavalent Chromium	01/31/17 4:39 PM	Reported
55	N022887-001A	SAMP	1	Hexavalent Chromium	01/31/17 4:48 PM	Reported
56	N022887-002A	SAMP	20	Hexavalent Chromium	01/31/17 4:58 PM	Not Reported
57	N022887-004A	SAMP	1	Hexavalent Chromium	01/31/17 5:07 PM	Reported
58	N022887-005A	SAMP	1	Hexavalent Chromium	01/31/17 5:20 PM	Not Reported
59	N022887-006A	SAMP	1	Hexavalent Chromium	01/31/17 5:31 PM	Not Reported
60	N022887-001ADUP	DUP	1	Hexavalent Chromium	01/31/17 5:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/31/17 5:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/31/17 6:02 PM	Reported
63	N022887-002A	SAMP	50	Hexavalent Chromium	01/31/17 6:11 PM	Reported
64	N022887-005A	SAMP	100	Hexavalent Chromium	01/31/17 6:21 PM	Reported
65	N022887-006A	SAMP	100	Hexavalent Chromium	01/31/17 6:30 PM	Reported
66	LCS-R113220	LCS	1	Hexavalent Chromium	01/31/17 6:39 PM	Reported
67	MB-R113220	MBLK	1	Hexavalent Chromium	01/31/17 6:49 PM	Reported
68	N022885-001A	SAMP	1	Hexavalent Chromium	01/31/17 6:58 PM	Not Reported
69	N022885-001AMS	MS	1	Hexavalent Chromium	01/31/17 7:08 PM	Reported
70	N022885-001AMSD	MSD	1	Hexavalent Chromium	01/31/17 7:17 PM	Reported
71	N022885-004A	SAMP	1	Hexavalent Chromium	01/31/17 7:27 PM	Reported
72	N022885-004AMS	MS	1	Hexavalent Chromium	01/31/17 7:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/31/17 7:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/31/17 7:55 PM	Reported
75	N022885-002A	SAMP	1	Hexavalent Chromium	01/31/17 8:05 PM	Reported
76	N022885-002ADUP	DUP	1	Hexavalent Chromium	01/31/17 8:14 PM	Reported
77	N022885-003A	SAMP	1	Hexavalent Chromium	01/31/17 8:24 PM	Reported
78	N022885-005A	SAMP	1	Hexavalent Chromium	01/31/17 8:33 PM	Not Reported
79	N022885-006A	SAMP	1	Hexavalent Chromium	01/31/17 8:42 PM	Not Reported
80	N022885-007A	SAMP	1	Hexavalent Chromium	01/31/17 8:52 PM	Reported
81	N022885-008A	SAMP	1	Hexavalent Chromium	01/31/17 9:02 PM	Reported
82	N022885-009A	SAMP	1	Hexavalent Chromium	01/31/17 9:11 PM	Not Reported
83	N022885-010A	SAMP	1	Hexavalent Chromium	01/31/17 9:20 PM	Reported
84	N022885-011A	SAMP	1	Hexavalent Chromium	01/31/17 9:30 PM	Reported
85	CCV-7	CCV	1	Hexavalent Chromium	01/31/17 9:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	01/31/17 9:49 PM	Reported
87	N022885-012A	SAMP	1	Hexavalent Chromium	01/31/17 9:58 PM	Reported
88	N022885-013A	SAMP	1	Hexavalent Chromium	01/31/17 10:08 PM	Reported
89	N022886-001A	SAMP	1	Hexavalent Chromium	01/31/17 10:17 PM	Reported
90	N022664-002A	SAMP	1	Hexavalent Chromium	01/31/17 10:27 PM	Not Reported
91	N022664-002AMS	MS	1	Hexavalent Chromium	01/31/17 10:36 PM	Not Reported
92	CCV-8	CCV1	1	Hexavalent Chromium	01/31/17 10:45 PM	Reported
93	CCB-8	CCB	1	Hexavalent Chromium	01/31/17 10:55 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170131A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**31/Jan/17 23:25:44**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		01/31/2017 09:29	Finished	
11	BLANK	2	1000	Unknown		01/31/2017 09:40	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		01/31/2017 09:50	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/31/2017 09:59	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/31/2017 10:09	Finished	CCB R170112D
15	MB-H2O,MBLK,1	6	1000	Unknown		01/31/2017 10:18	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		01/31/2017 10:27	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	9	1000	Unknown		01/31/2017 10:39	Finished	MB R170112D
18	N022830-001A,SAMF	11	1000	Unknown		01/31/2017 10:56	Finished	SAMP, 10mL
19	N022830-001AMS,MS	12	1000	Unknown		01/31/2017 11:08	Finished	MS (1ppb), IWST-161114D,10
20	N022830-002A,SAMF	13	1000	Unknown		01/31/2017 11:17	Finished	SAMP, 10mL
21	N022830-002AMS,MS	14	1000	Unknown		01/31/2017 11:27	Finished	MS (1ppb), IWST-161114D,10
22	N022830-003A,SAMF	15	1000	Unknown		01/31/2017 11:36	Finished	SAMP, 10mL
23	N022830-003AMS,MS	16	1000	Unknown		01/31/2017 11:46	Finished	MS (1ppb), IWST-161114D,10
24	N022830-004A,SAMF	17	1000	Unknown		01/31/2017 11:55	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	18	1000	Unknown		01/31/2017 12:05	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	19	1000	Unknown		01/31/2017 12:14	Finished	CCB R170112D
27	N022830-004AMS,MS	20	1000	Unknown		01/31/2017 12:24	Finished	MS (1ppb), IWST-161114D,10
28	N022830-005A,SAMF	21	1000	Unknown		01/31/2017 12:33	Finished	SAMP, 10mL
29	N022830-005AMS,MS	22	1000	Unknown		01/31/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
30	N022830-006A,SAMF	23	1000	Unknown		01/31/2017 12:52	Finished	SAMP, 10mL
31	N022830-006AMS,MS	24	1000	Unknown		01/31/2017 13:01	Finished	MS (1ppb), IWST-161114D,10
32	N022830-007A,SAMF	25	1000	Unknown		01/31/2017 13:11	Finished	SAMP, 10mL
33	N022830-007AMS,MS	26	1000	Unknown		01/31/2017 13:20	Finished	MS (1ppb), IWST-161114D,10
34	N022830-008A,SAMF	27	1000	Unknown		01/31/2017 13:30	Finished	SAMP, 10mL
35	N022830-008AMS,MS	28	1000	Unknown		01/31/2017 13:39	Finished	MS (1ppb), IWST-161114D,10
36	N022830-009A,SAMF	29	1000	Unknown		01/31/2017 13:49	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	30	1000	Unknown		01/31/2017 13:58	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	31	1000	Unknown		01/31/2017 14:08	Finished	CCB R170112D
39	N022830-009AMS,MS	32	1000	Unknown		01/31/2017 14:17	Finished	MS (1ppb), IWST-161114D,10
40	N022830-010A,SAMF	33	1000	Unknown		01/31/2017 14:27	Finished	SAMP, 10mL
41	N022830-010AMS,MS	34	1000	Unknown		01/31/2017 14:36	Finished	MS (1ppb), IWST-161114D,10
42	N022830-011A,SAMF	35	1000	Unknown		01/31/2017 14:46	Finished	SAMP, 10mL
43	N022830-011AMS,MS	36	1000	Unknown		01/31/2017 14:55	Finished	MS (1ppb), IWST-161114D,10
44	N022830-012A,SAMF	37	1000	Unknown		01/31/2017 15:04	Finished	SAMP, 10mL
45	N022830-012AMS,MS	38	1000	Unknown		01/31/2017 15:14	Finished	MS (1ppb), IWST-161114D,10
46	N022830-013A,SAMF	39	1000	Unknown		01/31/2017 15:23	Finished	SAMP, 10mL
47	N022830-013AMS,MS	40	1000	Unknown		01/31/2017 15:33	Finished	MS (1ppb), IWST-161114D,10
48	N022820-04A,SAMP,	41	1000	Unknown		01/31/2017 15:42	Finished	SAMP, 10mL
49	CCV-4,CCV1,1,	42	1000	Unknown		01/31/2017 15:52	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	43	1000	Unknown		01/31/2017 16:01	Finished	CCB R170103B
51	N022830-014AMS,MS	44	1000	Unknown		01/31/2017 16:11	Finished	MS (1ppb), IWST-161114D,10
52	N022887-003A,SAMF	45	1000	Unknown		01/31/2017 16:20	Finished	SAMP, 0.05>10mL
53	N022887-003AMS,MS	46	1000	Unknown		01/31/2017 16:30	Finished	MS (5ppb), IWST-161114D,0.0
54	N022887-003AMSD,M	47	1000	Unknown		01/31/2017 16:39	Finished	MSD (5ppb), IWST-161114D,0.
55	N022887-001A,SAMF	48	1000	Unknown		01/31/2017 16:48	Finished	SAMP, 10mL
56	N022887-002A,SAMF	49	1000	Unknown		01/31/2017 16:58	Finished	SAMP, 0.5>10mL
57	N022887-004A,SAMF	50	1000	Unknown		01/31/2017 17:07	Finished	SAMP, 10mL
58	N022887-005A,SAMF	1	1000	Unknown		01/31/2017 17:20	Finished	SAMP, 10mL
59	N022887-006A,SAMF	2	1000	Unknown		01/31/2017 17:31	Finished	SAMP, 10mL
60	N022887-001ADUP,D	3	1000	Unknown		01/31/2017 17:41	Finished	DUP, 10mL

rba 2/4/2017

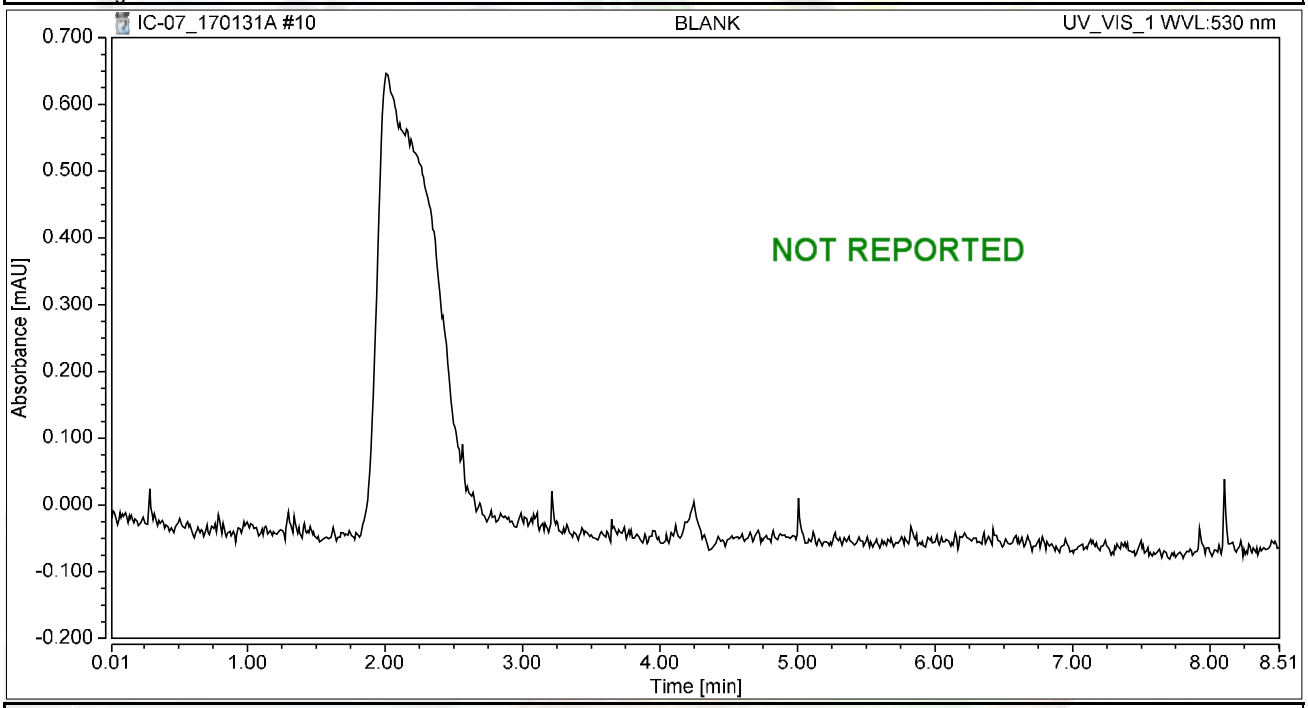
61	CCV-5,CCV,1,	4	1000	Unknown		01/31/2017 17:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	5	1000	Unknown		01/31/2017 18:02	Finished	CCB R170112D
63	N022887-002A,SAMF	6	1000	Unknown		01/31/2017 18:11	Finished	SAMP, 0.2>10mL
64	N022887-005A,SAMF	7	1000	Unknown		01/31/2017 18:21	Finished	SAMP, 0.1>10mL
65	N022887-006A,SAMF	8	1000	Unknown		01/31/2017 18:30	Finished	SAMP, 0.1>10mL
66	LCS-2,LCS,1	9	1000	Unknown		01/31/2017 18:39	Finished	LCS, IWST-161114D
67	MB-2,MBLK,1	10	1000	Unknown		01/31/2017 18:49	Finished	MB R170112D
68	N022885-001A,SAMF	11	1000	Unknown		01/31/2017 18:58	Finished	SAMP, 10mL
69	N022885-001AMS,MS	12	1000	Unknown		01/31/2017 19:08	Finished	MS (5ppb), IWST-161114D,10
70	N022885-001AMSD,M	13	1000	Unknown		01/31/2017 19:17	Finished	MSD (5ppb), IWST-161114D,1
71	N022885-004A,SAMF	14	1000	Unknown		01/31/2017 19:27	Finished	SAMP, 10mL
72	N022885-004AMS,MS	15	1000	Unknown		01/31/2017 19:36	Finished	MS (5ppb), IWST-161114D,10
73	CCV-6,CCV1,1,	16	1000	Unknown		01/31/2017 19:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	17	1000	Unknown		01/31/2017 19:55	Finished	CCB R170103B
75	N022885-002A,SAMF	18	1000	Unknown		01/31/2017 20:05	Finished	SAMP, 10mL
76	N022885-002ADUP,D	19	1000	Unknown		01/31/2017 20:14	Finished	DUP, 10mL
77	N022885-003A,SAMF	20	1000	Unknown		01/31/2017 20:24	Finished	SAMP, 10mL
78	N022885-005A,SAMF	21	1000	Unknown		01/31/2017 20:33	Finished	SAMP, 10mL
79	N022885-006A,SAMF	22	1000	Unknown		01/31/2017 20:42	Finished	SAMP, 10mL
80	N022885-007A,SAMF	23	1000	Unknown		01/31/2017 20:52	Finished	SAMP, 10mL
81	N022885-008A,SAMF	24	1000	Unknown		01/31/2017 21:02	Finished	SAMP, 10mL
82	N022885-009A,SAMF	25	1000	Unknown		01/31/2017 21:11	Finished	SAMP, 10mL
83	N022885-010A,SAMF	26	1000	Unknown		01/31/2017 21:20	Finished	SAMP, 10mL
84	N022885-011A,SAMF	27	1000	Unknown		01/31/2017 21:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	28	1000	Unknown		01/31/2017 21:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	29	1000	Unknown		01/31/2017 21:49	Finished	CCB R170112D
87	N022885-012A,SAMF	30	1000	Unknown		01/31/2017 21:58	Finished	SAMP, 10mL
88	N022885-013A,SAMF	31	1000	Unknown		01/31/2017 22:08	Finished	SAMP, 10mL
89	N022886-001A,SAMF	32	1000	Unknown		01/31/2017 22:17	Finished	SAMP, 10mL
90	N022664-002A,SAMF	33	1000	Unknown		01/31/2017 22:27	Finished	SAMP, 10mL
91	N022664-002AMS,MS	34	1000	Unknown		01/31/2017 22:36	Finished	MS (5ppb), IWST-161114D,10
92	CCV-8,CCV1,1,	35	1000	Unknown		01/31/2017 22:45	Finished	CCV @10ppb, IWST-161114C
93	CCB-8,CCB,1,	36	1000	Unknown		01/31/2017 22:55	Finished	CCB R170103B
94	SHUTDOWN	37	1000	Unknown		01/31/2017 23:05	Finished	
95	Eluent: R170131A	38	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170131B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

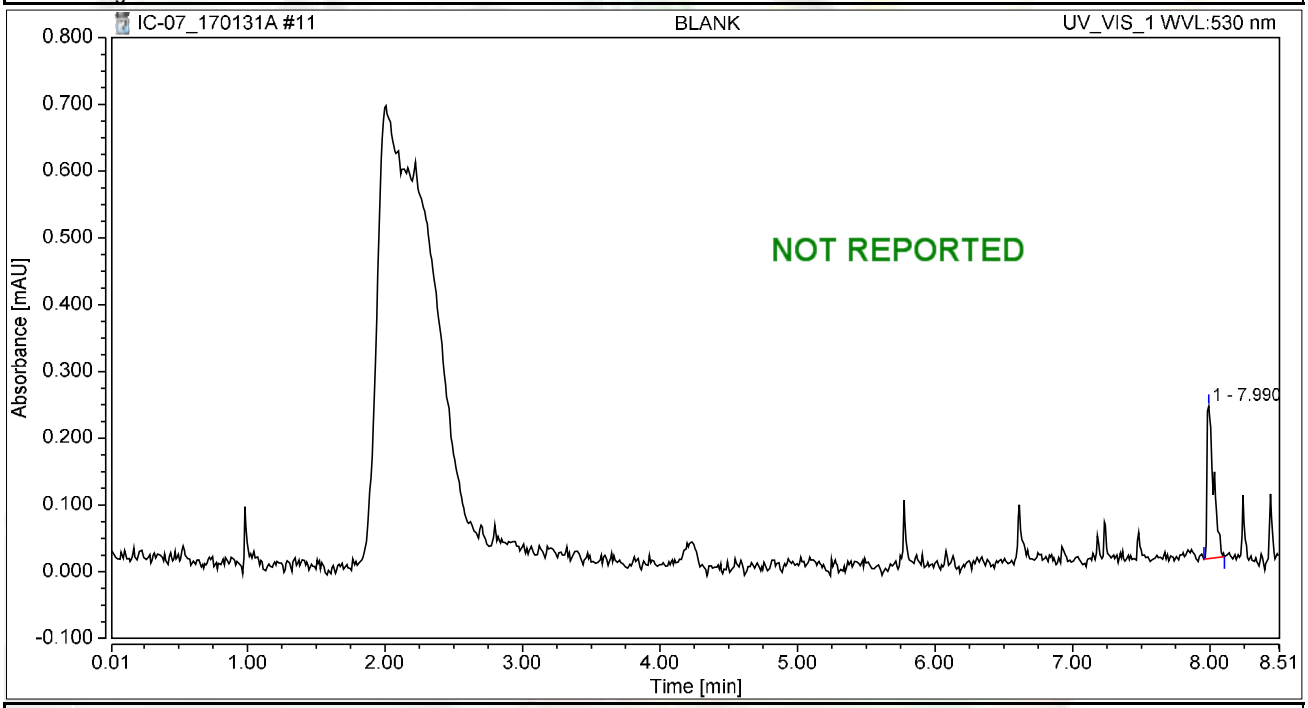
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

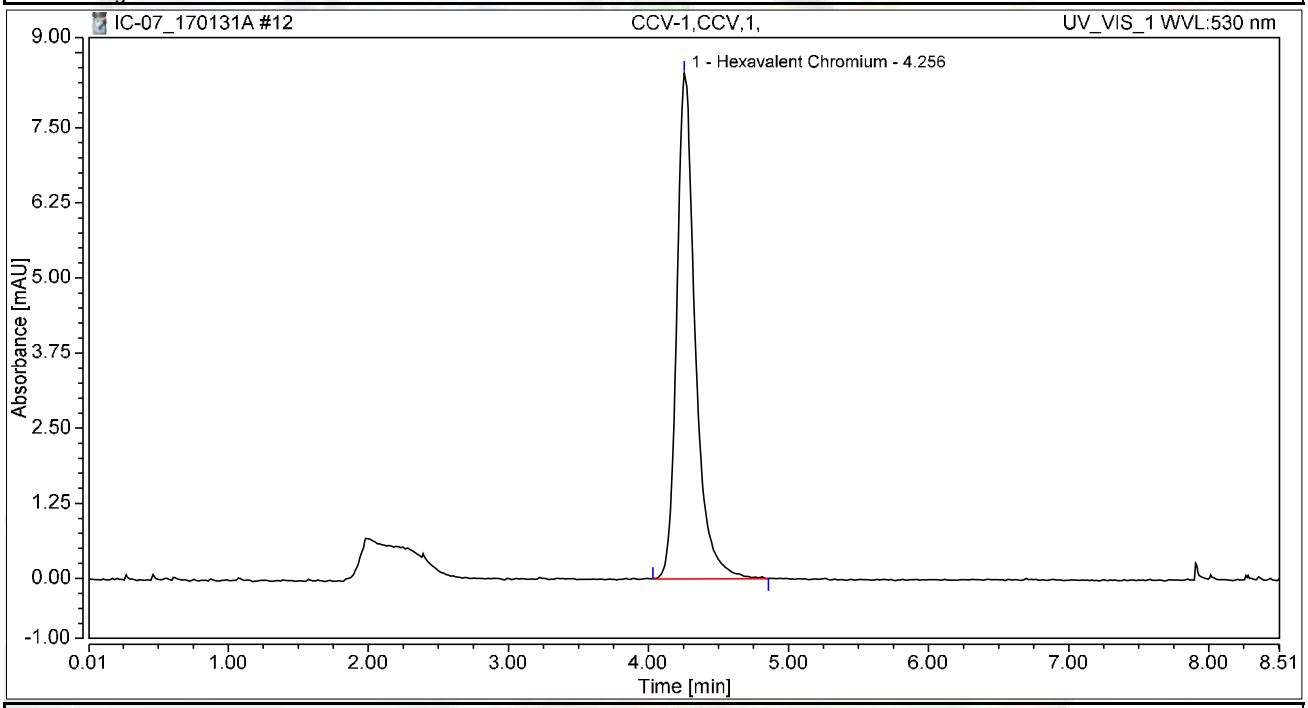
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.990	0.013	0.228	100.00	100.00	n.a.
Total:			**0.013**	**0.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

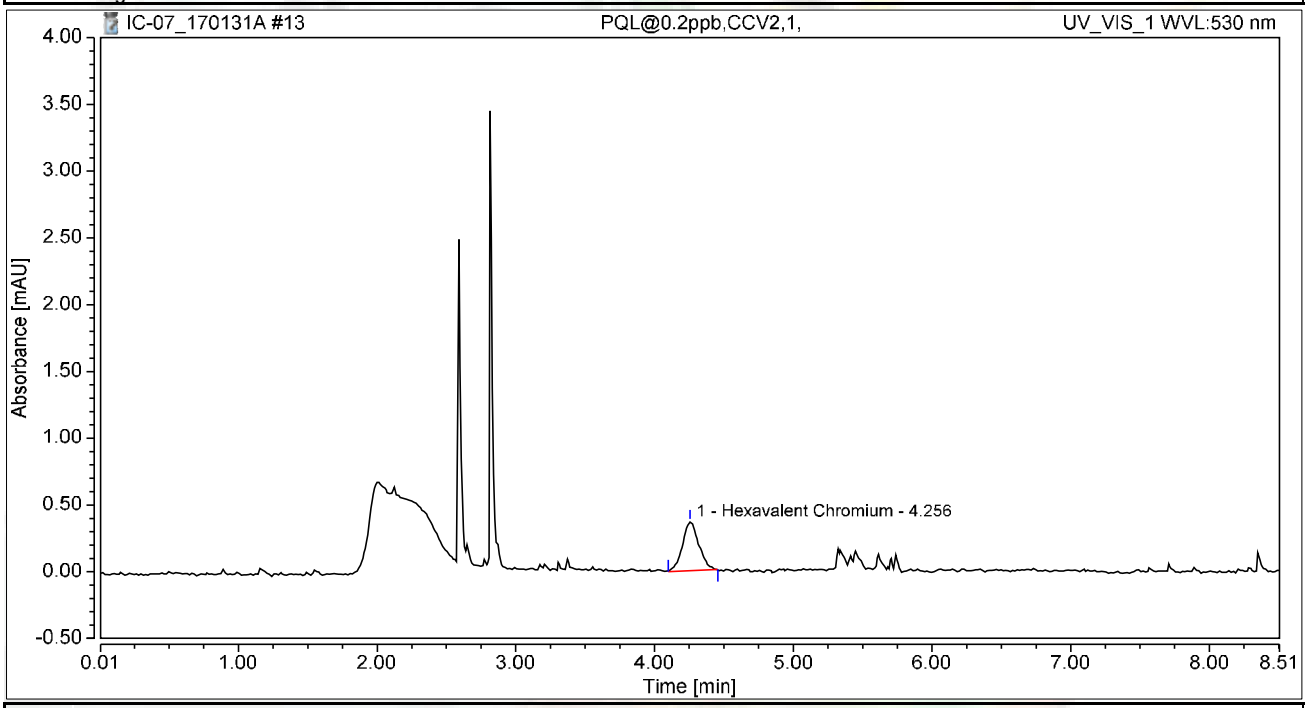
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.291	8.423	100.00	100.00	5.0490
Total:			**1.291**	**8.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

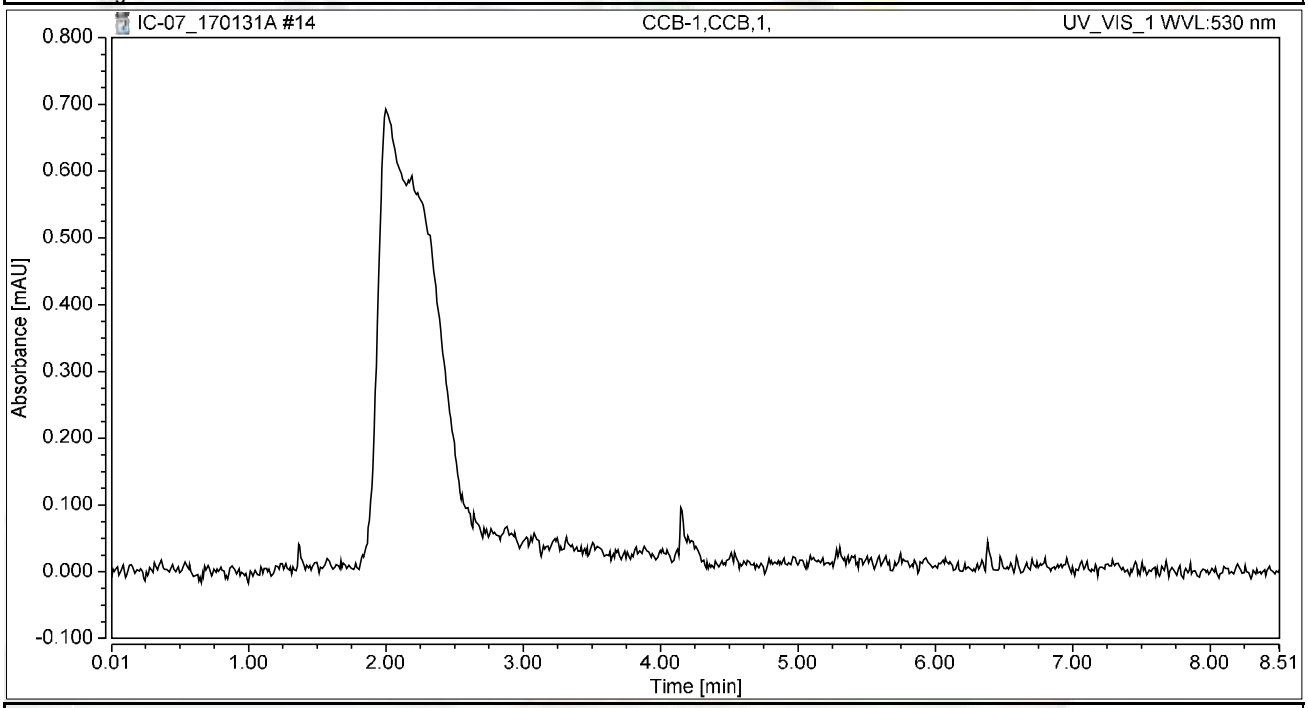
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.050	0.365	100.00	100.00	0.1956
Total:			**0.050**	**0.365**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

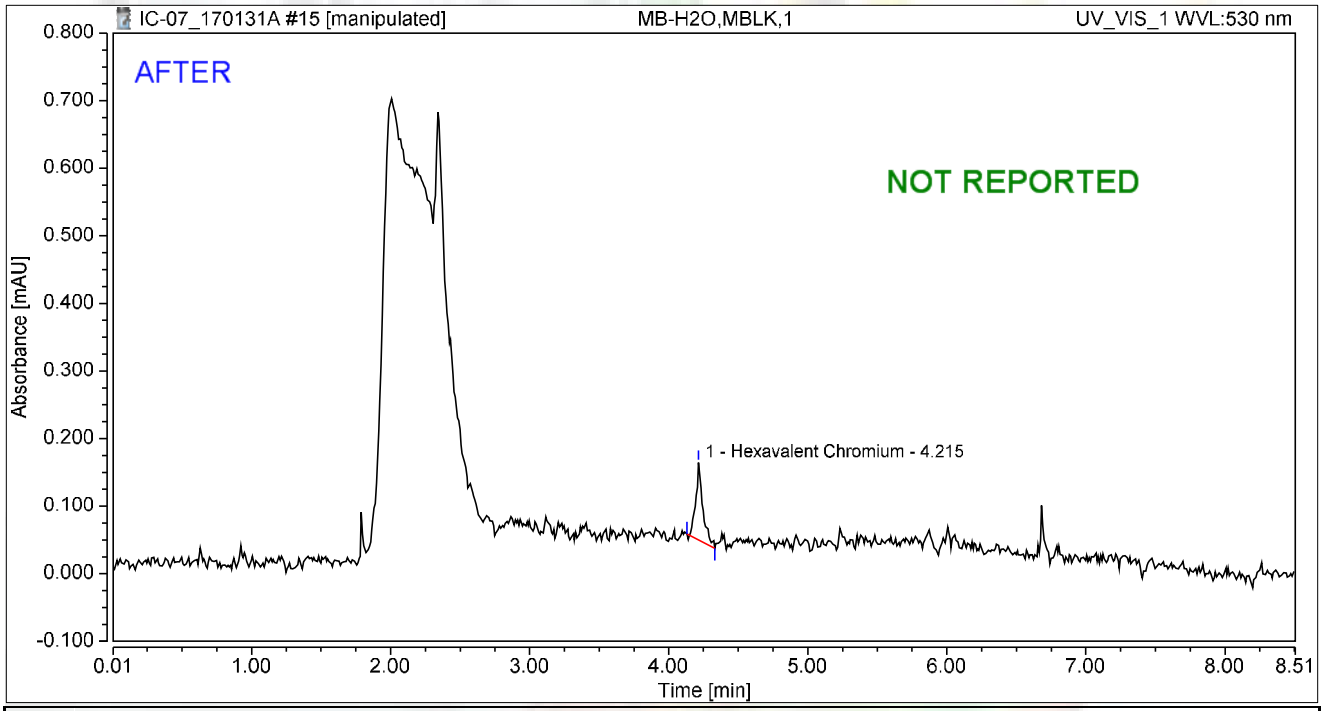
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.007	0.114	100.00	100.00	0.0260
Total:			**0.007**	**0.114**	**100.00**	**100.00**	

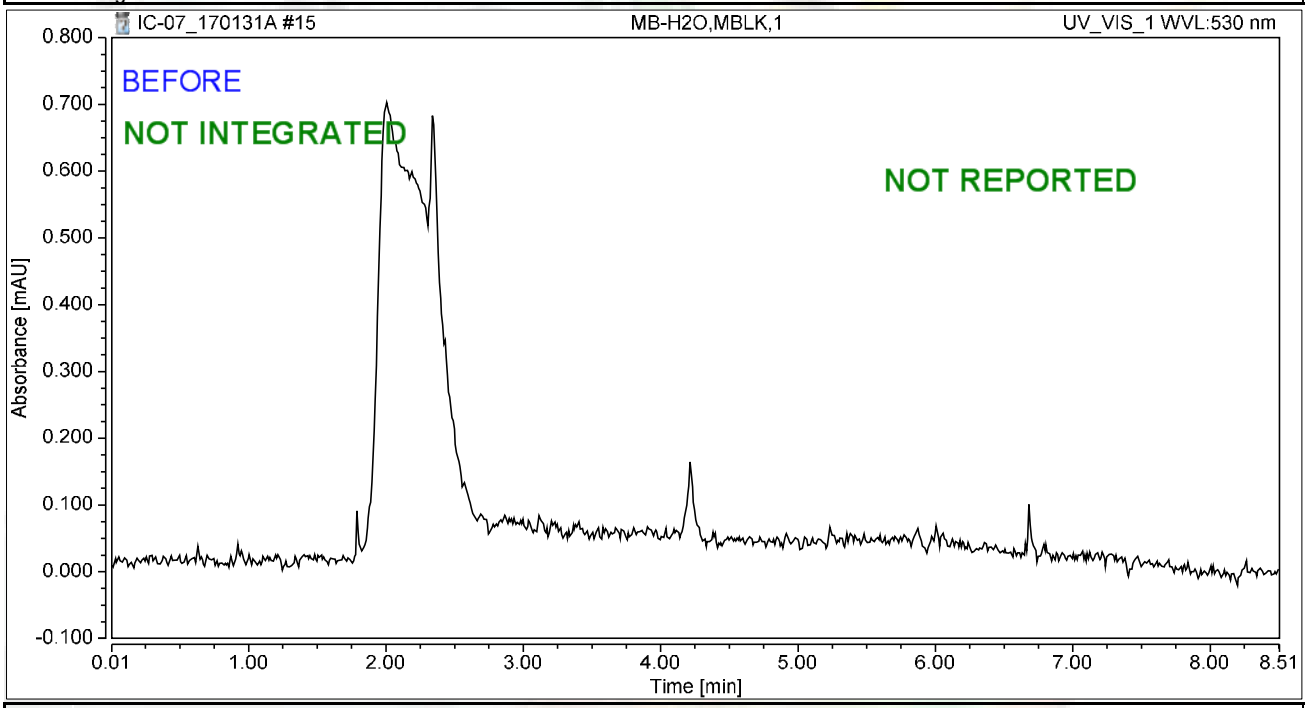
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

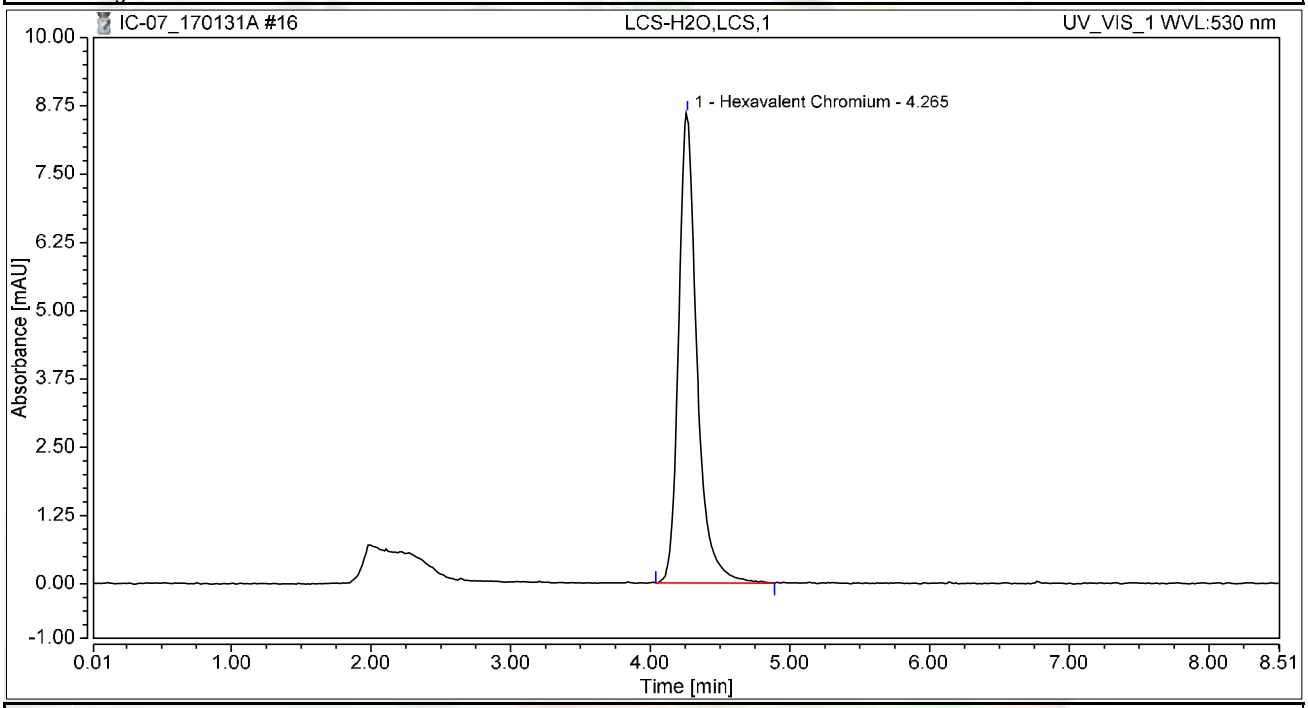
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

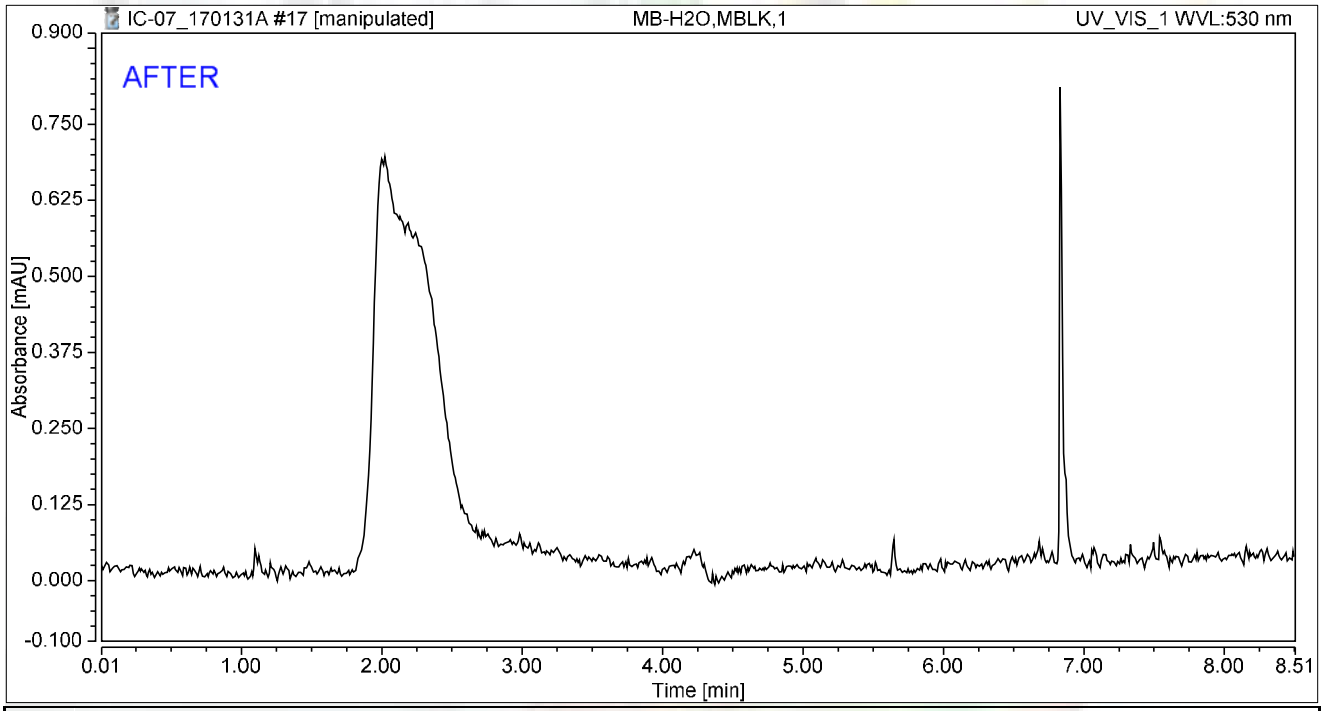
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.309	8.604	100.00	100.00	5.1191
Total:			**1.309**	**8.604**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 2/4/2017

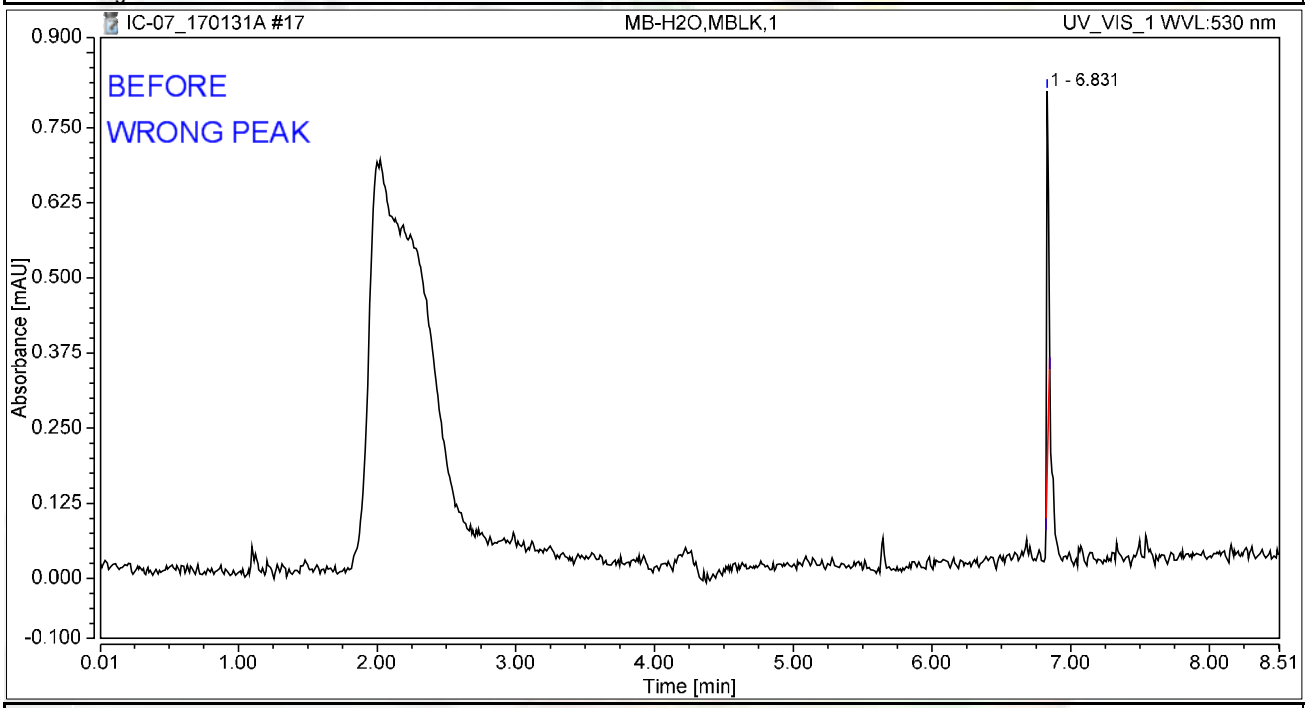
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.831	0.008	0.635	100.00	100.00	n.a.
Total:			**0.008**	**0.635**	**100.00**	**100.00**	

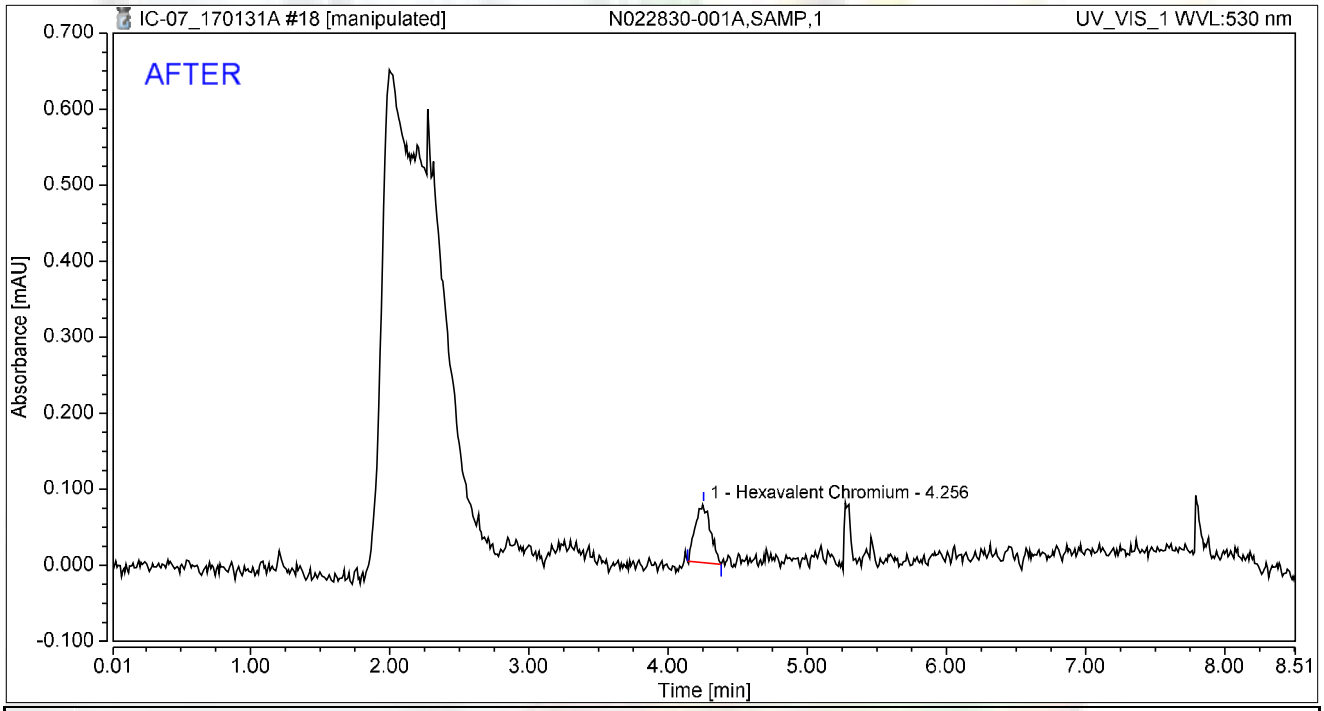
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.010	0.077	100.00	100.00	0.0380
Total:			**0.010**	**0.077**	**100.00**	**100.00**	

rba 2/4/2017

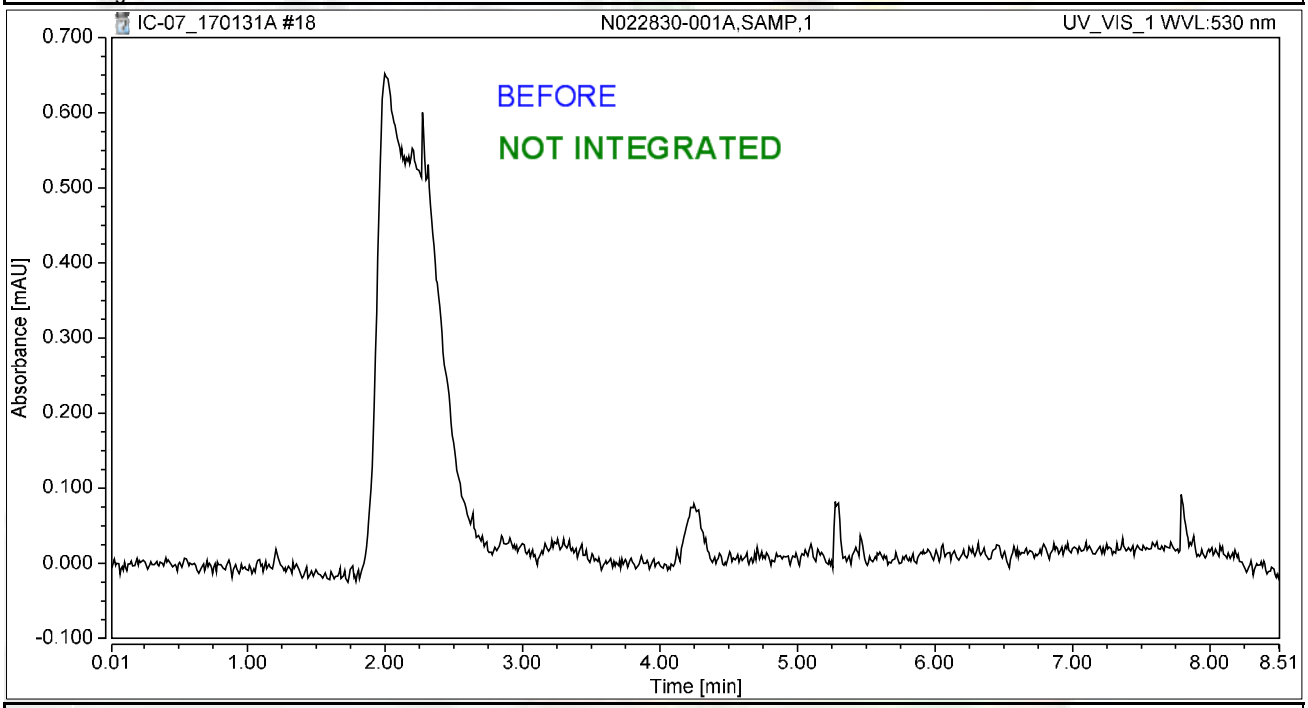
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

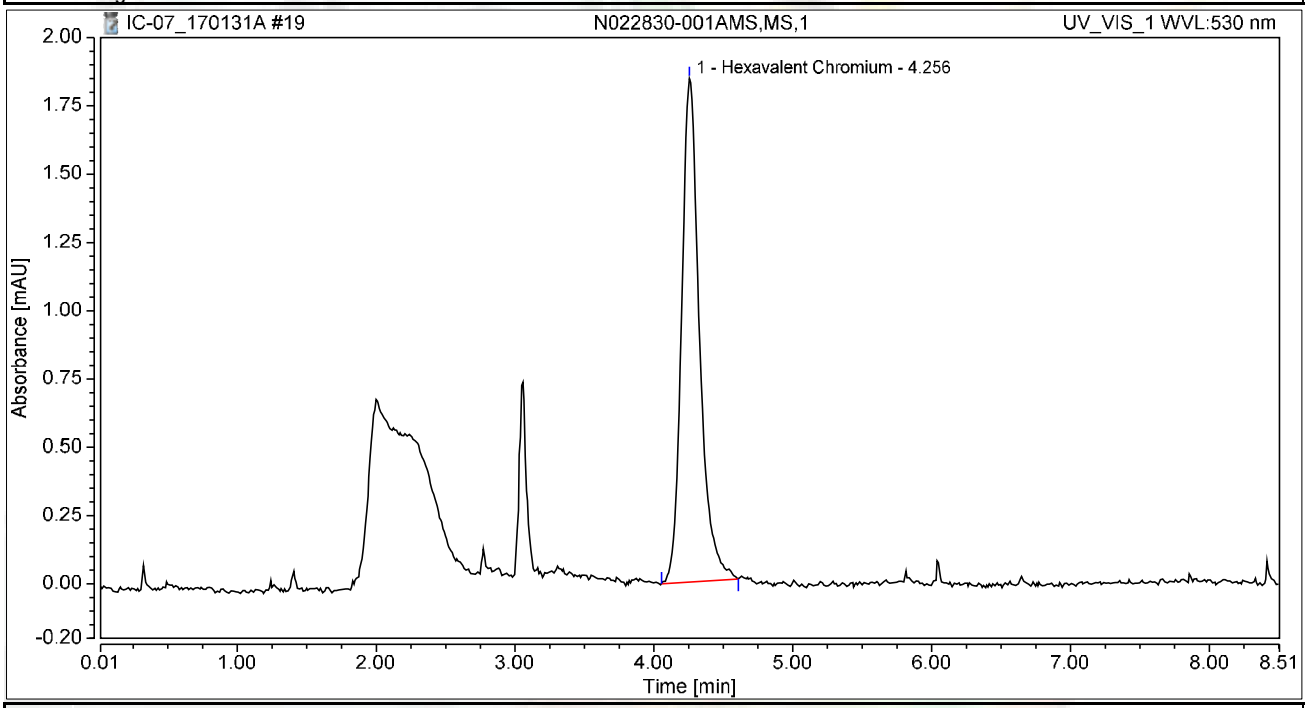
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

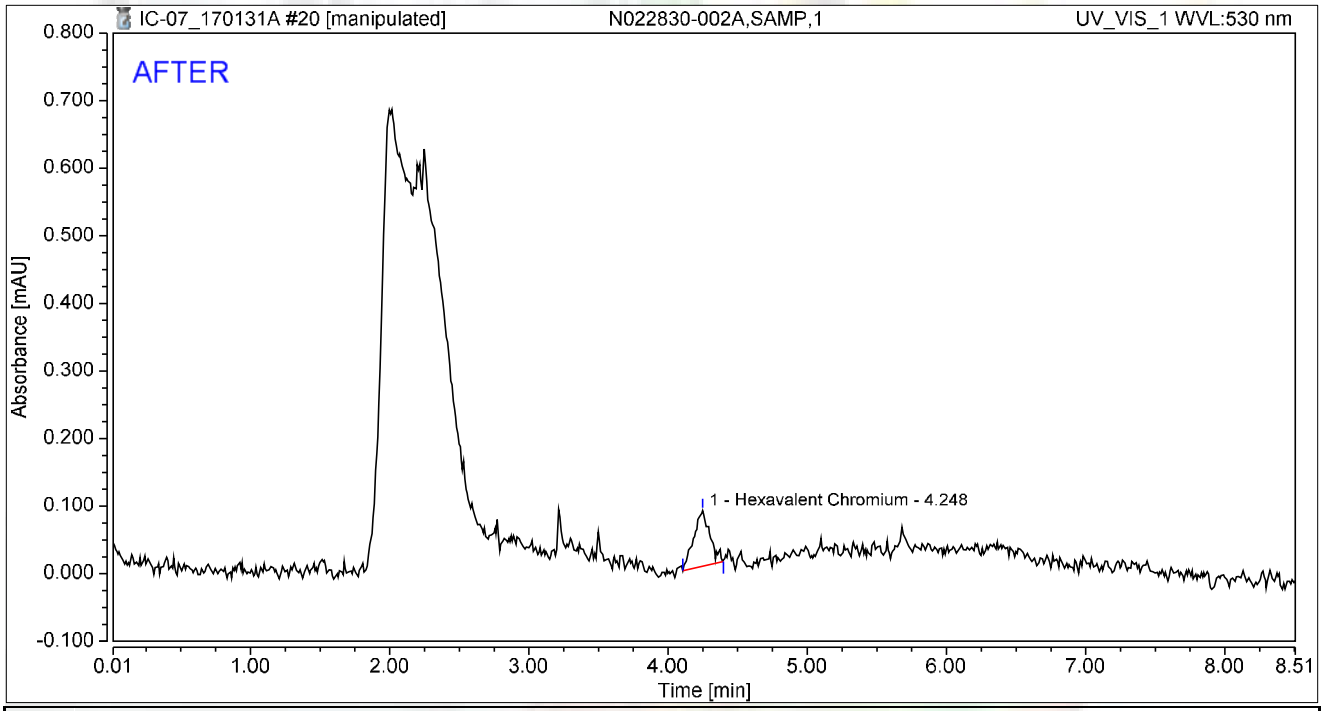
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.276	1.844	100.00	100.00	1.0797
Total:			**0.276**	**1.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.011	0.082	100.00	100.00	0.0435
Total:			**0.011**	**0.082**	**100.00**	**100.00**	

rba 2/4/2017

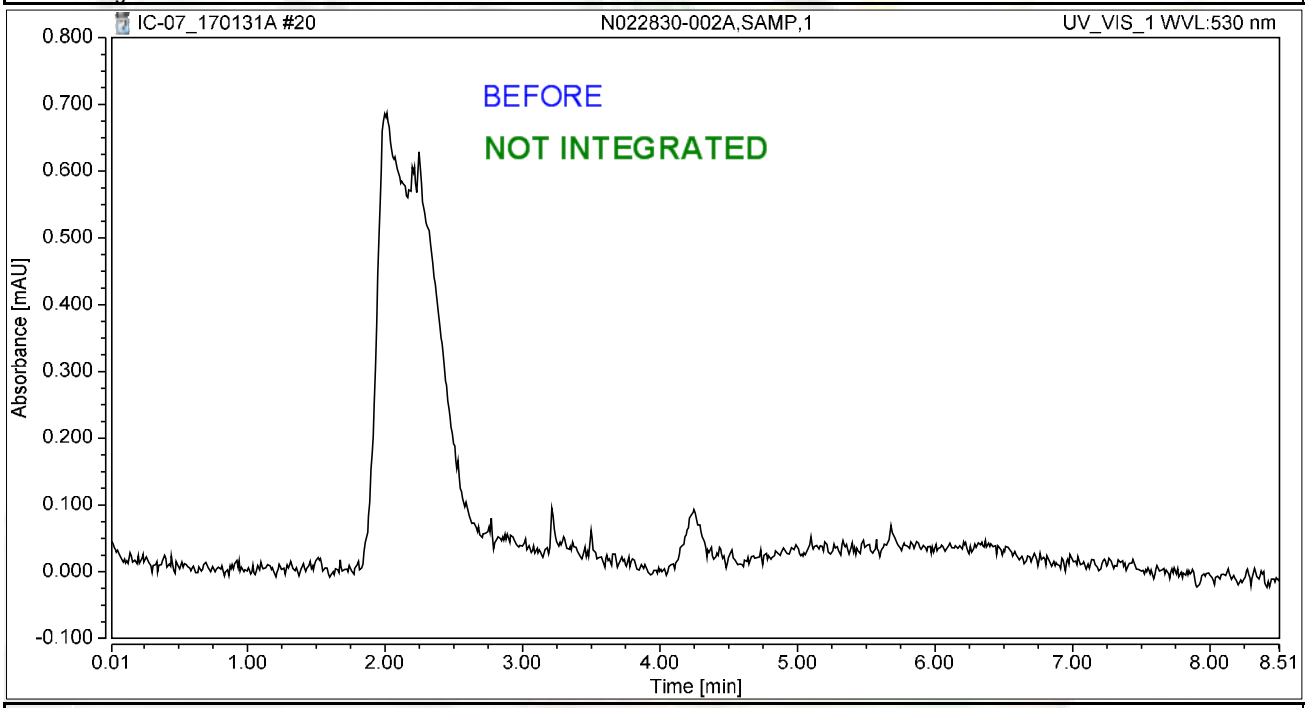
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

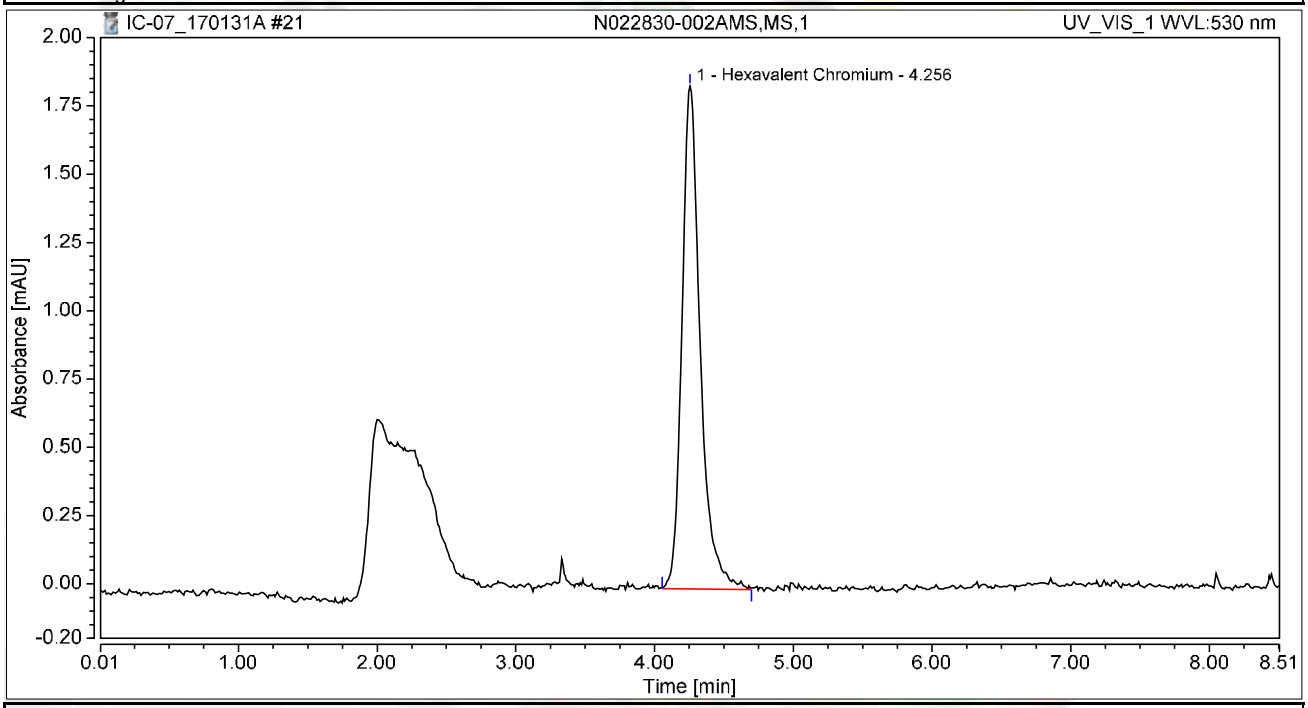
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

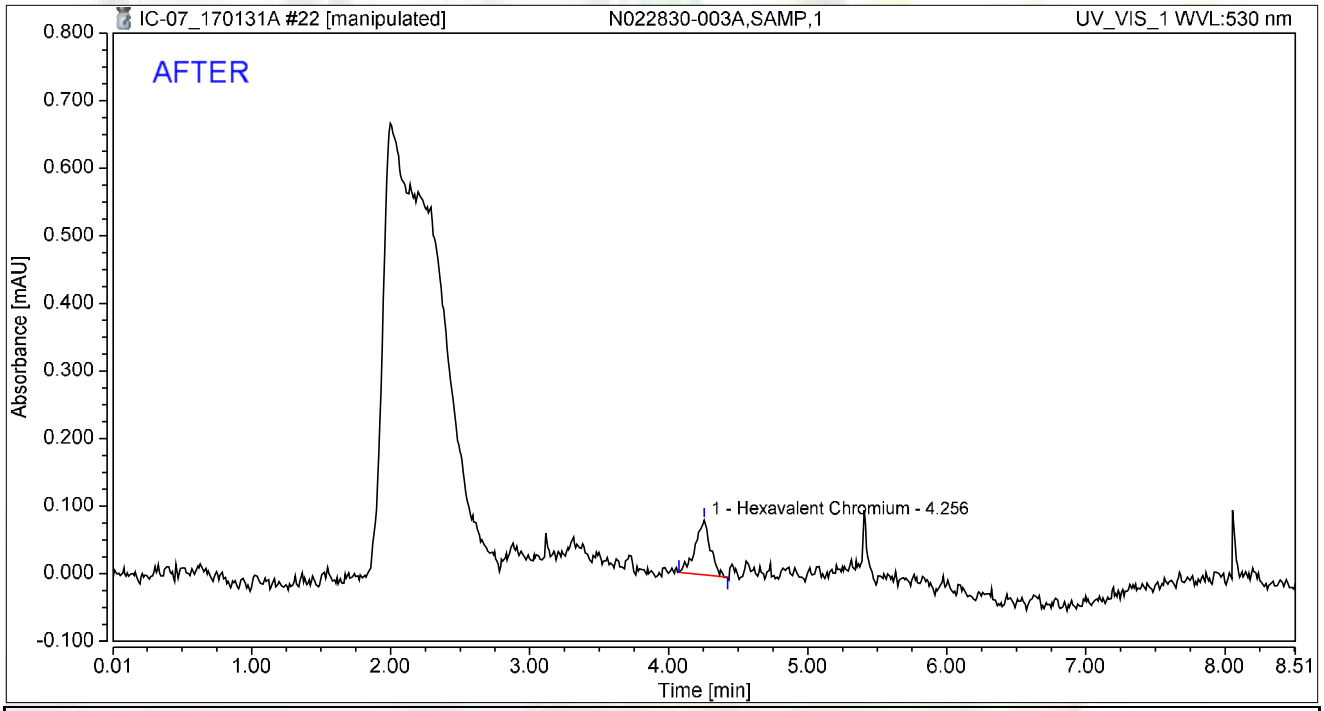
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.281	1.841	100.00	100.00	1.0984
Total:			**0.281**	**1.841**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.010	0.081	100.00	100.00	0.0398
Total:			**0.010**	**0.081**	**100.00**	**100.00**	

rba 2/4/2017

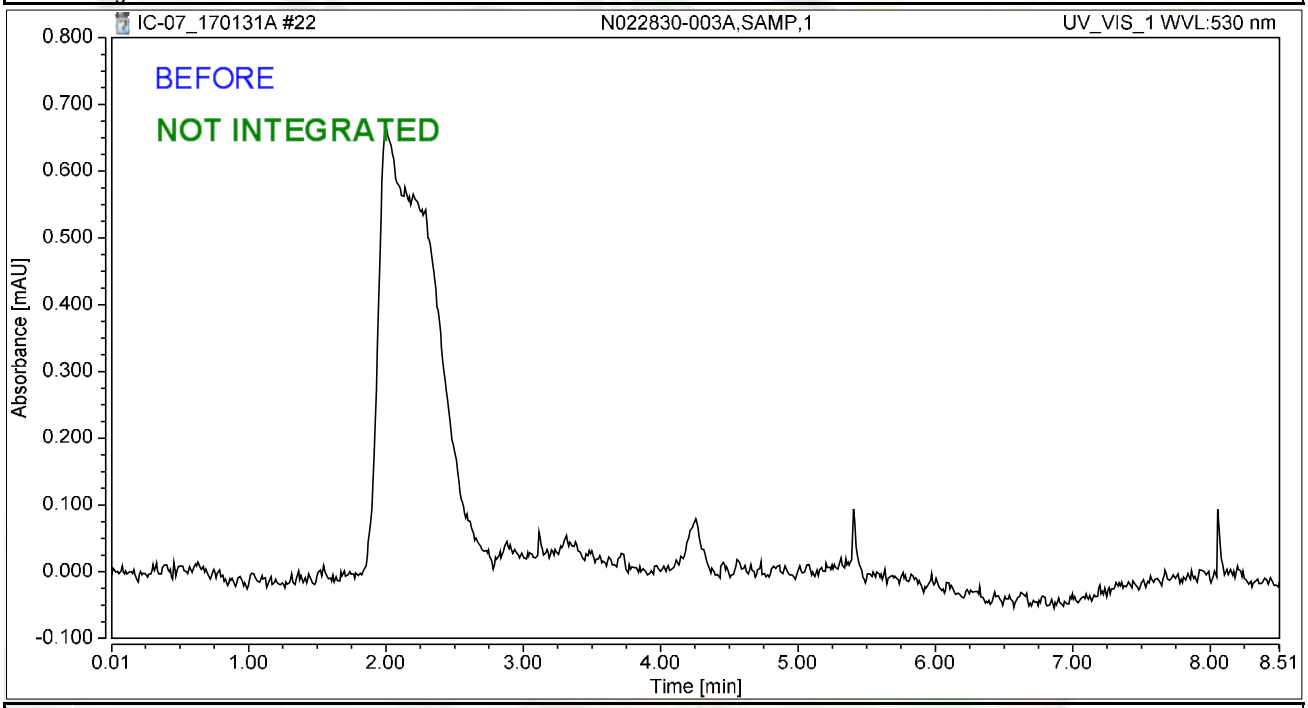
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

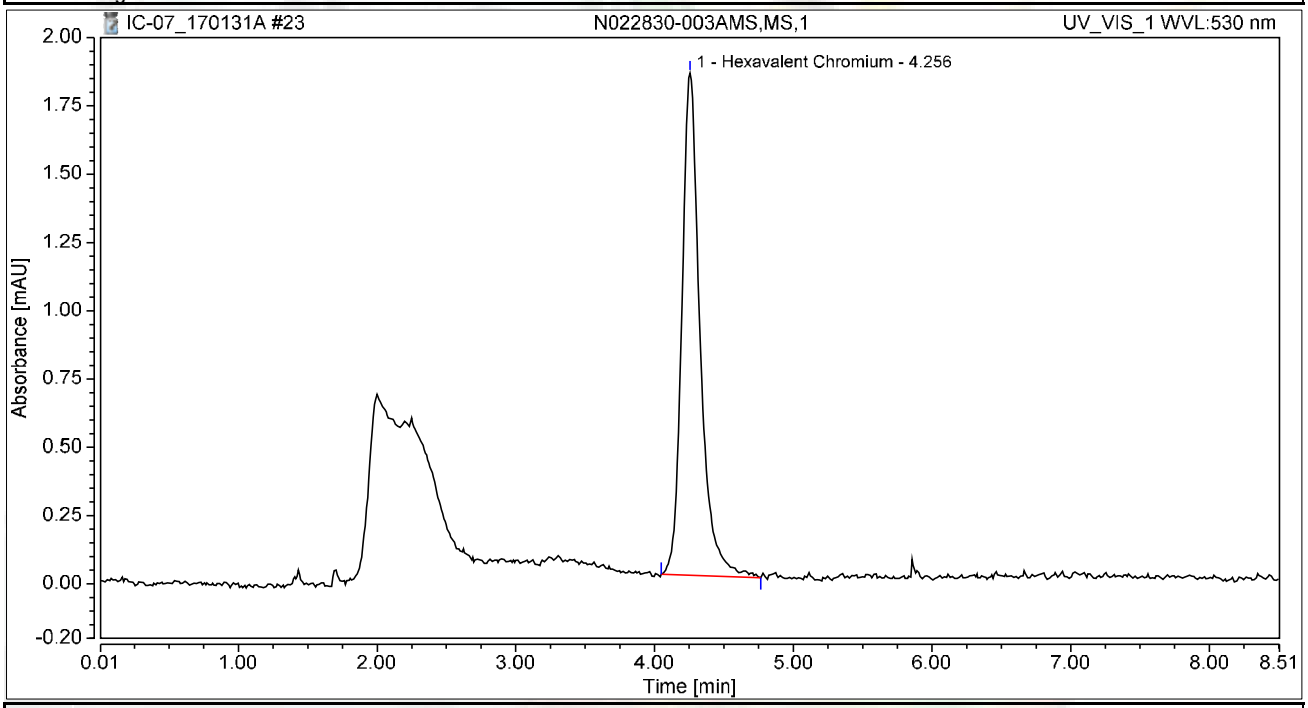
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

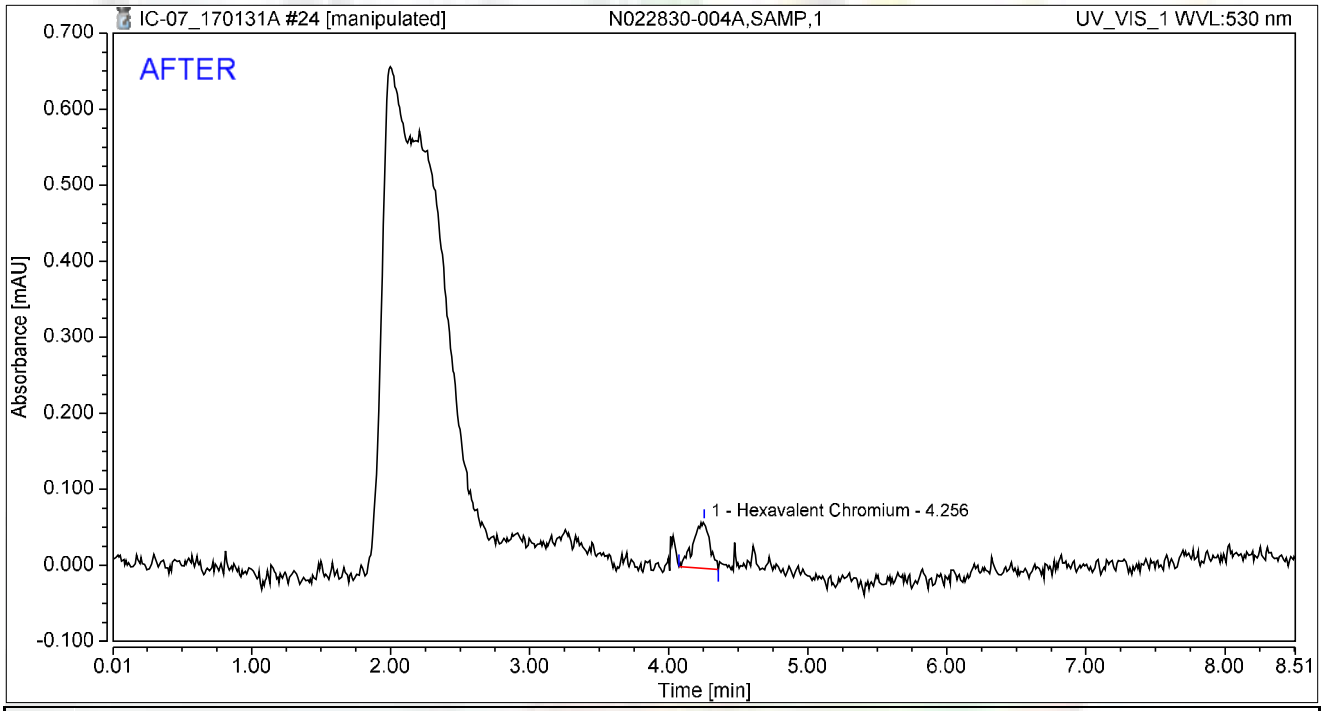
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.280	1.839	100.00	100.00	1.0955
Total:			**0.280**	**1.839**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.008	0.062	100.00	100.00	0.0329
Total:			**0.008**	**0.062**	**100.00**	**100.00**	

rba 2/4/2017

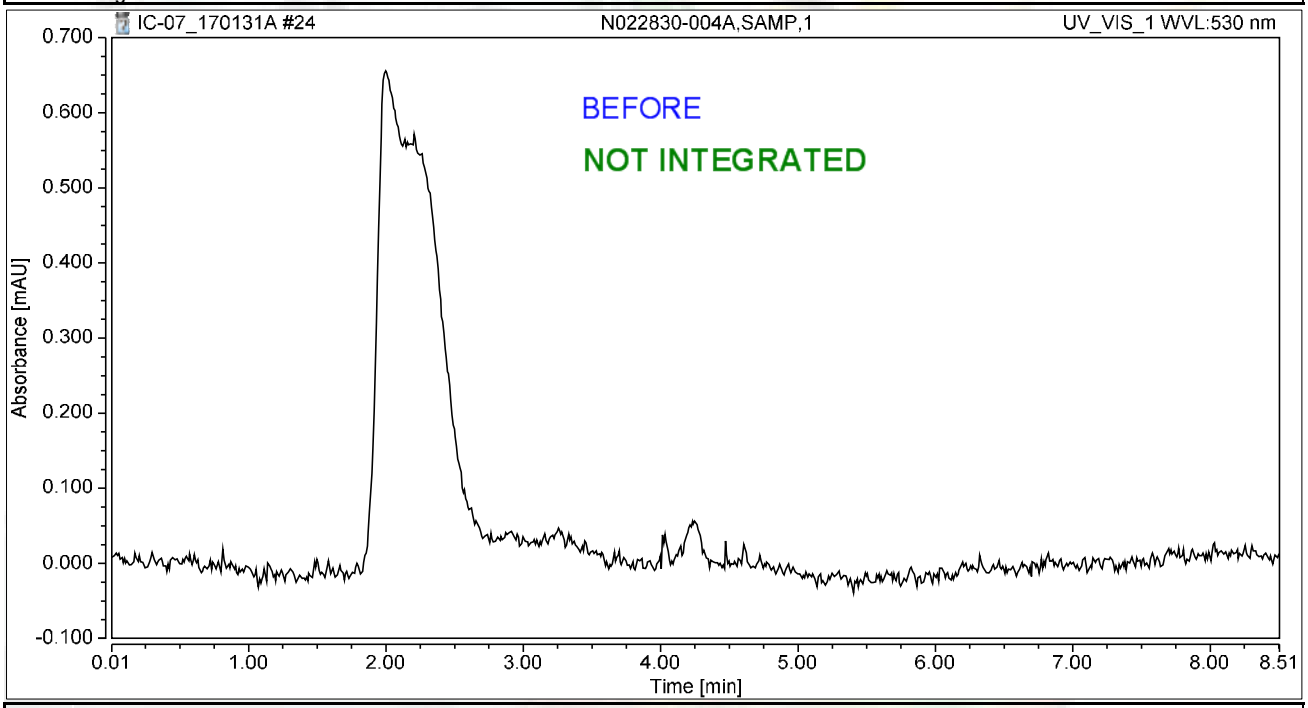
Reviewed by: Dmcy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

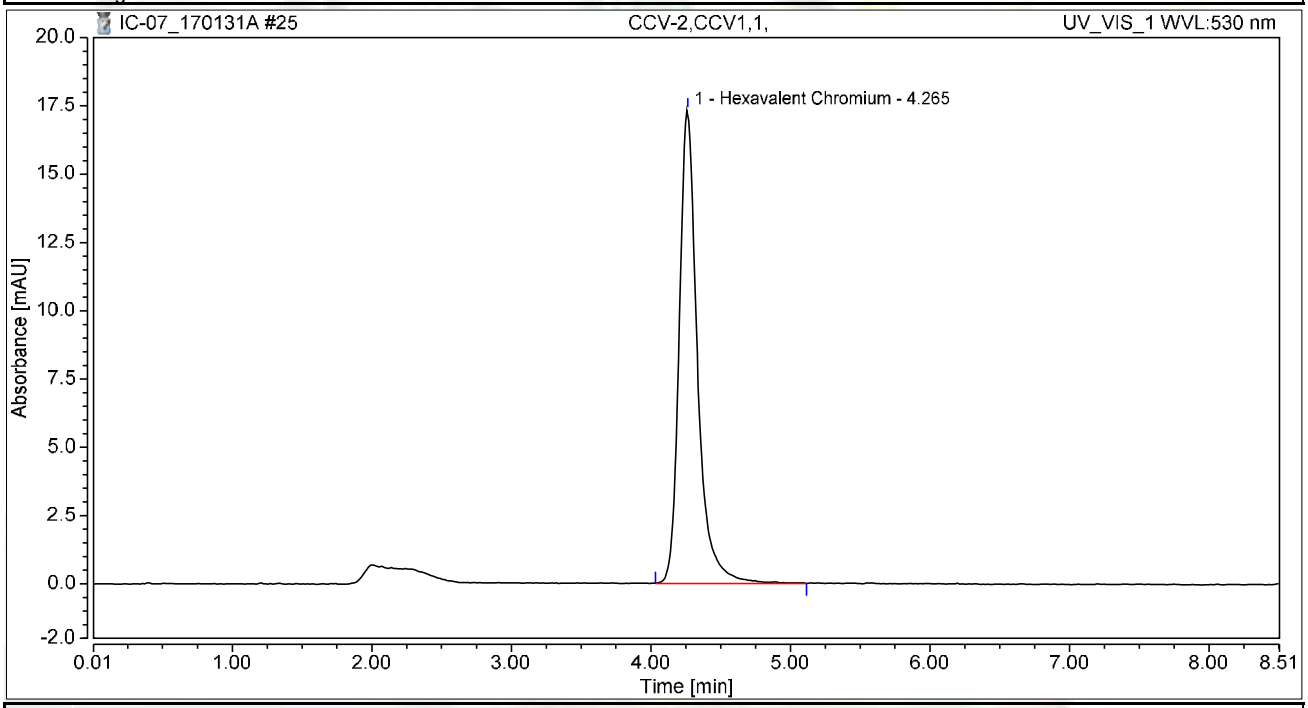
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

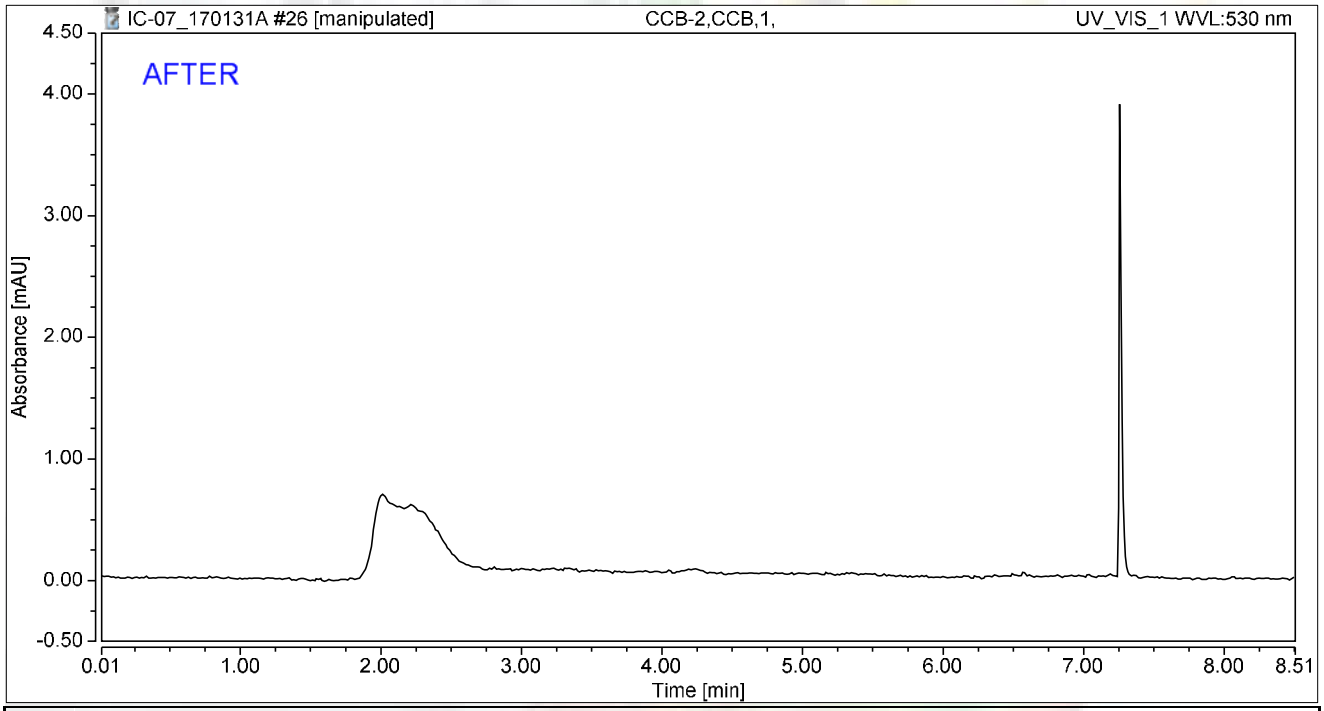
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	2.625	17.342	100.00	100.00	10.2668
Total:			**2.625**	**17.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 2/4/2017

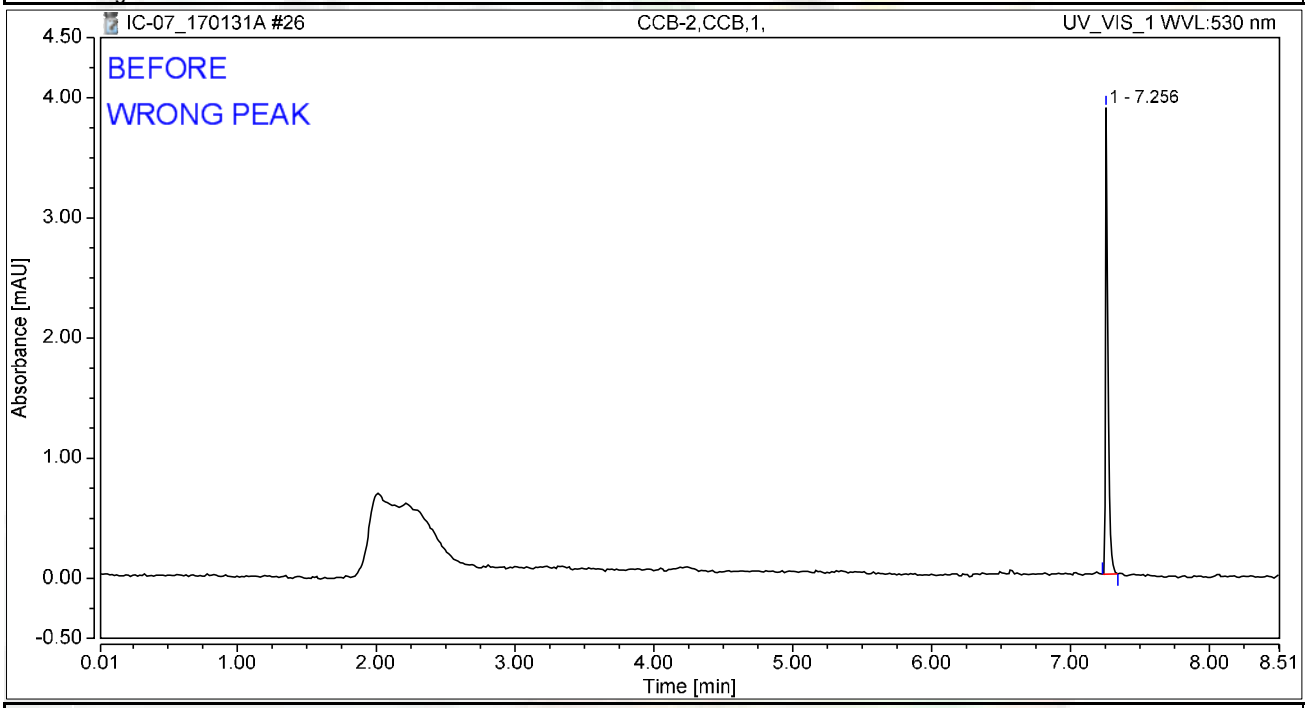
Reviewed by: Dmcy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.256	0.079	3.883	100.00	100.00	n.a.
Total:			**0.079**	**3.883**	**100.00**	**100.00**	

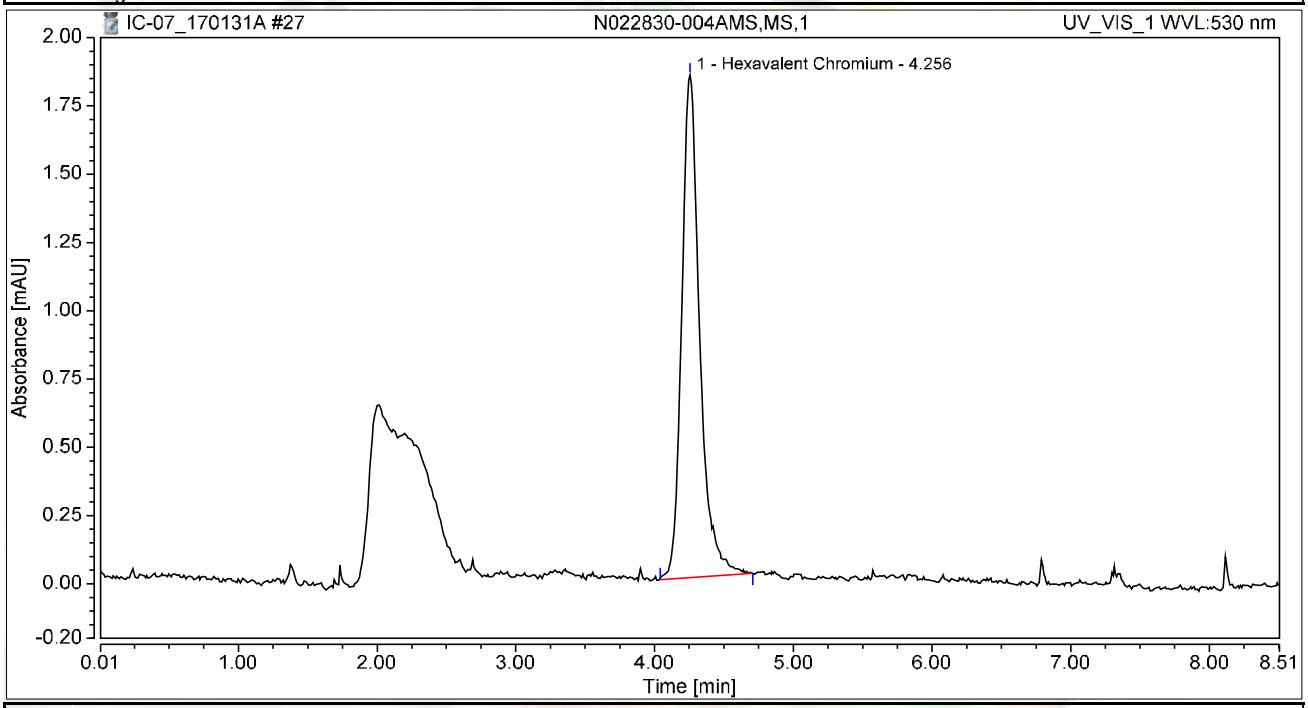
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

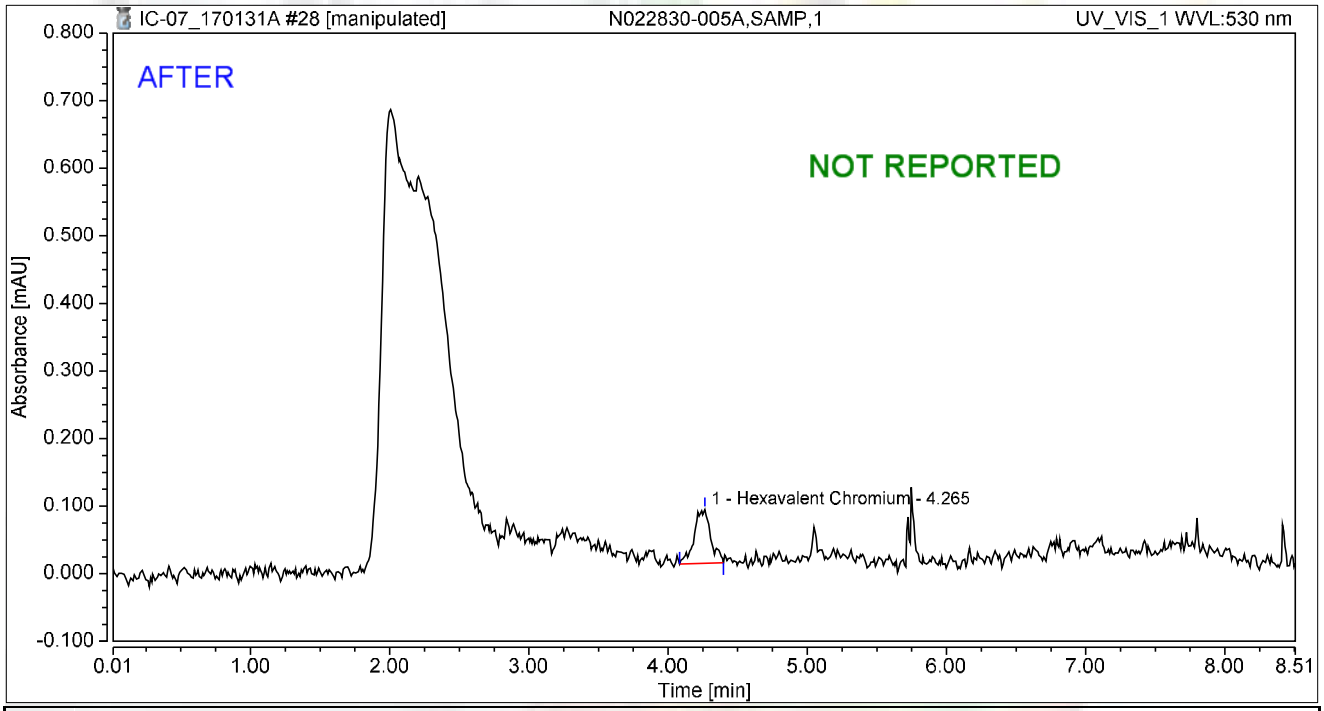
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.276	1.840	100.00	100.00	1.0808
Total:			**0.276**	**1.840**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.011	0.079	100.00	100.00	0.0425
Total:			**0.011**	**0.079**	**100.00**	**100.00**	

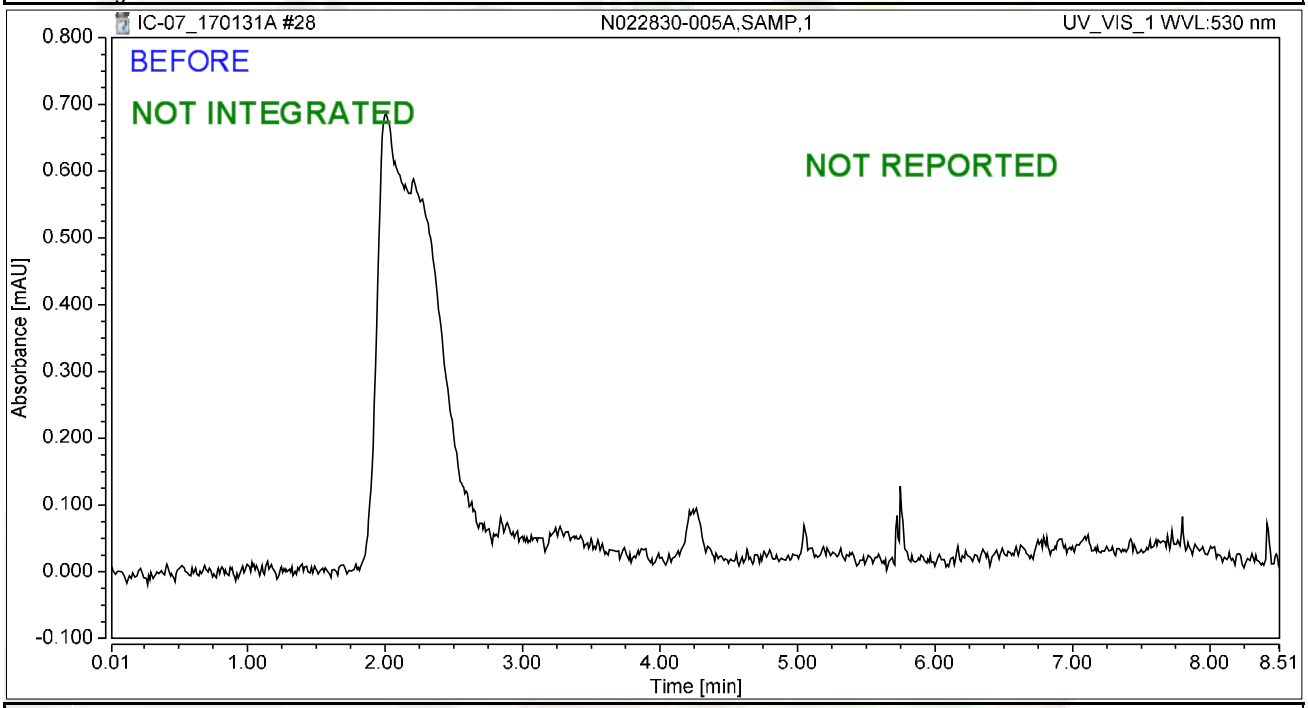
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

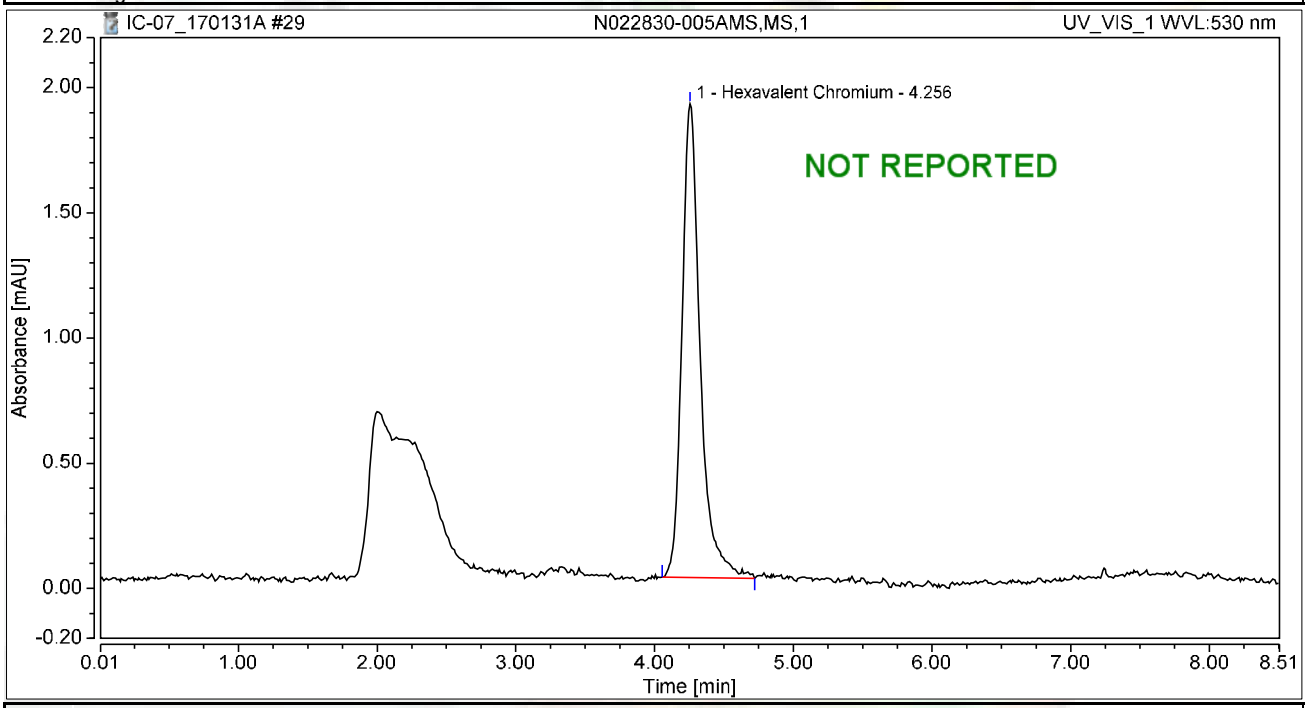
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

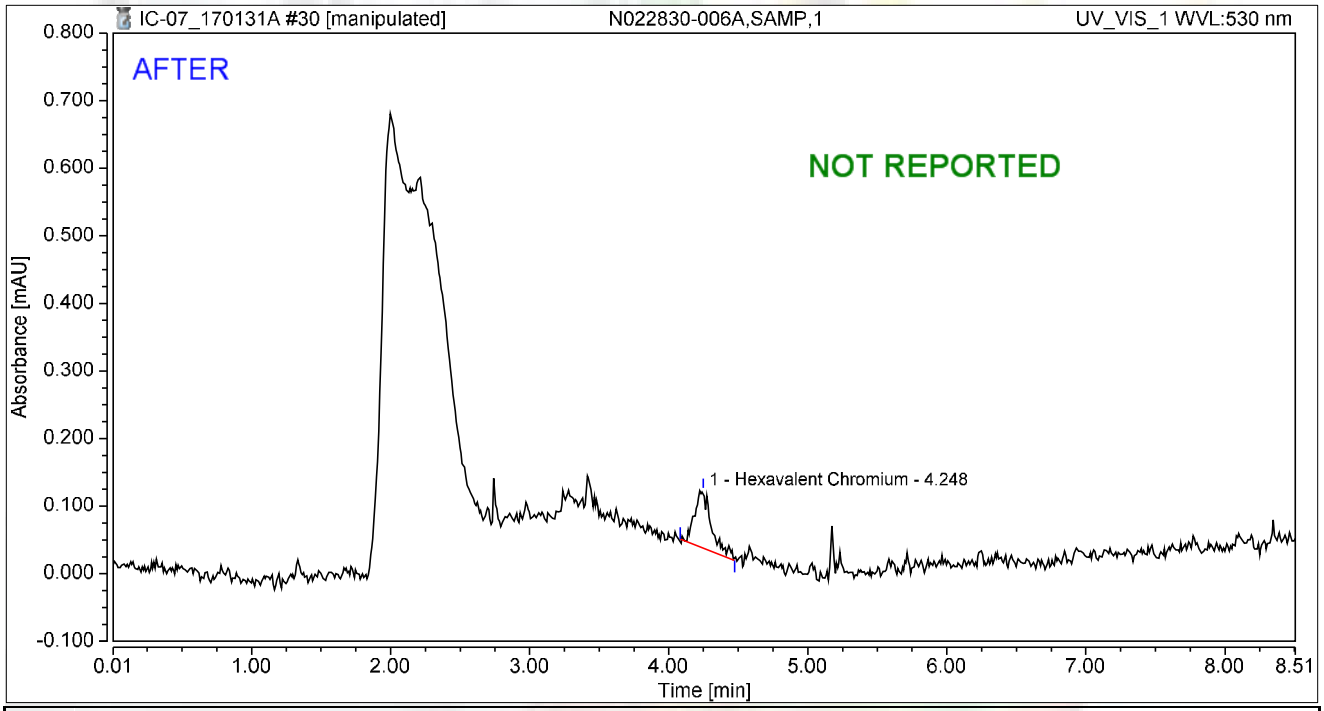
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.288	1.892	100.00	100.00	1.1249
Total:			**0.288**	**1.892**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.085	100.00	100.00	0.0471
Total:			**0.012**	**0.085**	**100.00**	**100.00**	

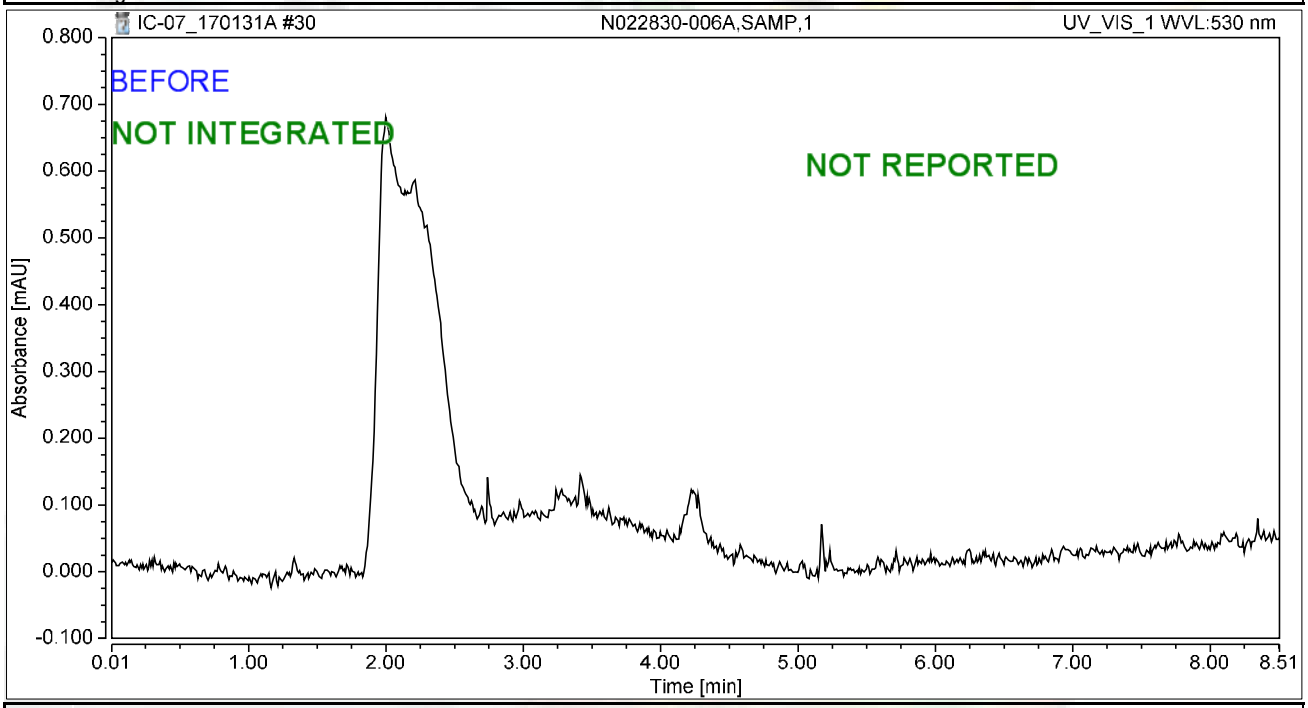
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

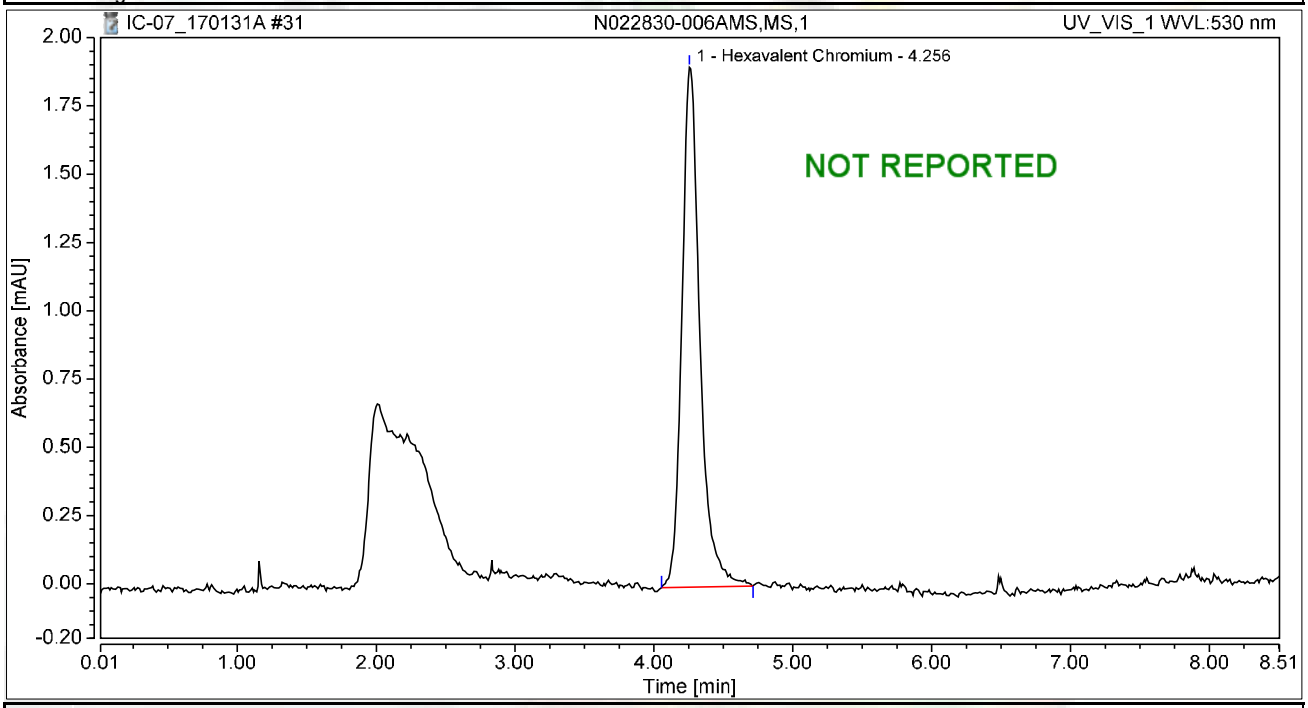
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

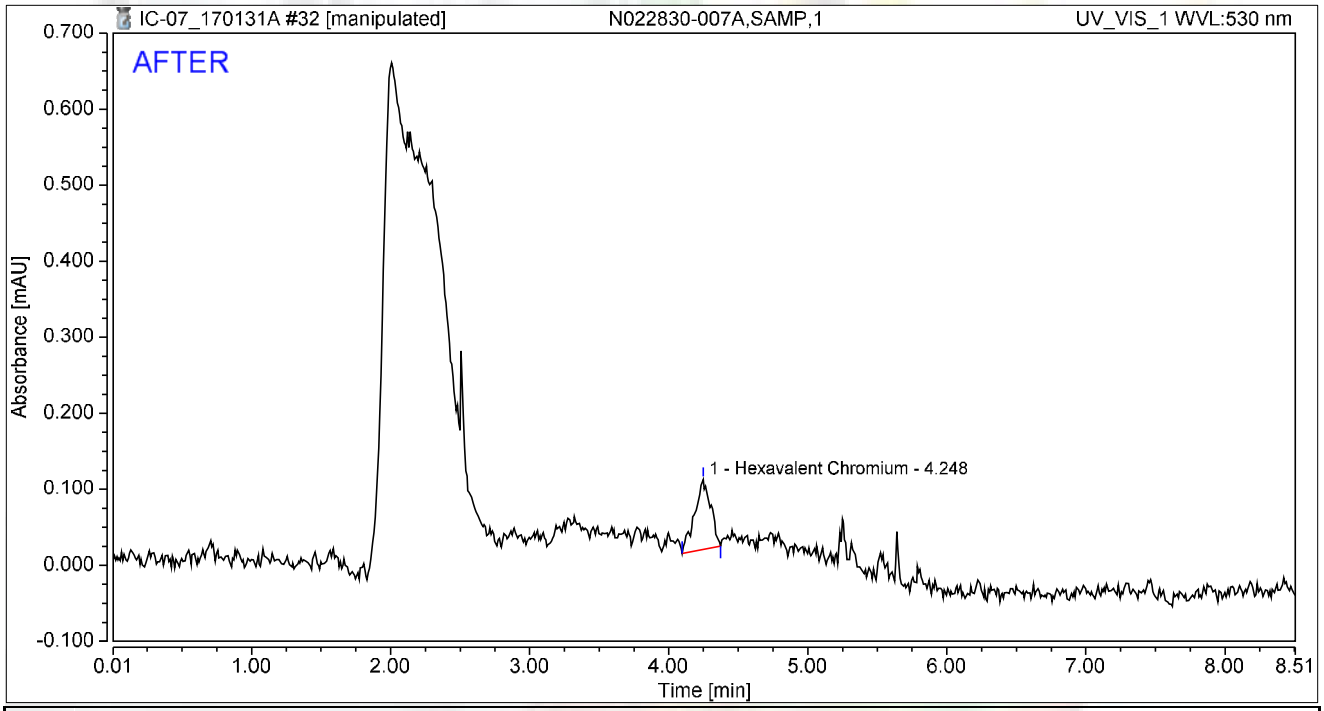
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.287	1.904	100.00	100.00	1.1217
Total:			**0.287**	**1.904**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.092	100.00	100.00	0.0485
Total:			**0.012**	**0.092**	**100.00**	**100.00**	

rba 2/4/2017

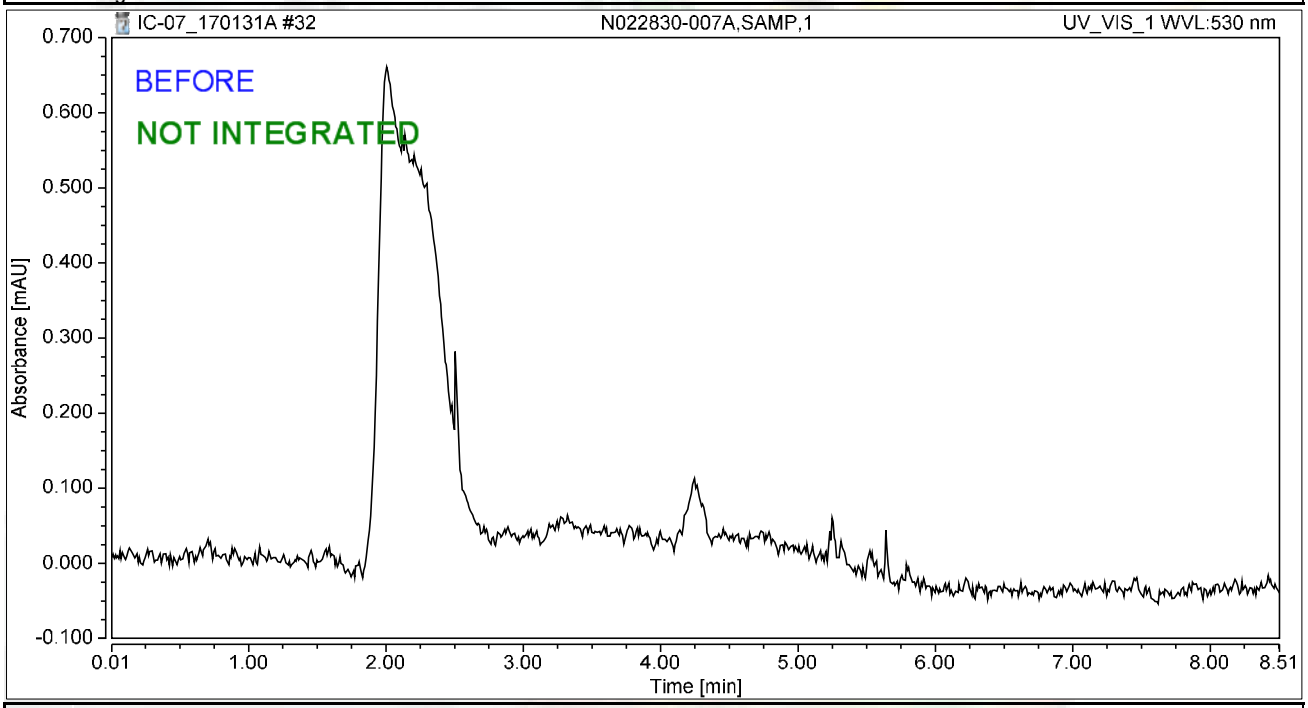
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

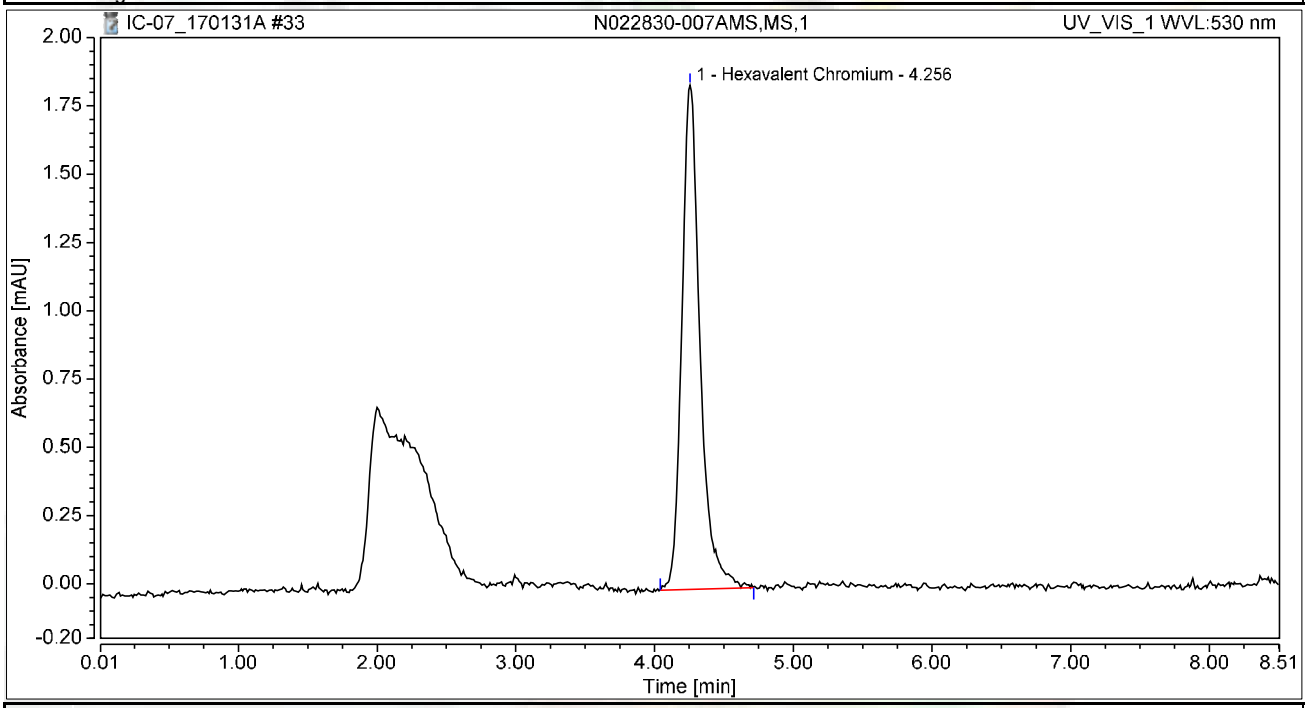
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

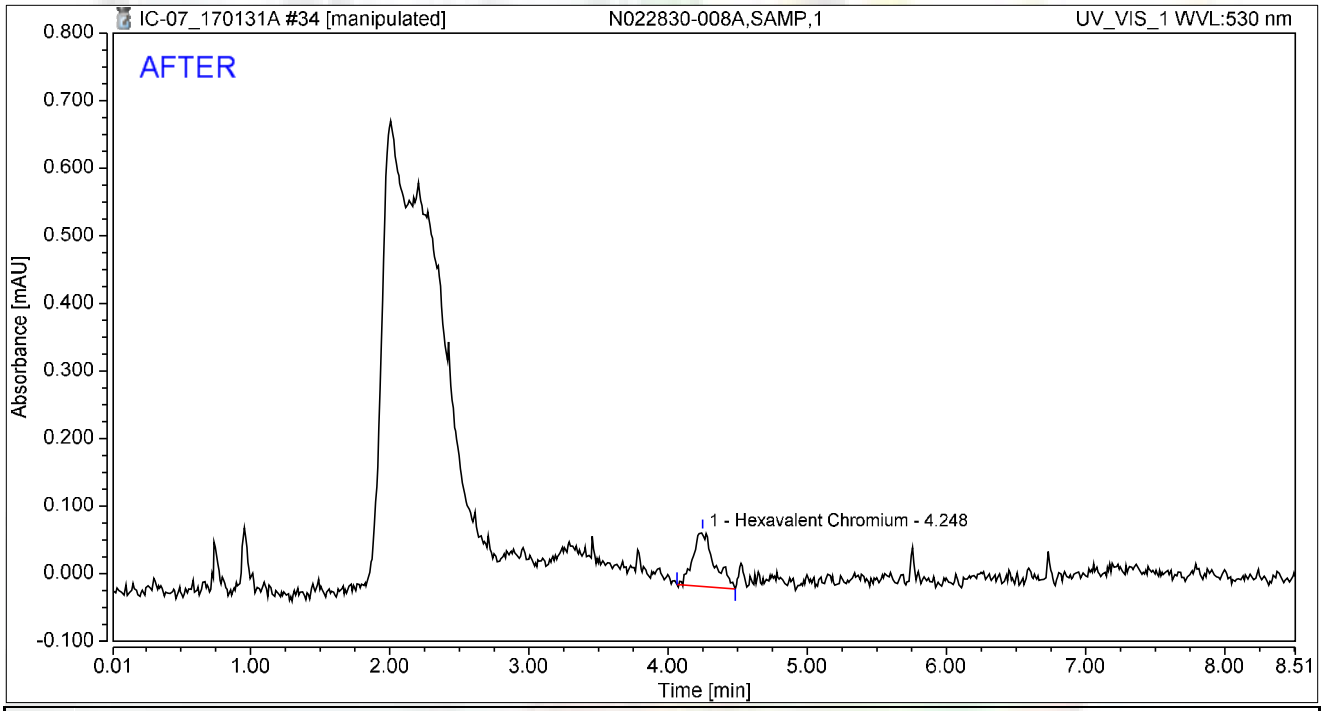
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.281	1.845	100.00	100.00	1.0997
Total:			**0.281**	**1.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.014	0.081	100.00	100.00	0.0563
Total:			**0.014**	**0.081**	**100.00**	**100.00**	

rba 2/4/2017

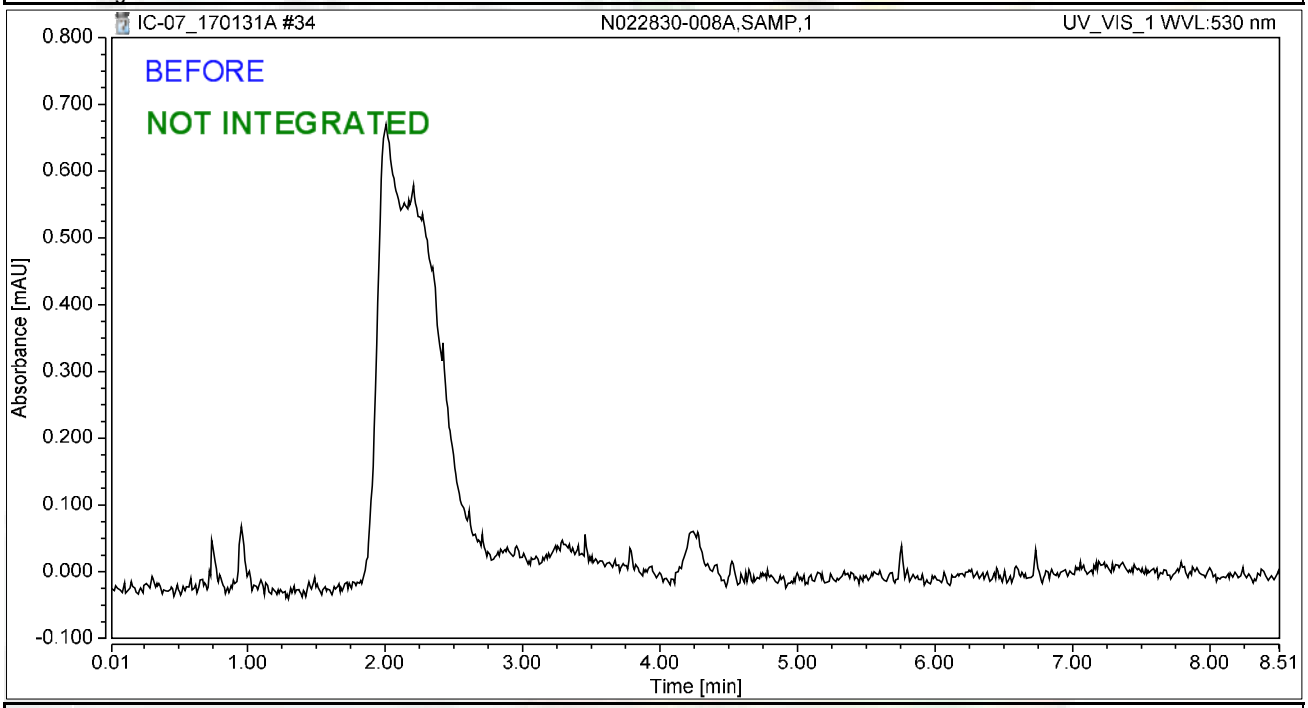
Reviewed by: Dionicy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

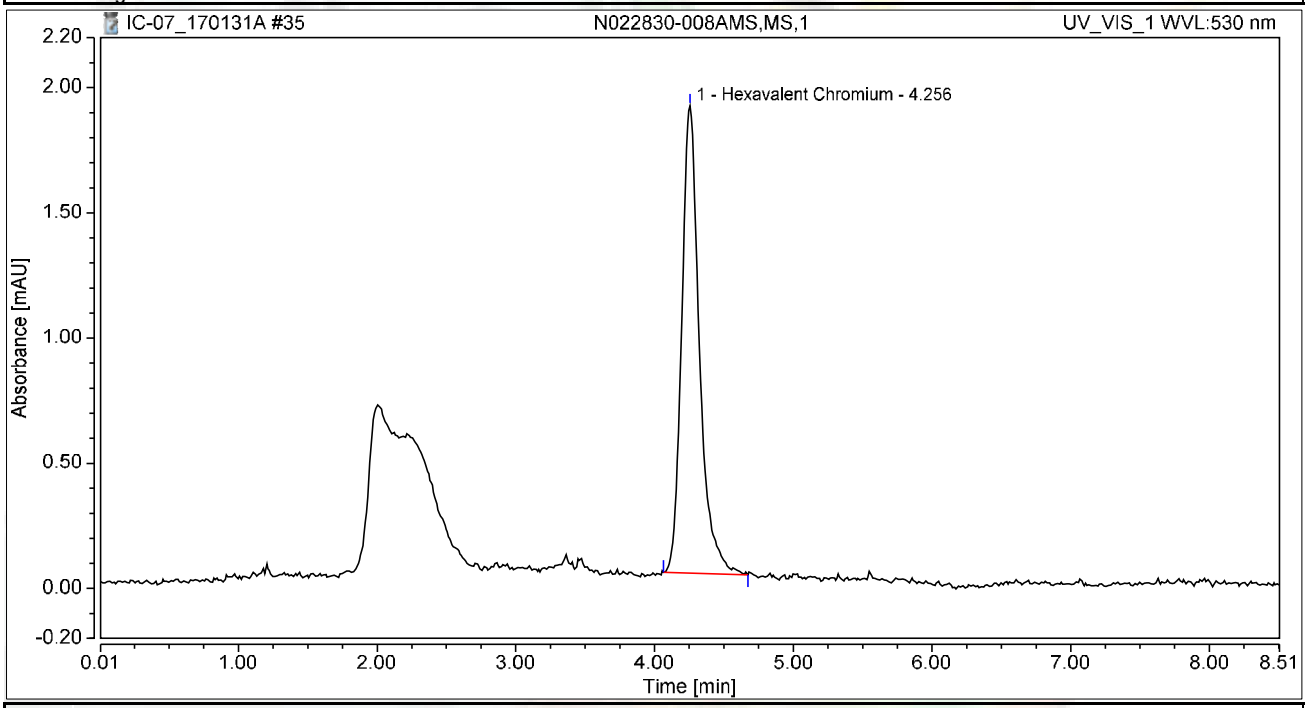
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

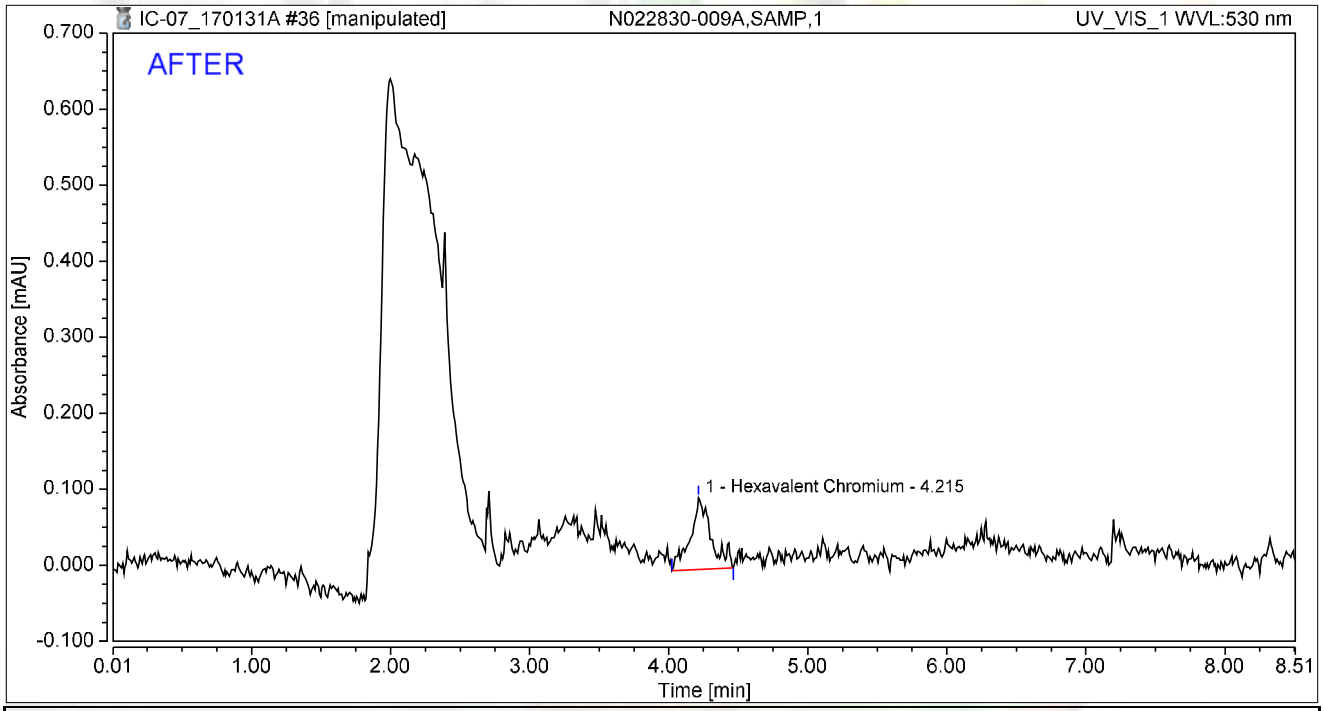
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.277	1.866	100.00	100.00	1.0835
Total:			**0.277**	**1.866**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.016	0.094	100.00	100.00	0.0635
Total:			**0.016**	**0.094**	**100.00**	**100.00**	

rba 2/4/2017

Reviewed by: Nancy 2/8/2017

My first report integration

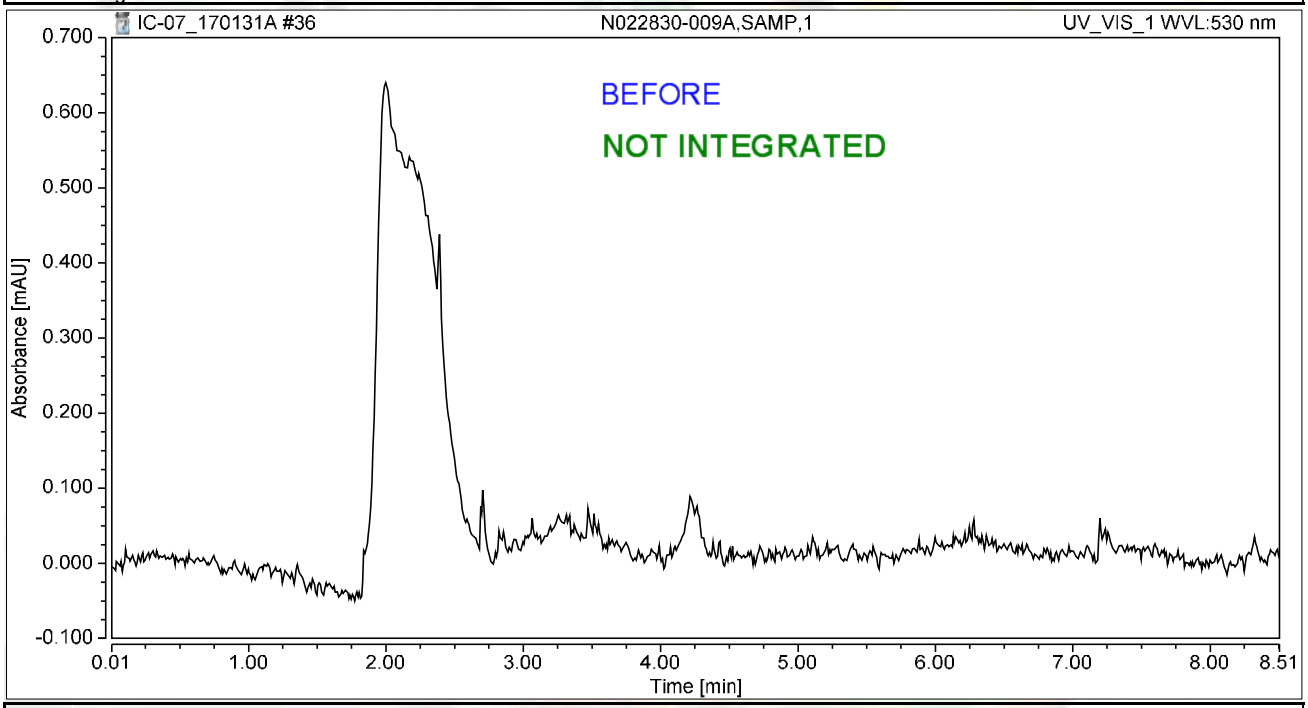
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022830-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

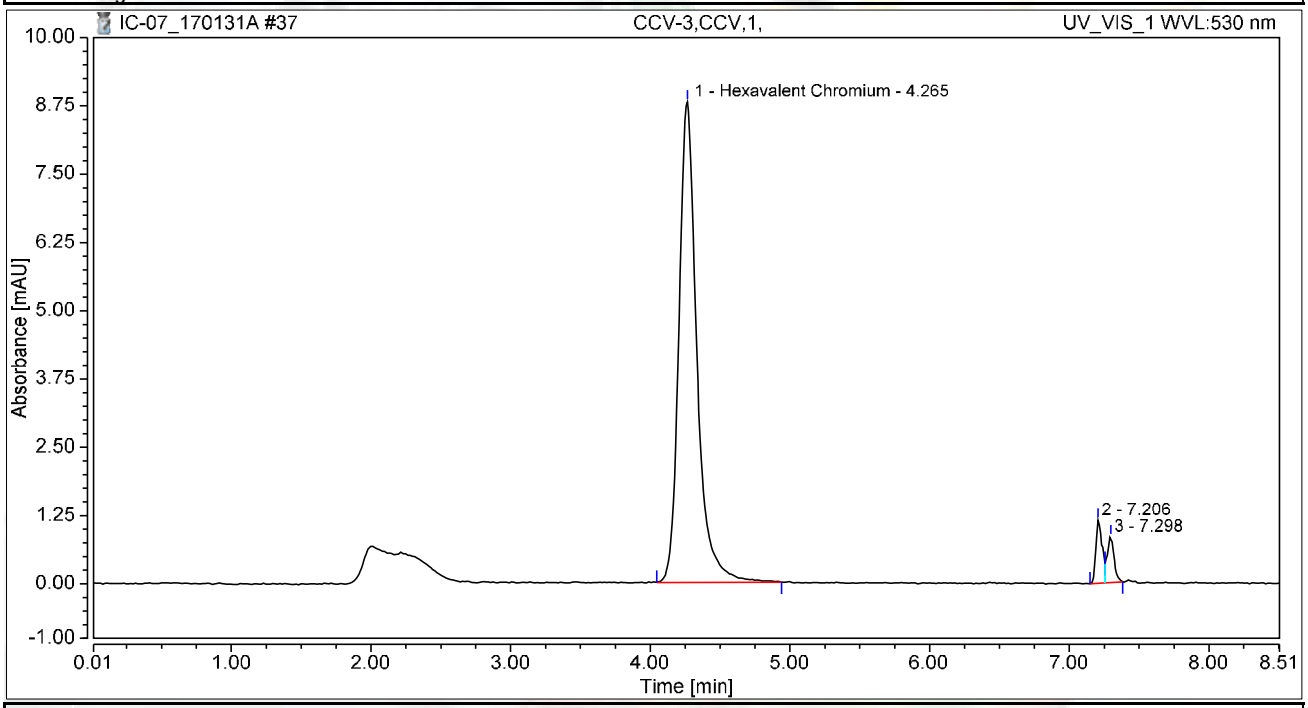
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

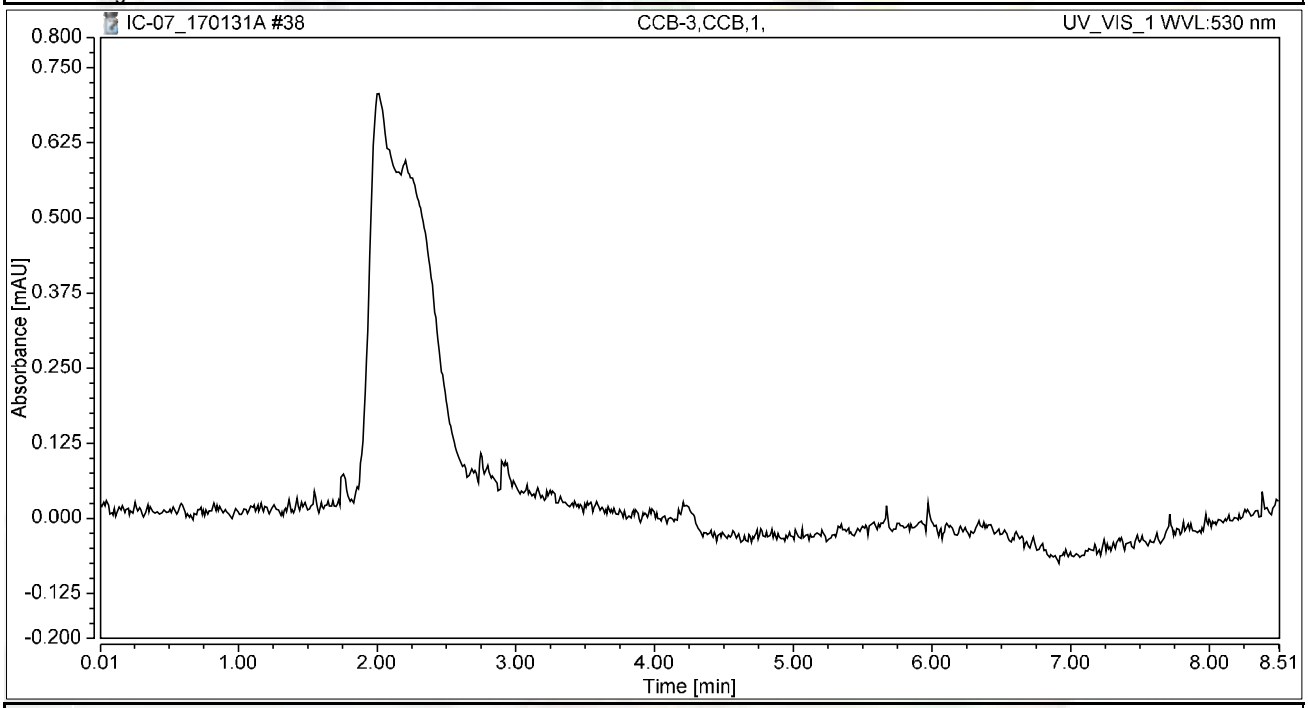
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.308	8.795	92.43	81.56	5.1171
2		7.206	0.059	1.153	4.20	10.69	n.a.
3		7.298	0.048	0.836	3.37	7.75	n.a.
Total:			**1.415**	**10.784**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

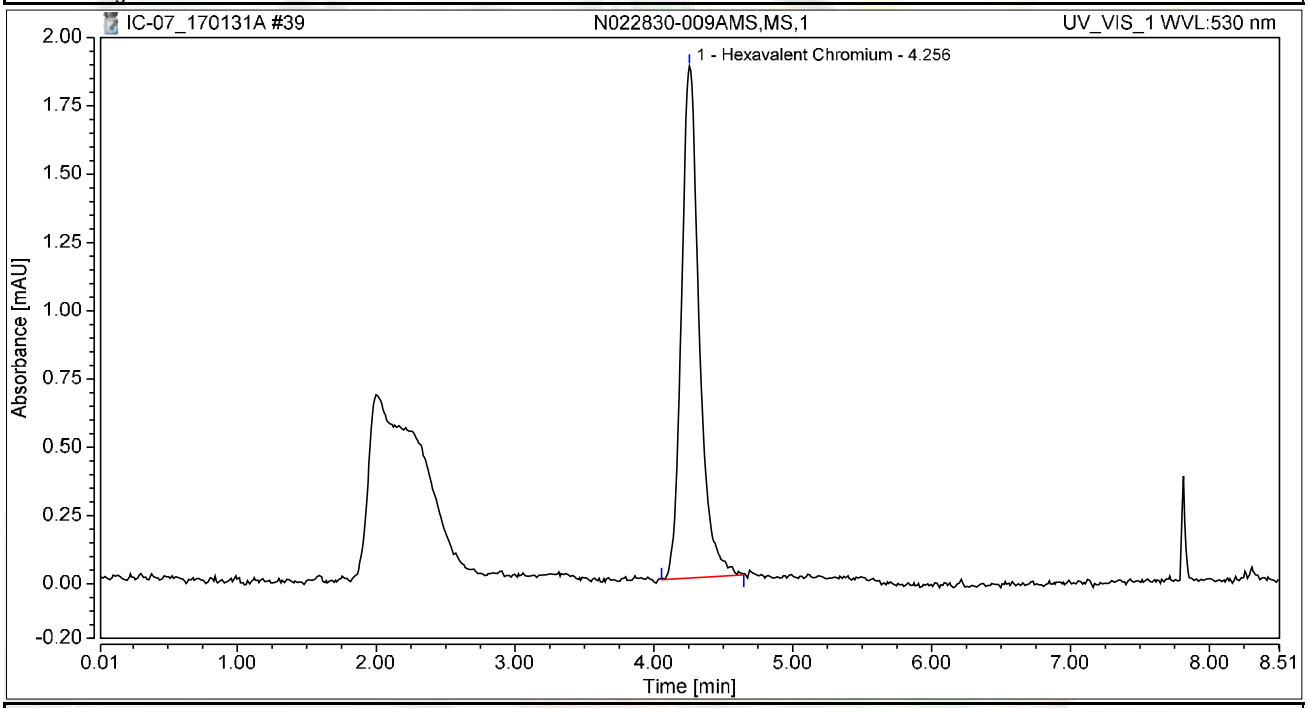
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-009AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

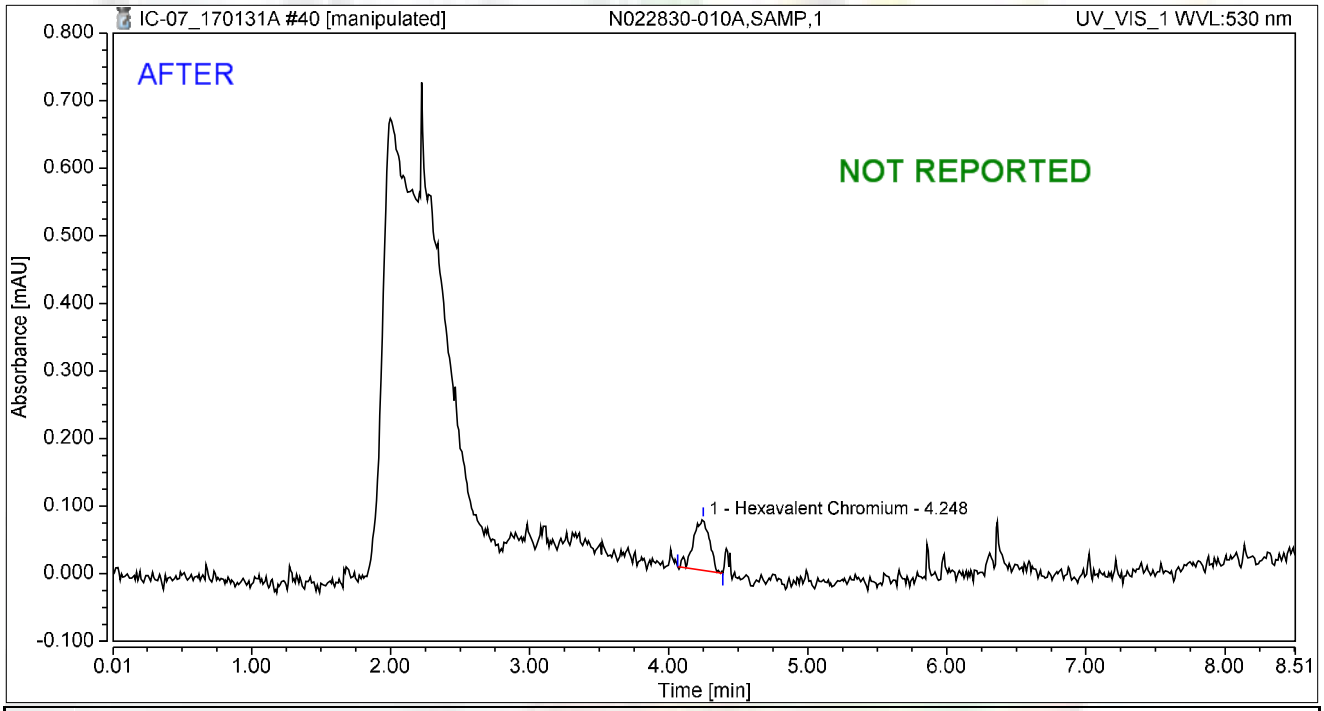
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.278	1.874	100.00	100.00	1.0877
Total:			**0.278**	**1.874**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.010	0.075	100.00	100.00	0.0388
Total:			**0.010**	**0.075**	**100.00**	**100.00**	

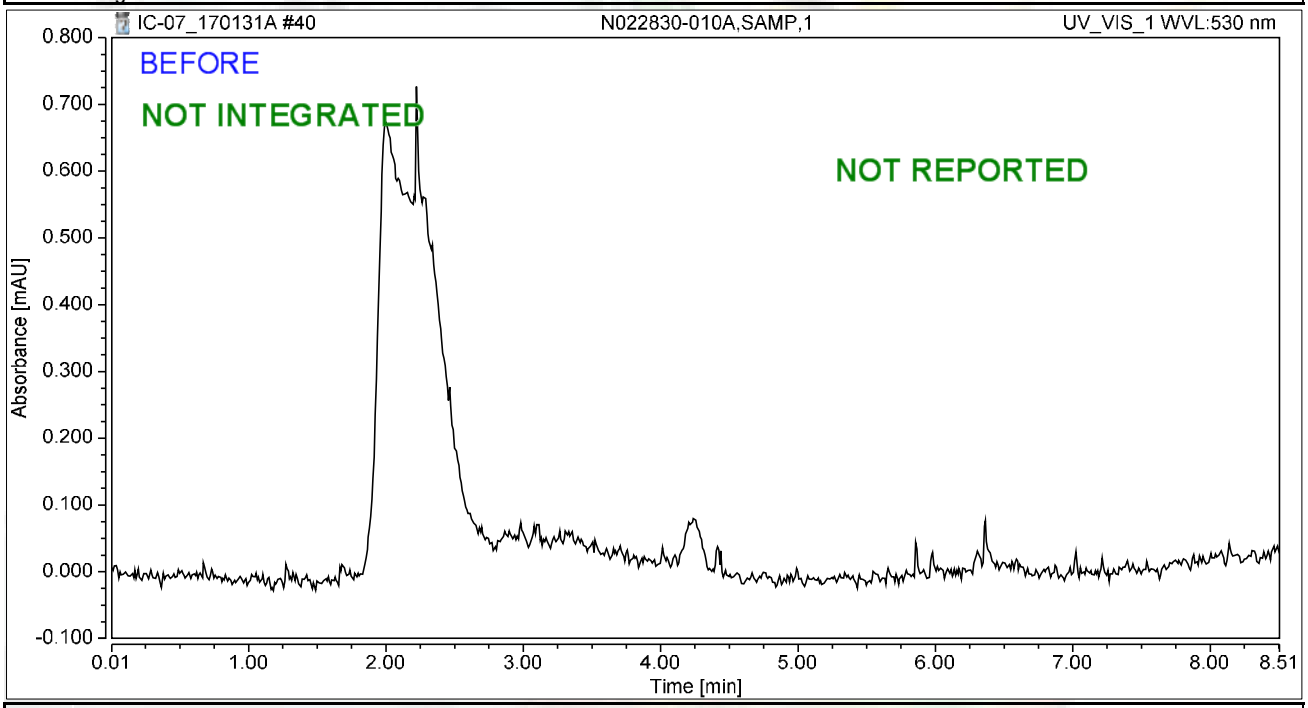
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

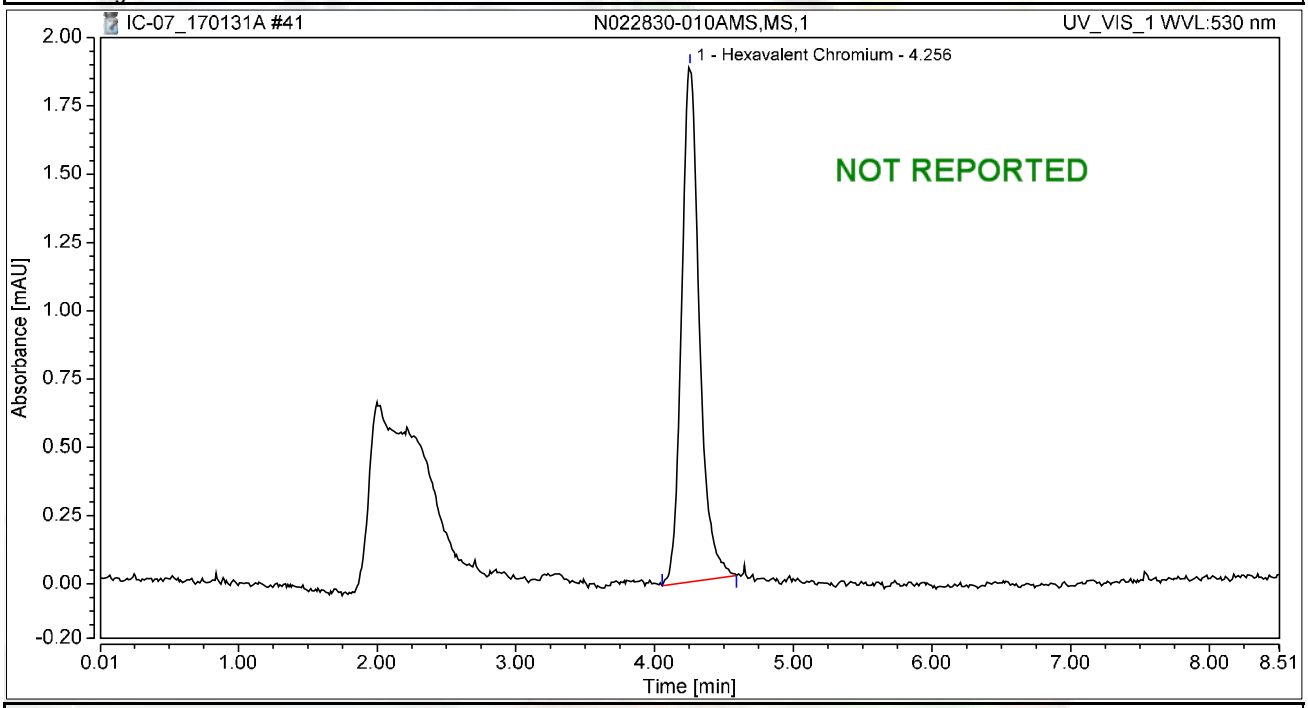
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.281	1.888	100.00	100.00	1.1004
Total:			**0.281**	**1.888**	**100.00**	**100.00**	

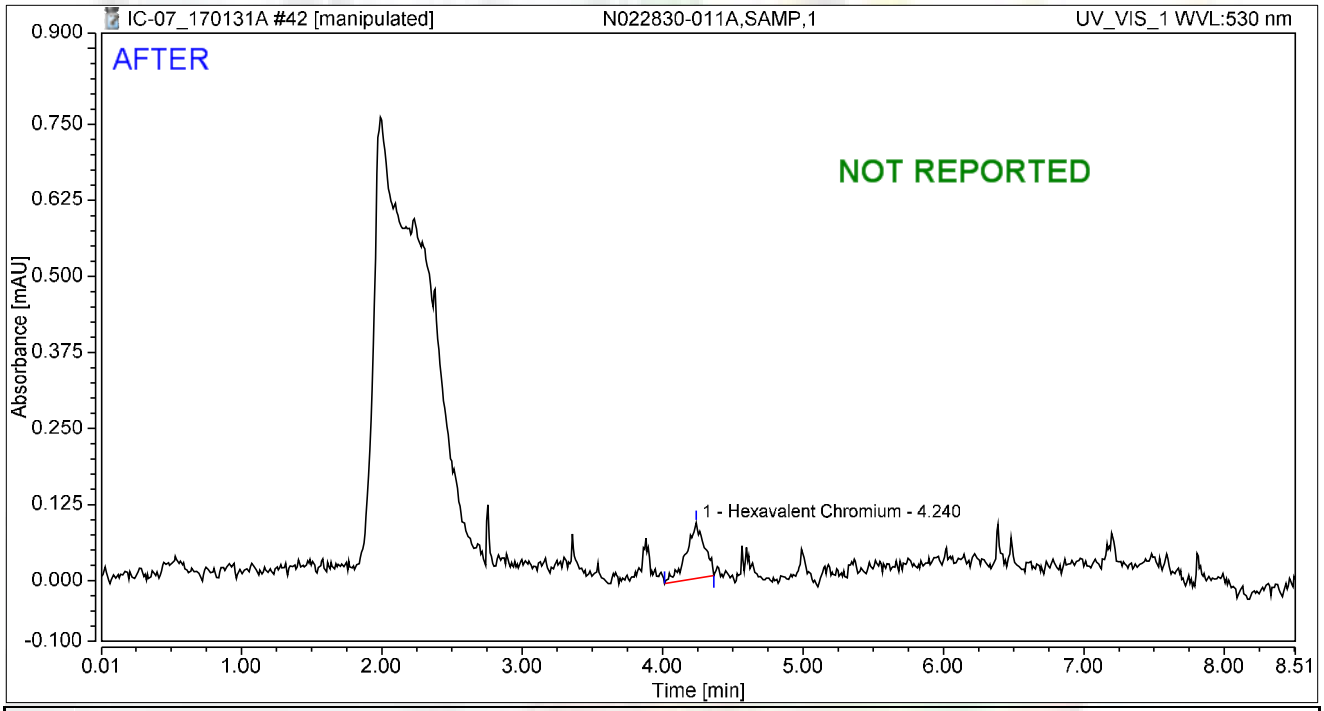
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.014	0.091	100.00	100.00	0.0528
Total:			**0.014**	**0.091**	**100.00**	**100.00**	

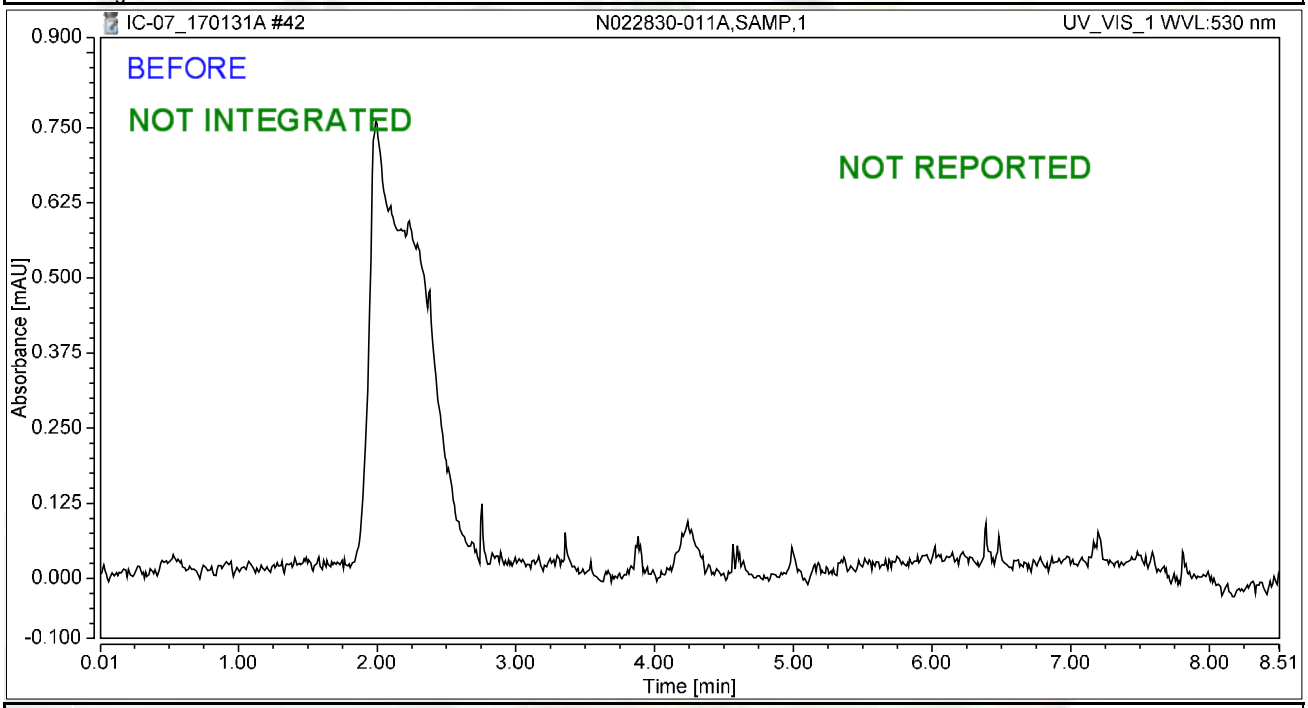
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

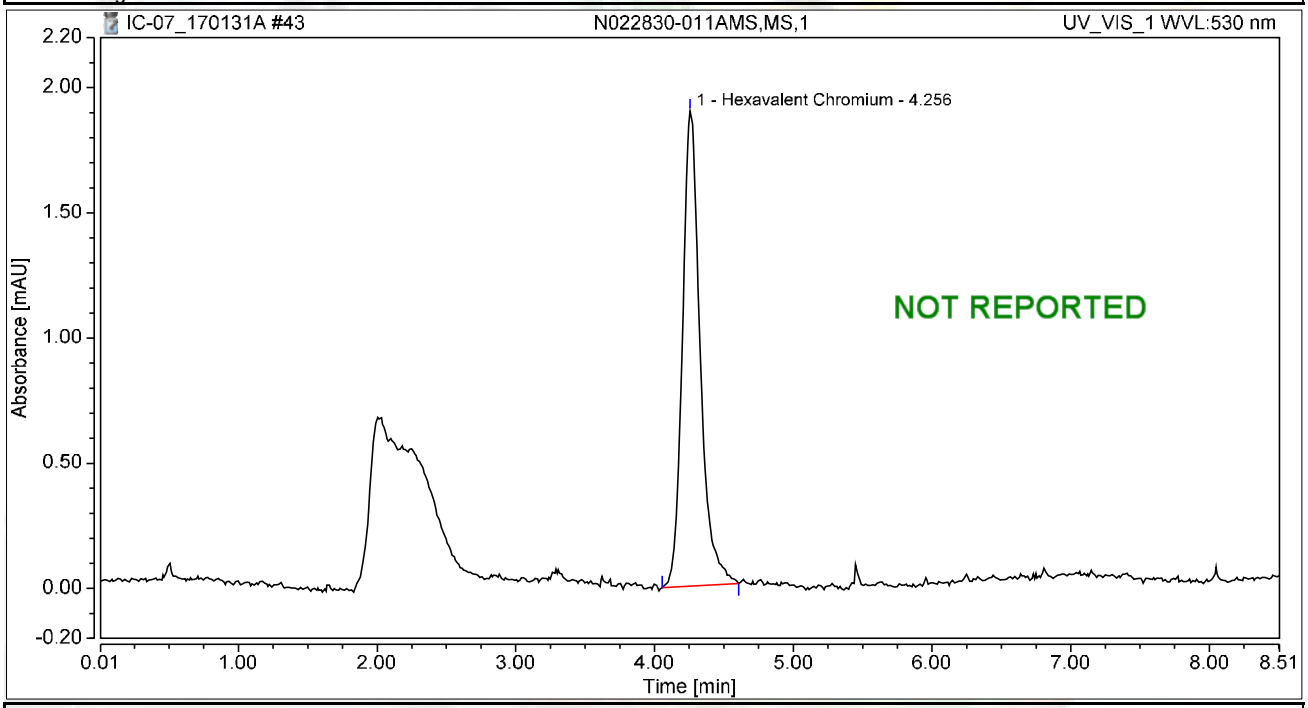
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 14:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.281	1.898	100.00	100.00	1.1005
Total:			**0.281**	**1.898**	**100.00**	**100.00**	

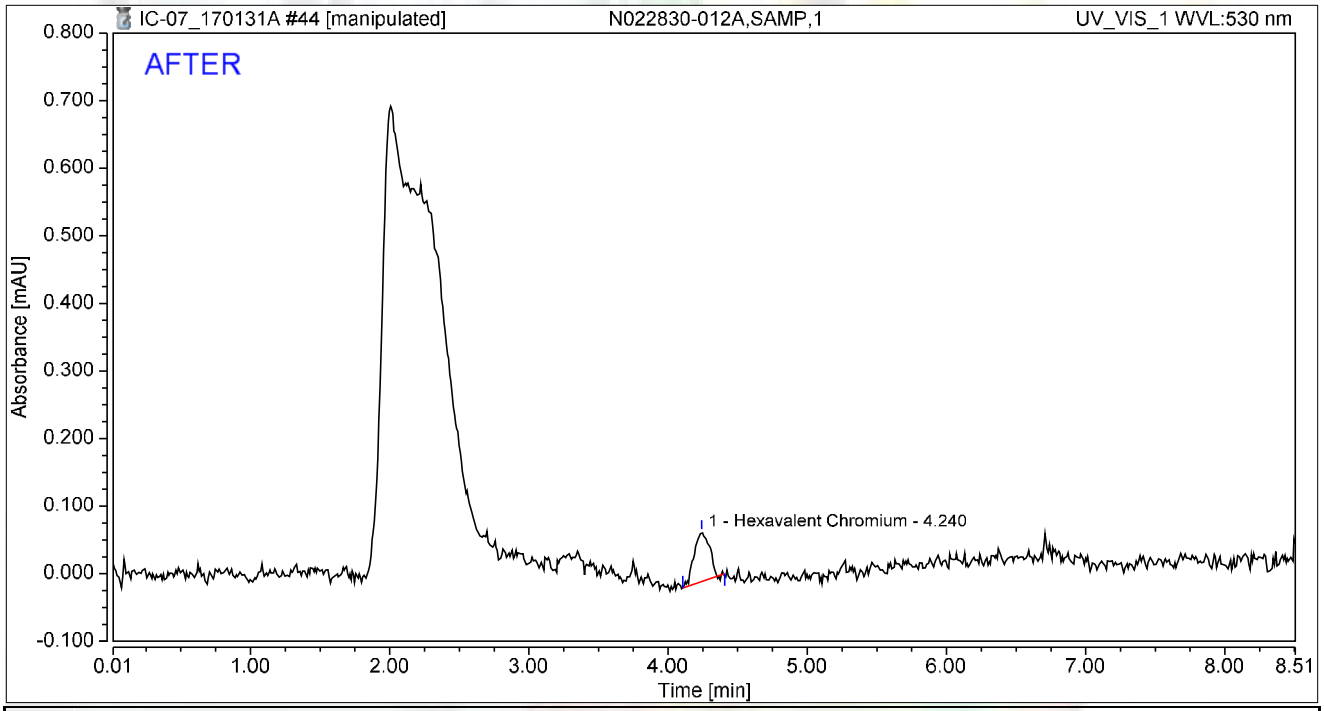
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-012A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.009	0.073	100.00	100.00	0.0360
Total:			**0.009**	**0.073**	**100.00**	**100.00**	

rba 2/4/2017

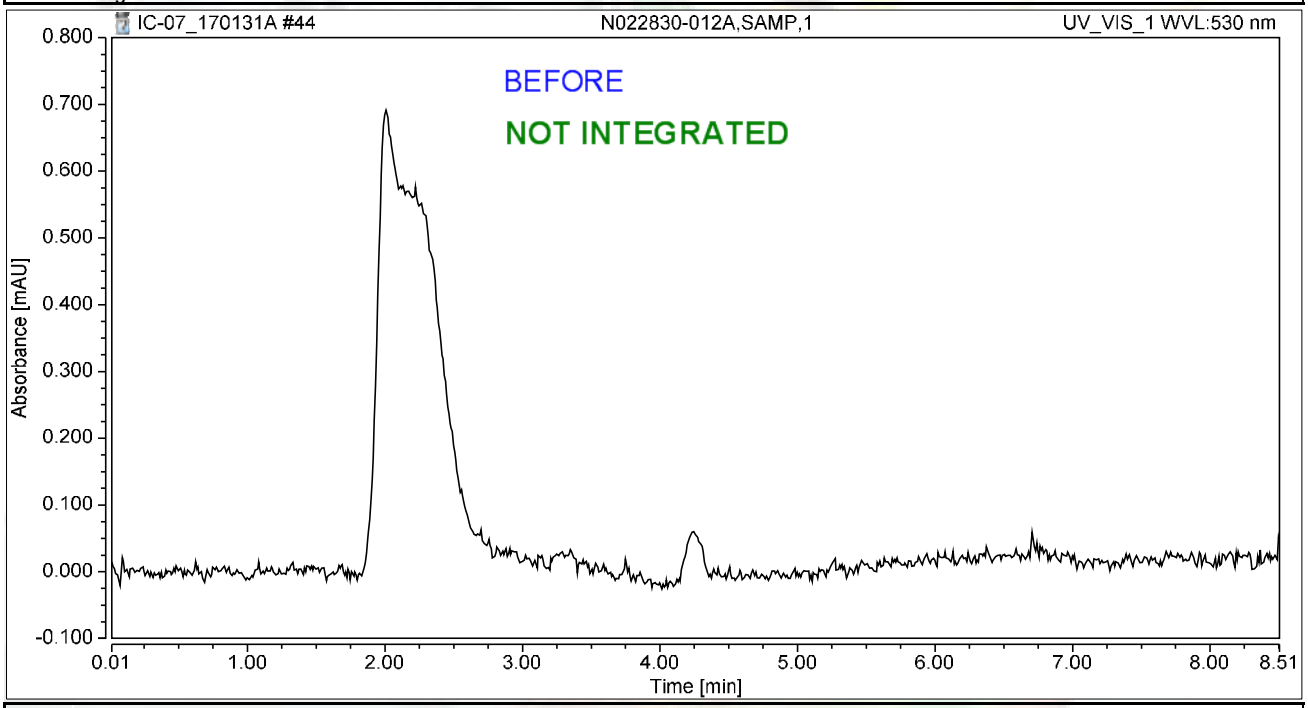
Reviewed by: Dionicy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-012A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

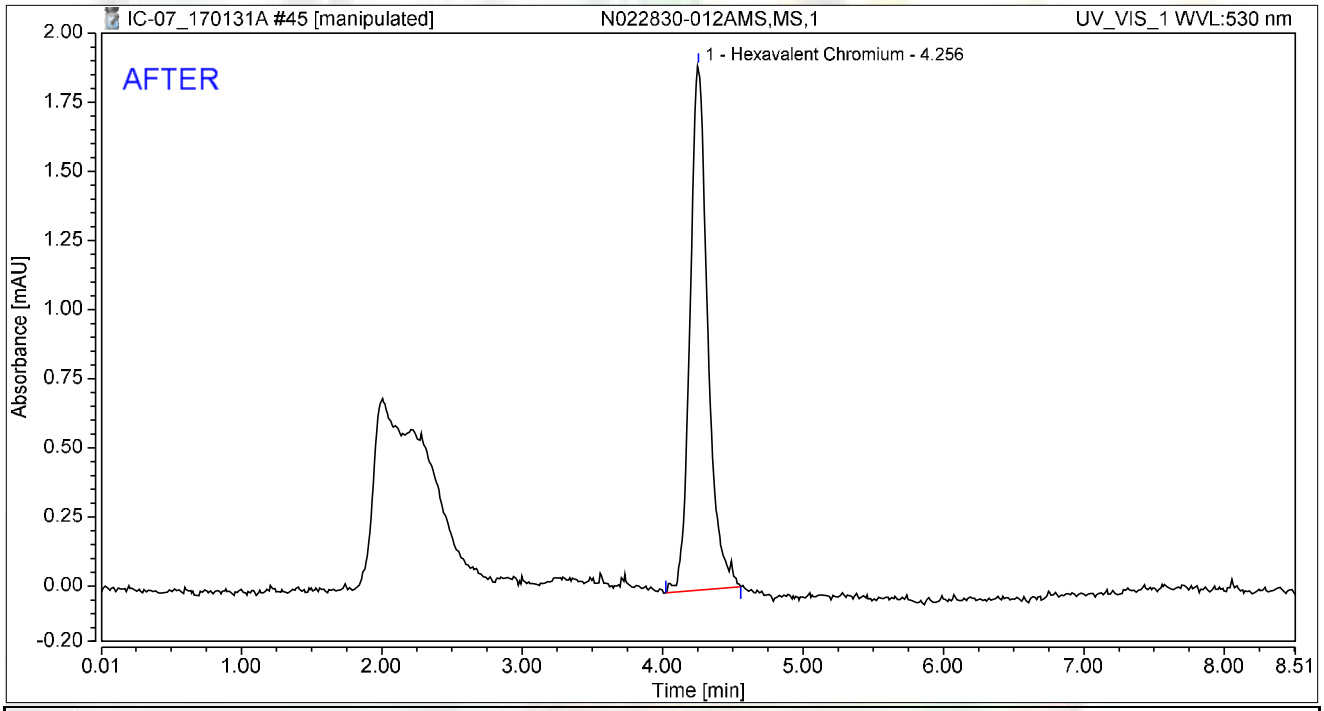
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.278	1.897	100.00	100.00	1.0891
Total:			**0.278**	**1.897**	**100.00**	**100.00**	

rba 2/4/2017

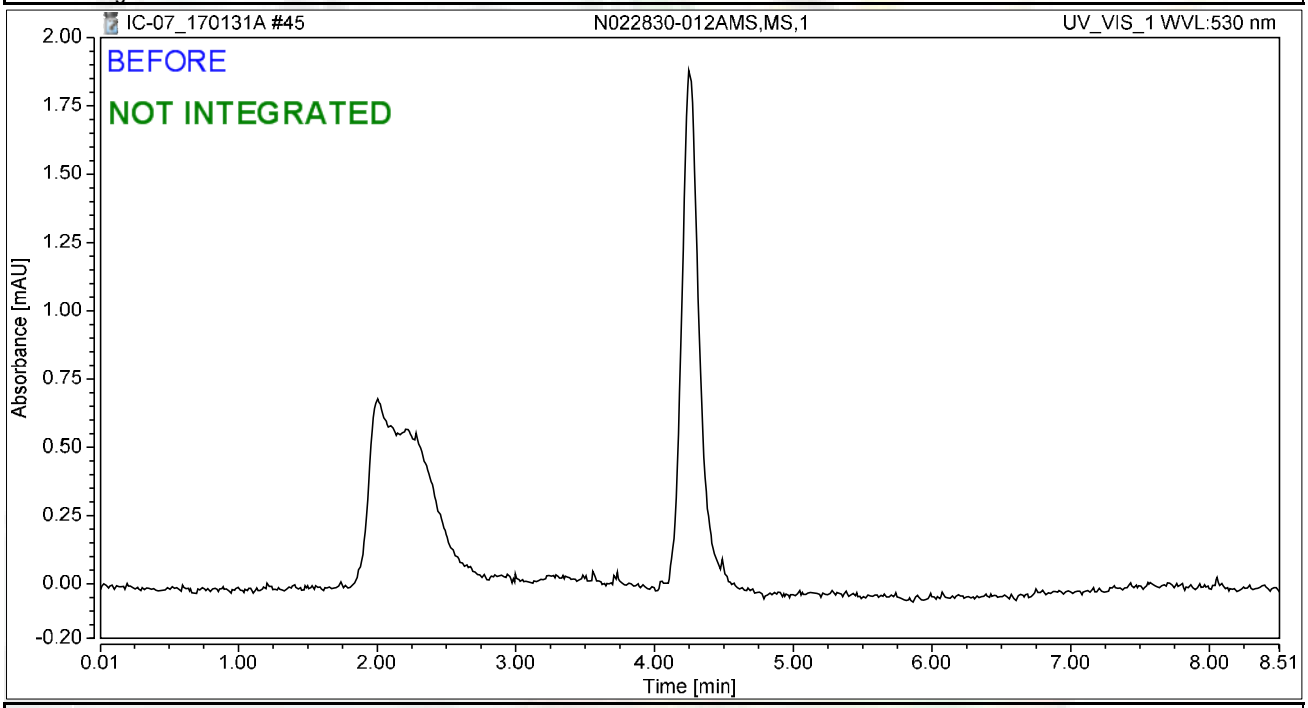
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

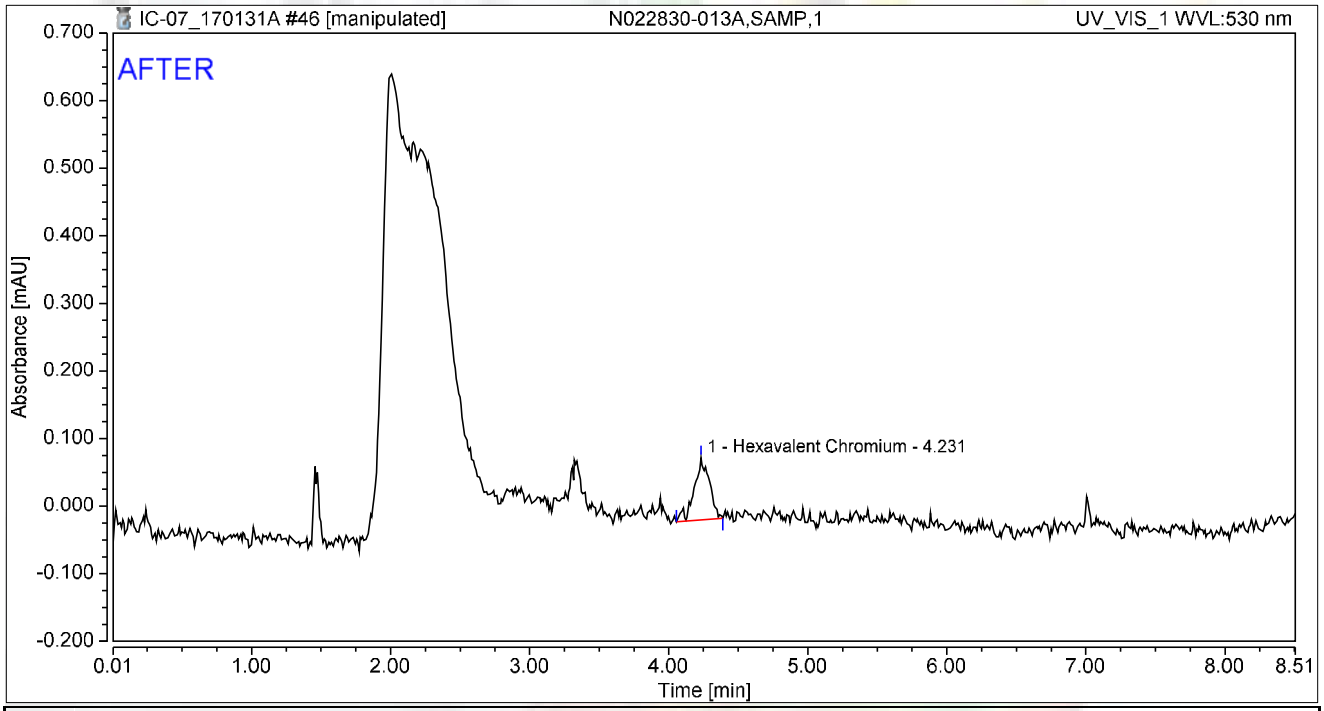
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-013A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.012	0.092	100.00	100.00	0.0453
Total:			**0.012**	**0.092**	**100.00**	**100.00**	

rba 2/4/2017

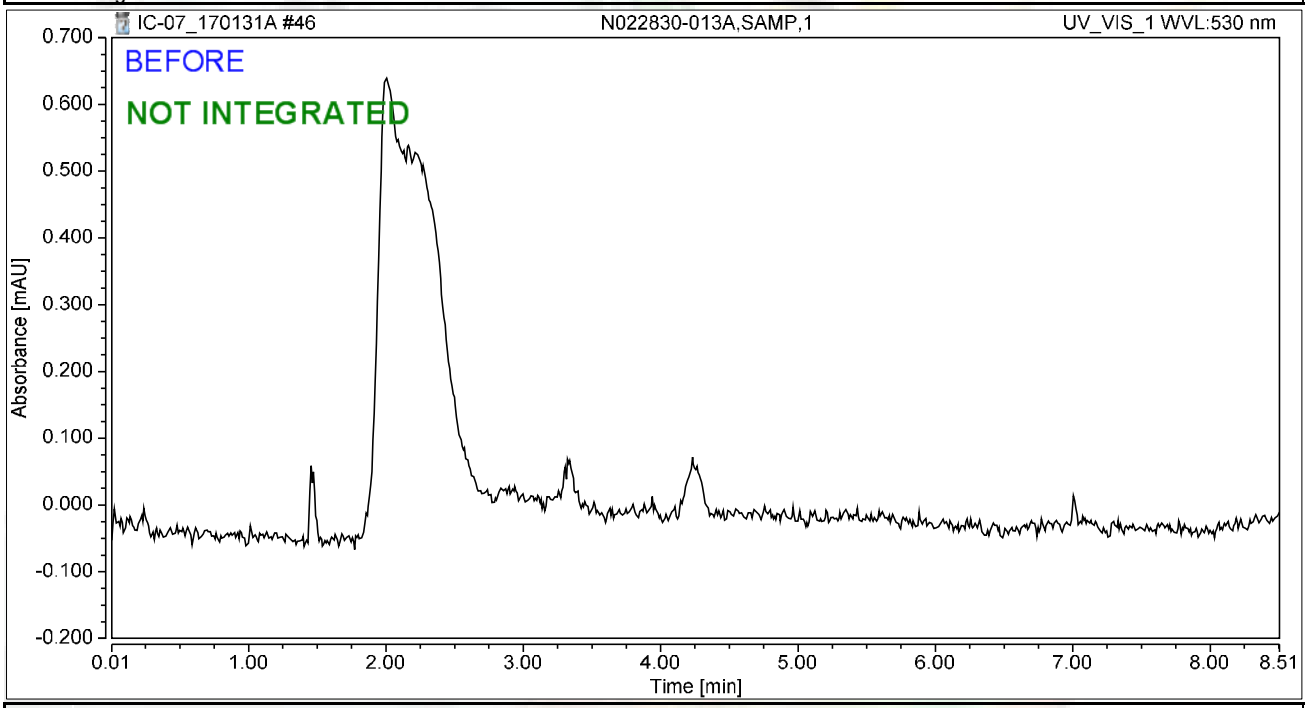
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-013A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

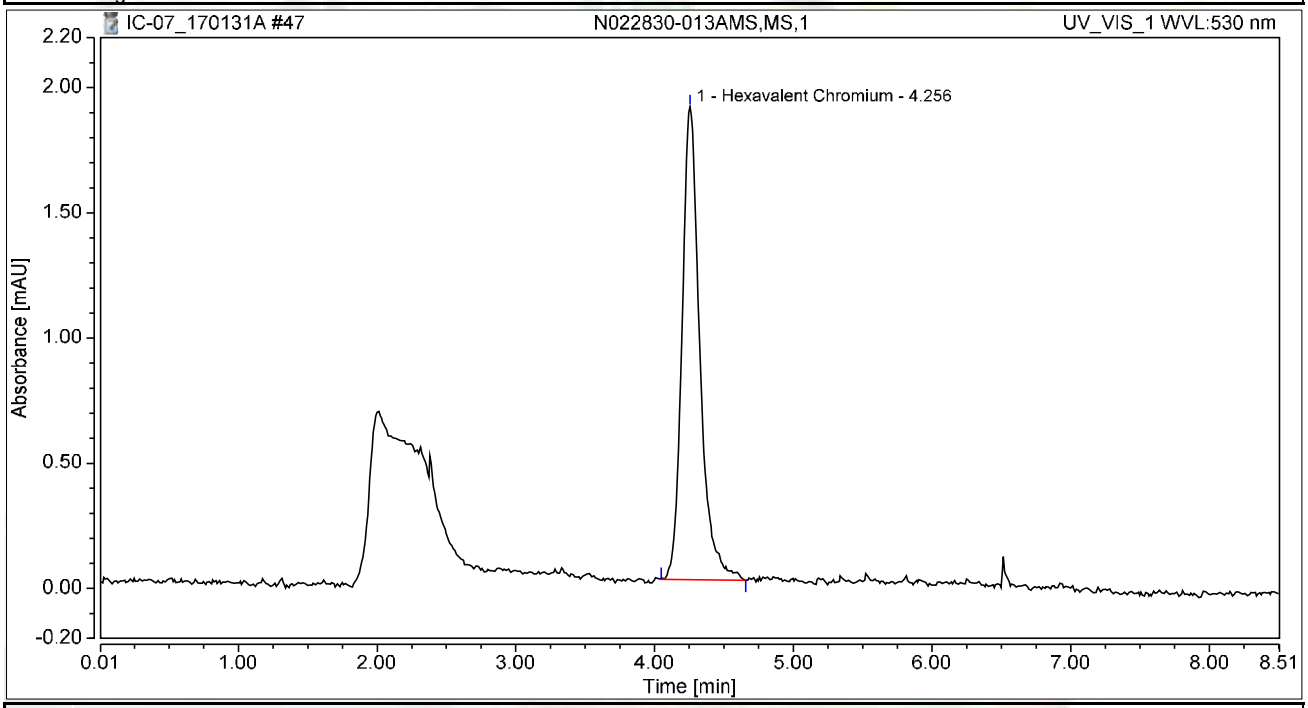
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.281	1.888	100.00	100.00	1.0980
Total:			**0.281**	**1.888**	**100.00**	**100.00**	

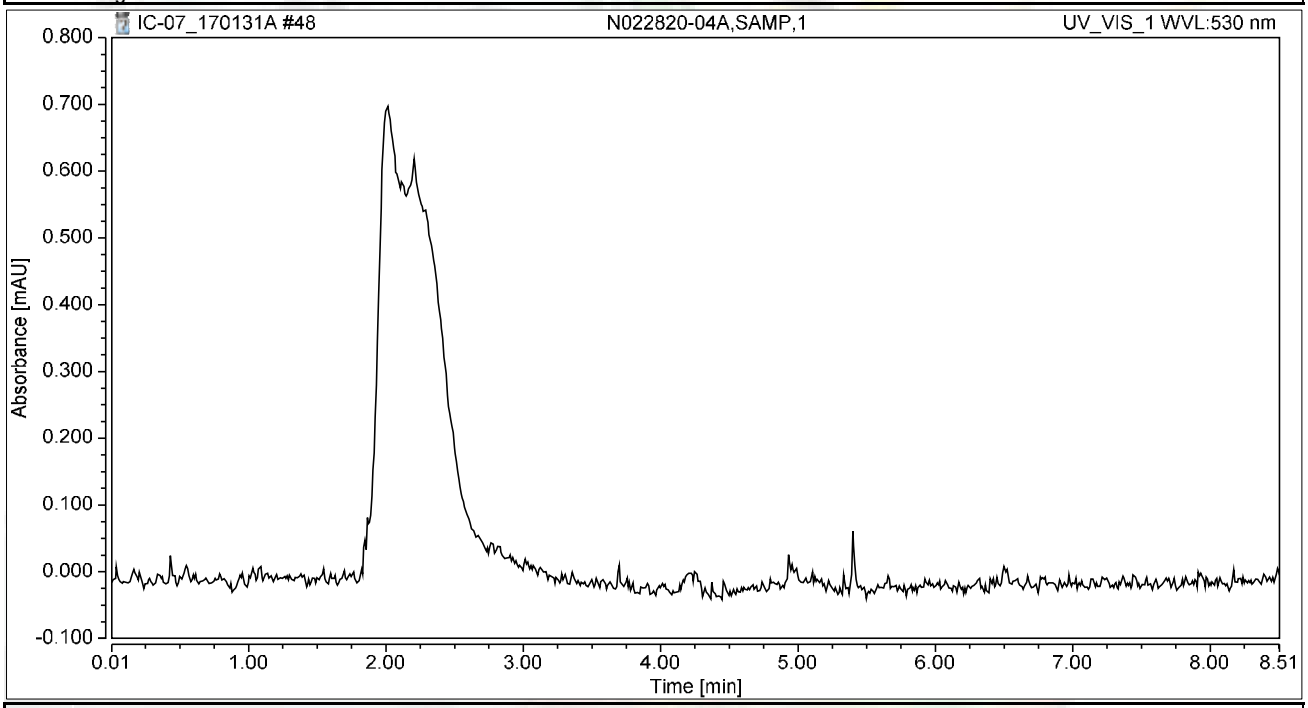
Chromatogram and Results

N022830-014A

Injection Details

Injection Name:	~~N022820-04~~A,SAMP,1	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

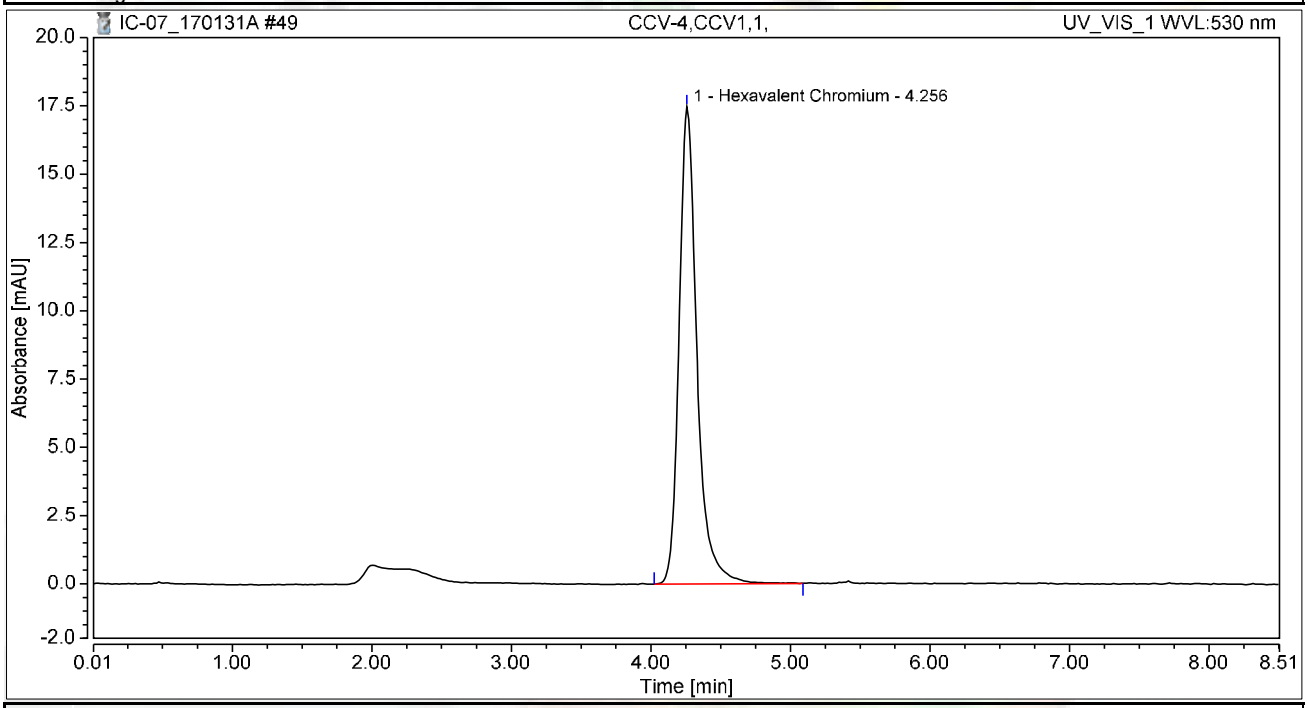
Nancy 2/8/2017
for

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 15:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

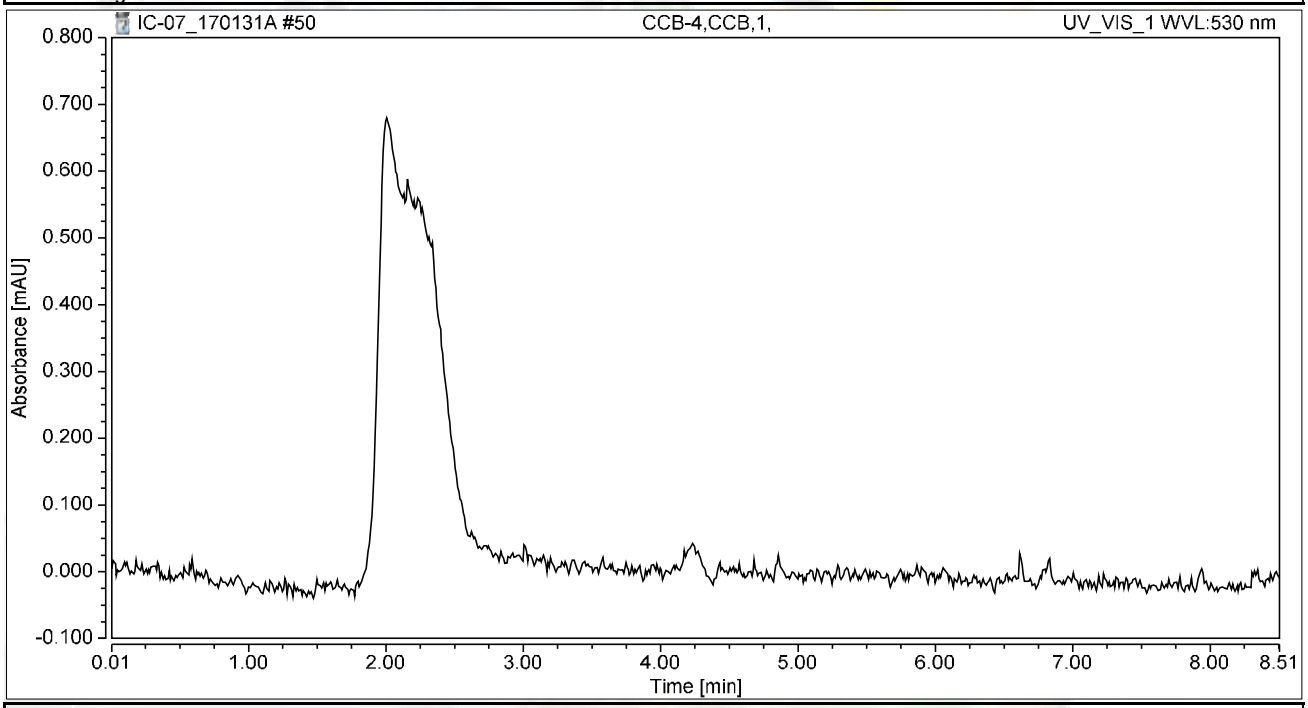
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.601	17.479	100.00	100.00	10.1759
Total:			**2.601**	**17.479**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

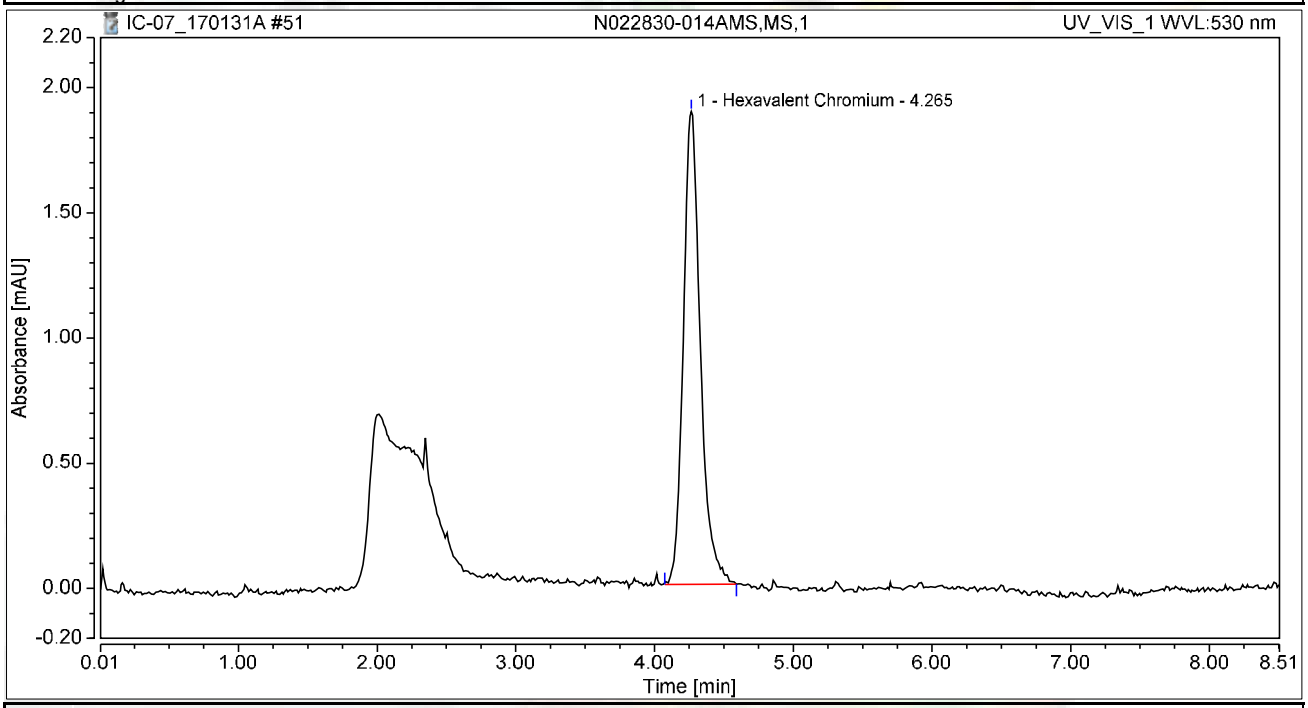
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-014AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

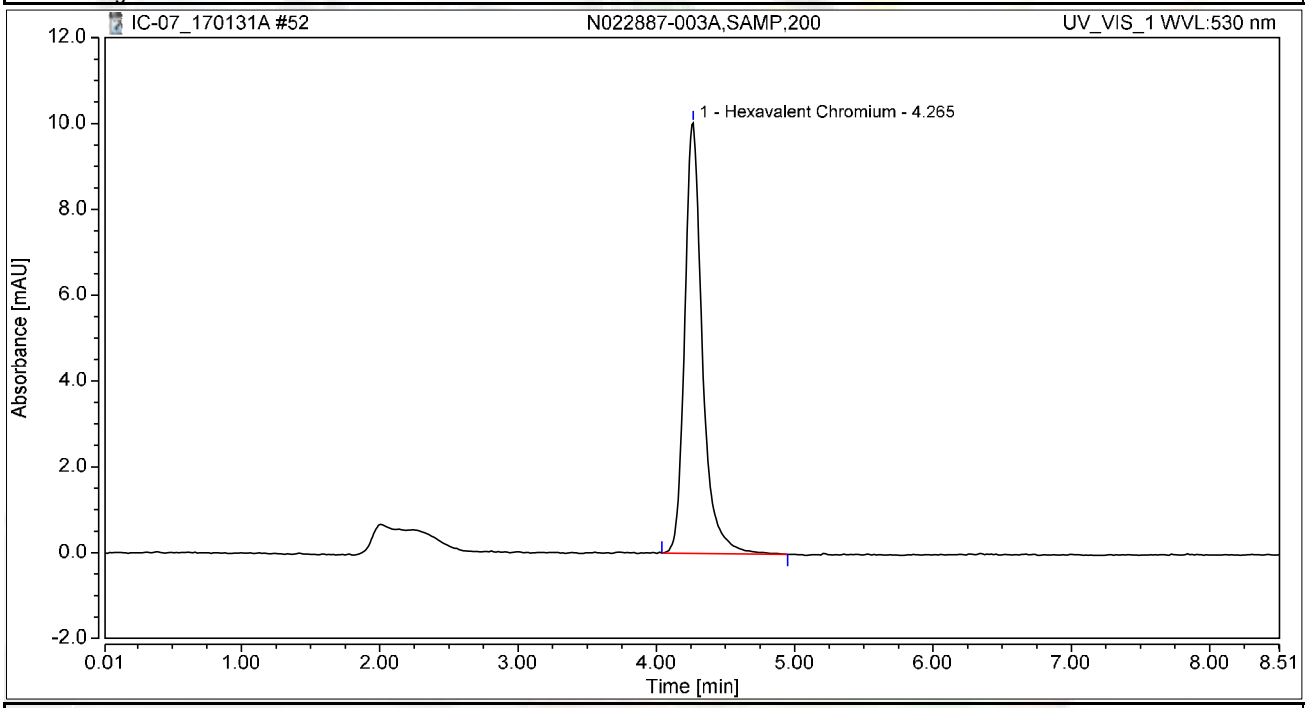
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.269	1.888	100.00	100.00	1.0513
Total:			**0.269**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-003A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

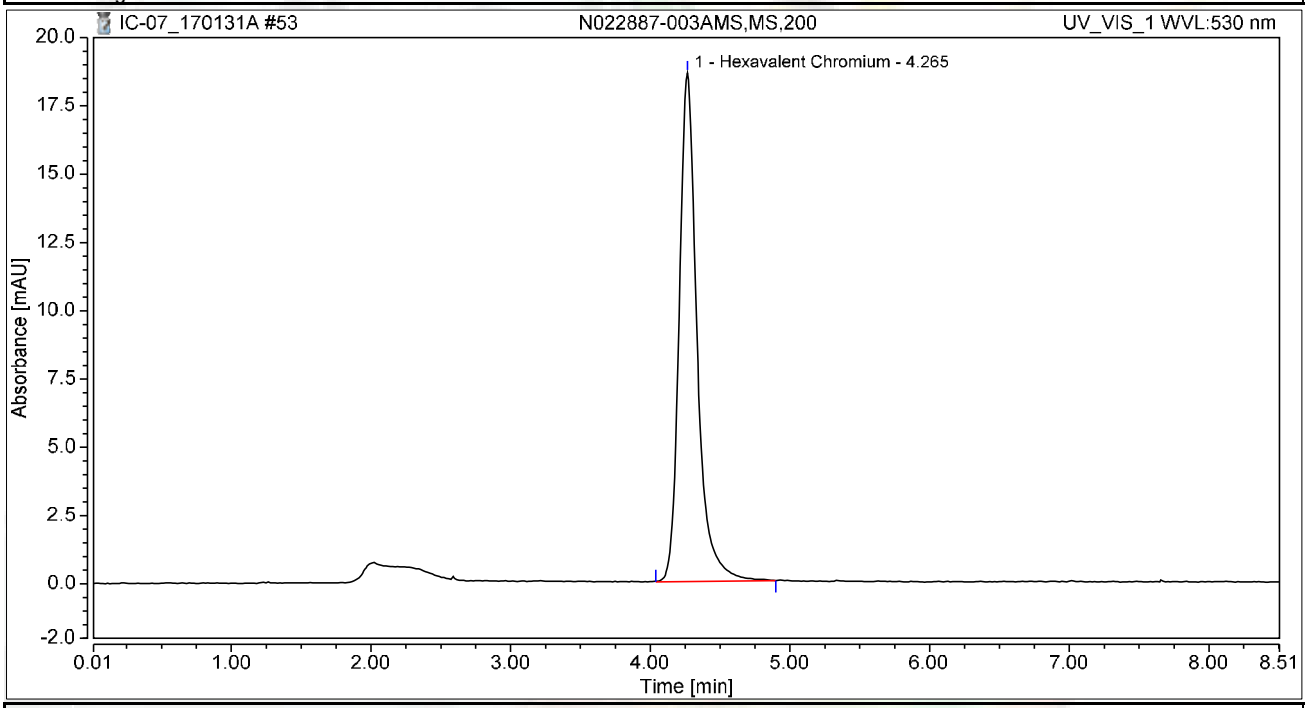
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.487	10.032	100.00	100.00	5.8185
Total:			**1.487**	**10.032**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-003AMS,MS,200**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

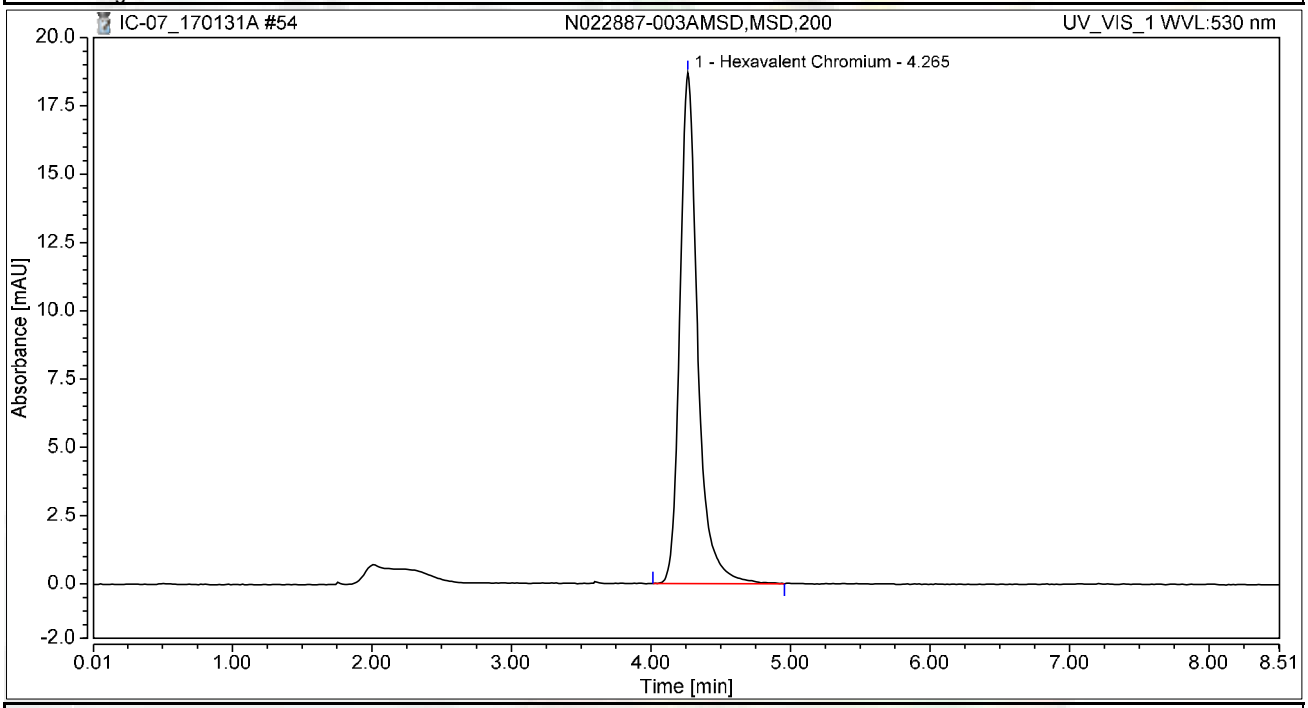
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	2.752	18.621	100.00	100.00	10.7644
Total:			**2.752**	**18.621**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-003AMSD,MSD,200**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

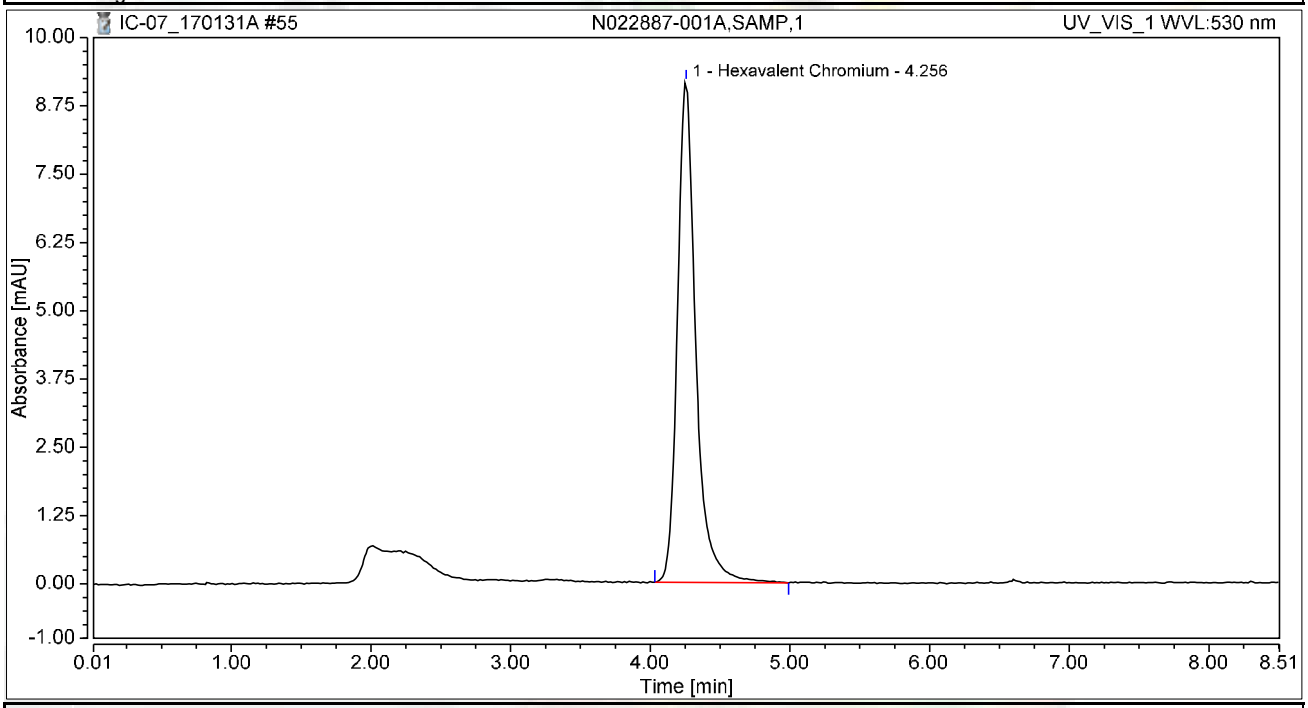
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	2.778	18.706	100.00	100.00	10.8665
Total:			**2.778**	**18.706**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

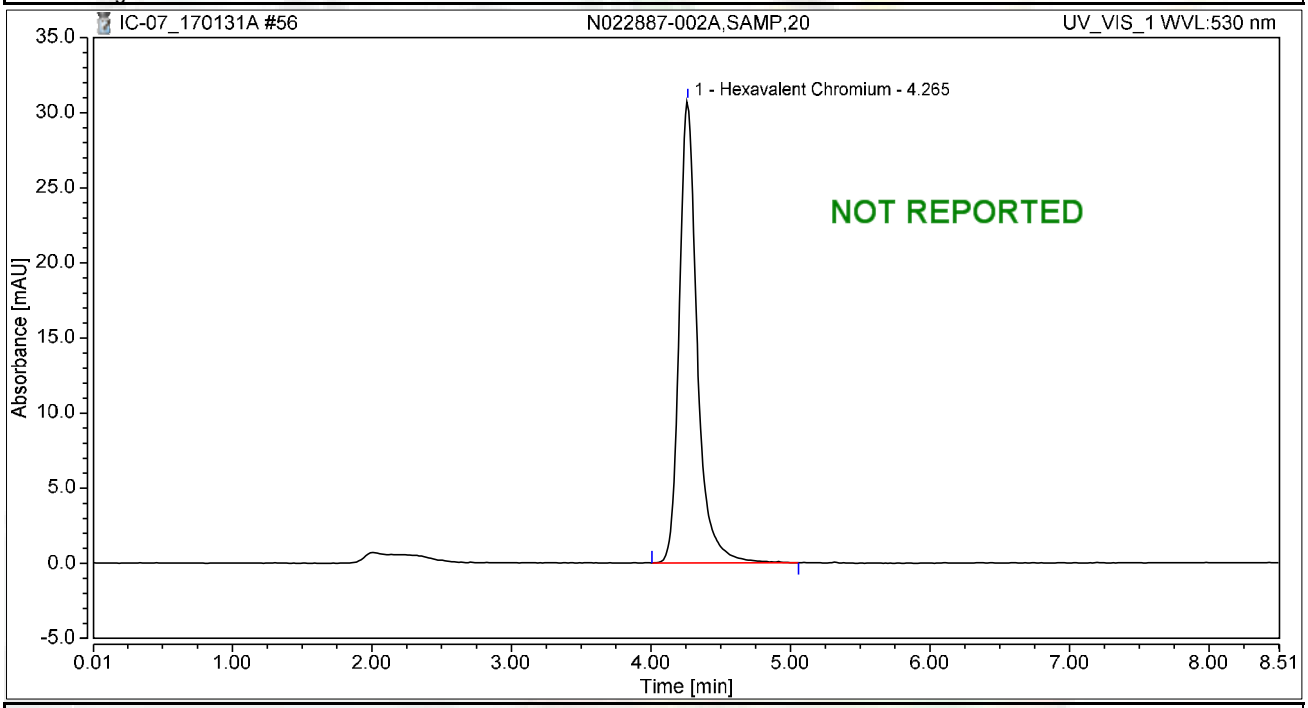
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.394	9.160	100.00	100.00	5.4539
Total:			**1.394**	**9.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-002A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

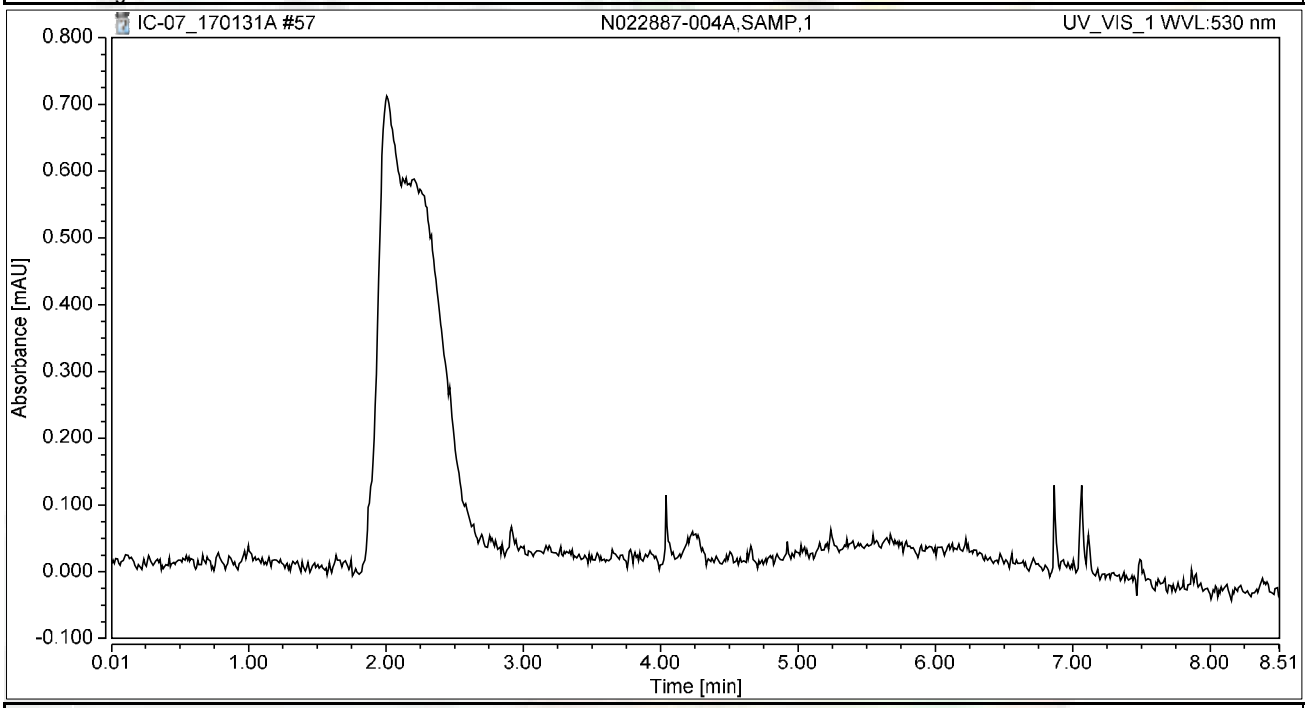
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	4.581	30.767	100.00	100.00	17.9195
Total:			**4.581**	**30.767**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

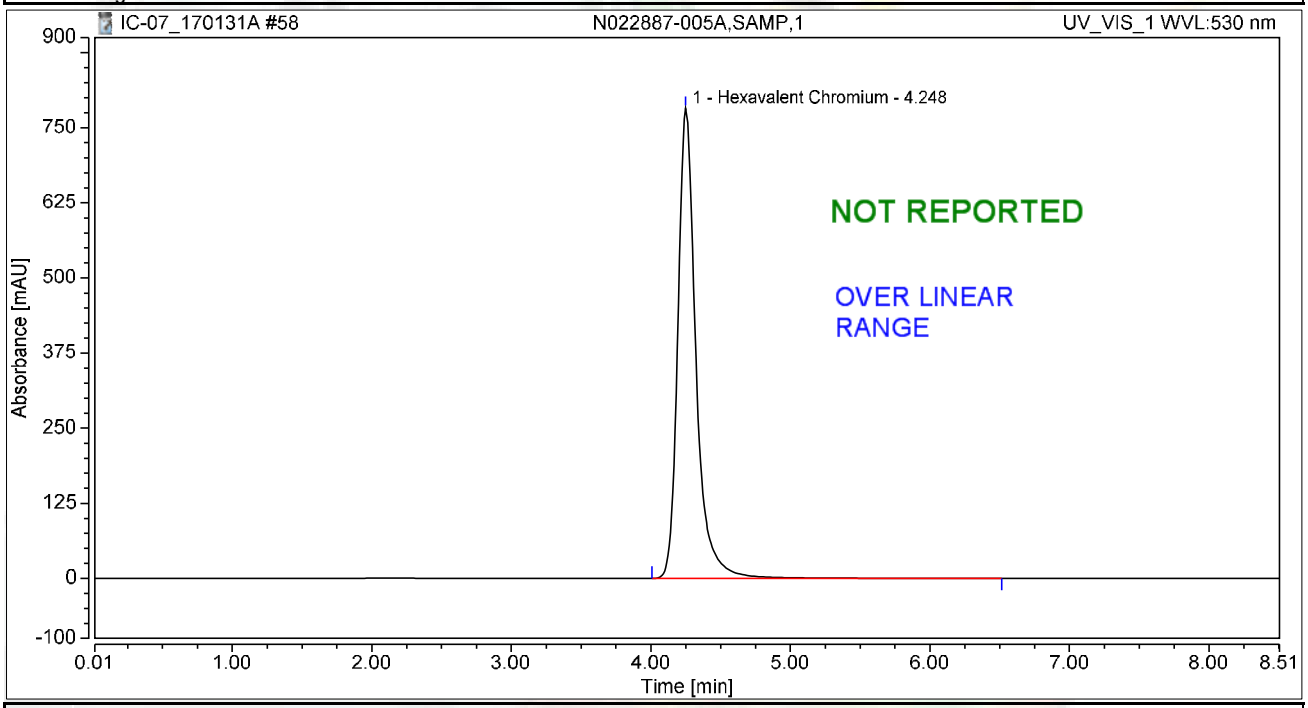
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

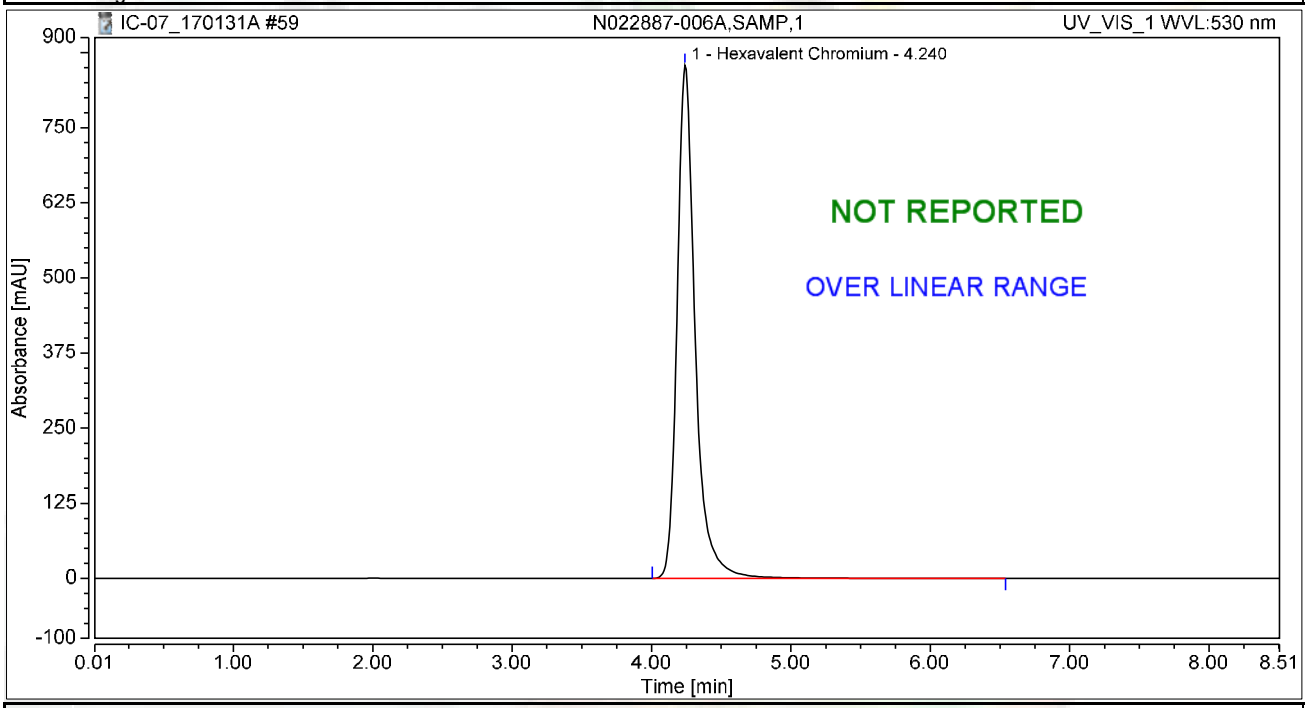
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	117.832	782.140	100.00	100.00	460.9142
Total:			**117.832**	**782.140**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

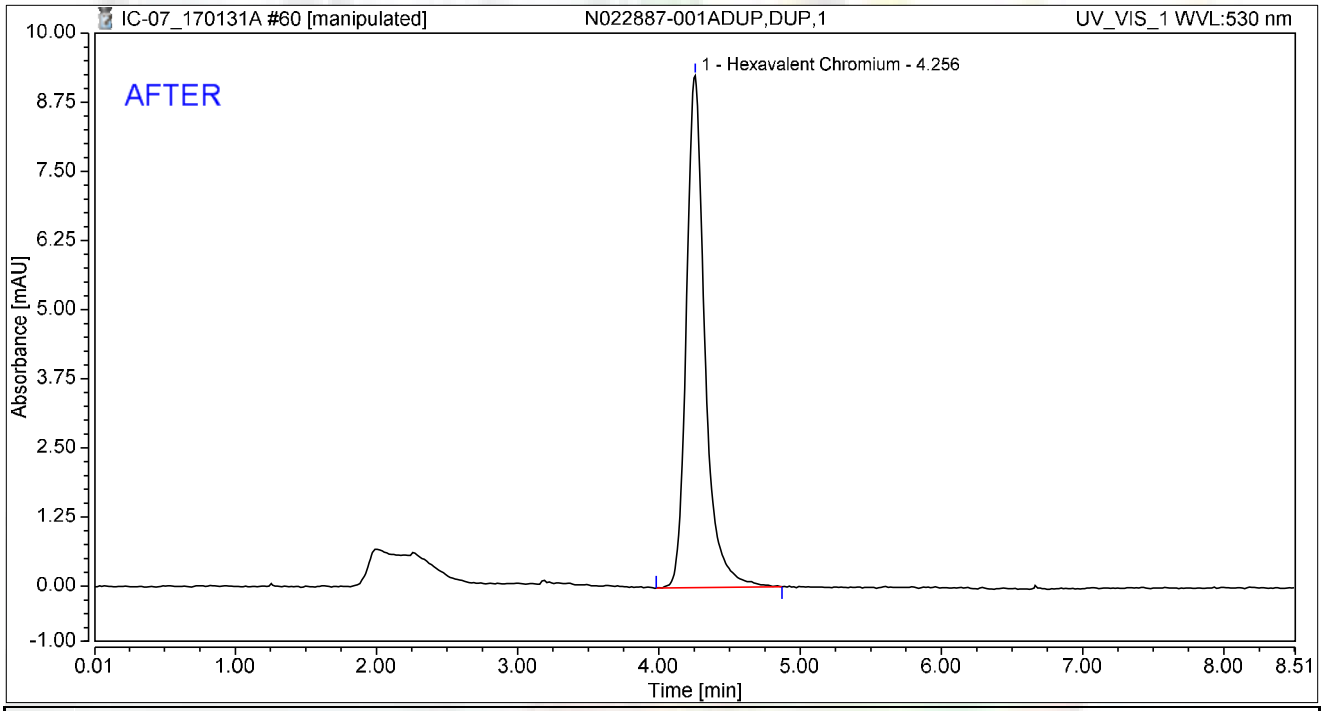
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	128.479	853.811	100.00	100.00	502.5598
Total:			**128.479**	**853.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.409	9.256	100.00	100.00	5.5121
Total:			**1.409**	**9.256**	**100.00**	**100.00**	

rba 2/4/2017

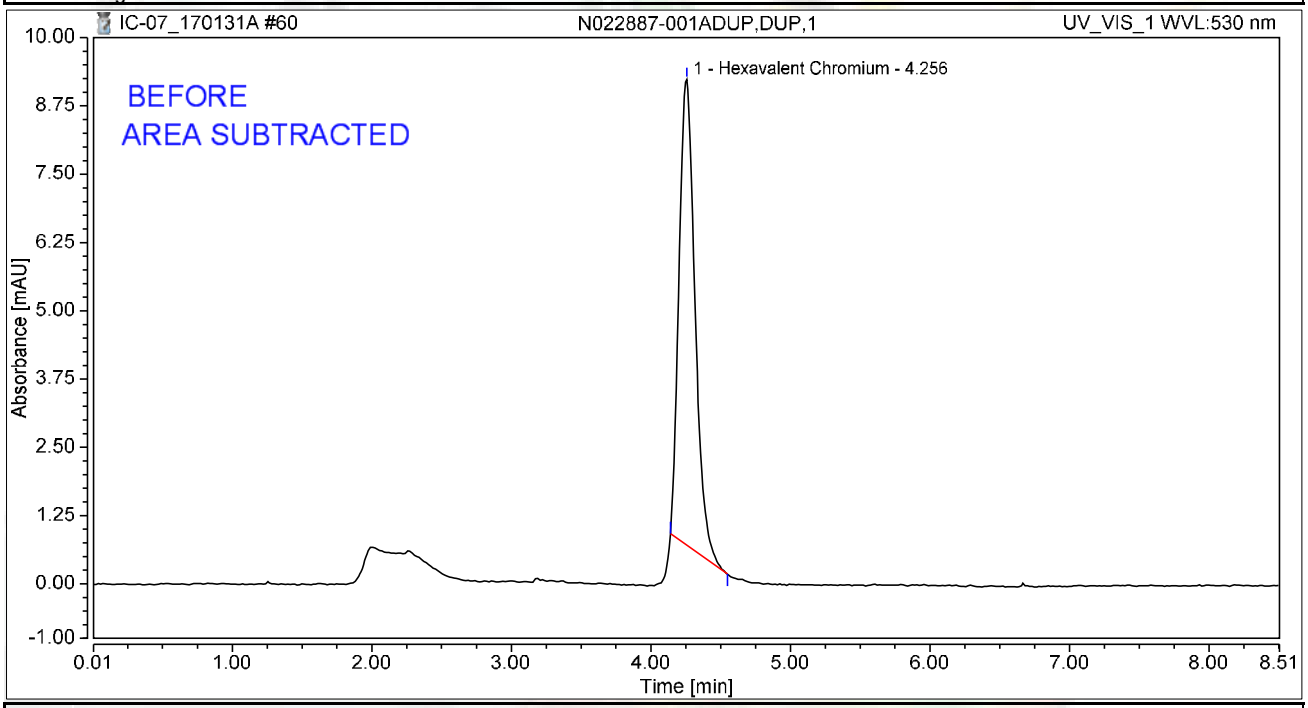
Reviewed by: Nancy 2/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022887-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.132	8.524	100.00	100.00	4.4262
Total:			**1.132**	**8.524**	**100.00**	**100.00**	

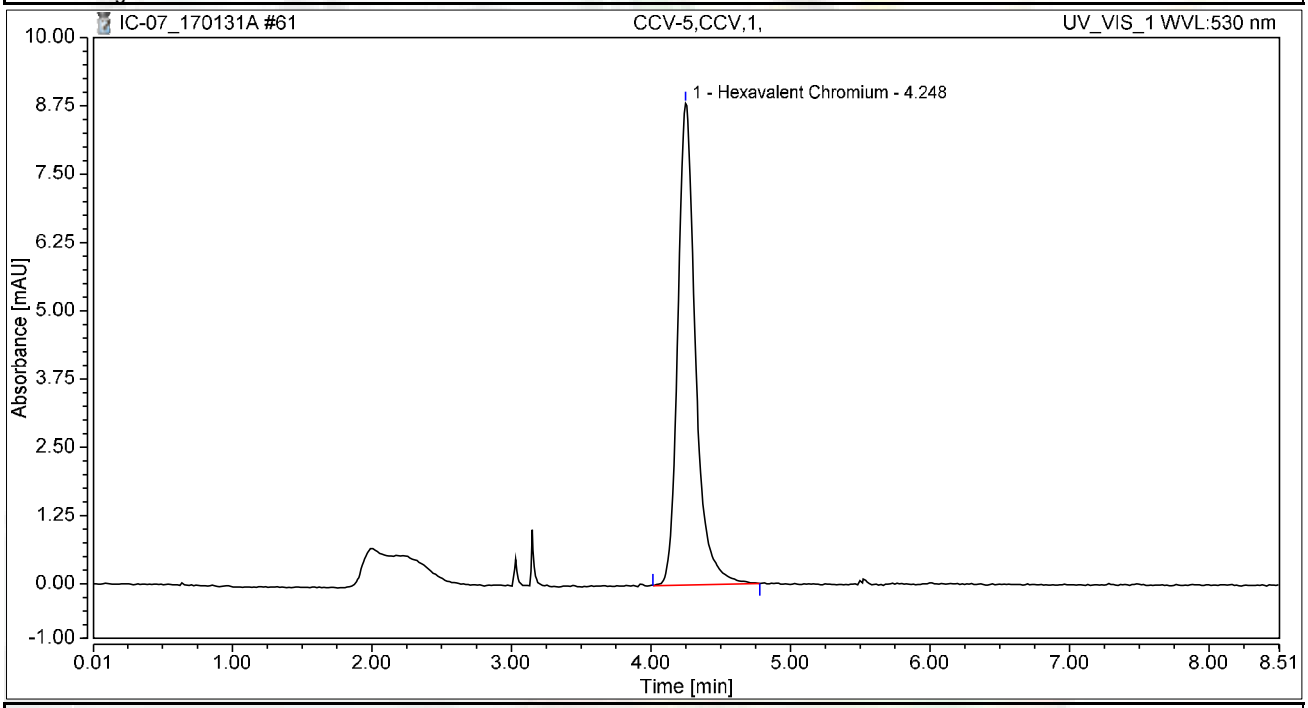
rba 2/4/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 17:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

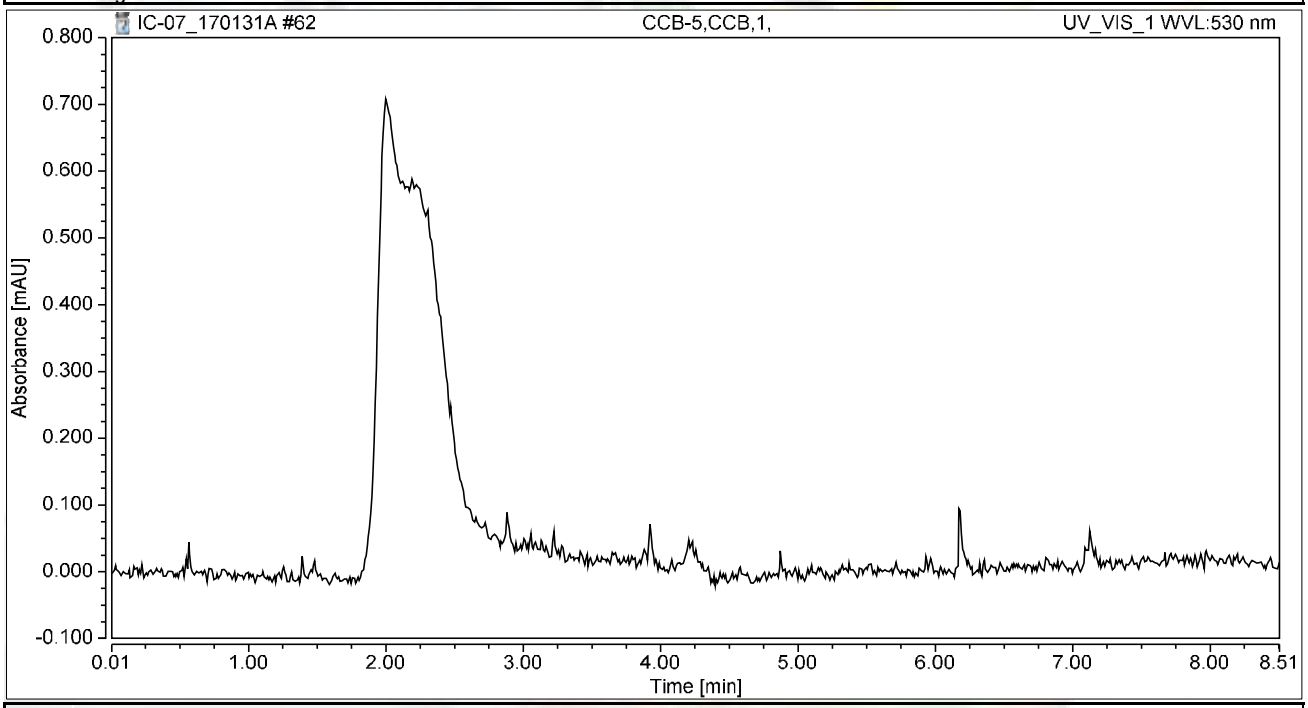
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.297	8.816	100.00	100.00	5.0726
Total:			**1.297**	**8.816**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 18:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

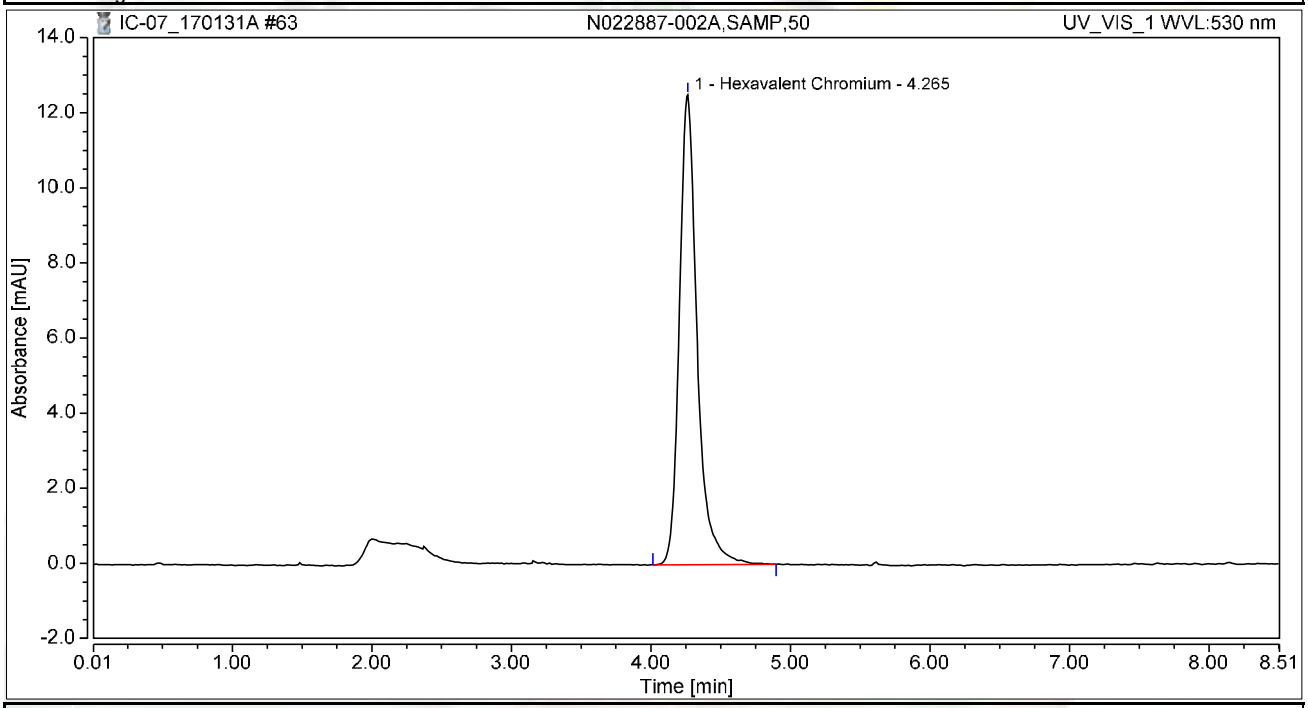
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-002A,SAMP,50**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

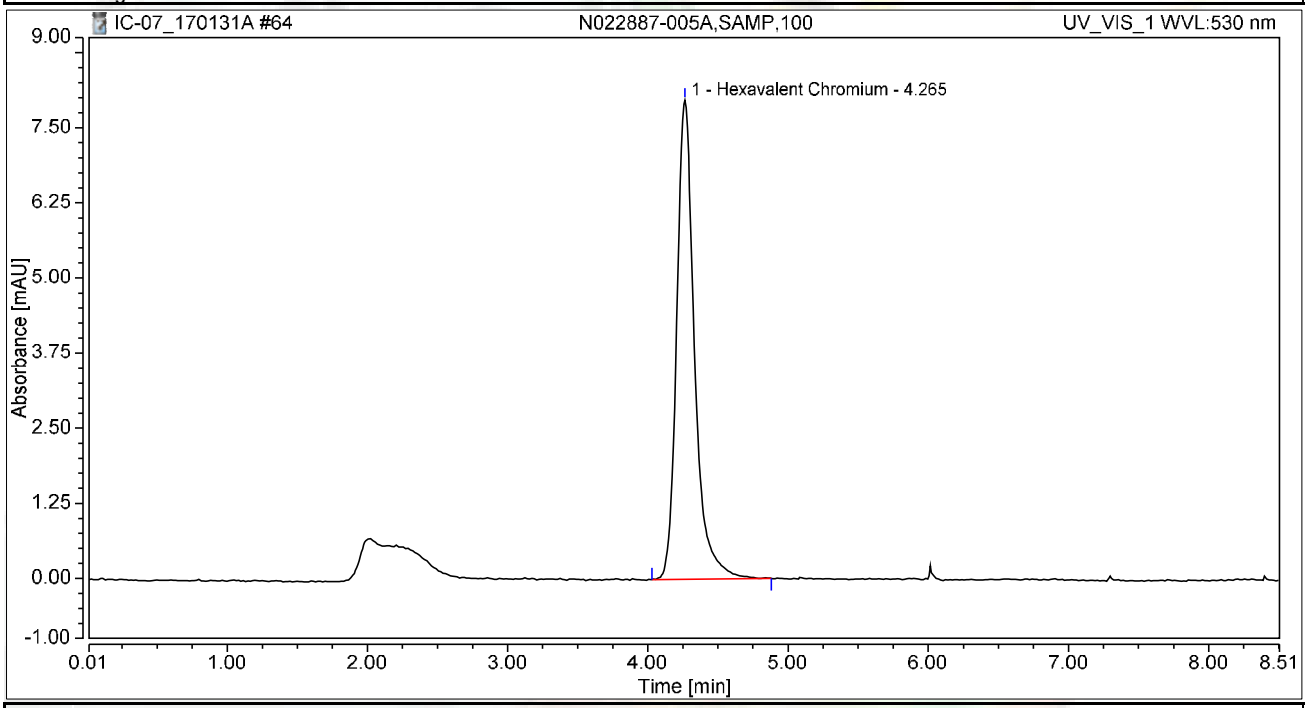
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.845	12.513	100.00	100.00	7.2178
Total:			**1.845**	**12.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-005A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

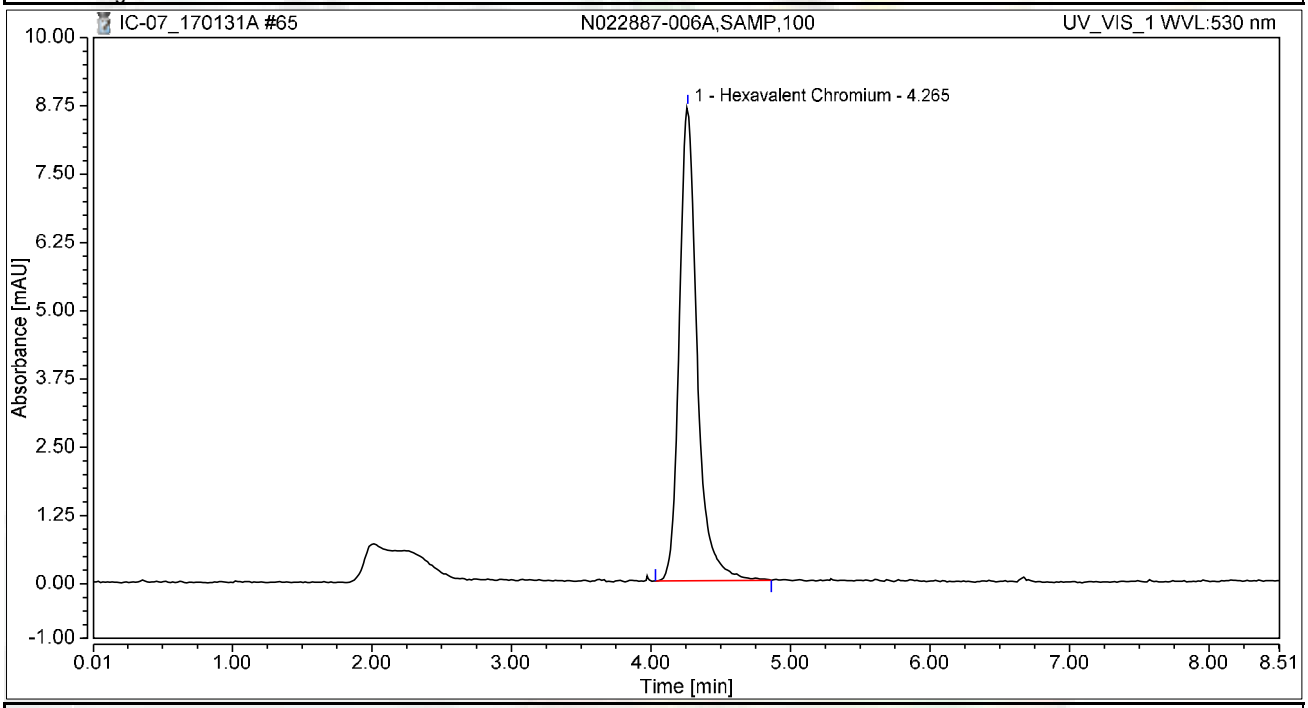
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.175	7.973	100.00	100.00	4.5952
Total:			**1.175**	**7.973**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022887-006A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 18:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

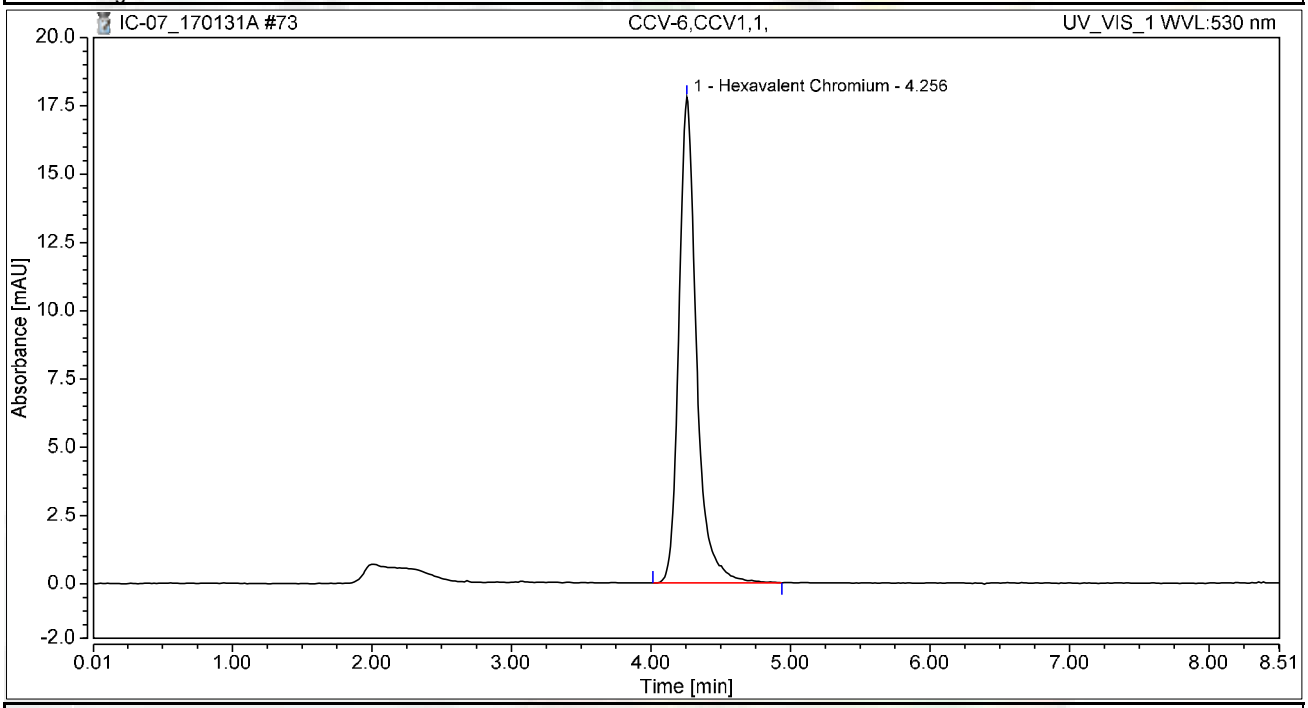
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	1.287	8.680	100.00	100.00	5.0334
Total:			**1.287**	**8.680**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 19:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

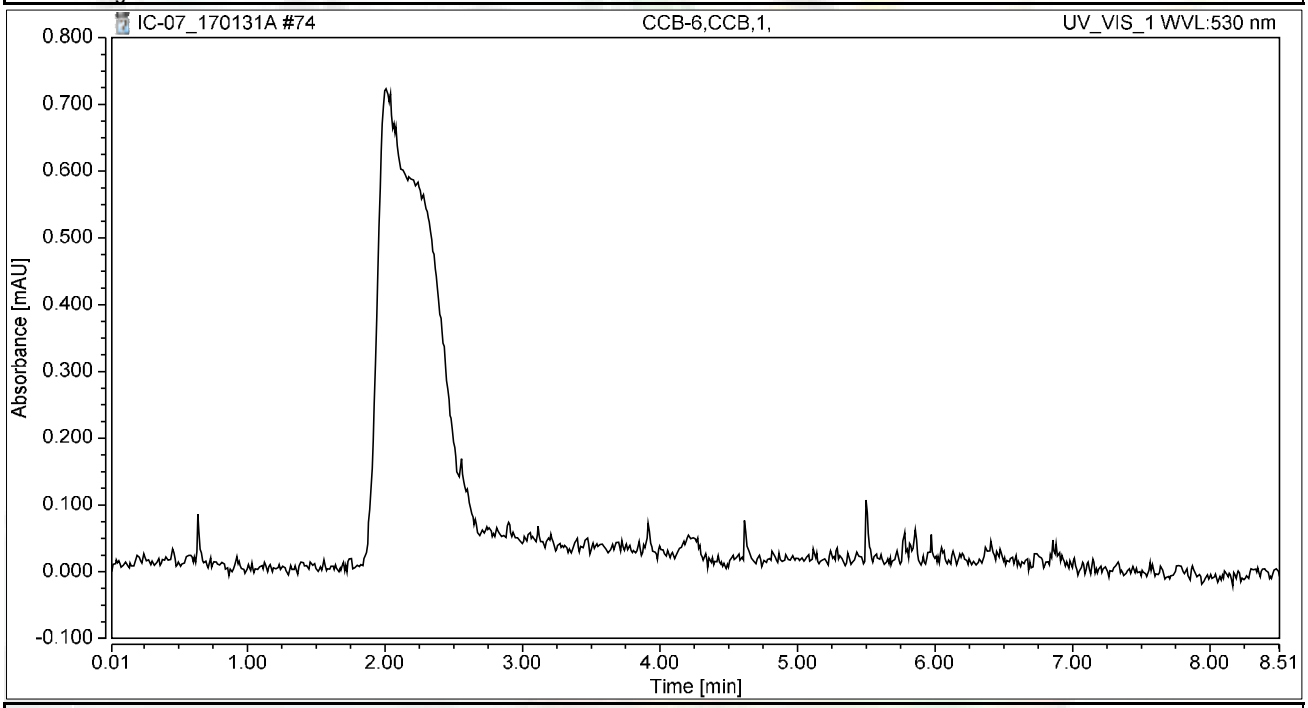
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.601	17.787	100.00	100.00	10.1744
Total:			**2.601**	**17.787**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/Jan/17 19:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/17 9:36 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/17 9:46 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/17 9:55 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:05 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:14 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:24 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:33 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/17 10:43 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 9:50 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/02/17 10:01 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/02/17 10:10 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/02/17 10:20 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/02/17 10:29 AM	Reported
15	MB-H2O	MBLK	1	Hexavalent Chromium	02/02/17 10:39 AM	Not Reported
16	LCS-R113260	LCS	1	Hexavalent Chromium	02/02/17 10:48 AM	Reported
17	MB-R113260	MBLK	1	Hexavalent Chromium	02/02/17 11:06 AM	Reported
18	N022819-006A	SAMP	1	Hexavalent Chromium	02/02/17 11:17 AM	Reported
19	N022819-008A	SAMP	1	Hexavalent Chromium	02/02/17 11:45 AM	Reported
20	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 11:57 AM	Not Reported
21	N022819-009A	SAMP	1	Hexavalent Chromium	02/02/17 12:06 PM	Reported
22	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 12:16 PM	Not Reported
23	N022819-010A	SAMP	1	Hexavalent Chromium	02/02/17 12:25 PM	Reported
24	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 12:43 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/02/17 12:55 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/02/17 1:07 PM	Reported
27	N022820-001A	SAMP	1	Hexavalent Chromium	02/02/17 1:16 PM	Reported
28	N022820-001AMS	MS	1	Hexavalent Chromium	02/02/17 1:25 PM	Reported
29	N022774-008A	SAMP	1	Hexavalent Chromium	02/02/17 1:35 PM	Not Reported
30	N022774-009A	SAMP	1	Hexavalent Chromium	02/02/17 1:45 PM	Not Reported
31	N022774-010A	SAMP	1	Hexavalent Chromium	02/02/17 1:54 PM	Not Reported
32	N022774-011A	SAMP	1	Hexavalent Chromium	02/02/17 2:03 PM	Not Reported
33	N022830-005A	SAMP	1	Hexavalent Chromium	02/02/17 2:13 PM	Reported
34	N022830-005AMS	MS	1	Hexavalent Chromium	02/02/17 2:22 PM	Reported
35	N022830-006A	SAMP	1	Hexavalent Chromium	02/02/17 2:32 PM	Reported
36	N022830-006AMS	MS	1	Hexavalent Chromium	02/02/17 2:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/02/17 2:51 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/02/17 3:00 PM	Reported
39	N022830-010A	SAMP	1	Hexavalent Chromium	02/02/17 3:10 PM	Reported
40	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 3:19 PM	Not Reported
41	N022830-011A	SAMP	1	Hexavalent Chromium	02/02/17 3:28 PM	Reported
42	N022830-011AMS	MS	1	Hexavalent Chromium	02/02/17 3:38 PM	Reported

rba 2/6/2017

IC7 RBA 2/6/2017 1:22 PM

2/7/2017

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N022819-006AMS	MS	1	Hexavalent Chromium	02/02/17 3:48 PM	Reported
44	N022819-008AMS	MS	1	Hexavalent Chromium	02/02/17 3:57 PM	Reported
45	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 4:06 PM	Not Reported
46	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 4:16 PM	Not Reported
47	N022820-002A	SAMP	1	Hexavalent Chromium	02/02/17 4:25 PM	Reported
48	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 4:35 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	02/02/17 4:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/02/17 4:54 PM	Reported
51	N022820-003A	SAMP	1	Hexavalent Chromium	02/02/17 5:03 PM	Reported
52	N022820-003AMS	MS	1	Hexavalent Chromium	02/02/17 5:13 PM	Reported
53	N022927-004A	SAMP	1	Hexavalent Chromium	02/02/17 5:22 PM	Reported
54	N022927-004AMS	MS	1	Hexavalent Chromium	02/02/17 5:31 PM	Reported
55	N022927-002A	SAMP	1	Hexavalent Chromium	02/02/17 5:43 PM	Reported
56	N022927-004AMSD	MSD	1	Hexavalent Chromium	02/02/17 5:53 PM	Reported
57	N022927-002ADUP	DUP	1	Hexavalent Chromium	02/02/17 6:04 PM	Reported
58	N022927-003A	SAMP	1	Hexavalent Chromium	02/02/17 6:14 PM	Reported
59	N022927-006A	SAMP	1	Hexavalent Chromium	02/02/17 6:23 PM	Reported
60	N022927-007A	SAMP	1	Hexavalent Chromium	02/02/17 6:41 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/02/17 6:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/02/17 7:02 PM	Reported
63	N022819-009AMS	MS	1	Hexavalent Chromium	02/02/17 7:11 PM	Reported
64	N022819-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:21 PM	Reported
65	N022830-010AMS	MS	1	Hexavalent Chromium	02/02/17 7:30 PM	Reported
66	N022820-002AMS	MS	1	Hexavalent Chromium	02/02/17 7:40 PM	Reported
67	LCS-R113261	LCS	1	Hexavalent Chromium	02/02/17 7:49 PM	Reported
68	MB-R113261	MBLK	1	Hexavalent Chromium	02/02/17 7:59 PM	Reported
69	N022922-005A	SAMP	1	Hexavalent Chromium	02/02/17 8:08 PM	Reported
70	N022922-005AMS	MS	1	Hexavalent Chromium	02/02/17 8:17 PM	Not Reported
71	N022922-005AMSD	MSD	1	Hexavalent Chromium	02/02/17 8:27 PM	Not Reported
72	N022922-013A	SAMP	50	Hexavalent Chromium	02/02/17 8:36 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/02/17 8:46 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/02/17 8:55 PM	Reported
75	N022922-013AMS	MS	50	Hexavalent Chromium	02/02/17 9:05 PM	Reported
76	N022922-004A	SAMP	1	Hexavalent Chromium	02/02/17 9:14 PM	Reported
77	N022922-004ADUP	DUP	1	Hexavalent Chromium	02/02/17 9:24 PM	Reported
78	N022922-001A	SAMP	1	Hexavalent Chromium	02/02/17 9:33 PM	Reported
79	N022922-002A	SAMP	1	Hexavalent Chromium	02/02/17 9:43 PM	Reported
80	N022922-003A	SAMP	1	Hexavalent Chromium	02/02/17 9:52 PM	Not Reported
81	N022922-006A	SAMP	200	Hexavalent Chromium	02/02/17 10:02 PM	Reported
82	N022922-007A	SAMP	200	Hexavalent Chromium	02/02/17 10:11 PM	Reported
83	N022922-008A	SAMP	1	Hexavalent Chromium	02/02/17 10:20 PM	Reported
84	N022922-009A	SAMP	1	Hexavalent Chromium	02/02/17 10:30 PM	Not Reported

INJECTION LOG: 170202A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	02/02/17 10:39 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	02/02/17 10:49 PM	Reported
87	N022922-010A	SAMP	100	Hexavalent Chromium	02/02/17 10:59 PM	Reported
88	N022922-011A	SAMP	1	Hexavalent Chromium	02/02/17 11:08 PM	Reported
89	N022922-012A	SAMP	50	Hexavalent Chromium	02/02/17 11:17 PM	Reported
90	N022922-014A	SAMP	50	Hexavalent Chromium	02/02/17 11:27 PM	Reported
91	N022922-003A	SAMP	10	Hexavalent Chromium	02/02/17 11:36 PM	Reported
92	N022922-009AMS	MS	5	Hexavalent Chromium	02/02/17 11:46 PM	Reported
93	N022922-009AMSD	MSD	5	Hexavalent Chromium	02/02/17 11:55 PM	Reported
94	N022922-009A	SAMP	5	Hexavalent Chromium	02/03/17 12:05 AM	Reported
95	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:14 AM	Not Reported
96	N022828-001AMS	MS	1	Hexavalent Chromium	02/03/17 12:23 AM	Not Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	02/03/17 12:33 AM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	02/03/17 12:42 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170202A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Feb/17 01:13:11**
No. of Injections:	**101**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2017 09:26	Finished	
2	BLANK	2	1000	Unknown		01/09/2017 09:36	Finished	
3	iBLANK	3	1000	Unknown		01/09/2017 09:46	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2017 09:55	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2017 10:05	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2017 10:14	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2017 10:24	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2017 10:33	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2017 10:43	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/02/2017 09:50	Finished	
11	BLANK	2	1000	Unknown		02/02/2017 10:01	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/02/2017 10:10	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/02/2017 10:20	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/02/2017 10:29	Finished	CCB R170103B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/02/2017 10:39	Finished	MB R170112D
16	LCS-H2O,LCS,1	7	1000	Unknown		02/02/2017 10:48	Finished	LCS, IWST-161114D
17	MB-H2O,MBLK,1	8	1000	Unknown		02/02/2017 11:06	Finished	SAMP, 10mL
18	N022819-006A,SAMF	9	1000	Unknown		02/02/2017 11:17	Finished	SAMP, 10mL
19	N022819-008A,SAMF	10	1000	Unknown		02/02/2017 11:45	Finished	SAMP, 10mL
20	N022819-008AMS,MS	11	1000	Unknown		02/02/2017 11:57	Finished	MS (1ppb), IWST-161114D,10
21	N022819-009A,SAMF	12	1000	Unknown		02/02/2017 12:06	Finished	SAMP, 10mL
22	N022819-009AMS,MS	13	1000	Unknown		02/02/2017 12:16	Finished	MS (1ppb), IWST-161114D,10
23	N022819-010A,SAMF	14	1000	Unknown		02/02/2017 12:25	Finished	SAMP, 10mL
24	N022819-010AMS,MS	15	1000	Unknown		02/02/2017 12:43	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/02/2017 12:55	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/02/2017 13:07	Finished	CCB R170112D
27	N022820-001A,SAMF	18	1000	Unknown		02/02/2017 13:16	Finished	SAMP, 10mL
28	N022820-001AMS,MS	19	1000	Unknown		02/02/2017 13:25	Finished	MS (1ppb), IWST-161114D,10
29	N022774-008A,SAMF	20	1000	Unknown		02/02/2017 13:35	Finished	SAMP, 10mL
30	N022774-009A,SAMF	21	1000	Unknown		02/02/2017 13:45	Finished	SAMP, 10mL
31	N022774-010A,SAMF	22	1000	Unknown		02/02/2017 13:54	Finished	SAMP, 10mL
32	N022774-011A,SAMF	23	1000	Unknown		02/02/2017 14:03	Finished	SAMP, 10mL
33	N022830-005A,SAMF	24	1000	Unknown		02/02/2017 14:13	Finished	SAMP, 10mL
34	N022830-005AMS,MS	25	1000	Unknown		02/02/2017 14:22	Finished	MS (1ppb), IWST-161114D,10
35	N022830-006A,SAMF	26	1000	Unknown		02/02/2017 14:32	Finished	SAMP, 10mL
36	N022830-006AMS,MS	27	1000	Unknown		02/02/2017 14:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/02/2017 14:51	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/02/2017 15:00	Finished	CCB R170112D
39	N022830-010A,SAMF	30	1000	Unknown		02/02/2017 15:10	Finished	SAMP, 10mL
40	N022830-010AMS,MS	31	1000	Unknown		02/02/2017 15:19	Finished	MS (1ppb), IWST-161114D,10
41	N022830-011A,SAMF	32	1000	Unknown		02/02/2017 15:28	Finished	SAMP, 10mL
42	N022830-011AMS,MS	33	1000	Unknown		02/02/2017 15:38	Finished	MS (1ppb), IWST-161114D,10
43	N022819-006AMS,MS	34	1000	Unknown		02/02/2017 15:48	Finished	MS (1ppb), IWST-161114D,10
44	N022819-008AMS,MS	35	1000	Unknown		02/02/2017 15:57	Finished	MS (1ppb), IWST-161114D,10
45	N022819-009AMS,MS	36	1000	Unknown		02/02/2017 16:06	Finished	MS (1ppb), IWST-161114D,10
46	N022819-010AMS,MS	37	1000	Unknown		02/02/2017 16:16	Finished	MS (1ppb), IWST-161114D,10
47	N022820-002A,SAMF	38	1000	Unknown		02/02/2017 16:25	Finished	SAMP, 10mL
48	N022820-002AMS,MS	39	1000	Unknown		02/02/2017 16:35	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV1,1,	40	1000	Unknown		02/02/2017 16:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/02/2017 16:54	Finished	CCB R170103B
51	N022820-003A,SAMF	42	1000	Unknown		02/02/2017 17:03	Finished	SAMP, 10mL
52	N022820-003AMS,MS	43	1000	Unknown		02/02/2017 17:13	Finished	MS (1ppb), IWST-161114D,10
53	N022927-004A,SAMF	44	1000	Unknown		02/02/2017 17:22	Finished	SAMP, 10mL
54	N022927-004AMS,MS	45	1000	Unknown		02/02/2017 17:31	Finished	MS (5ppb), IWST-161114D,10
55	N022927-002A,SAMF	47	1000	Unknown		02/02/2017 17:43	Finished	SAMP, 10mL
56	N022927-004AMSD,M	46	1000	Unknown		02/02/2017 17:53	Finished	MSD (5ppb), IWST-161114D,1
57	N022927-002ADUP,D	48	1000	Unknown		02/02/2017 18:04	Finished	DUP, 10mL
58	N022927-003A,SAMF	49	1000	Unknown		02/02/2017 18:14	Finished	SAMP, 10mL
59	N022927-006A,SAMF	50	1000	Unknown		02/02/2017 18:23	Finished	SAMP, 10mL
60	N022927-007A,SAMF	1	1000	Unknown		02/02/2017 18:41	Finished	DUP, 10mL

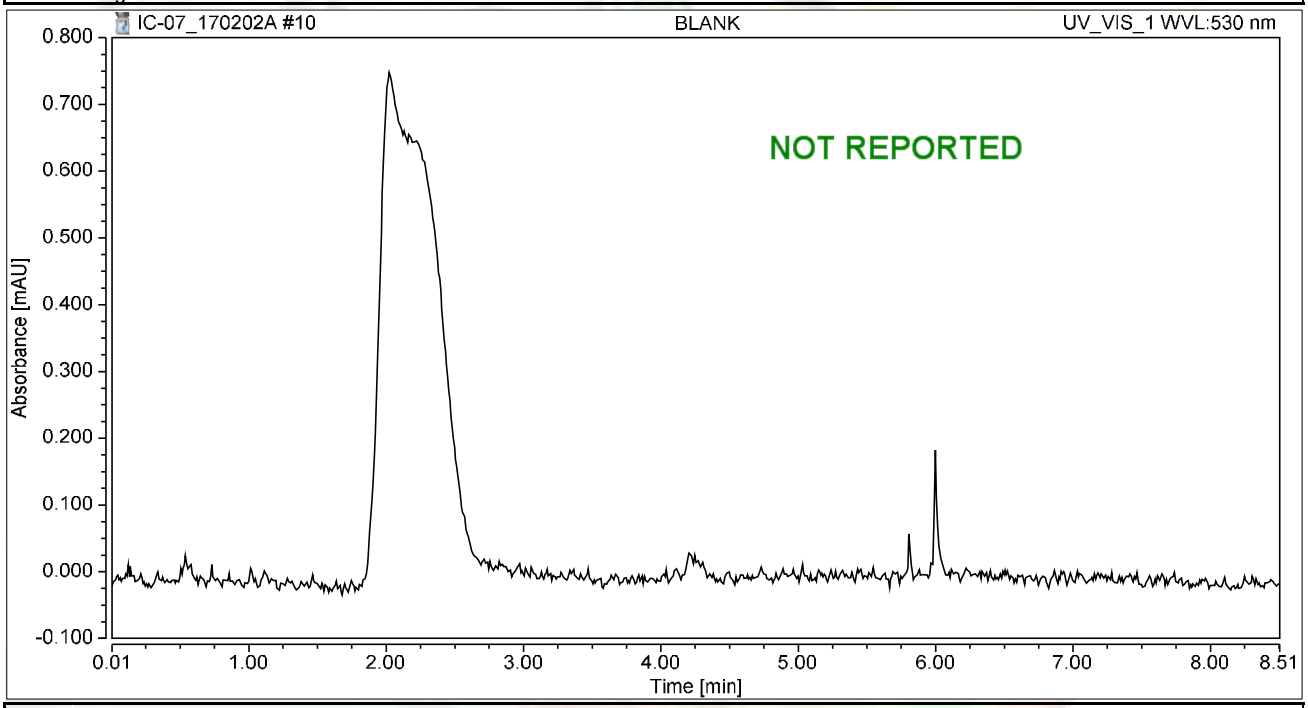
61	CCV-5,CCV,1,	2	1000	Unknown		02/02/2017 18:52	Finished	CCV @5ppb, IWST-161114C
62	CCB-5,CCB,1,	3	1000	Unknown		02/02/2017 19:02	Finished	CCB R170112D
63	N022819-009AMS,MS	4	1000	Unknown		02/02/2017 19:11	Finished	MS (1ppb), IWST-161114D,10
64	N022819-010AMS,MS	5	1000	Unknown		02/02/2017 19:21	Finished	MS (1ppb), IWST-161114D,10
65	N022830-010AMS,MS	6	1000	Unknown		02/02/2017 19:30	Finished	MS (1ppb), IWST-161114D,10
66	N022820-002AMS,MS	7	1000	Unknown		02/02/2017 19:40	Finished	MS (1ppb), IWST-161114D,10
67	LCS-2,LCS,1	8	1000	Unknown		02/02/2017 19:49	Finished	LCS, IWST-161114D
68	MB-2,MBLK,1	9	1000	Unknown		02/02/2017 19:59	Finished	MB R170112D
69	N022922-005A,SAMP	10	1000	Unknown		02/02/2017 20:08	Finished	SAMP, 10mL
70	N022922-005AMS,MS	11	1000	Unknown		02/02/2017 20:17	Finished	MS (5ppb), IWST-161114D,10
71	N022922-005AMSD,M	12	1000	Unknown		02/02/2017 20:27	Finished	MSD (5ppb), IWST-161114D,1
72	N022922-013A,SAMP	13	1000	Unknown		02/02/2017 20:36	Finished	SAMP, 0.2>10mL
73	CCV-6,CCV1,1,	14	1000	Unknown		02/02/2017 20:46	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	15	1000	Unknown		02/02/2017 20:55	Finished	CCB R170103B
75	N022922-013AMS,MS	16	1000	Unknown		02/02/2017 21:05	Finished	MS (5ppb), IWST-161114D,0.2
76	N022922-004A,SAMP	17	1000	Unknown		02/02/2017 21:14	Finished	SAMP, 10mL
77	N022922-004ADUP,D	18	1000	Unknown		02/02/2017 21:24	Finished	DUP, 10mL
78	N022922-001A,SAMP	19	1000	Unknown		02/02/2017 21:33	Finished	DUP, 10mL
79	N022922-002A,SAMP	20	1000	Unknown		02/02/2017 21:43	Finished	SAMP, 10mL
80	N022922-003A,SAMP	21	1000	Unknown		02/02/2017 21:52	Finished	SAMP, 10mL
81	N022922-006A,SAMP	22	1000	Unknown		02/02/2017 22:02	Finished	SAMP, 10mL
82	N022922-007A,SAMP	23	1000	Unknown		02/02/2017 22:11	Finished	SAMP, 0.05>10mL
83	N022922-008A,SAMP	24	1000	Unknown		02/02/2017 22:20	Finished	SAMP, 0.05>10mL
84	N022922-009A,SAMP	25	1000	Unknown		02/02/2017 22:30	Finished	SAMP, 10mL
85	CCV-7,CCV,1,	26	1000	Unknown		02/02/2017 22:39	Finished	CCV @5ppb, IWST-161114C
86	CCB-7,CCB,1,	27	1000	Unknown		02/02/2017 22:49	Finished	CCB R170112D
87	N022922-010A,SAMP	28	1000	Unknown		02/02/2017 22:59	Finished	SAMP, 0.1>10mL
88	N022922-011A,SAMP	29	1000	Unknown		02/02/2017 23:08	Finished	SAMP, 10mL
89	N022922-012A,SAMP	30	1000	Unknown		02/02/2017 23:17	Finished	SAMP,0.2>10mL
90	N022922-014A,SAMP	31	1000	Unknown		02/02/2017 23:27	Finished	SAMP,0.2>10mL
91	N022922-003A,SAMP	32	1000	Unknown		02/02/2017 23:36	Finished	SAMP, 1>10mL
92	N022922-009AMS,MS	33	1000	Unknown		02/02/2017 23:46	Finished	MS (5ppb), IWST-161114D,2>1
93	N022922-009AMSD,M	34	1000	Unknown		02/02/2017 23:55	Finished	MSD (5ppb), IWST-161114D,2
94	N022922-009A,SAMP	35	1000	Unknown		02/03/2017 00:05	Finished	SAMP, 2>10mL
95	N022828-001AMS,MS	36	1000	Unknown		02/03/2017 00:14	Finished	SAMP, 10mL
96	N022828-001AMS,MS	37	1000	Unknown		02/03/2017 00:23	Finished	MS (1ppb), IWST-161114D,10
97	CCV-8,CCV1,1,	38	1000	Unknown		02/03/2017 00:33	Finished	CCV @10ppb, IWST-161114C
98	CCB-8,CCB,1,	39	1000	Unknown		02/03/2017 00:42	Finished	CCB R170103B
99	SHUTDOWN	40	1000	Unknown		02/03/2017 00:52	Finished	
100	Eluent: R170202A	41	1000	Unknown		n.a.	Finished	Eluent
101	PCR: R170201A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

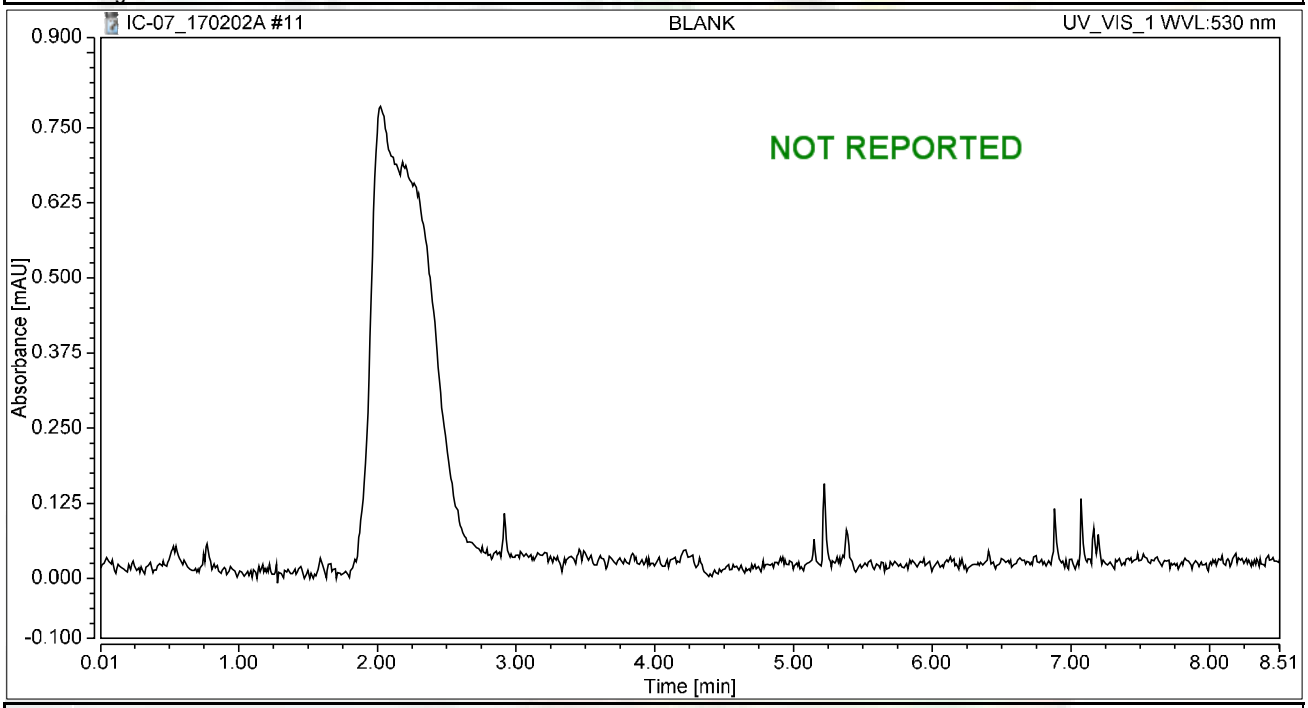
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

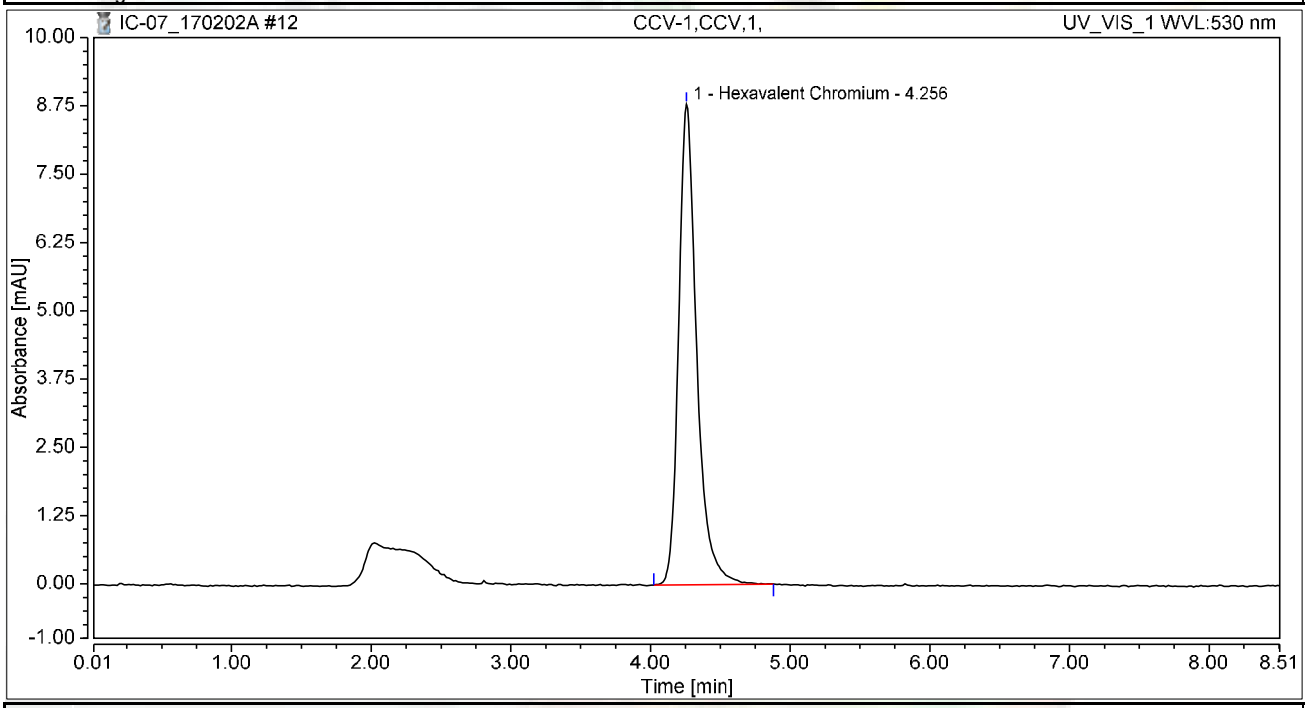
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

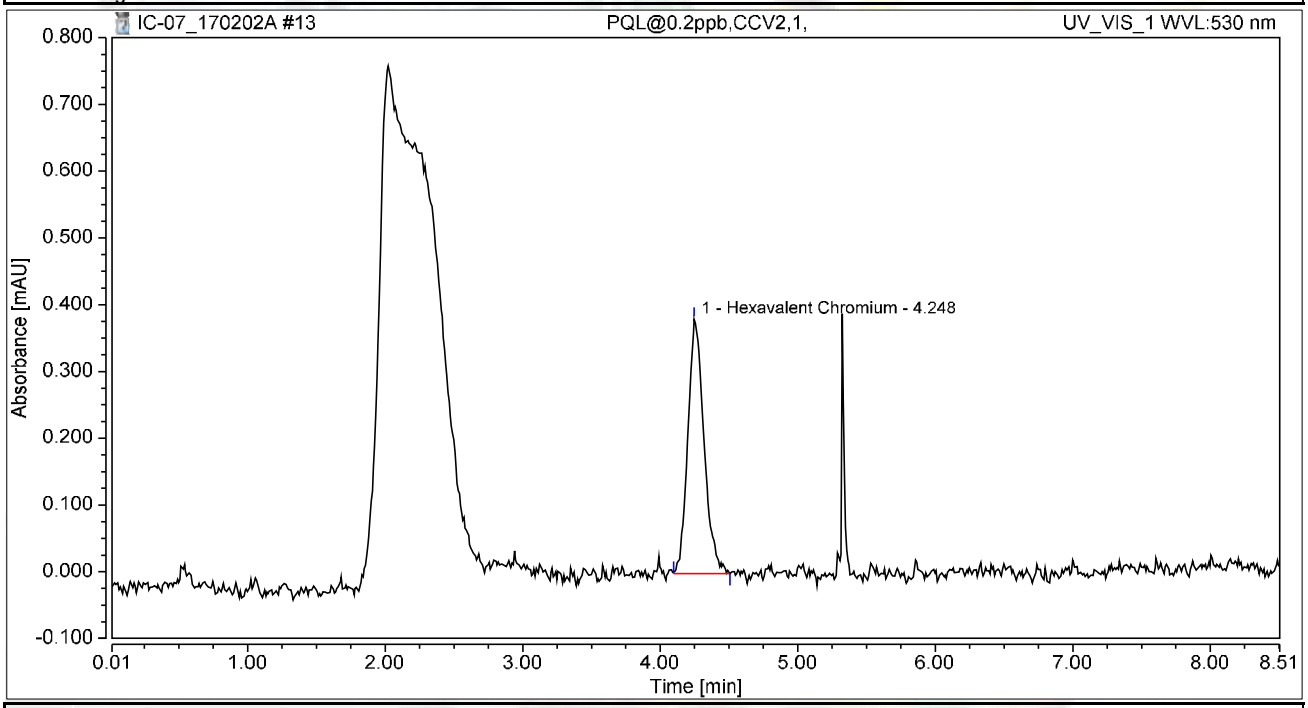
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.324	8.800	100.00	100.00	5.1780
Total:			**1.324**	**8.800**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

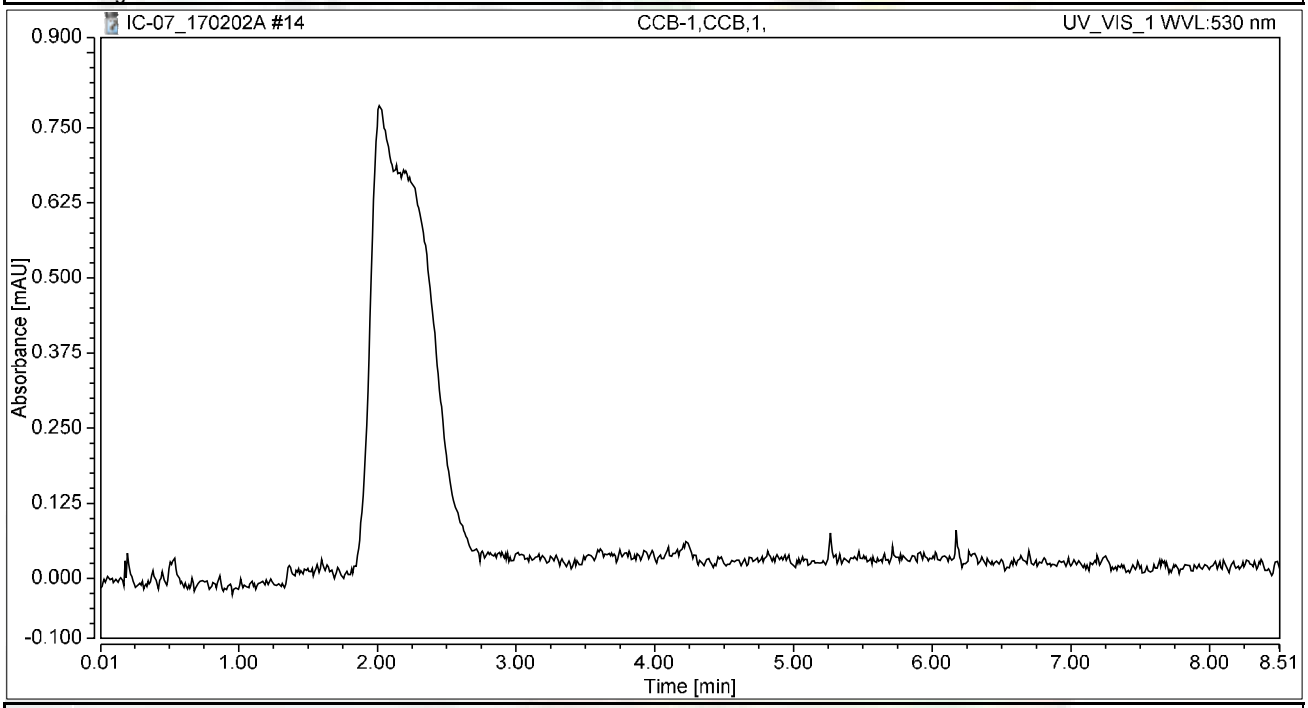
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.052	0.381	100.00	100.00	0.2032
Total:			**0.052**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

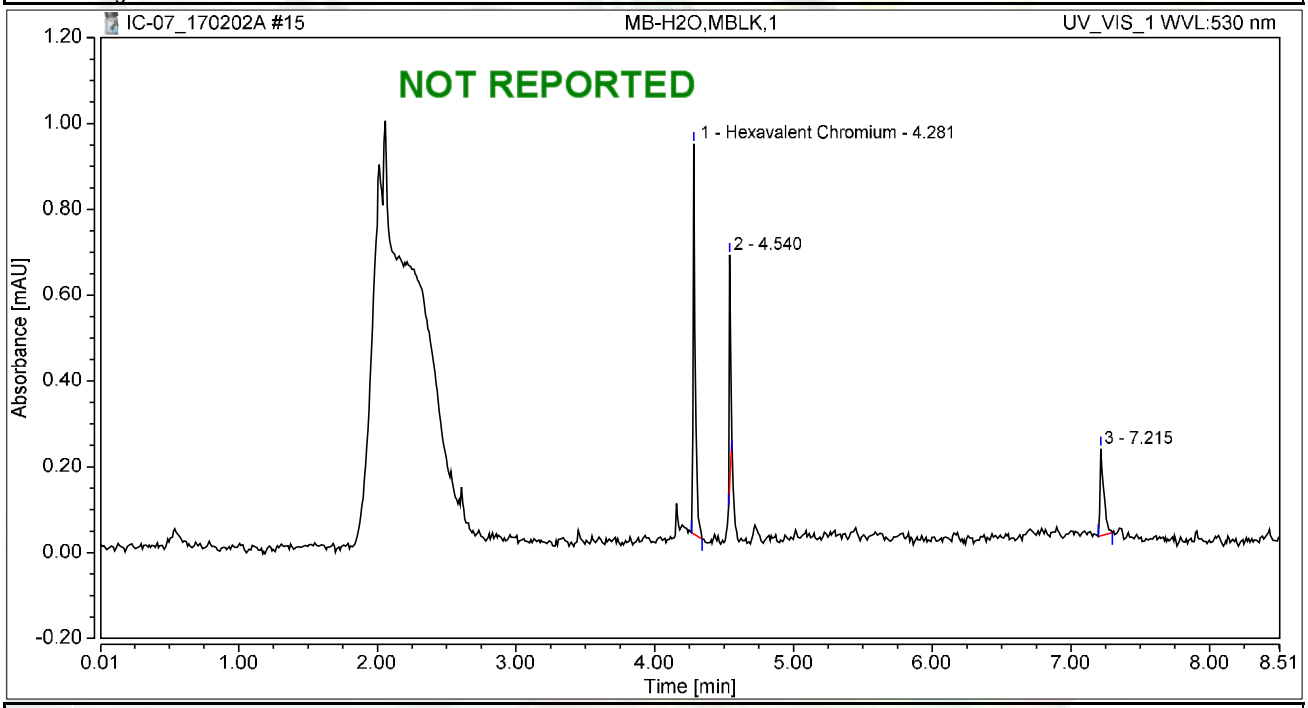
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

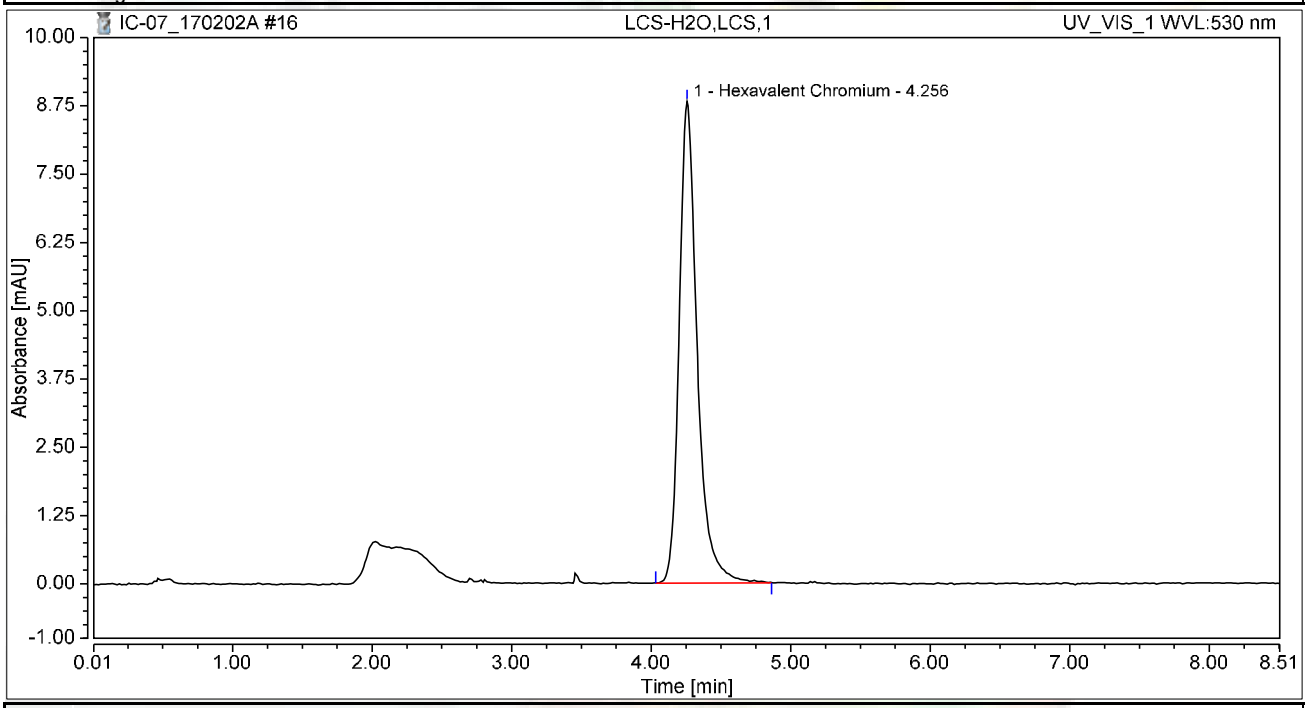
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.281	0.017	0.910	57.22	55.28	0.0681
2		4.540	0.007	0.533	21.97	32.38	n.a.
3		7.215	0.006	0.203	20.81	12.34	n.a.
Total:			**0.030**	**1.645**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

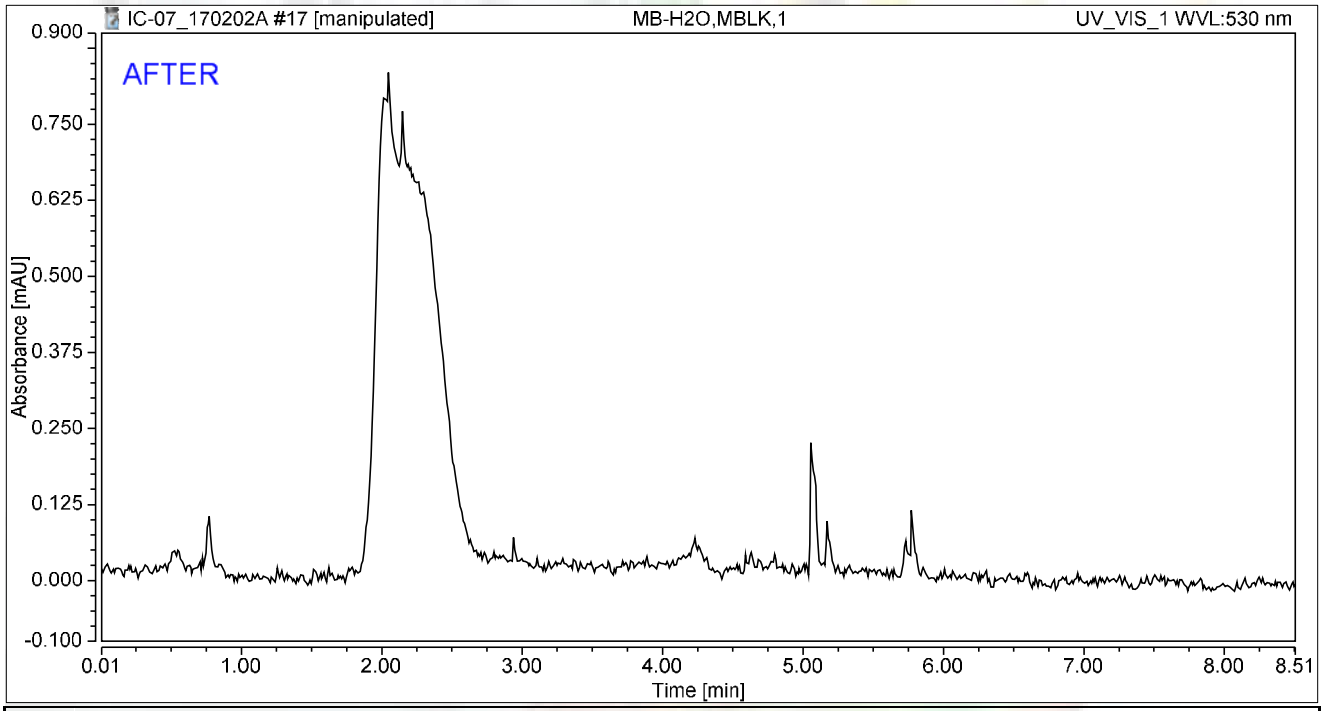
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.317	8.811	100.00	100.00	5.1510
Total:			**1.317**	**8.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 2/6/2017

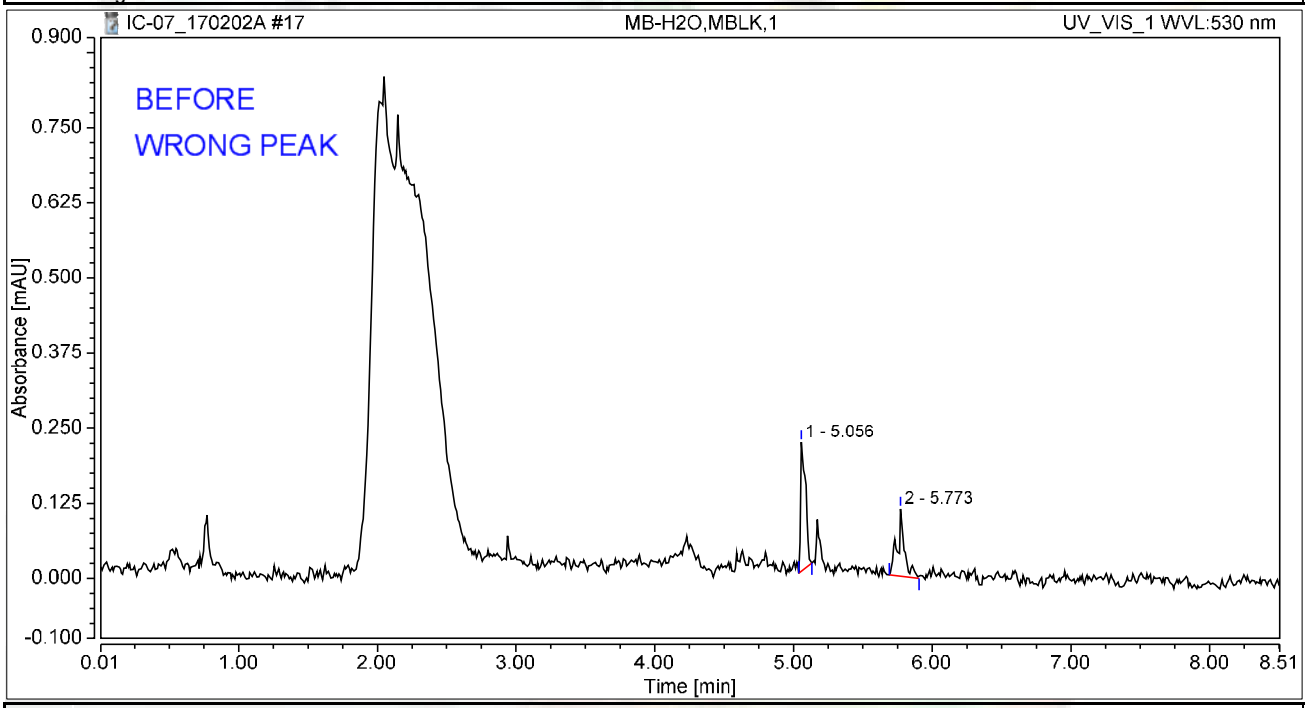
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.056	0.009	0.215	56.37	65.76	n.a.
2		5.773	0.007	0.112	43.63	34.24	n.a.
Total:			**0.015**	**0.327**	**100.00**	**100.00**	

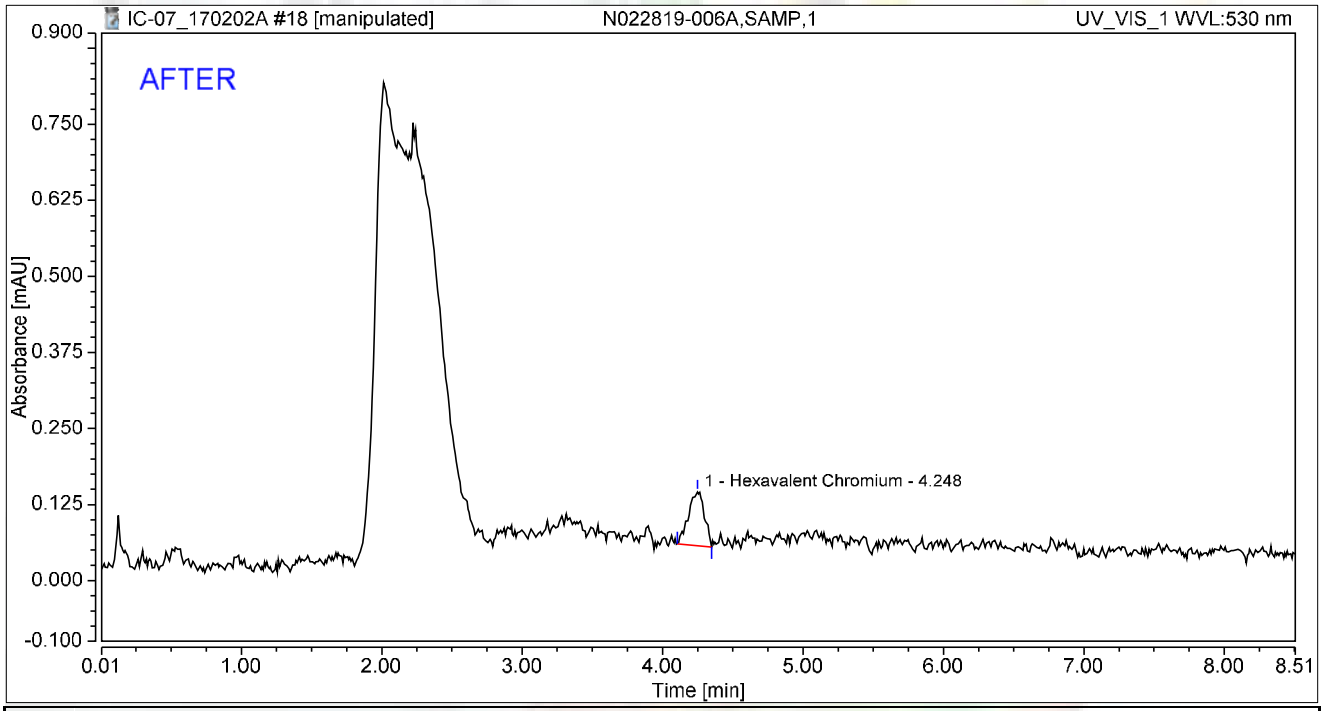
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.012	0.088	100.00	100.00	0.0454
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

rba 2/6/2017

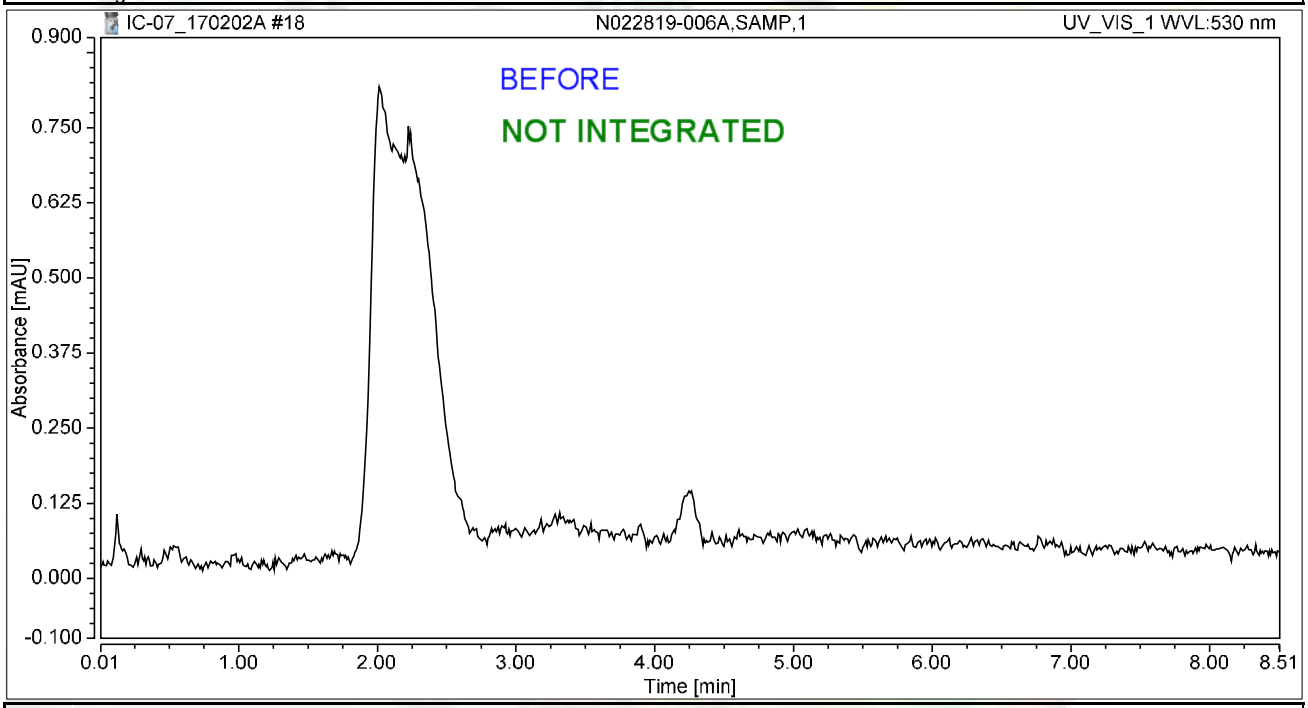
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

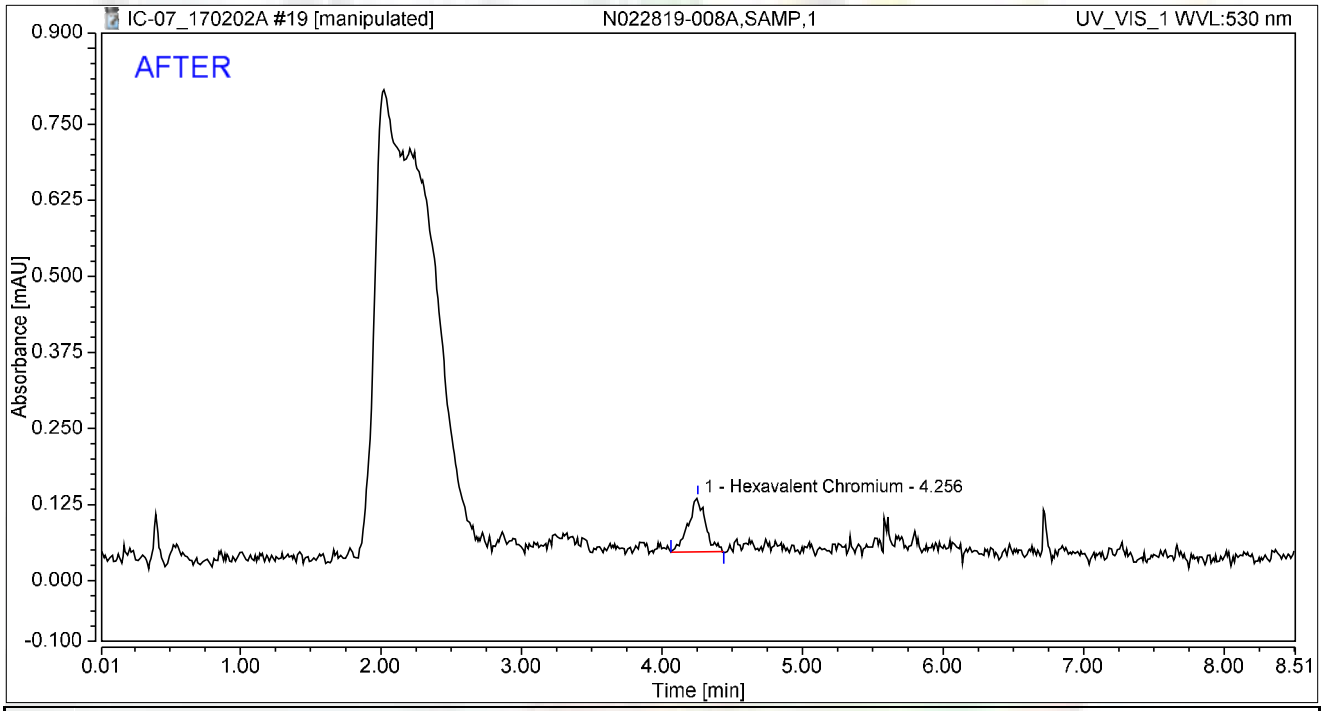
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.013	0.089	100.00	100.00	0.0492
Total:			**0.013**	**0.089**	**100.00**	**100.00**	

rba 2/6/2017

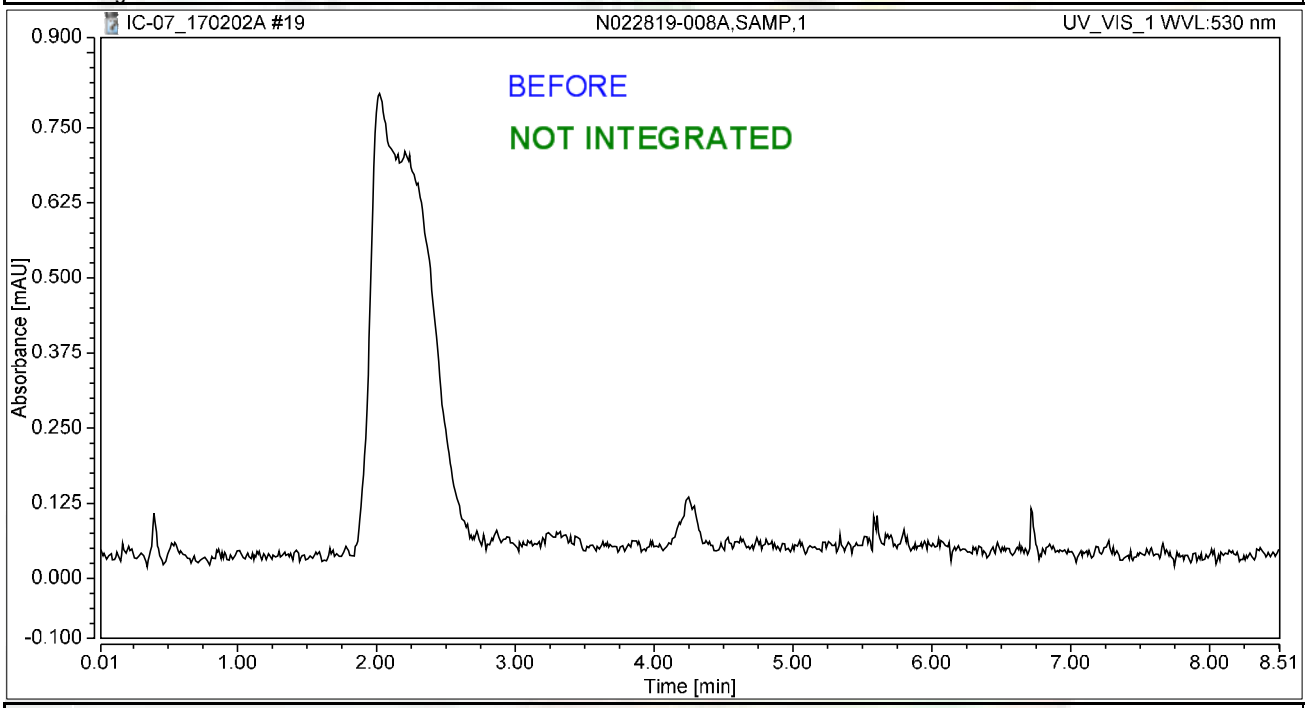
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

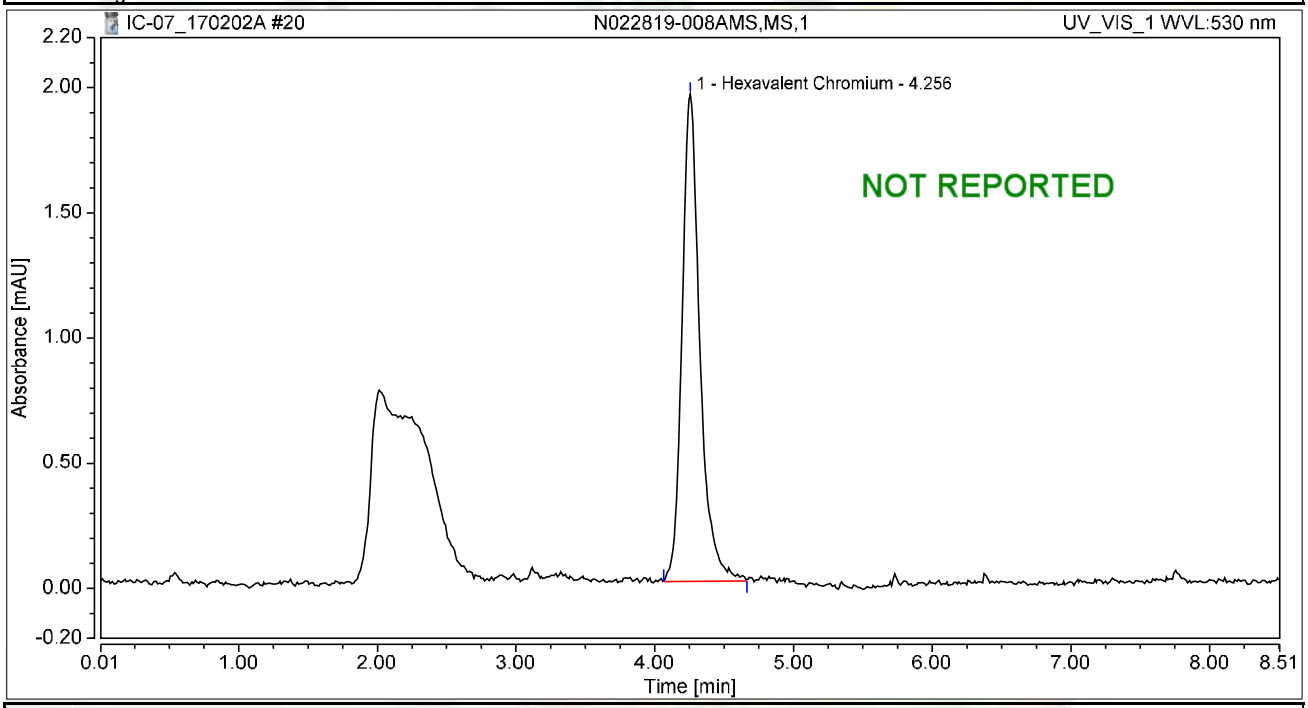
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

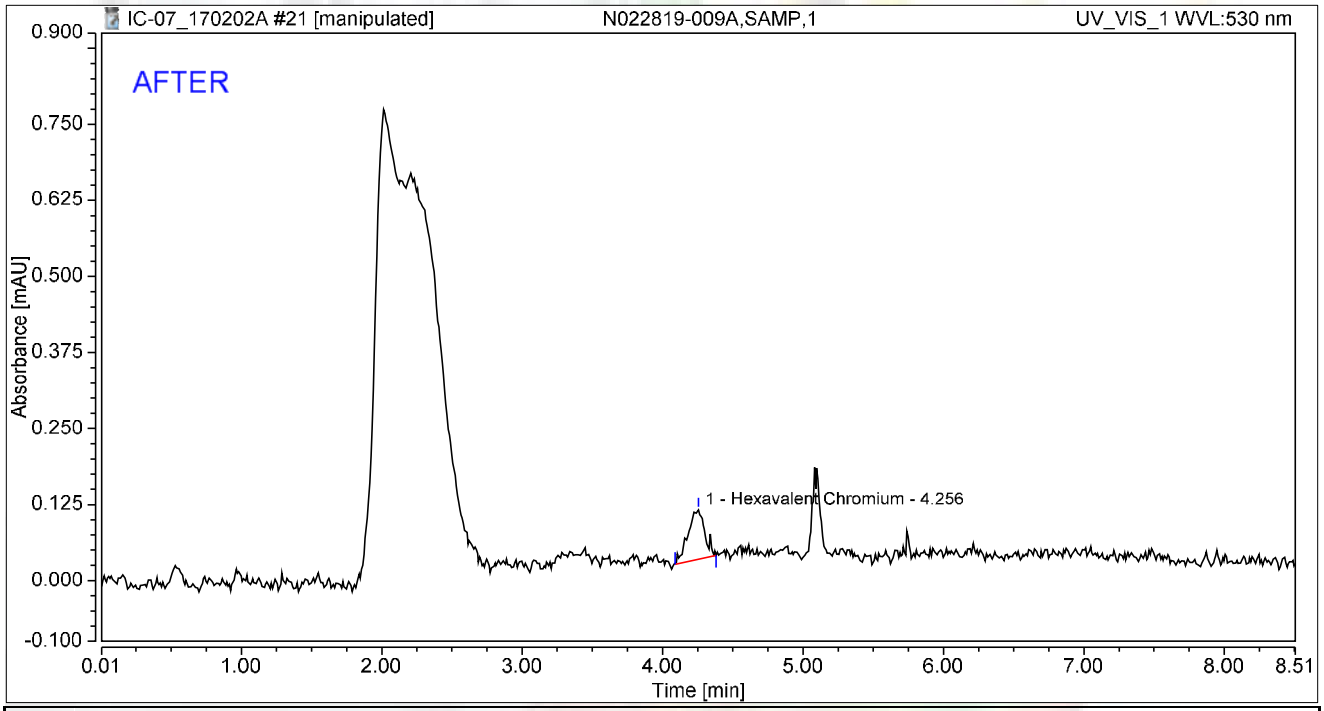
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.290	1.946	100.00	100.00	1.1356
Total:			**0.290**	**1.946**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	100.00	100.00	0.0437
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

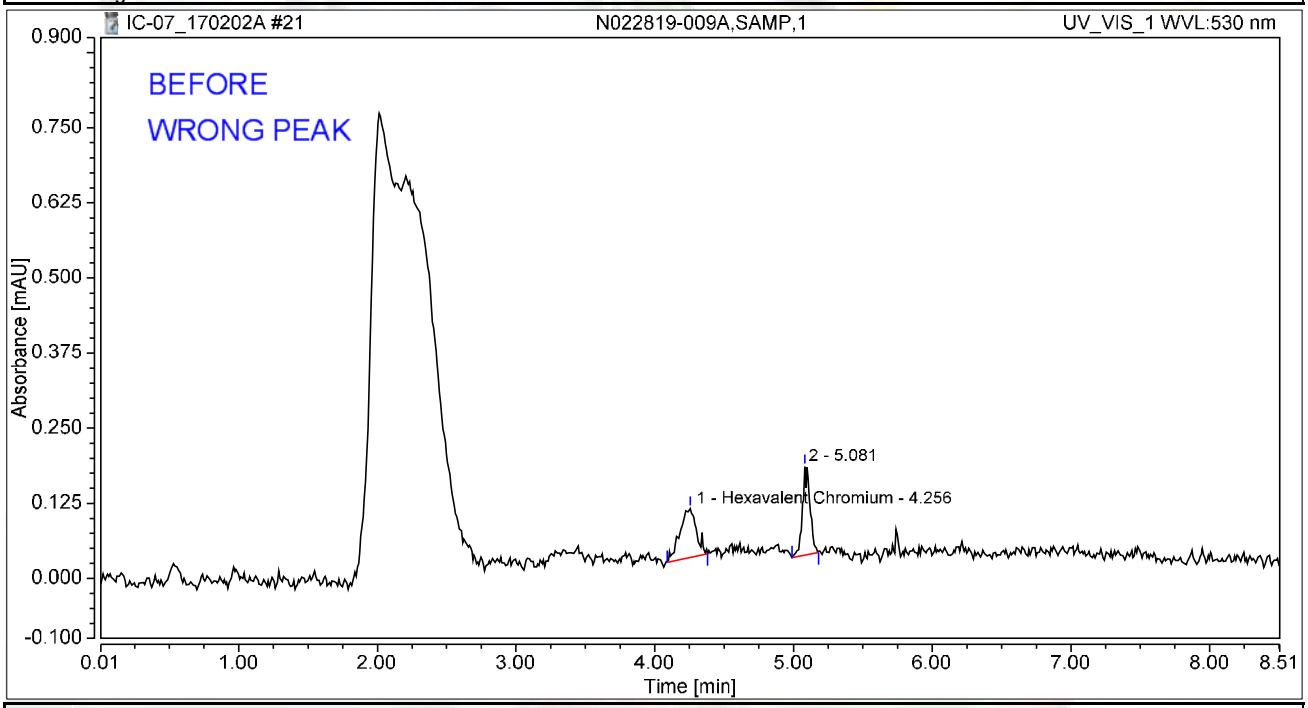
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.011	0.081	54.59	35.48	0.0437
2		5.081	0.009	0.147	45.41	64.52	n.a.
Total:			**0.020**	**0.228**	**100.00**	**100.00**	

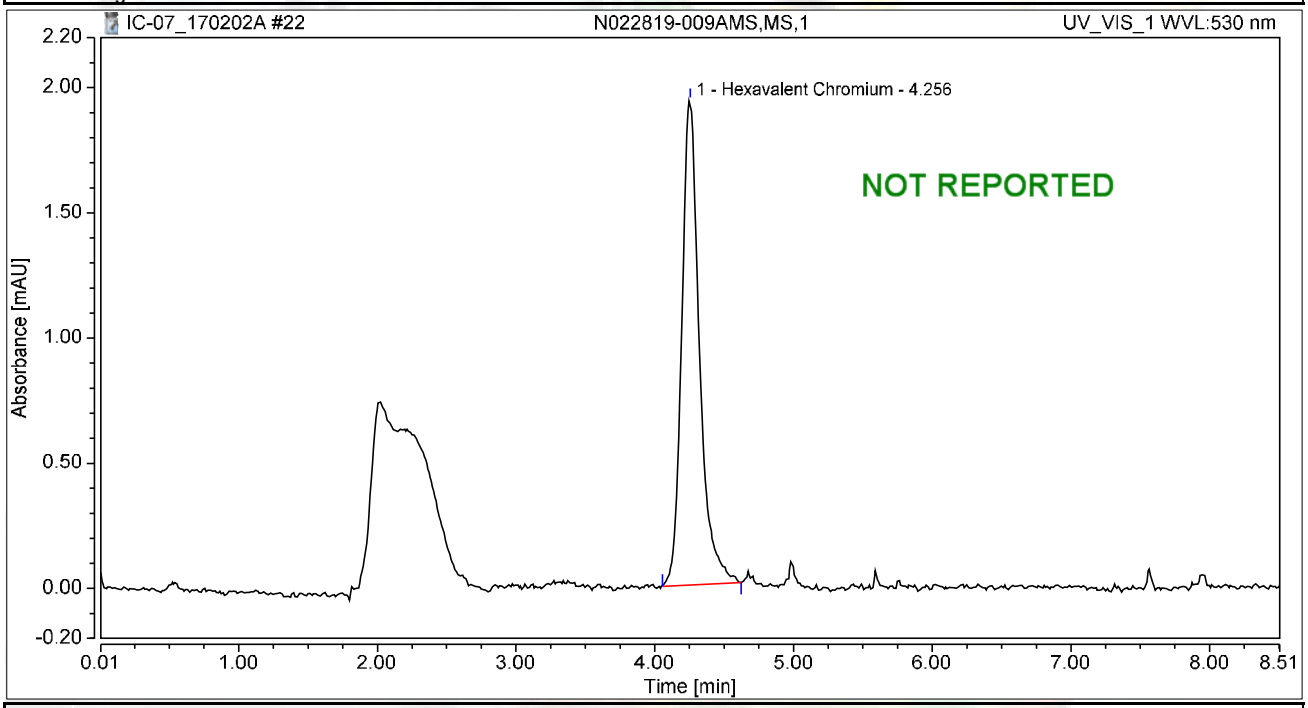
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.287	1.935	100.00	100.00	1.1231
Total:			**0.287**	**1.935**	**100.00**	**100.00**	

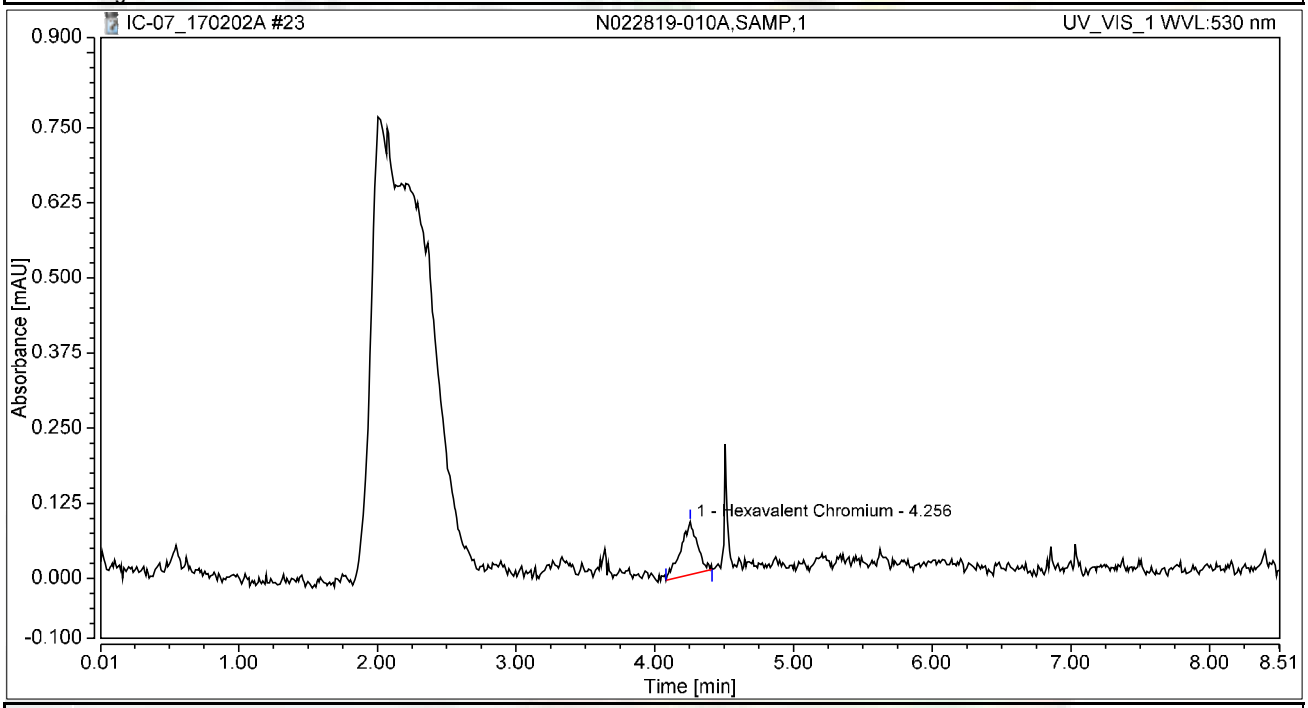
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

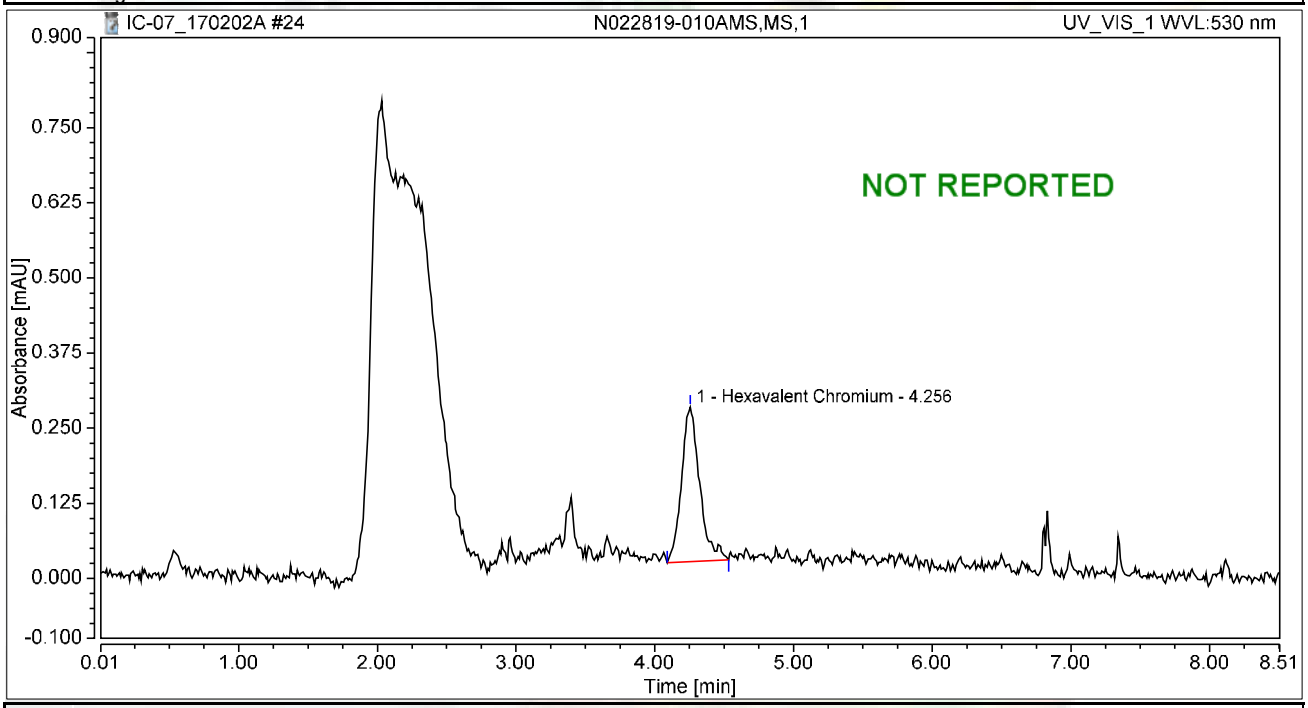
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.012	0.088	100.00	100.00	0.0477
Total:			**0.012**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.039	0.257	100.00	100.00	0.1524
Total:			**0.039**	**0.257**	**100.00**	**100.00**	

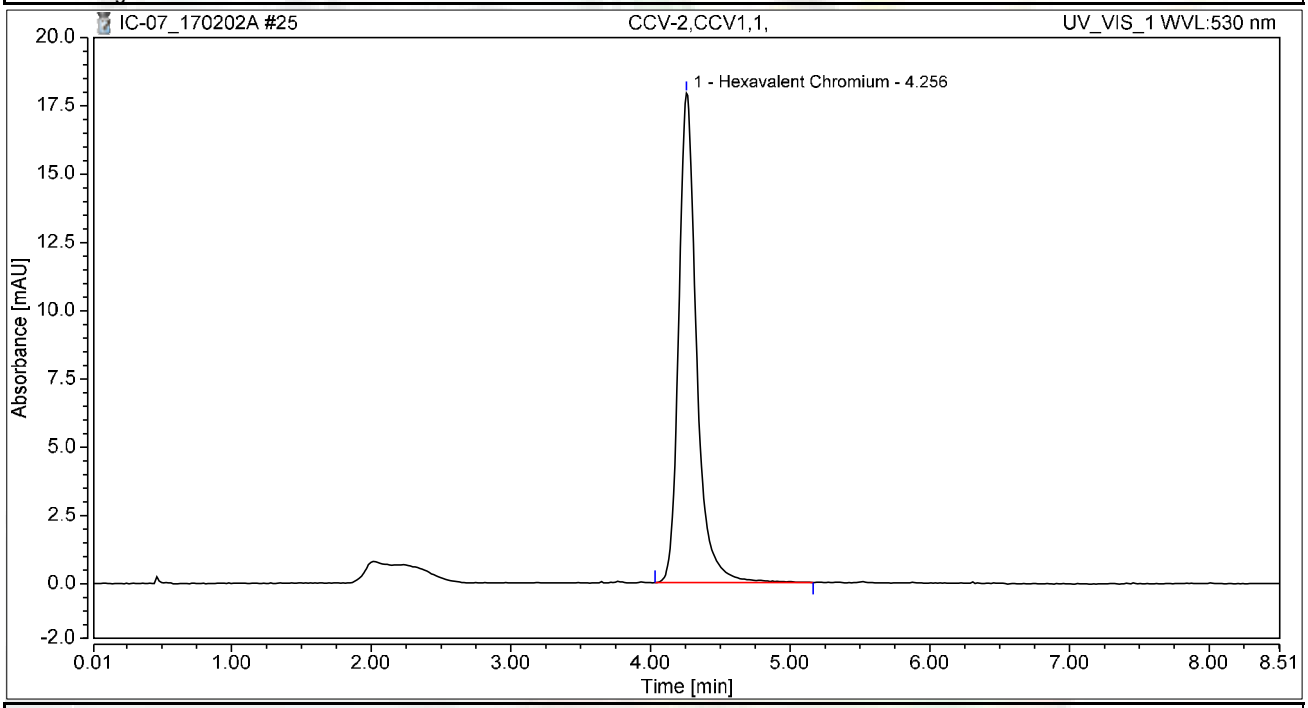
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

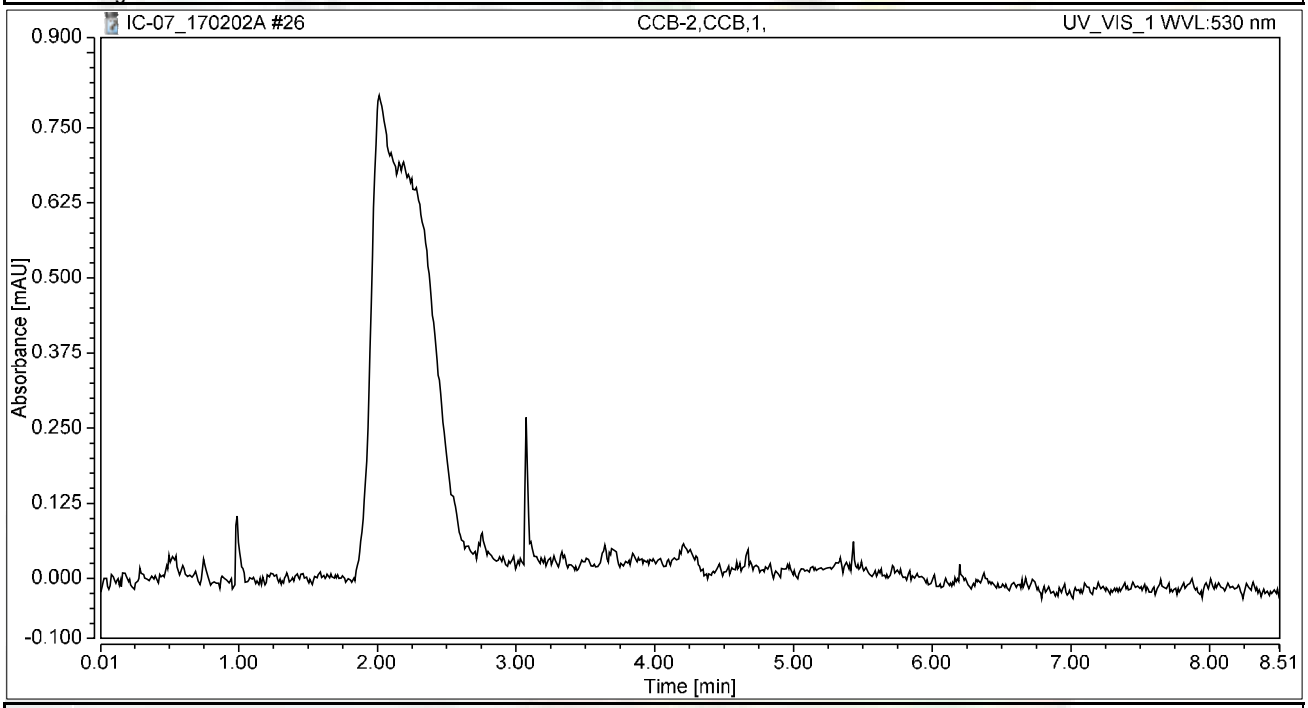
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.651	17.908	100.00	100.00	10.3680
Total:			**2.651**	**17.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

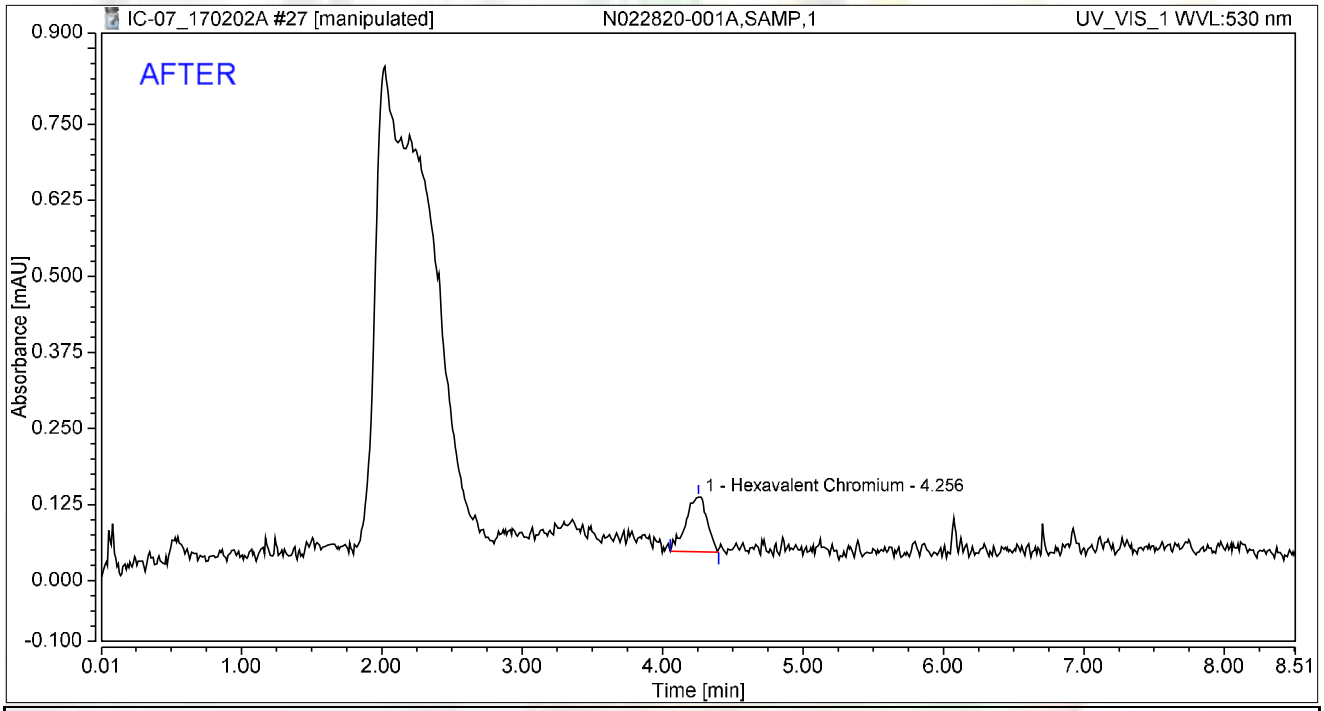
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.016	0.090	100.00	100.00	0.0620
Total:			**0.016**	**0.090**	**100.00**	**100.00**	

rba 2/6/2017

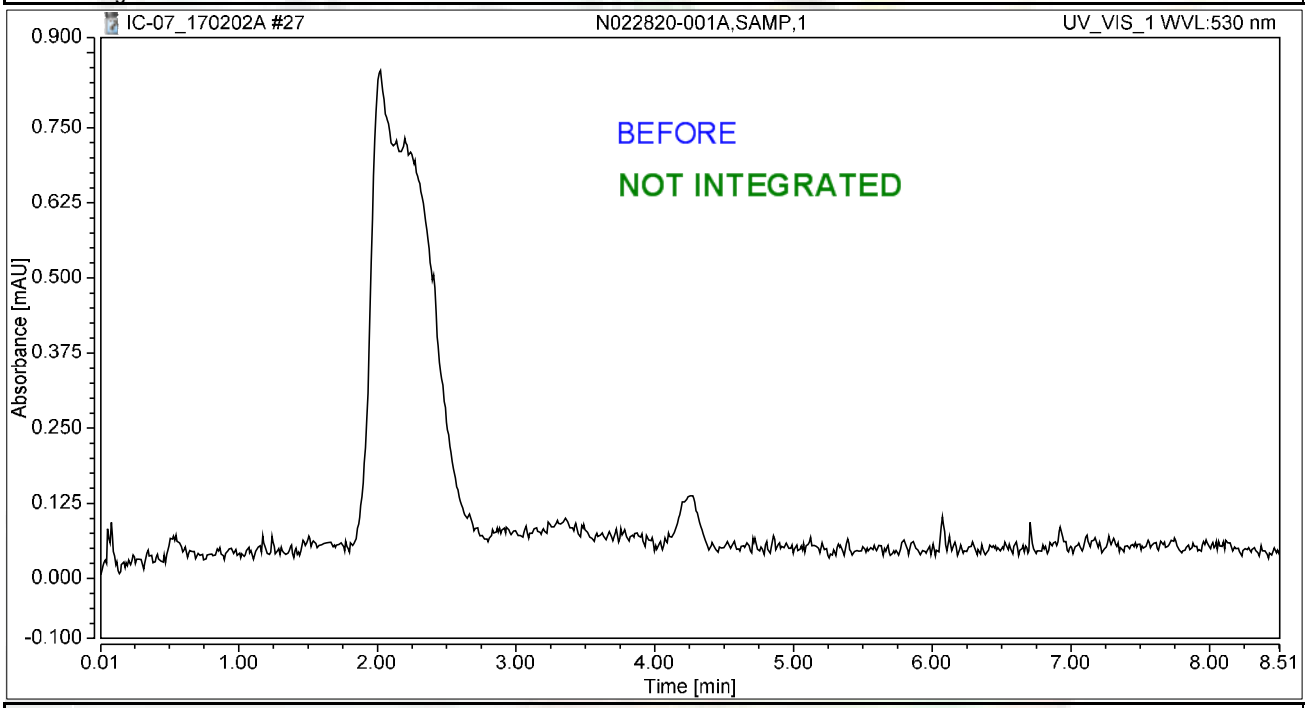
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

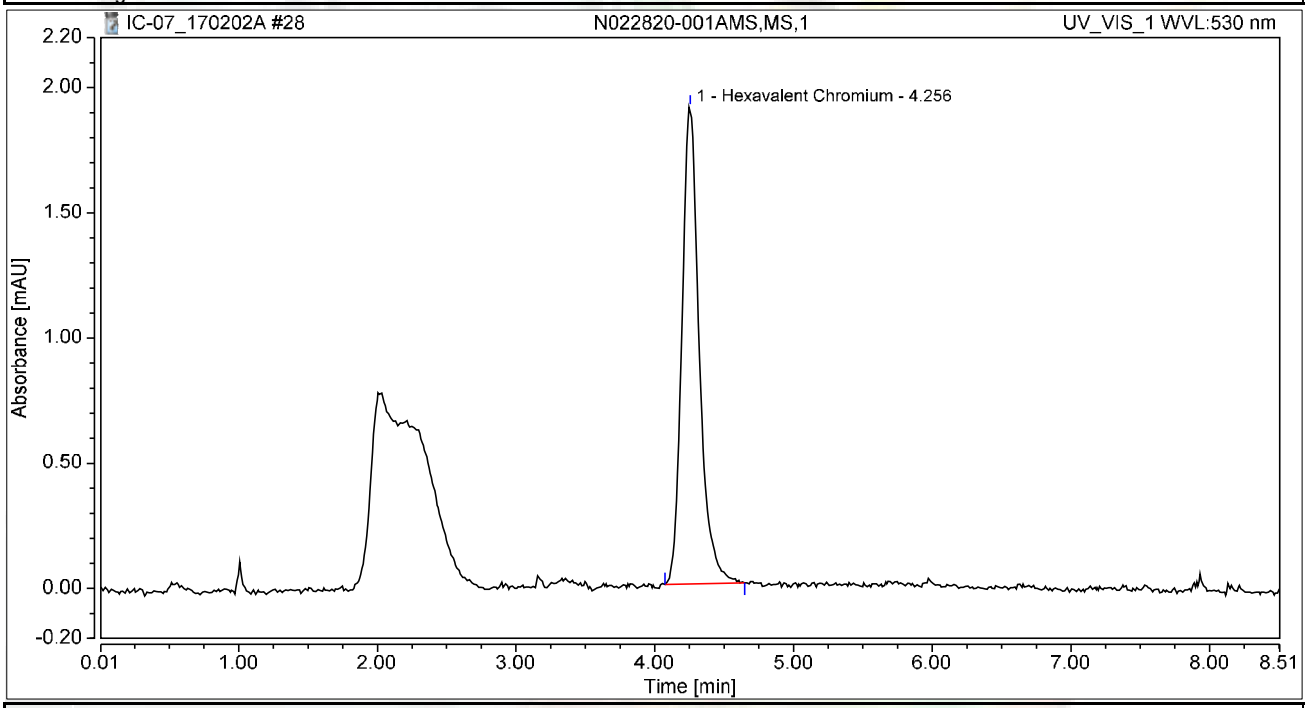
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

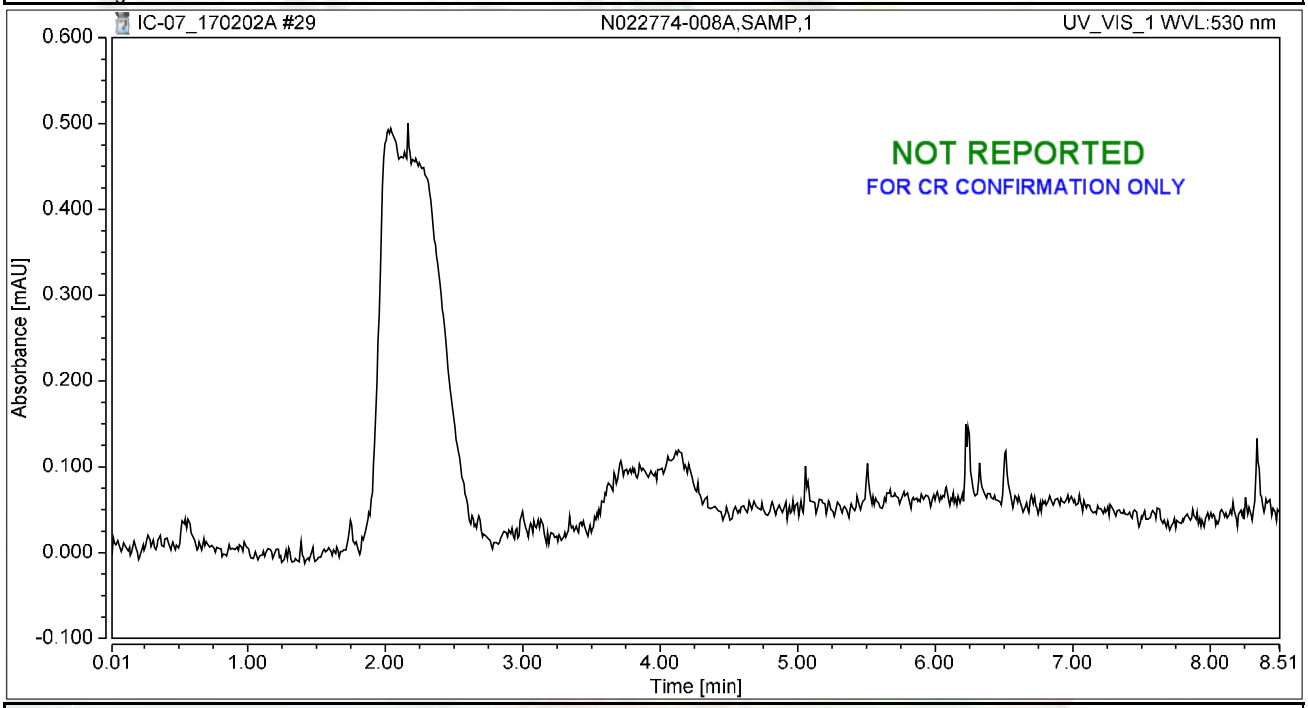
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.277	1.905	100.00	100.00	1.0833
Total:			**0.277**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

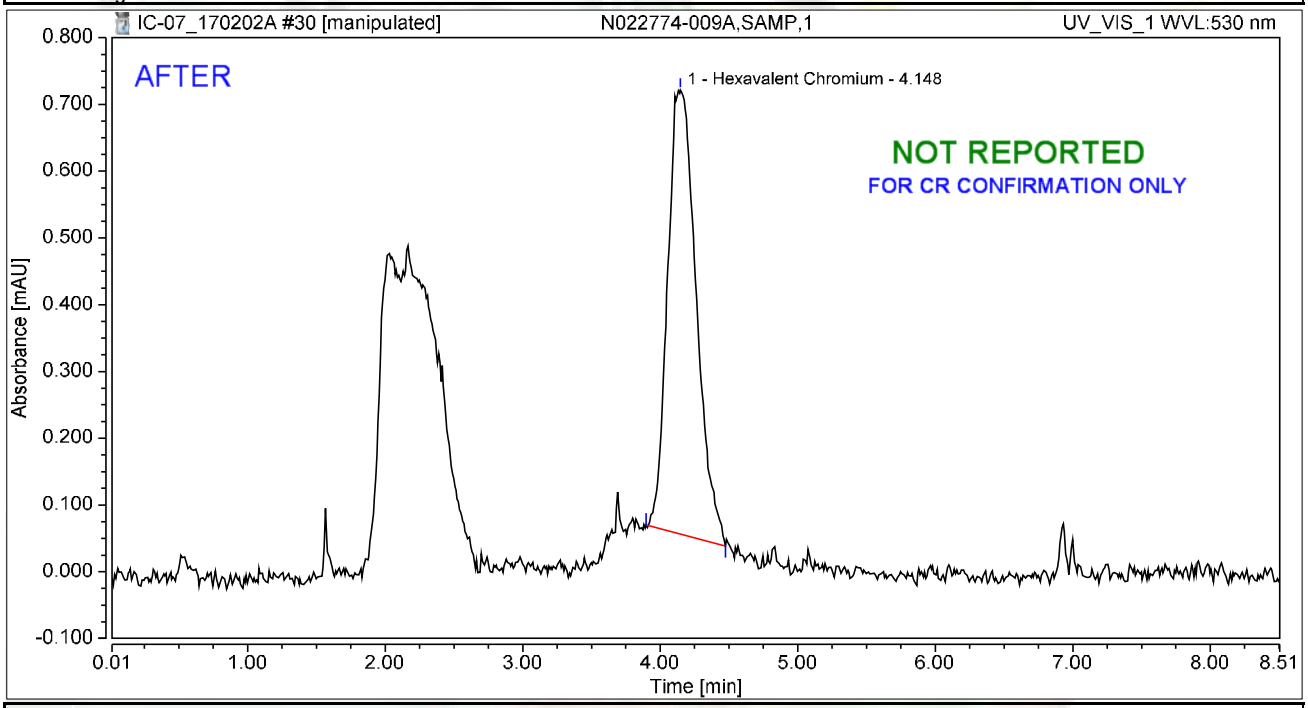
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.160	0.665	100.00	100.00	0.6270
Total:			**0.160**	**0.665**	**100.00**	**100.00**	

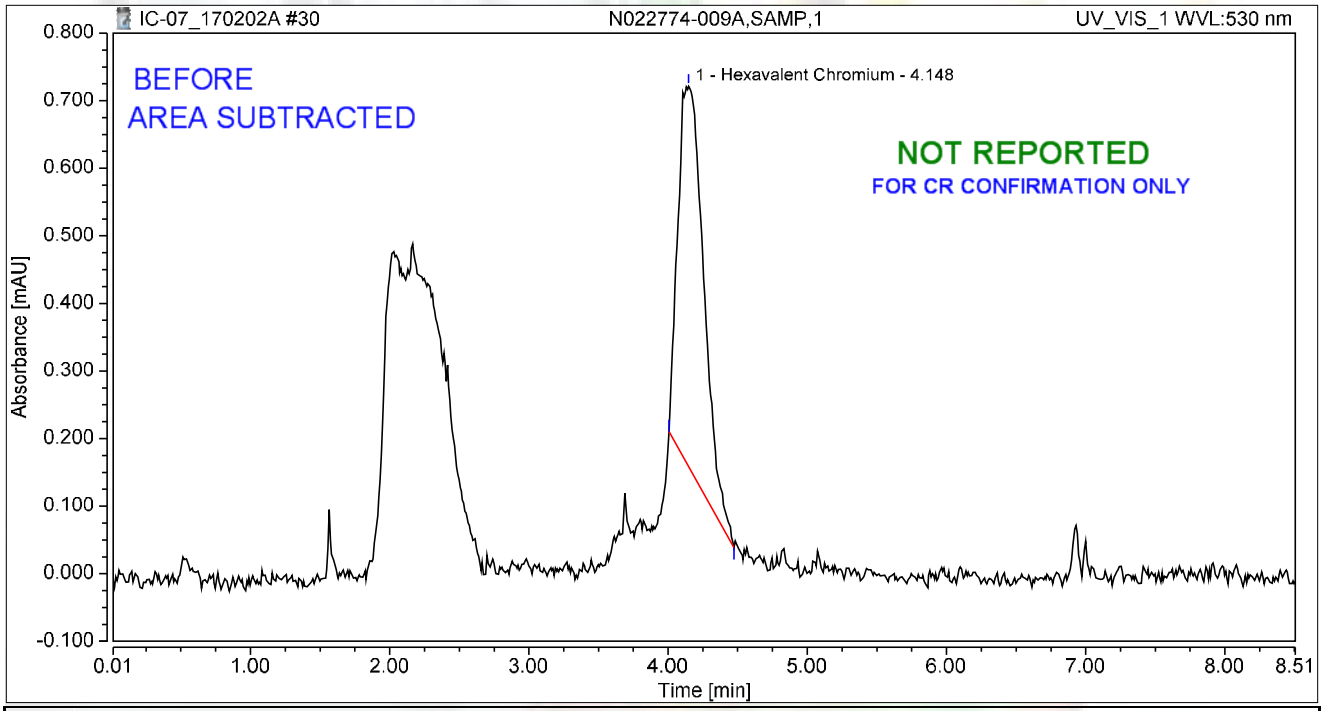
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.122	0.563	100.00	100.00	0.4757
Total:			**0.122**	**0.563**	**100.00**	**100.00**	

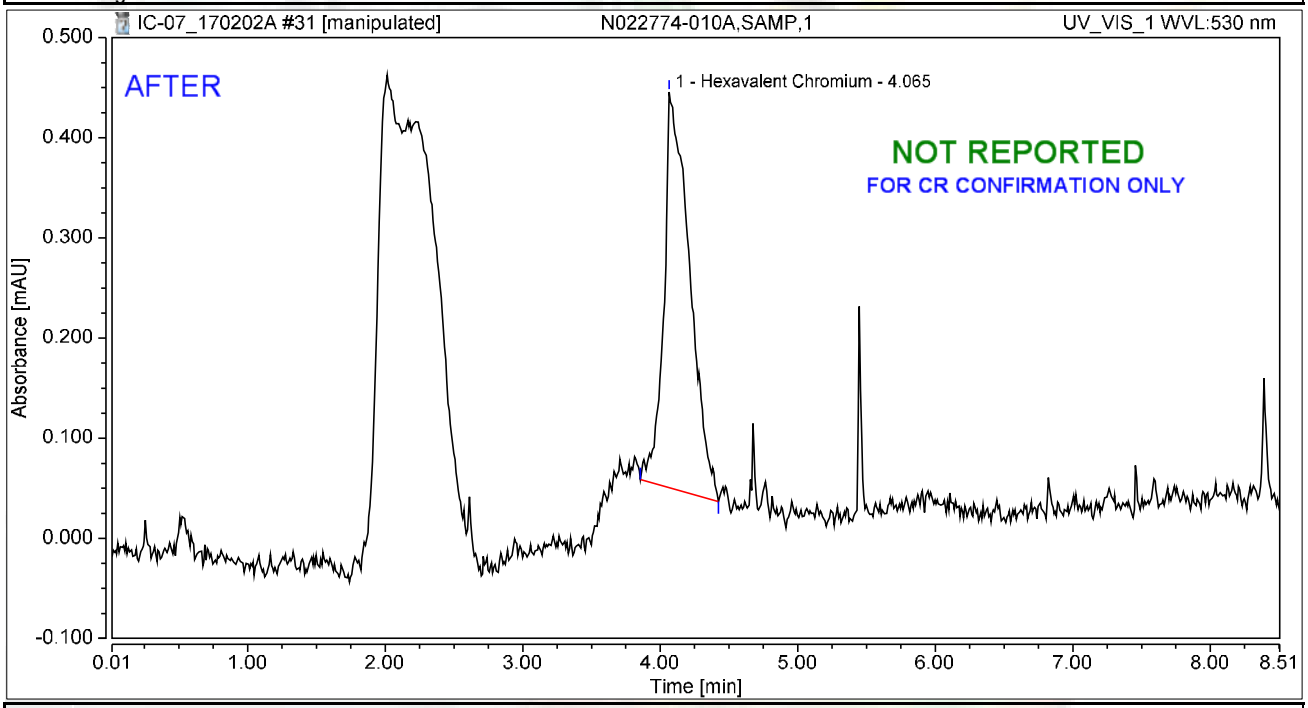
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.086	0.395	100.00	100.00	0.3373
Total:			**0.086**	**0.395**	**100.00**	**100.00**	

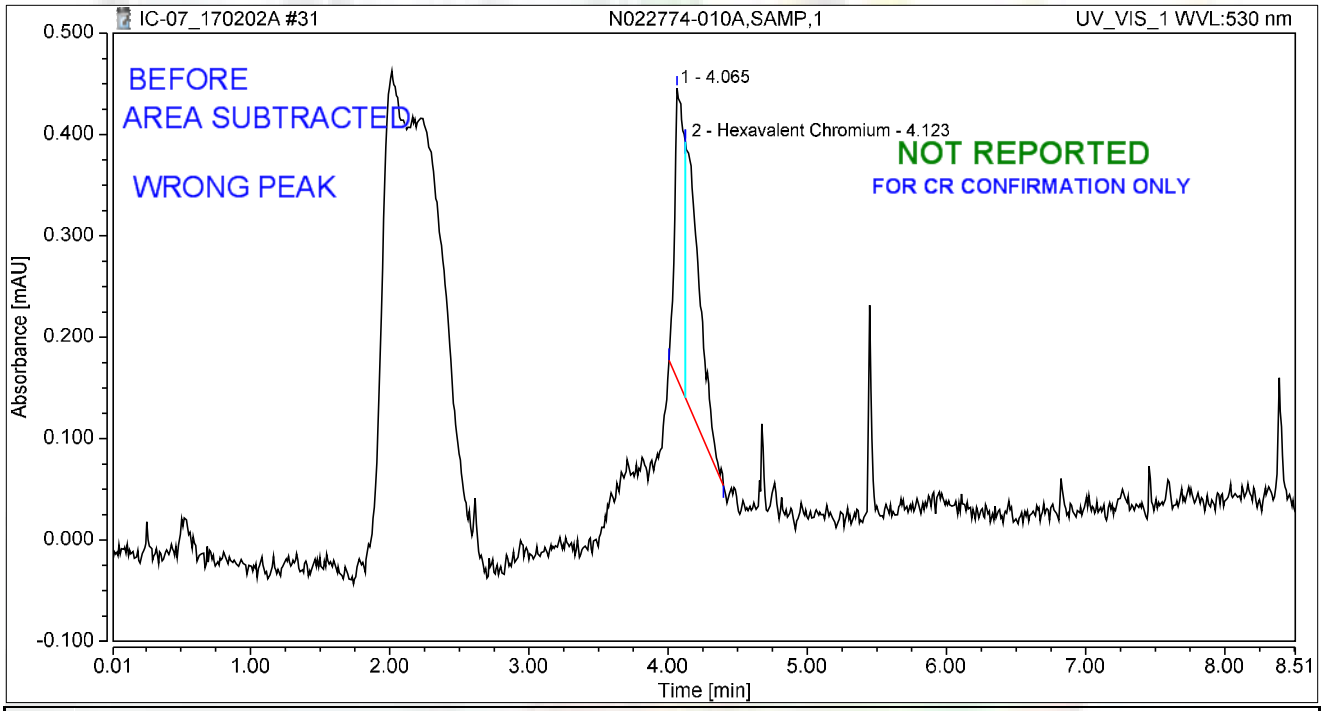
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.065	0.022	0.287	42.13	53.16	n.a.
2	Hexavalent Chromium	4.123	0.030	0.253	57.87	46.84	0.1188
Total:			**0.052**	**0.539**	**100.00**	**100.00**	

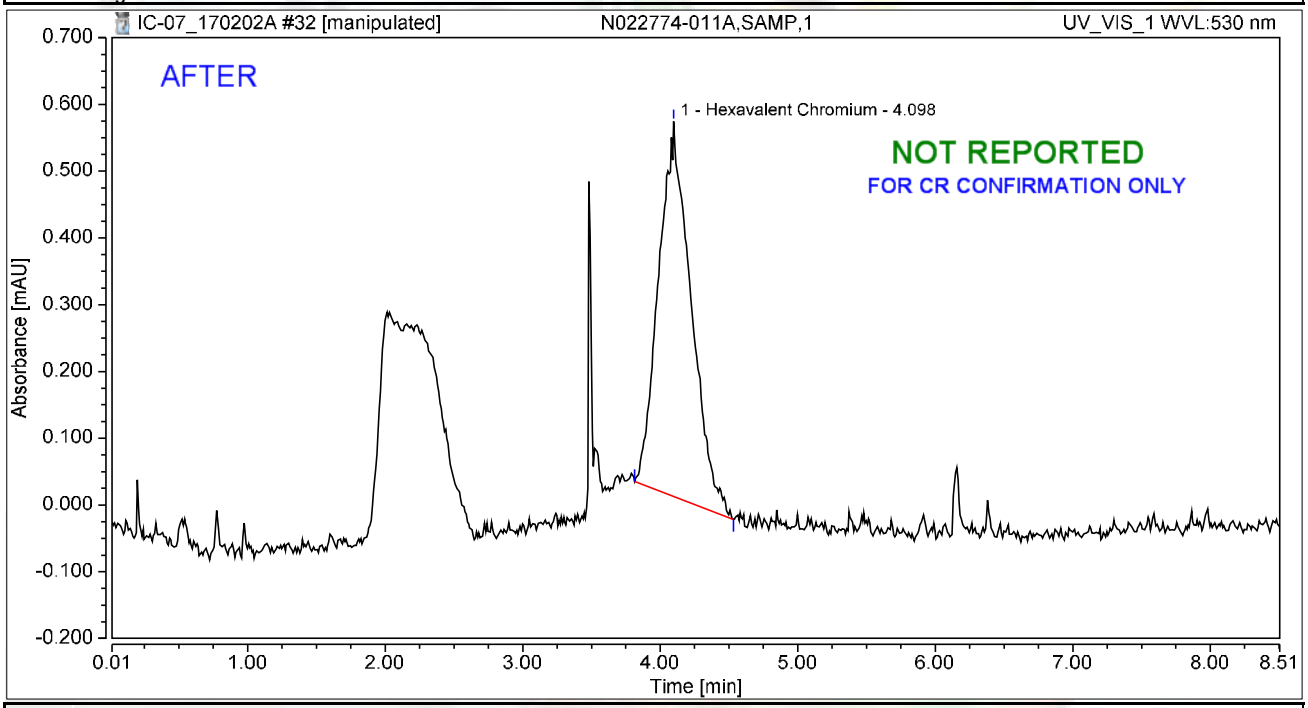
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.153	0.562	100.00	100.00	0.5998
Total:			**0.153**	**0.562**	**100.00**	**100.00**	

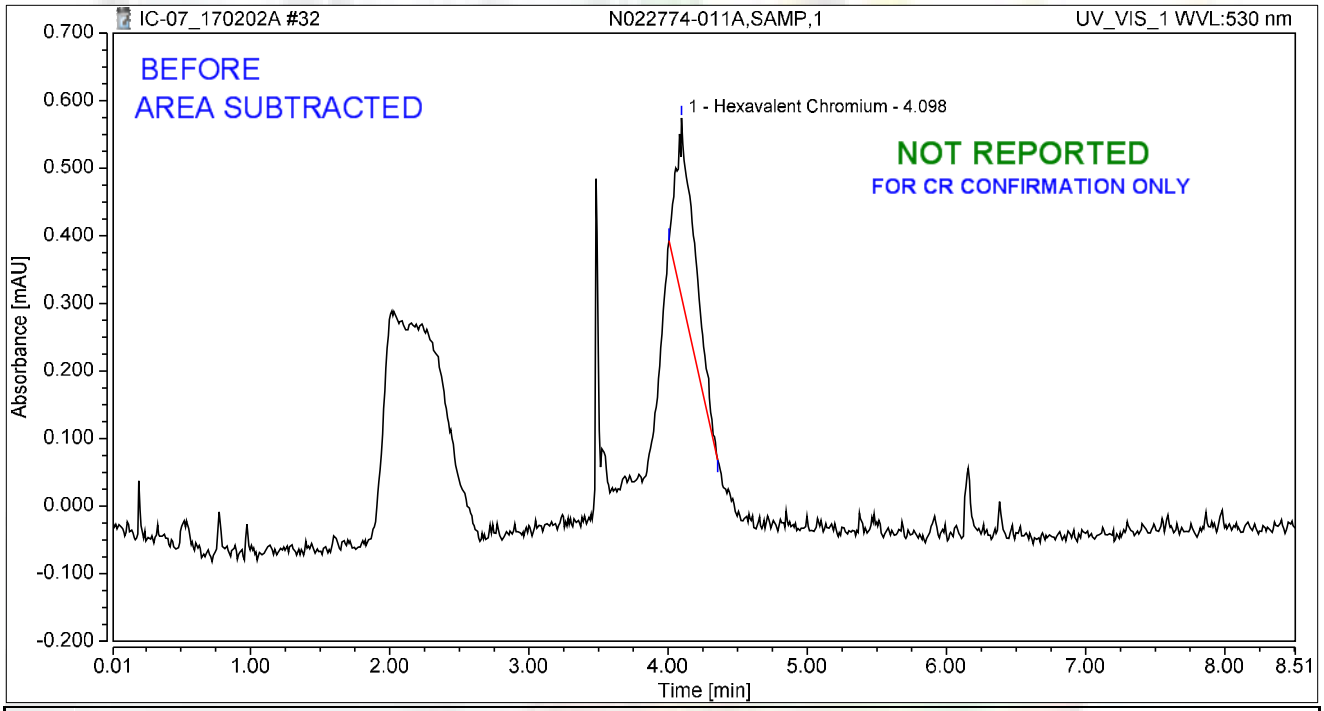
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022774-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.042	0.267	100.00	100.00	0.1646
Total:			**0.042**	**0.267**	**100.00**	**100.00**	

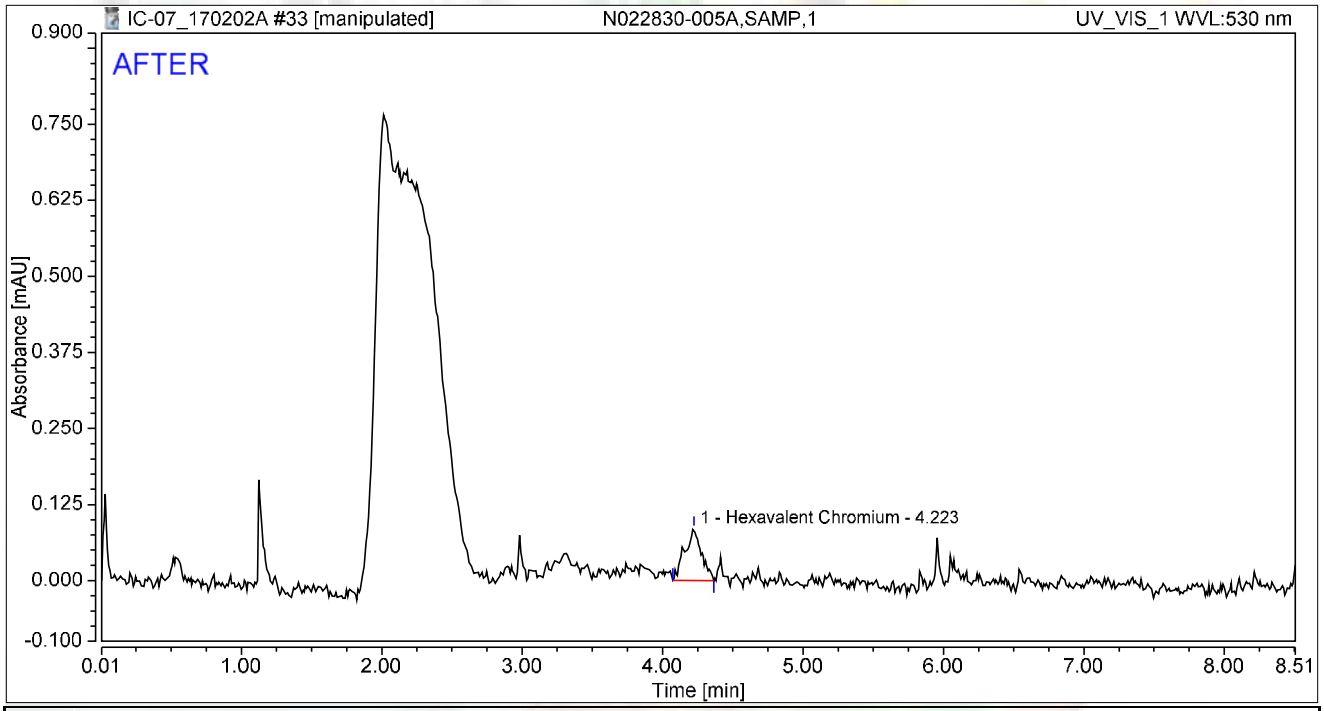
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.012	0.085	100.00	100.00	0.0460
Total:			**0.012**	**0.085**	**100.00**	**100.00**	

rba 2/6/2017

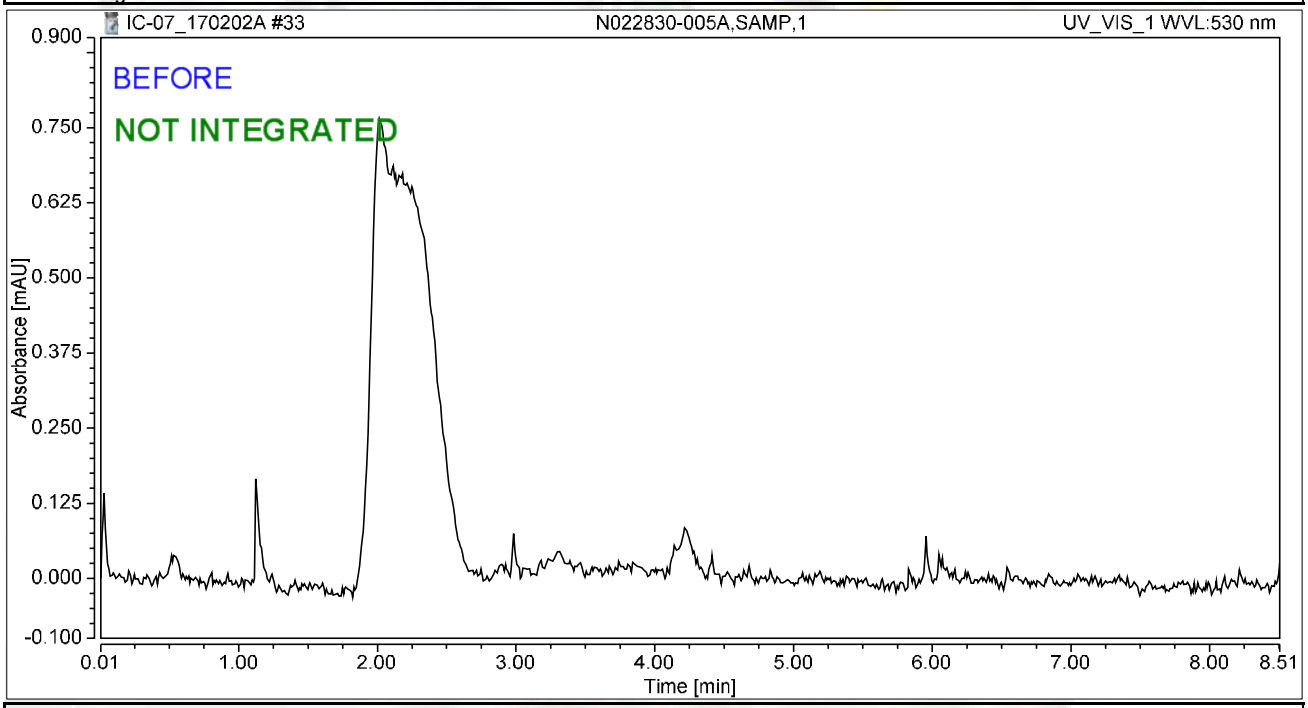
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

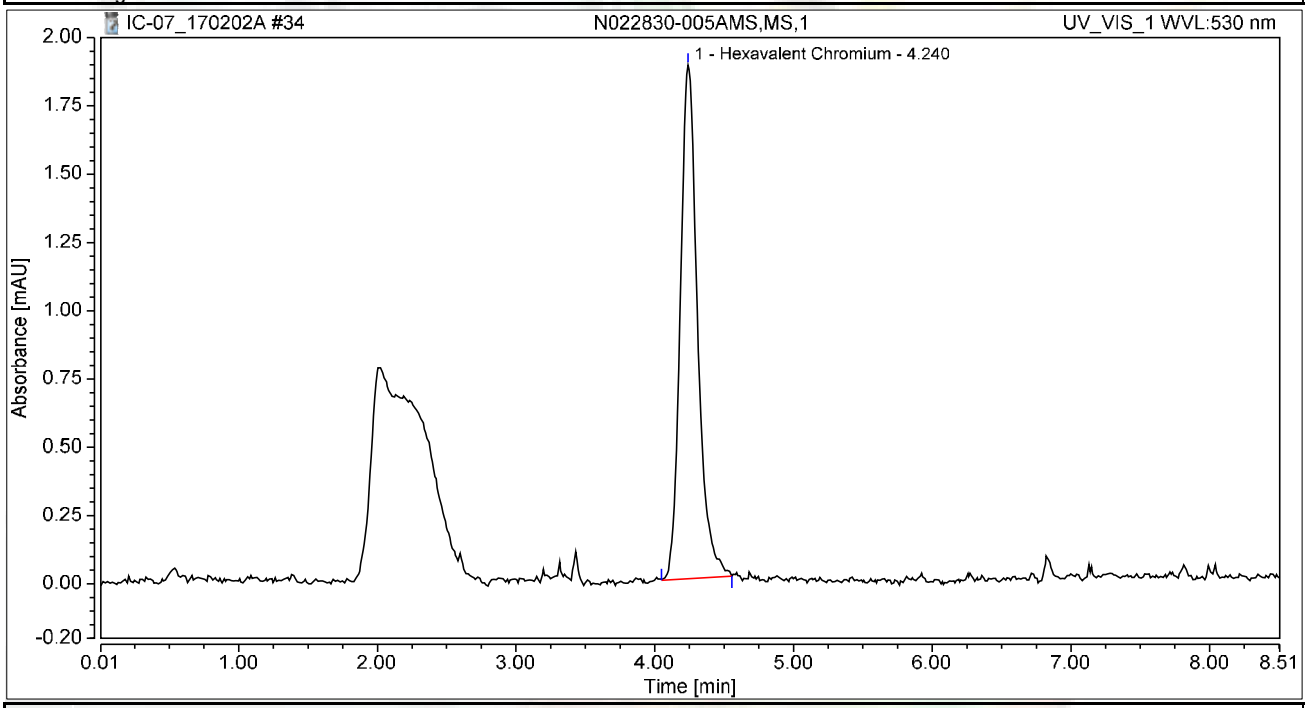
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

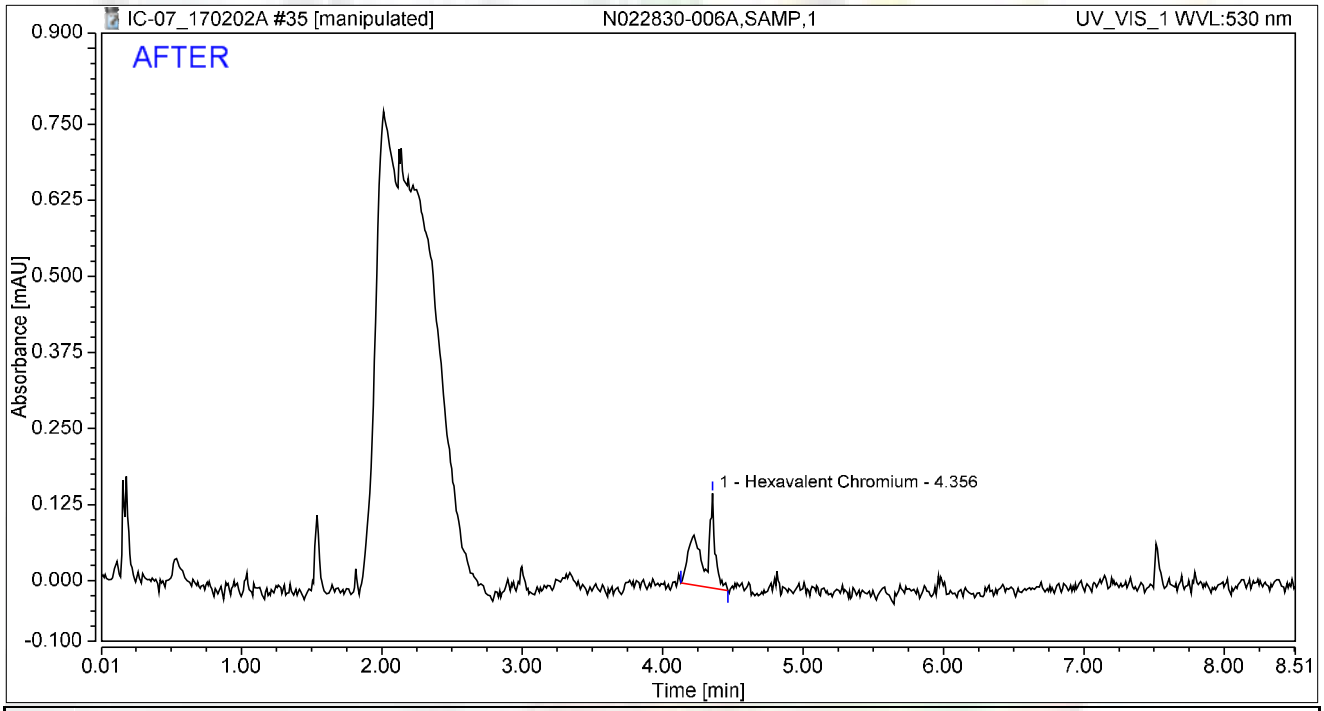
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.880	100.00	100.00	1.0603
Total:			**0.271**	**1.880**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.356	0.016	0.156	100.00	100.00	0.0609
Total:			**0.016**	**0.156**	**100.00**	**100.00**	

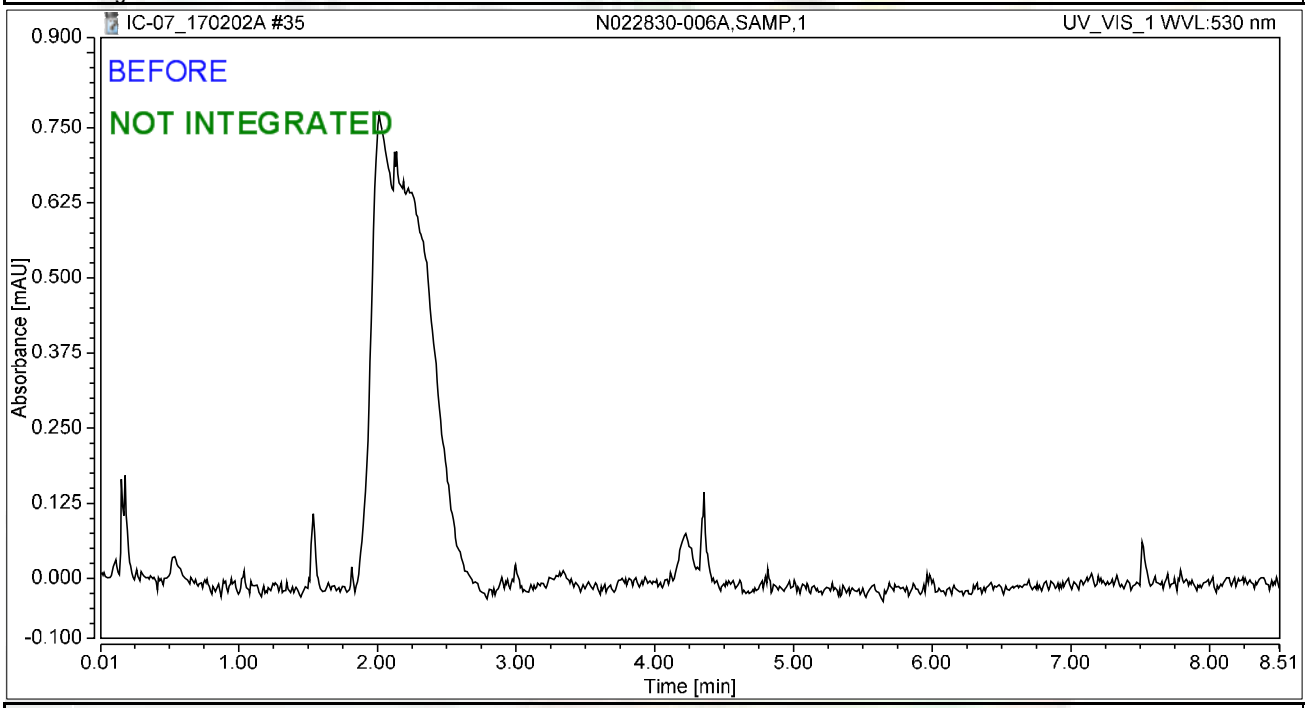
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

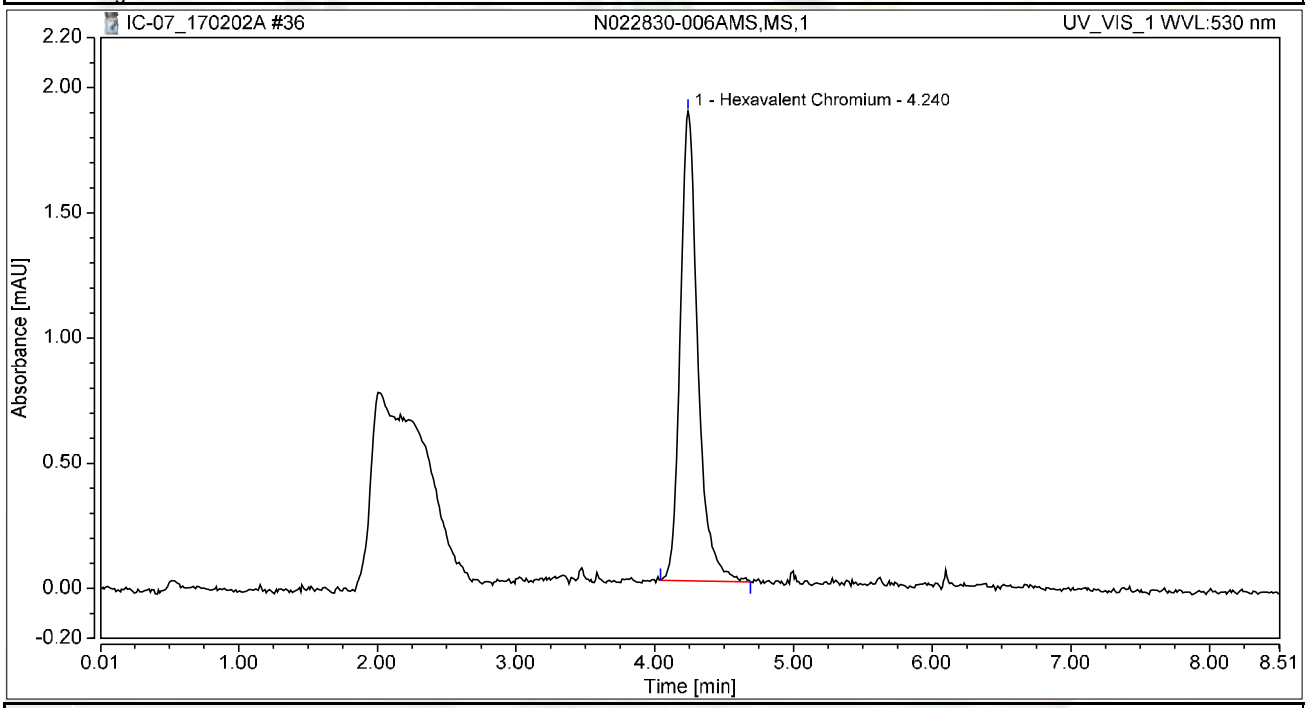
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

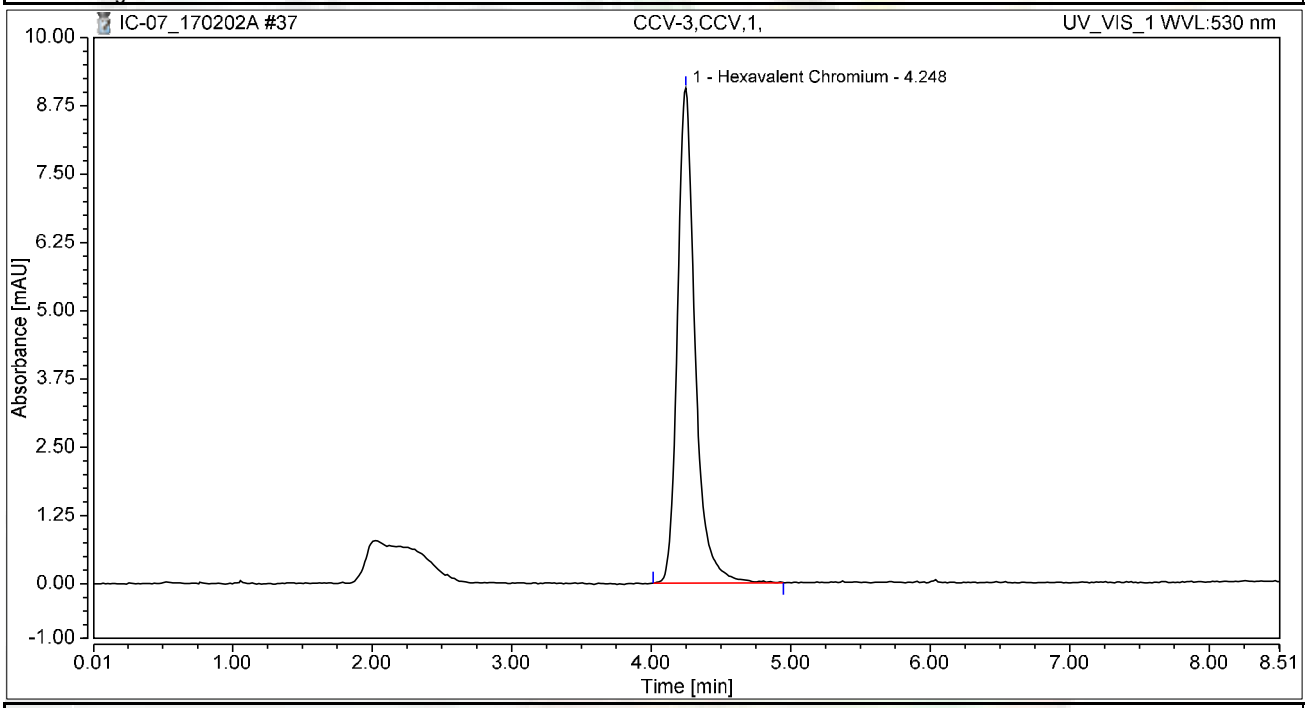
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.275	1.875	100.00	100.00	1.0772
Total:			**0.275**	**1.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

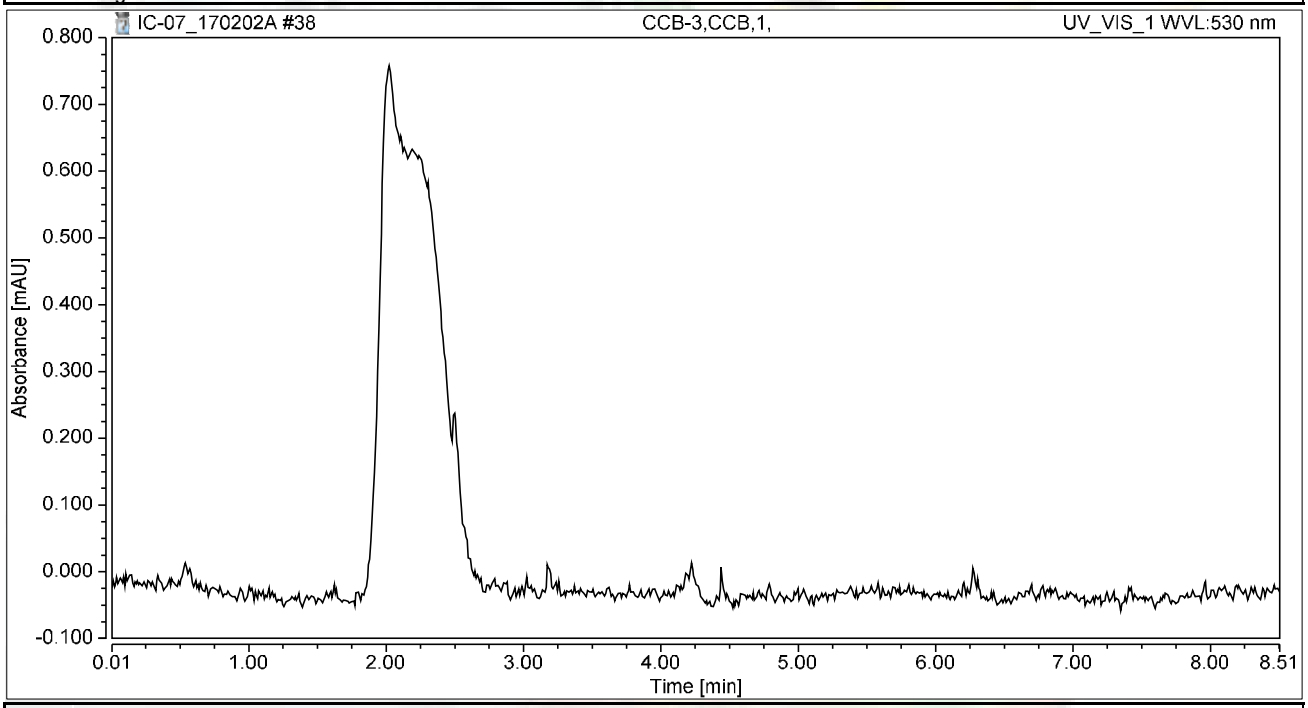
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.331	9.066	100.00	100.00	5.2052
Total:			**1.331**	**9.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

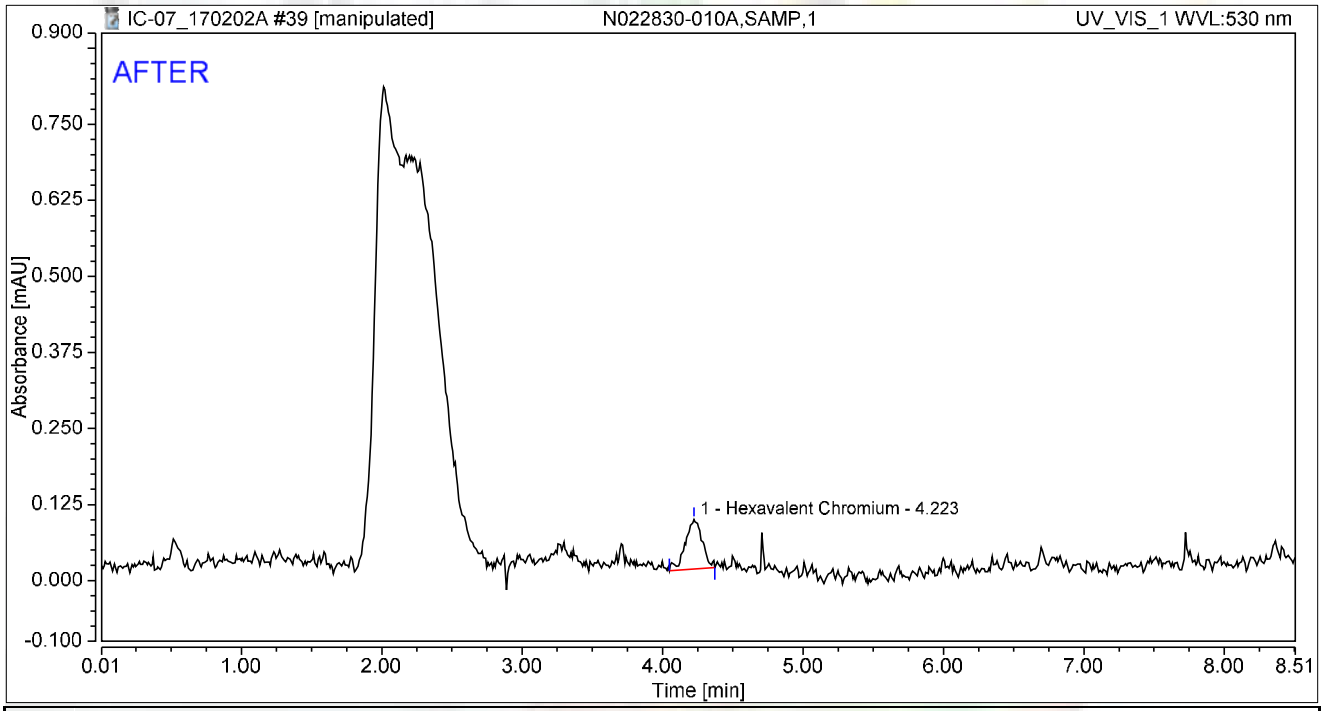
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.011	0.081	100.00	100.00	0.0443
Total:			**0.011**	**0.081**	**100.00**	**100.00**	

rba 2/6/2017

Reviewed by: Nancy 2/7/2017

My first report/Integration

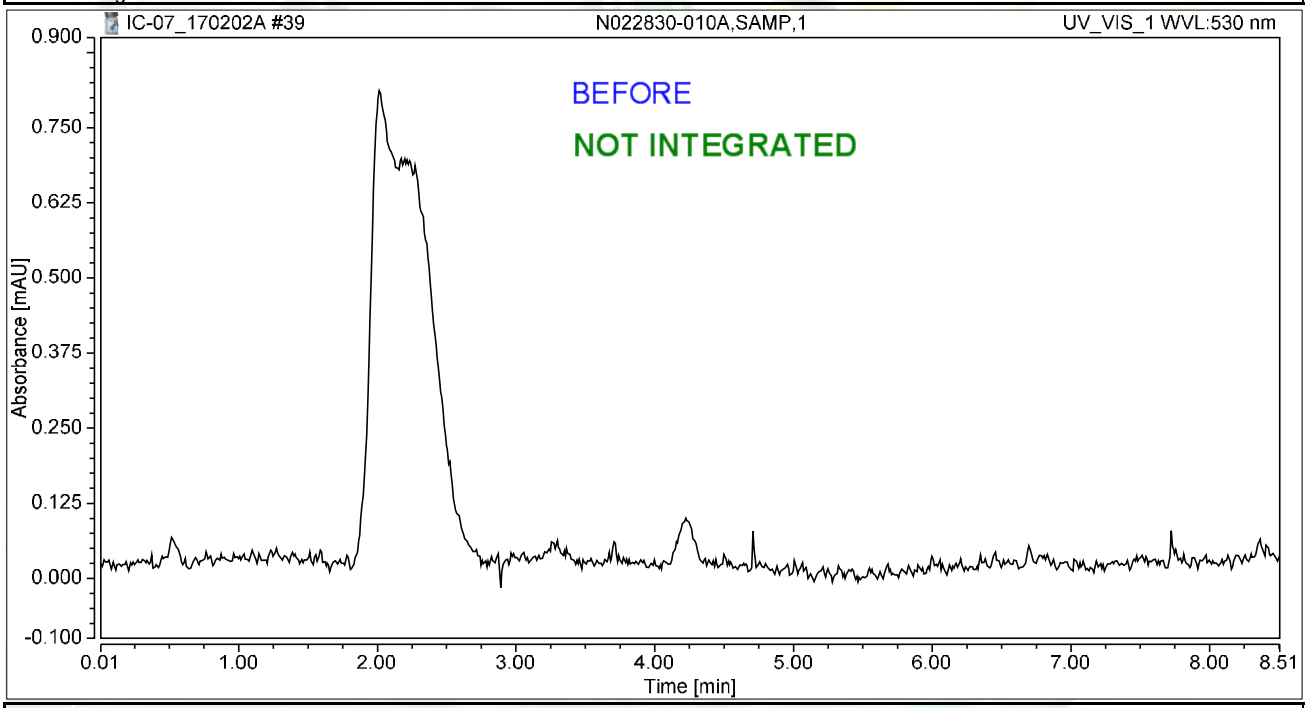
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

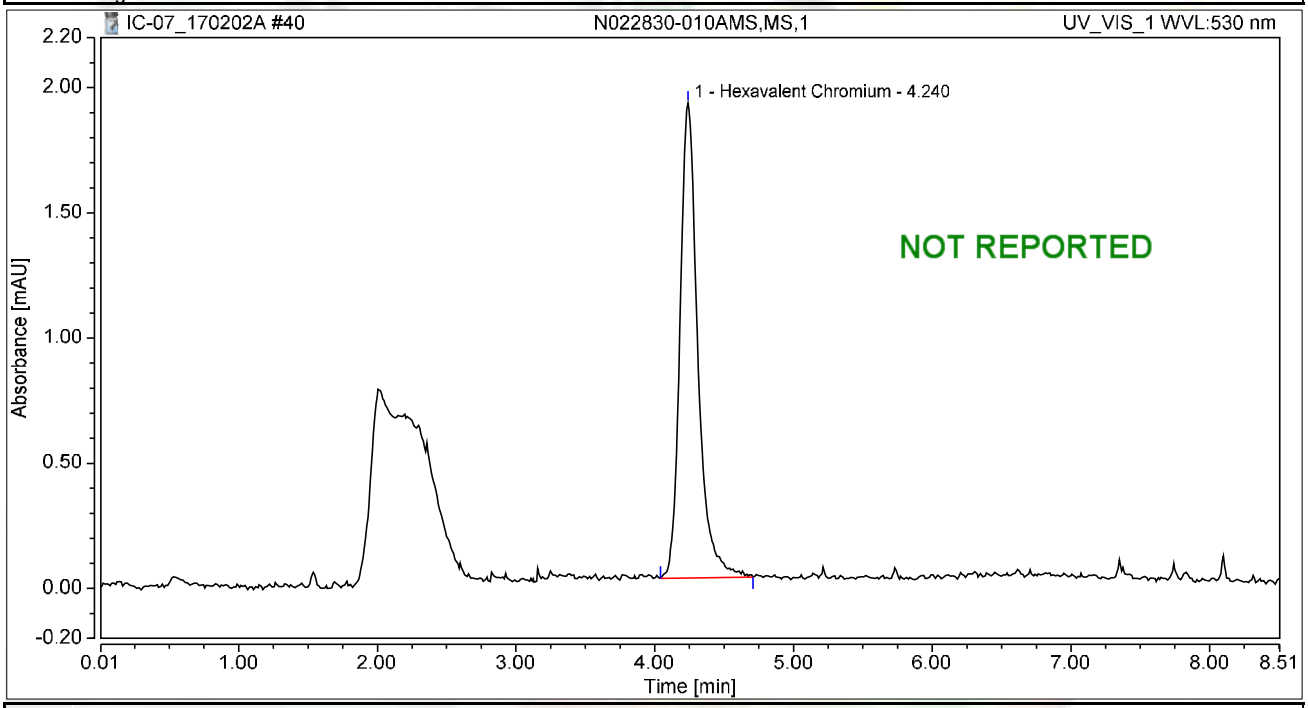
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

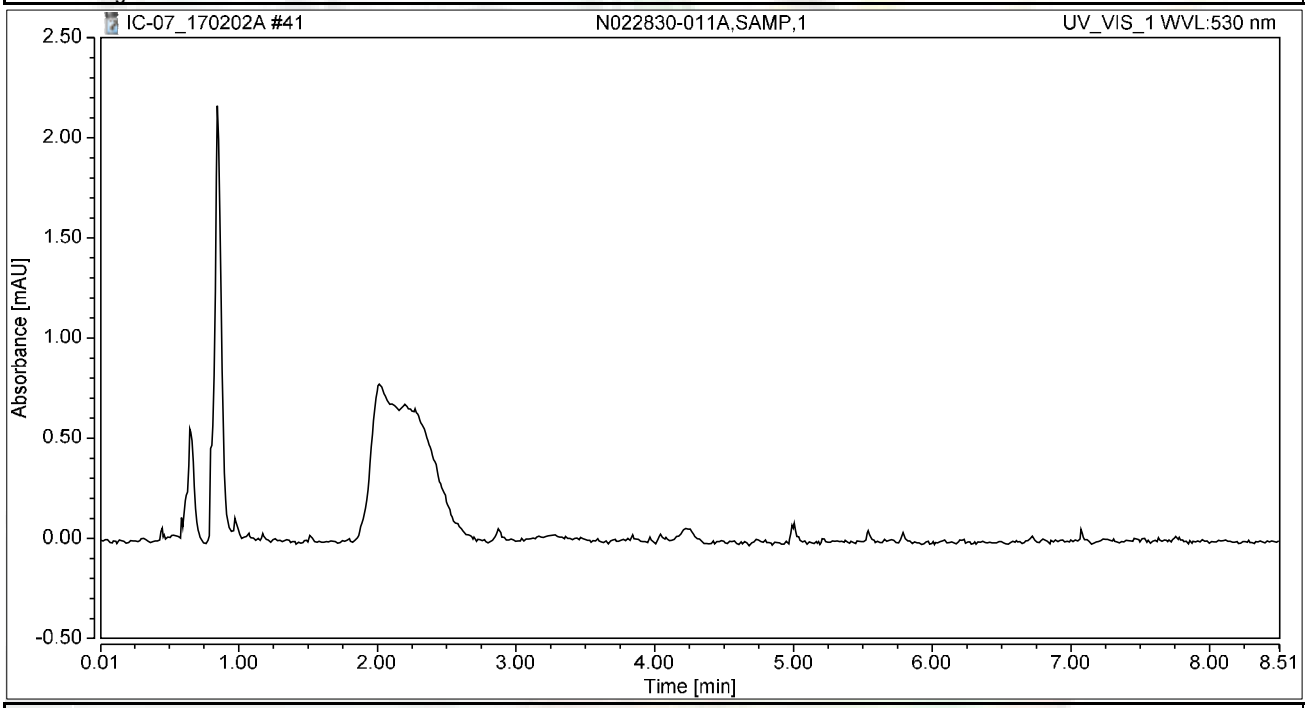
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.898	100.00	100.00	1.1031
Total:			**0.282**	**1.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

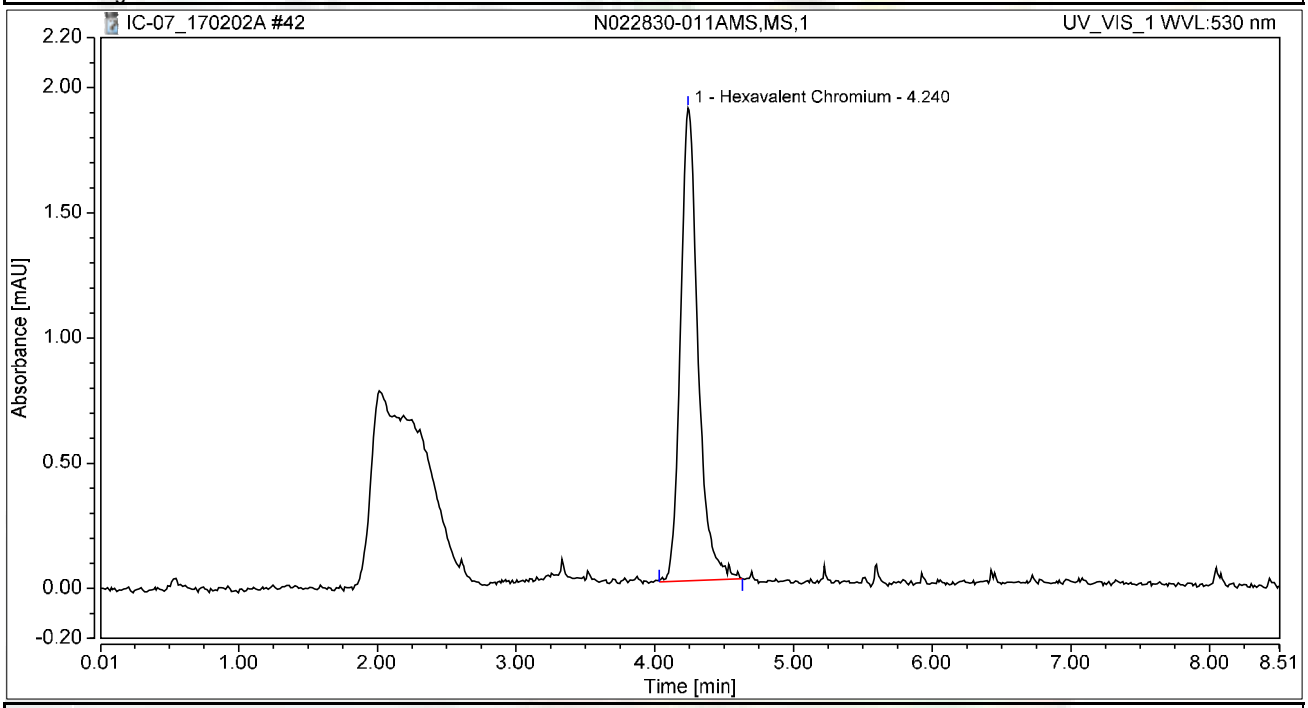
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022830-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

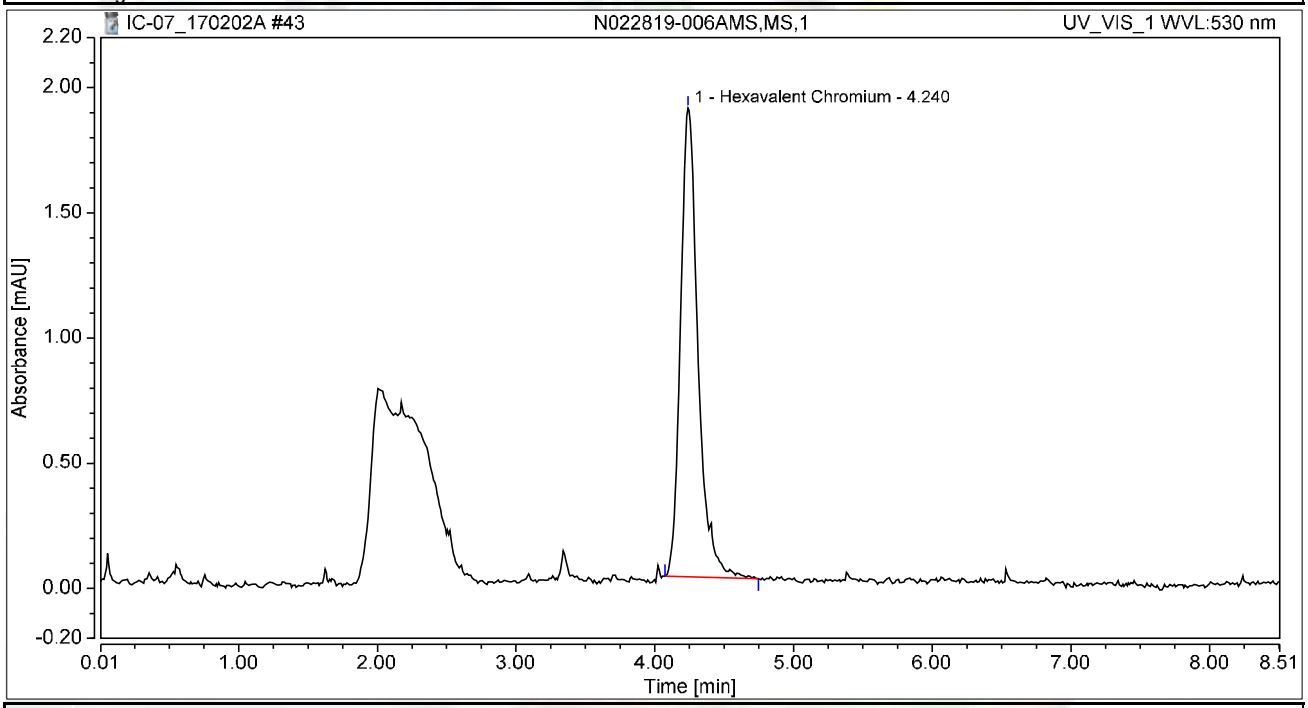
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.277	1.888	100.00	100.00	1.0848
Total:			**0.277**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

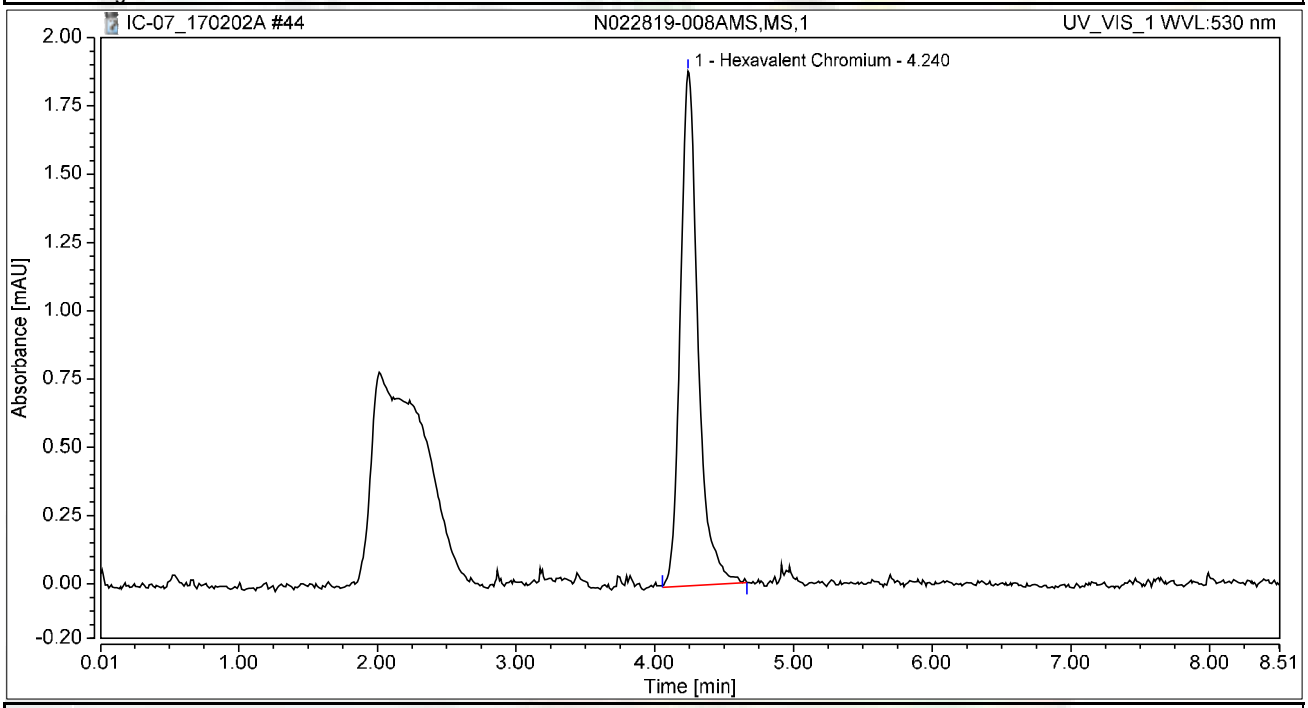
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.274	1.873	100.00	100.00	1.0705
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

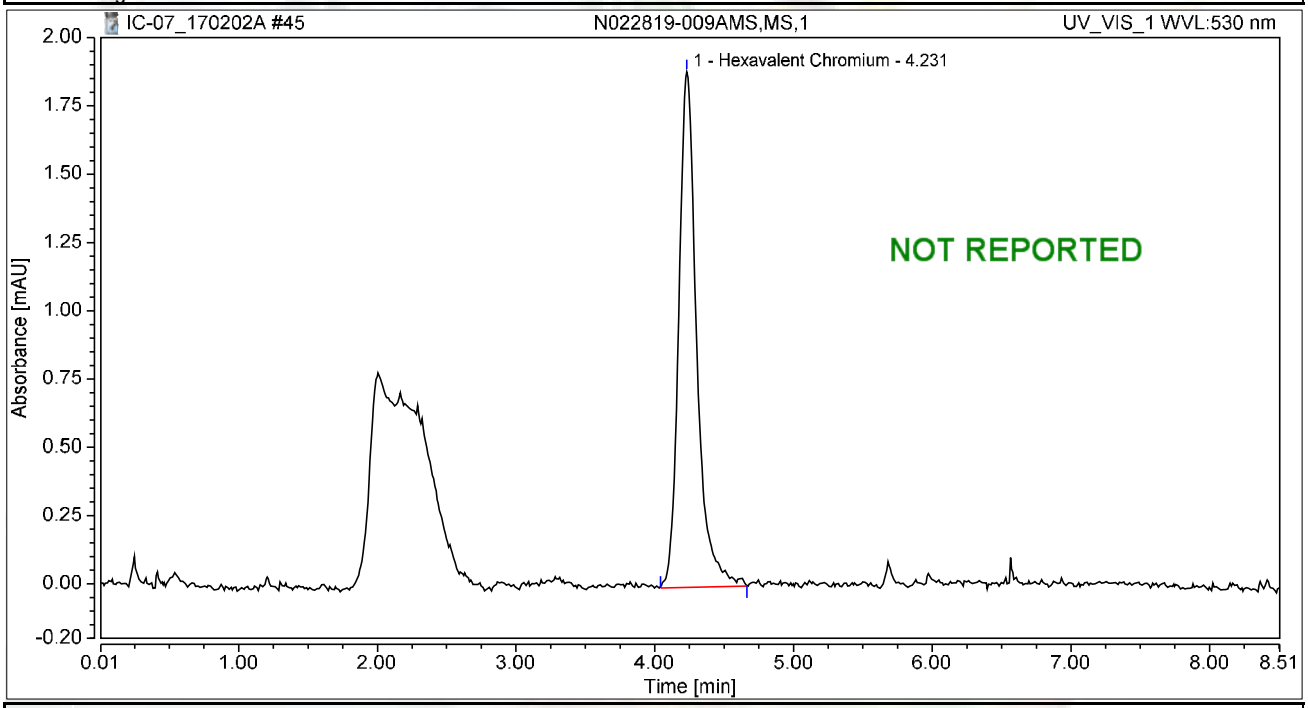
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.279	1.884	100.00	100.00	1.0899
Total:			**0.279**	**1.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

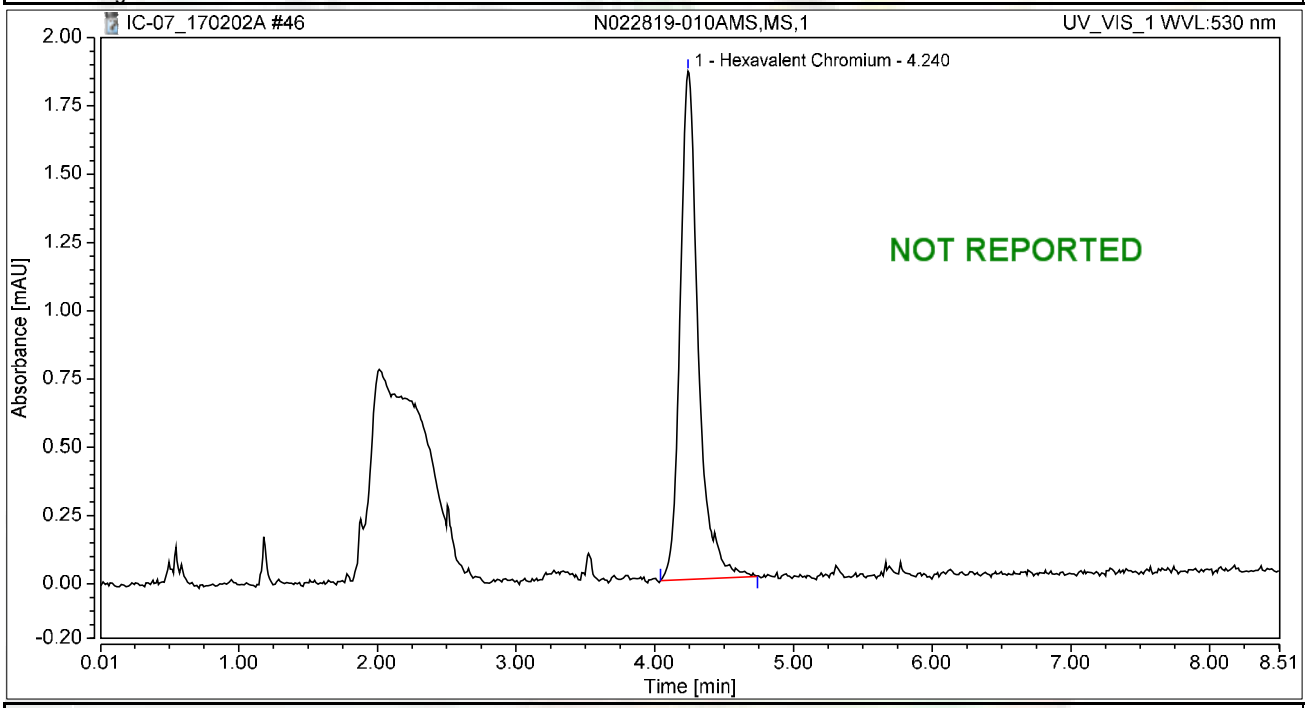
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.283	1.888	100.00	100.00	1.1067
Total:			**0.283**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

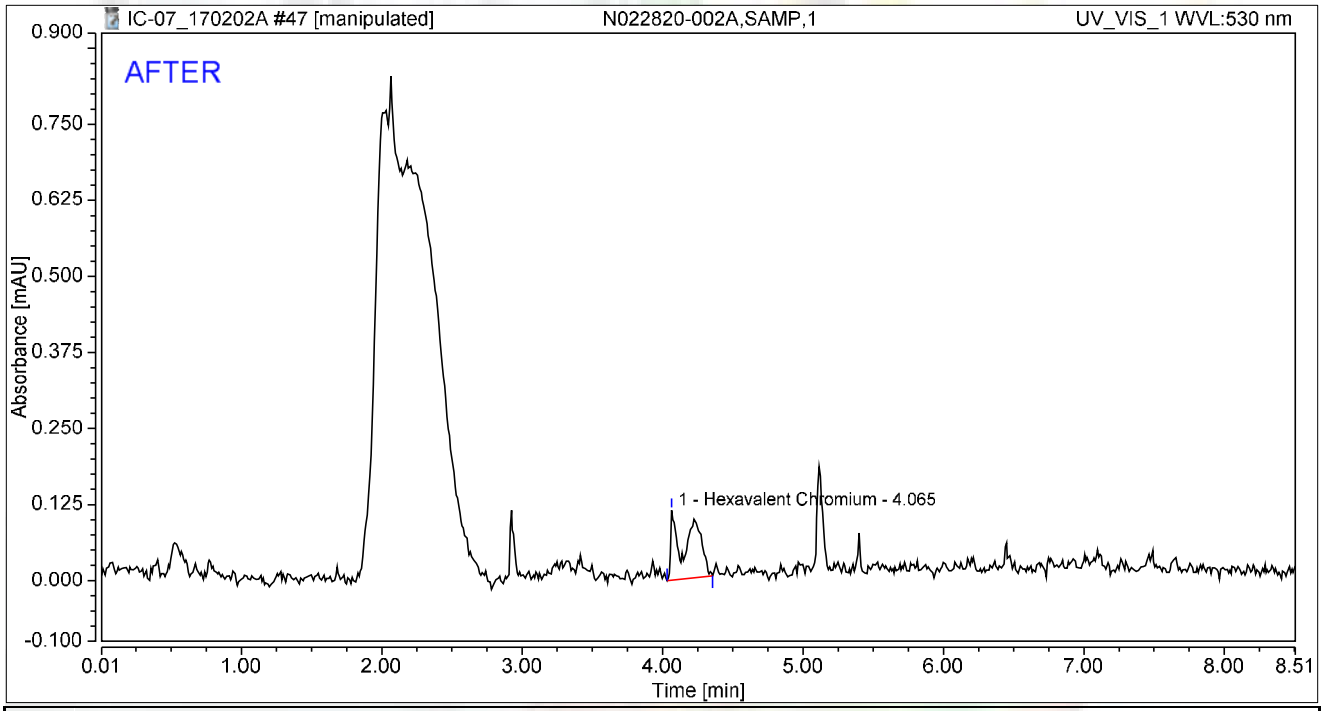
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.282	1.861	100.00	100.00	1.1013
Total:			**0.282**	**1.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.017	0.115	100.00	100.00	0.0674
Total:			**0.017**	**0.115**	**100.00**	**100.00**	

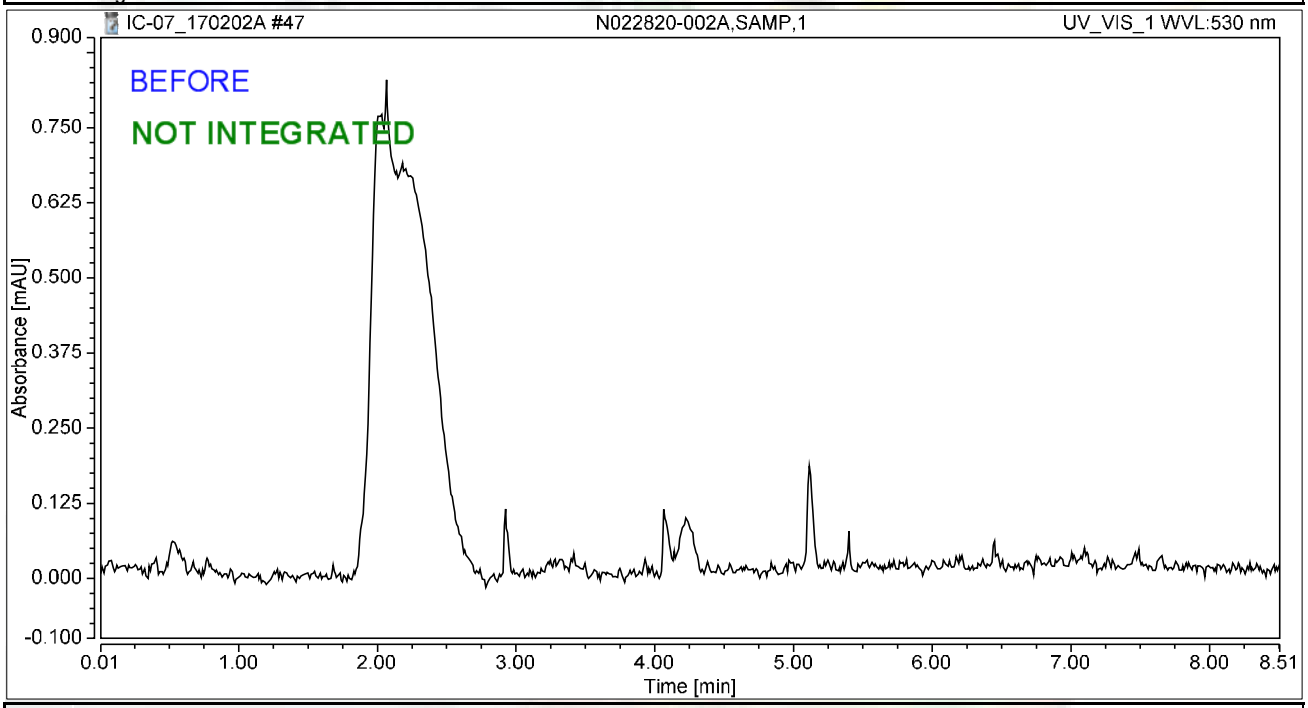
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

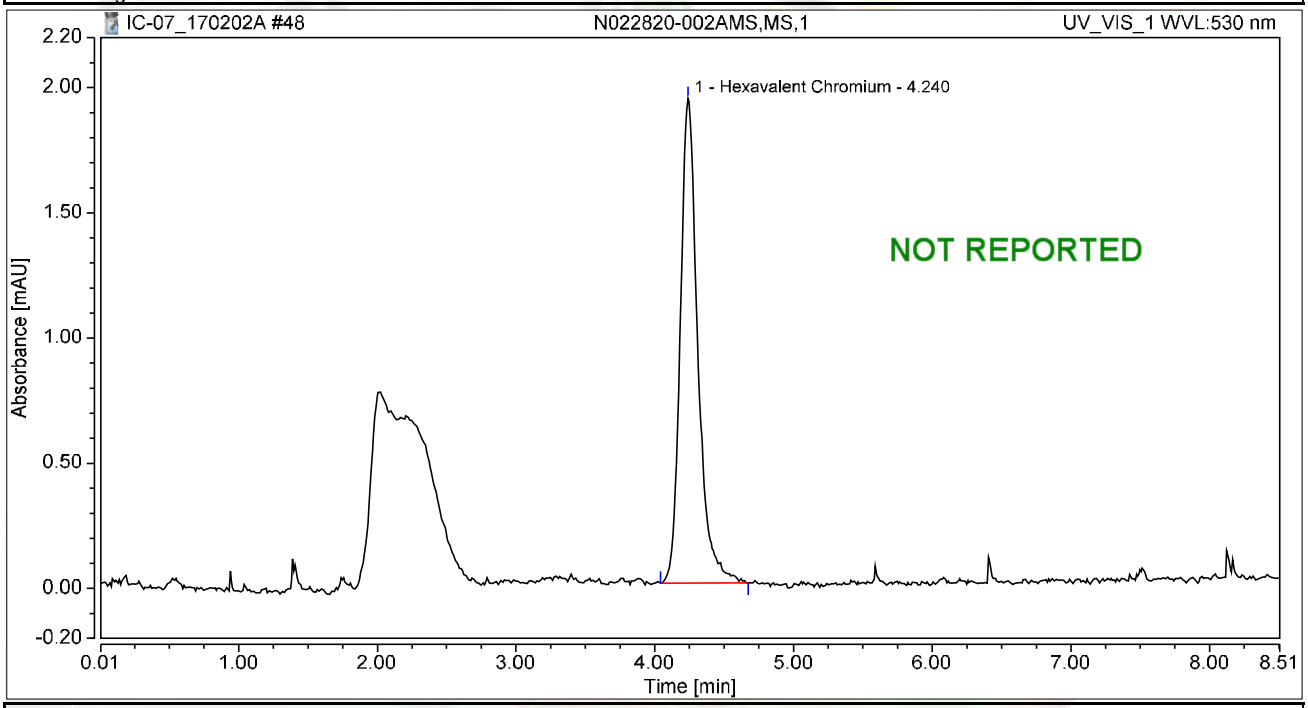
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

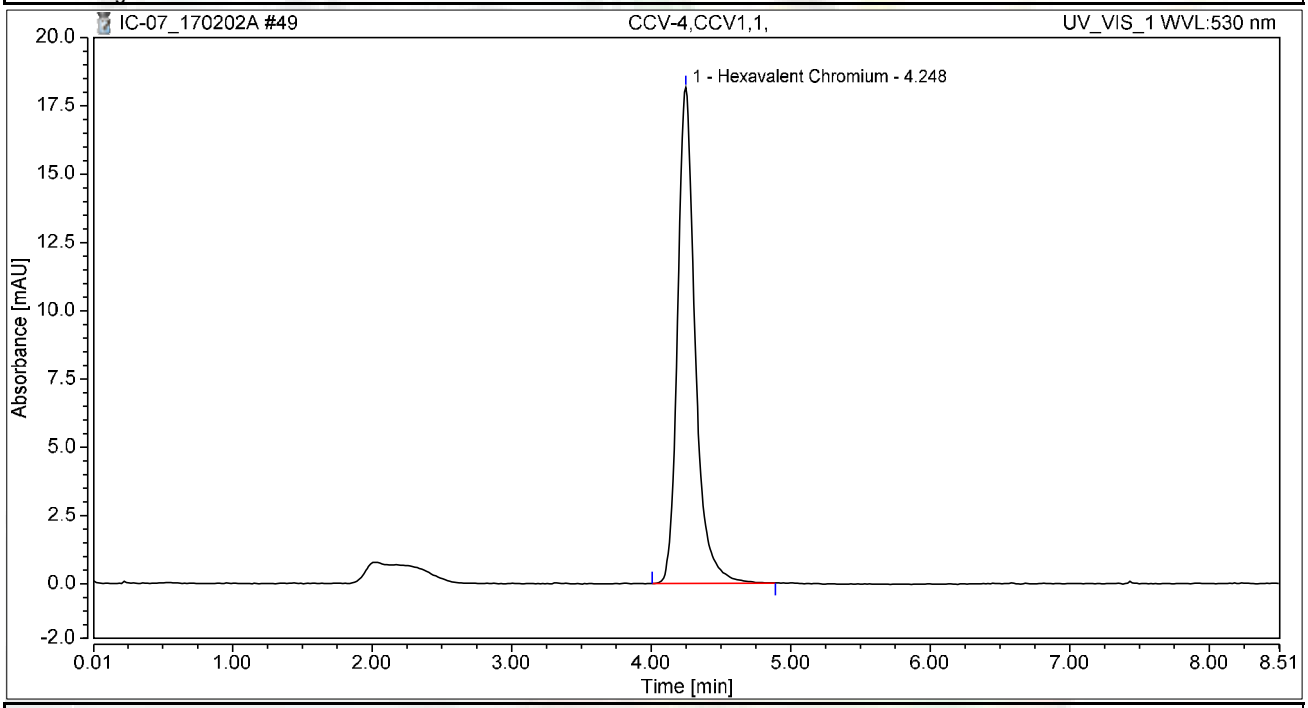
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.284	1.937	100.00	100.00	1.1103
Total:			**0.284**	**1.937**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

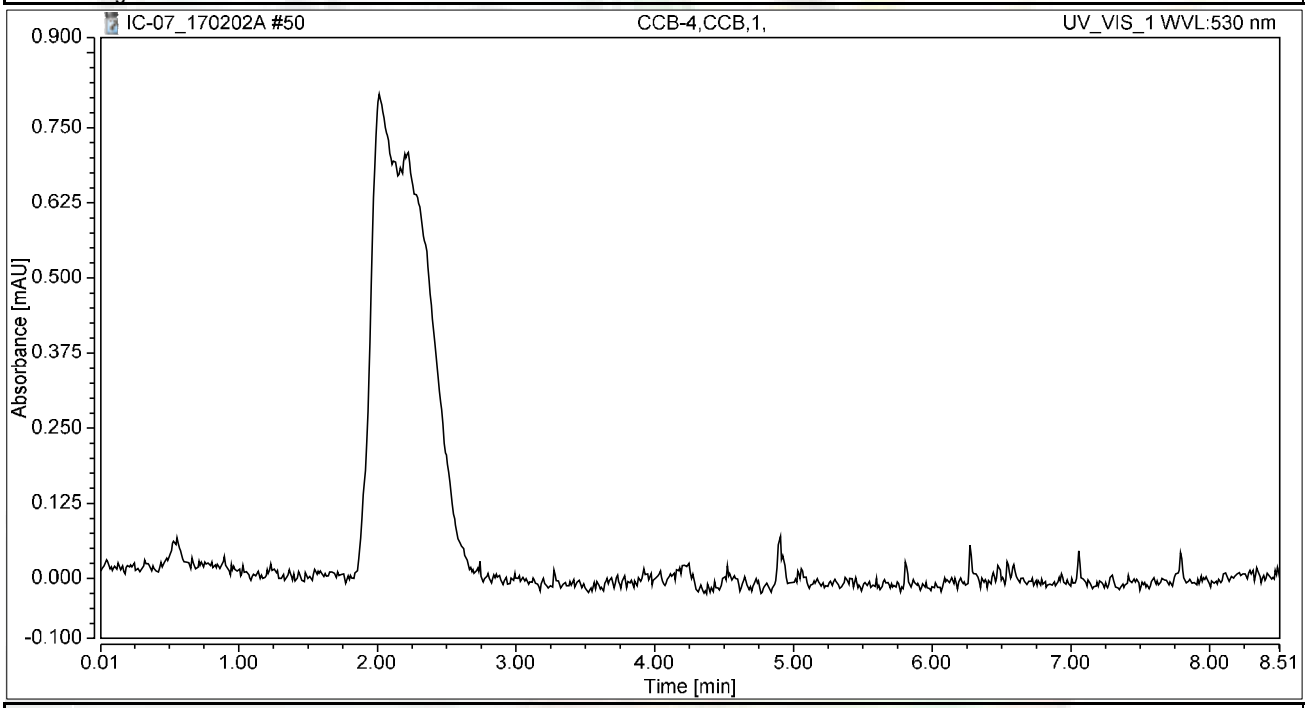
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.658	18.158	100.00	100.00	10.3972
Total:			**2.658**	**18.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

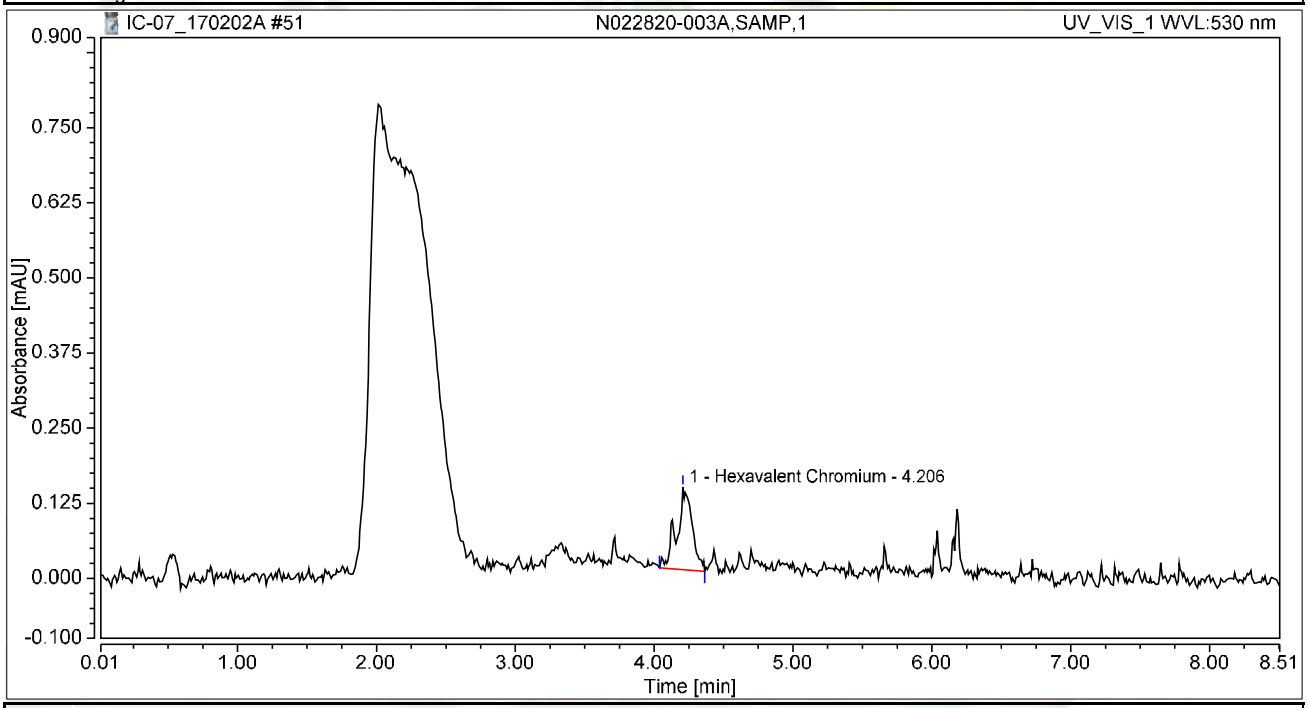
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

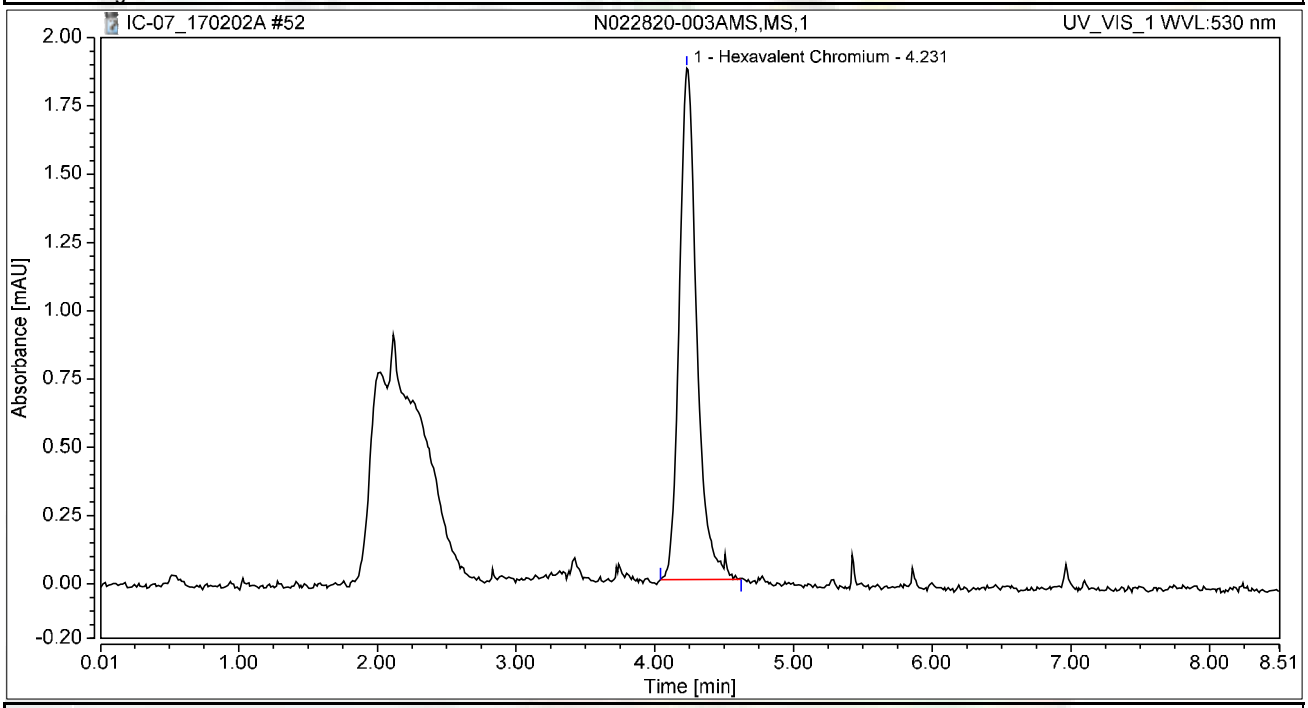
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.017	0.137	100.00	100.00	0.0683
Total:			**0.017**	**0.137**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022820-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

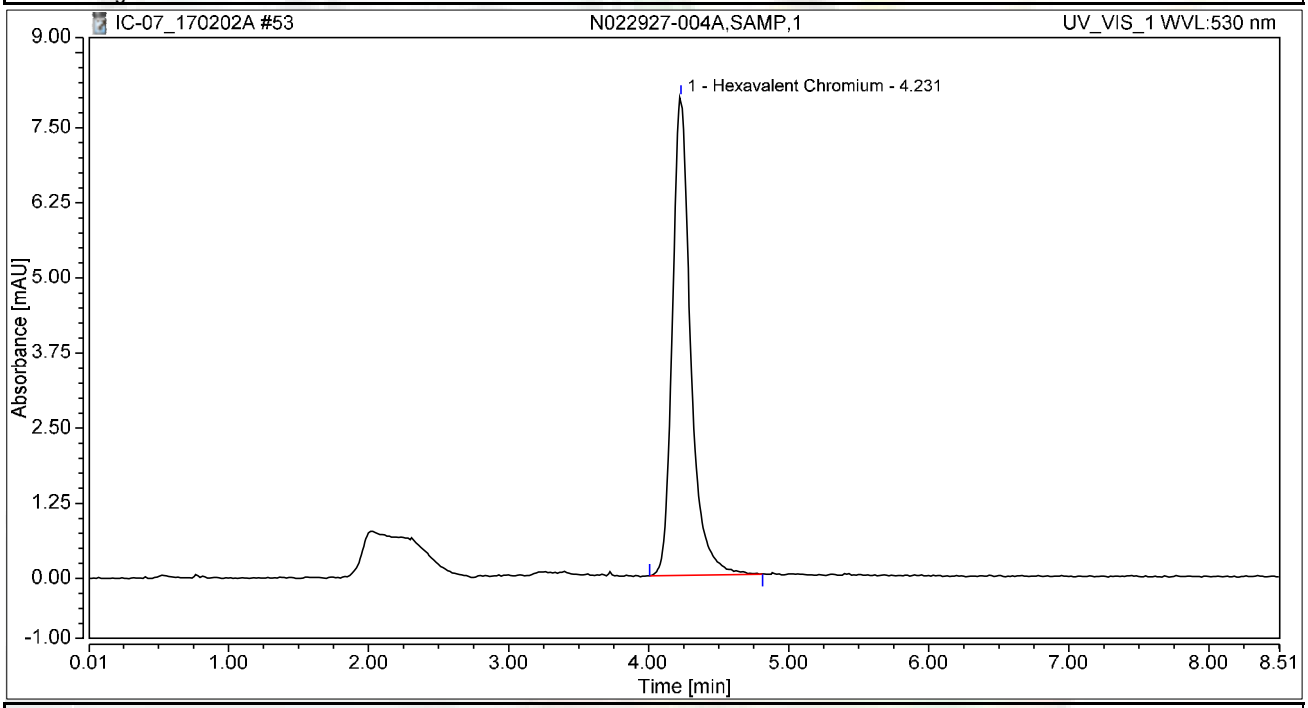
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.274	1.873	100.00	100.00	1.0706
Total:			**0.274**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

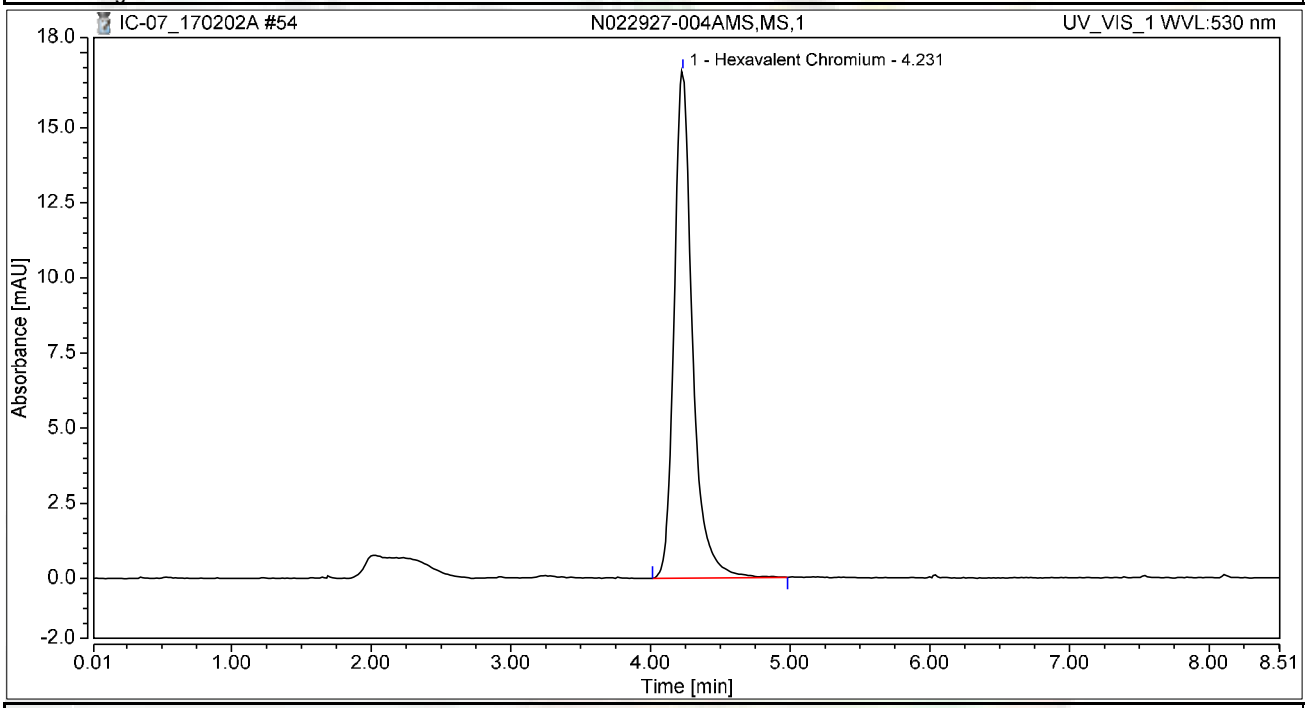
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.209	7.958	100.00	100.00	4.7282
Total:			**1.209**	**7.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

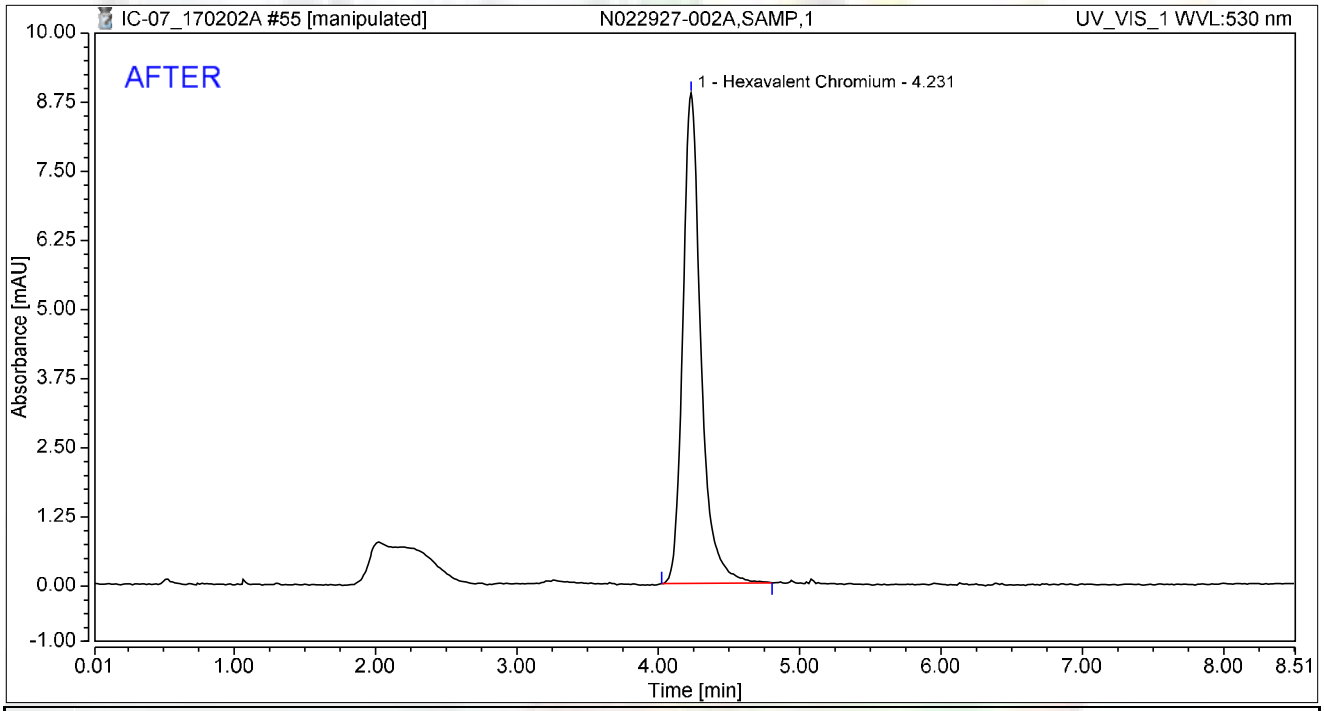
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.569	16.873	100.00	100.00	10.0495
Total:			**2.569**	**16.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.317	8.864	100.00	100.00	5.1516
Total:			**1.317**	**8.864**	**100.00**	**100.00**	

rba 2/6/2017

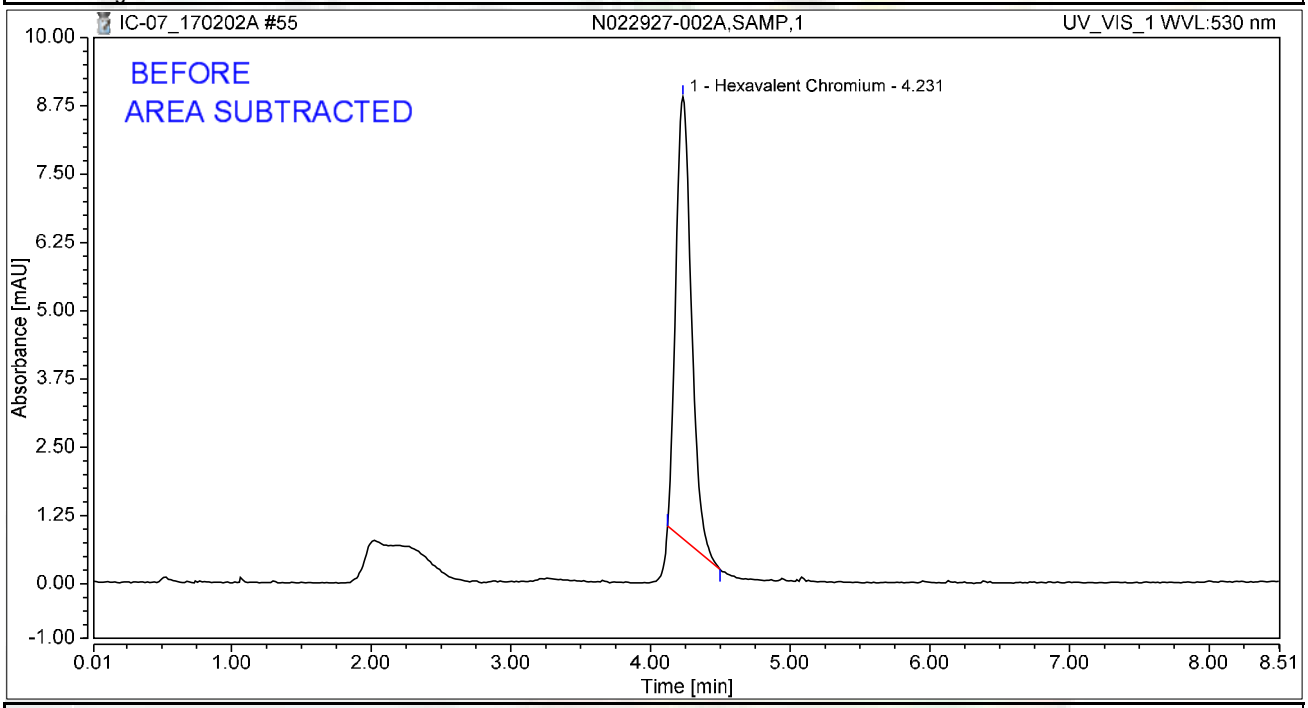
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.046	8.082	100.00	100.00	4.0910
Total:			**1.046**	**8.082**	**100.00**	**100.00**	

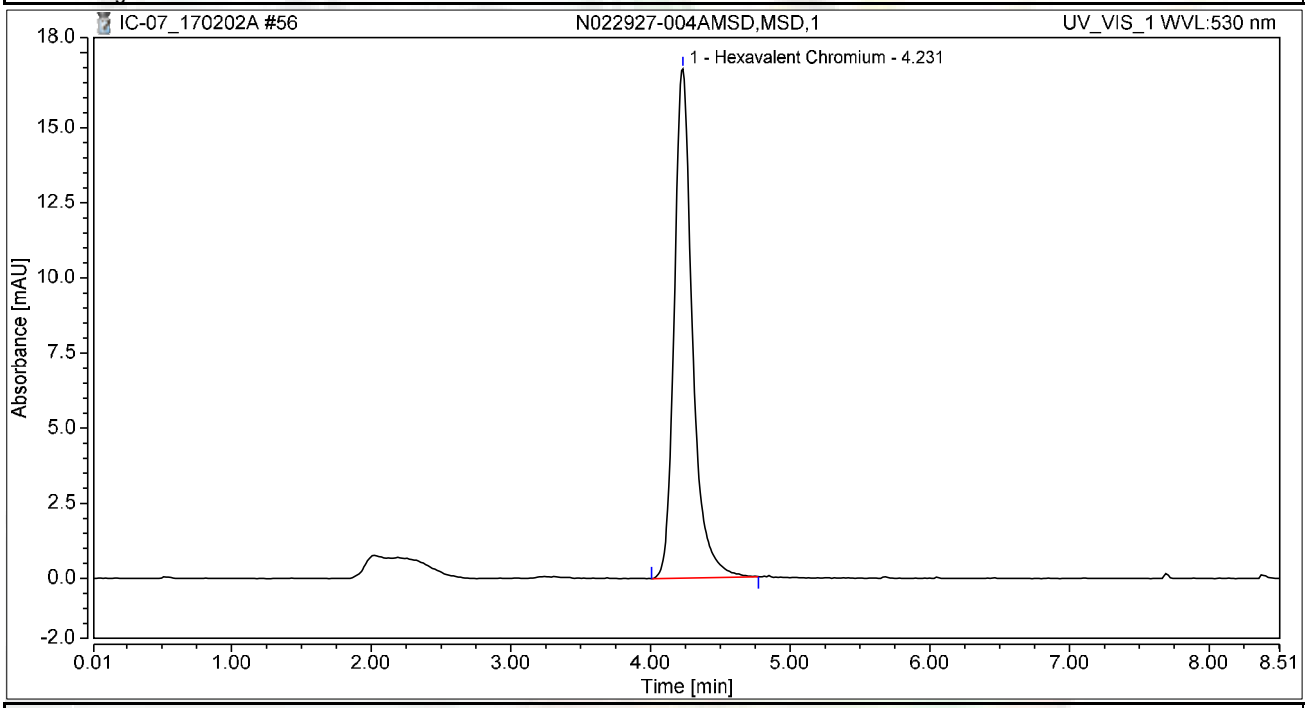
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022927-004AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 17:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

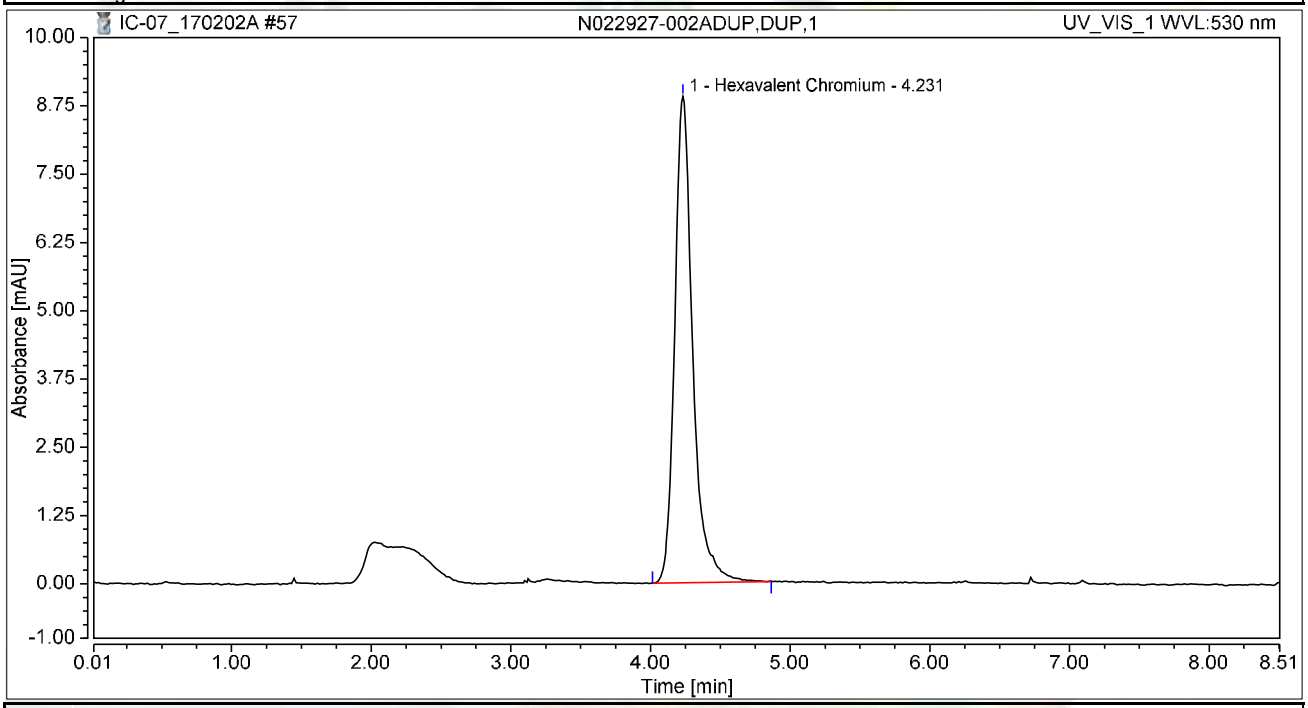
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.566	16.959	100.00	100.00	10.0366
Total:			**2.566**	**16.959**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

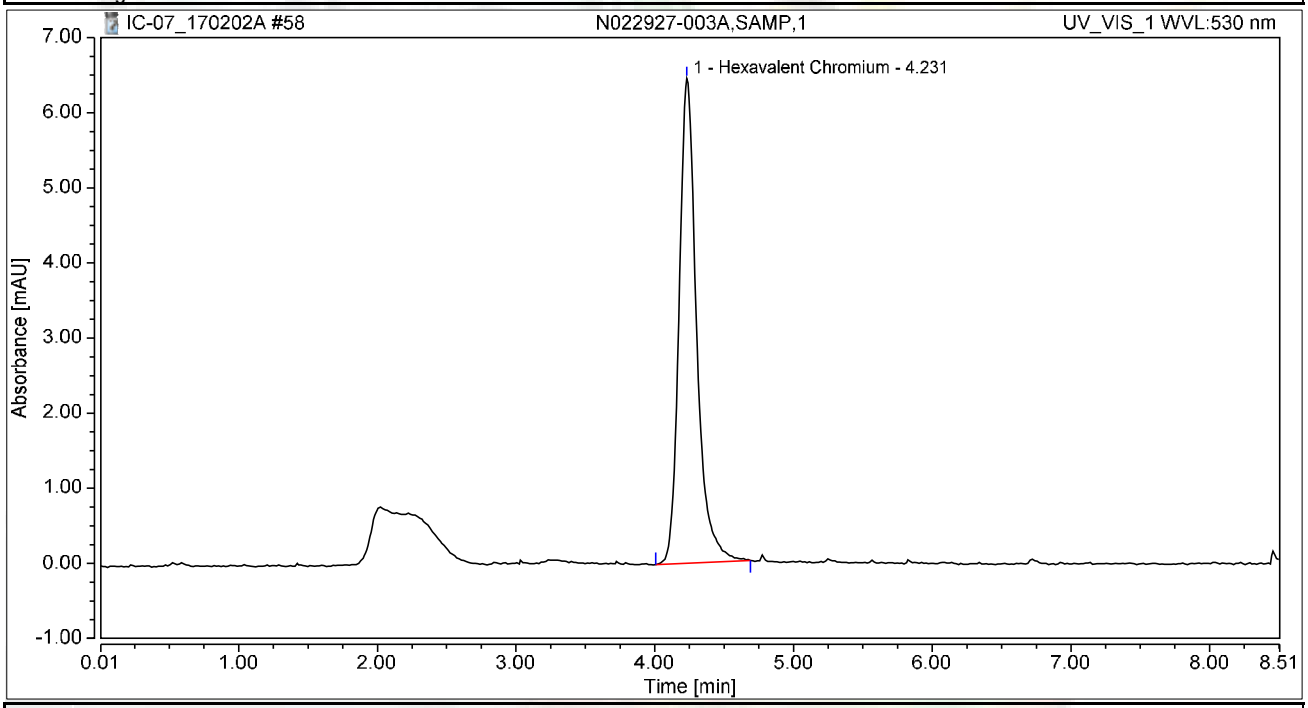
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.329	8.908	100.00	100.00	5.1999
Total:			**1.329**	**8.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

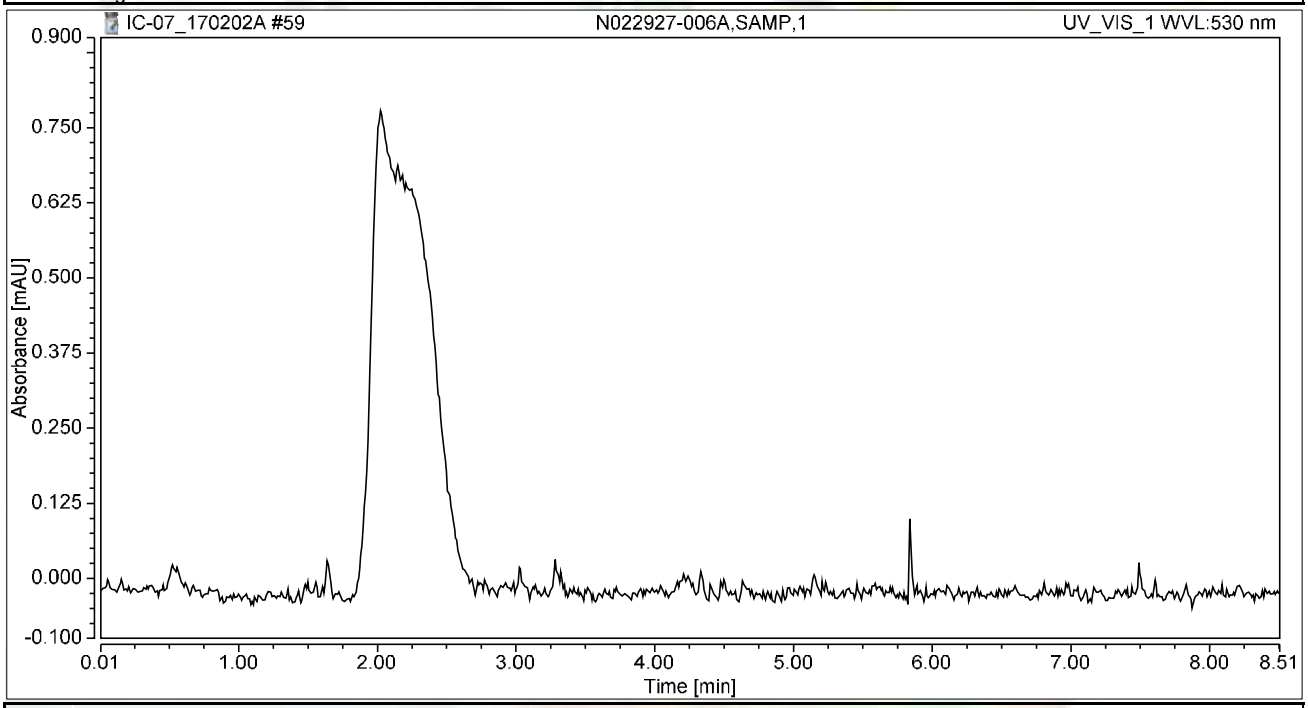
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.942	6.451	100.00	100.00	3.6856
Total:			**0.942**	**6.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

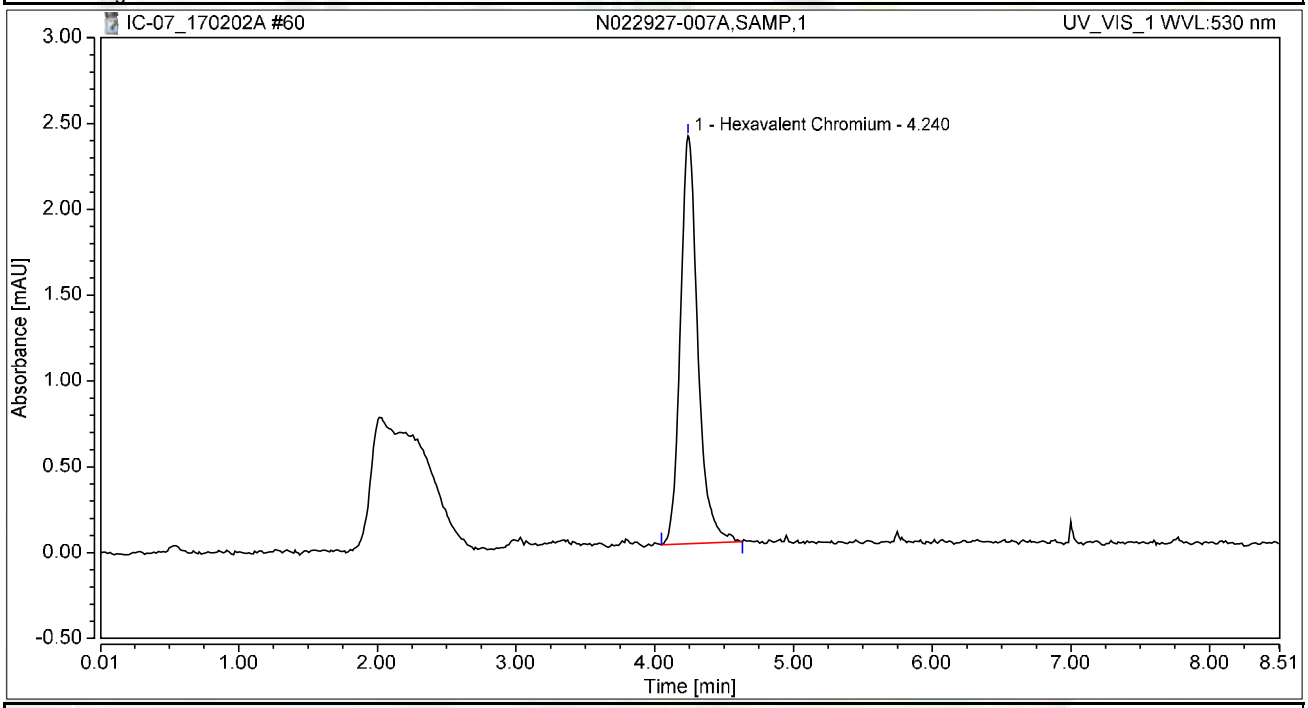
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022927-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

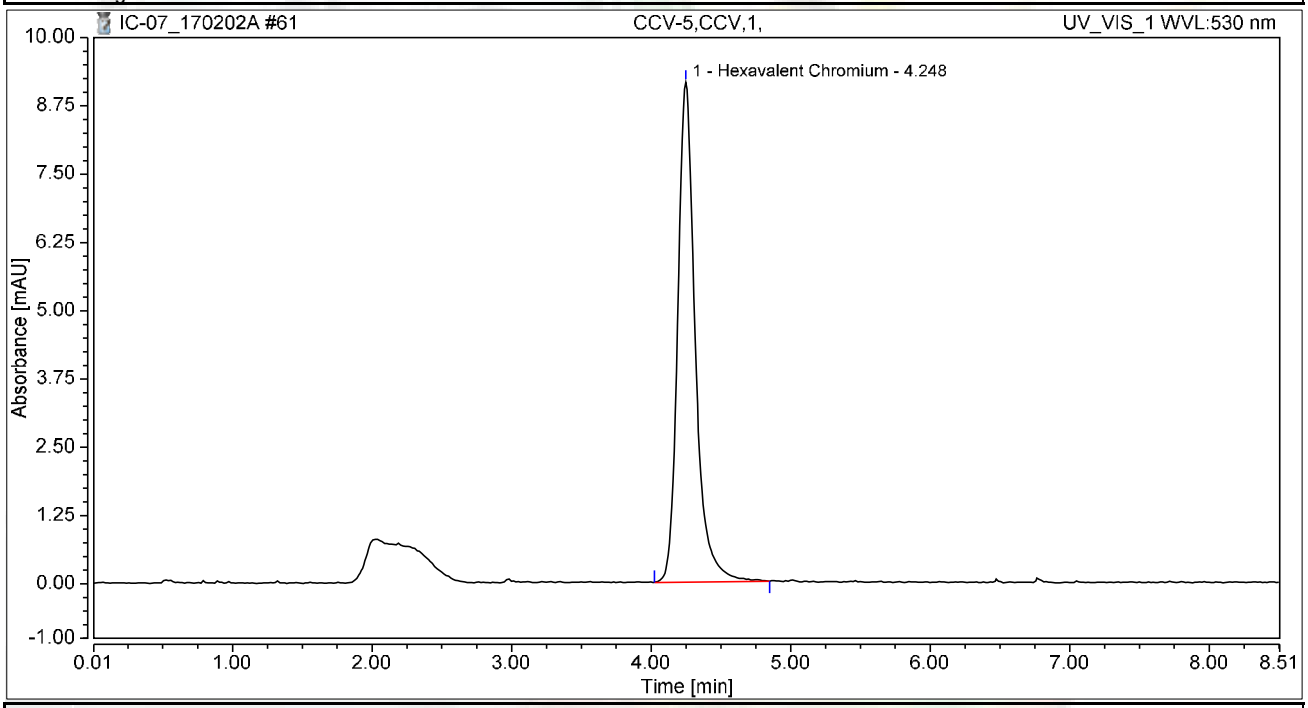
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.346	2.377	100.00	100.00	1.3553
Total:			**0.346**	**2.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

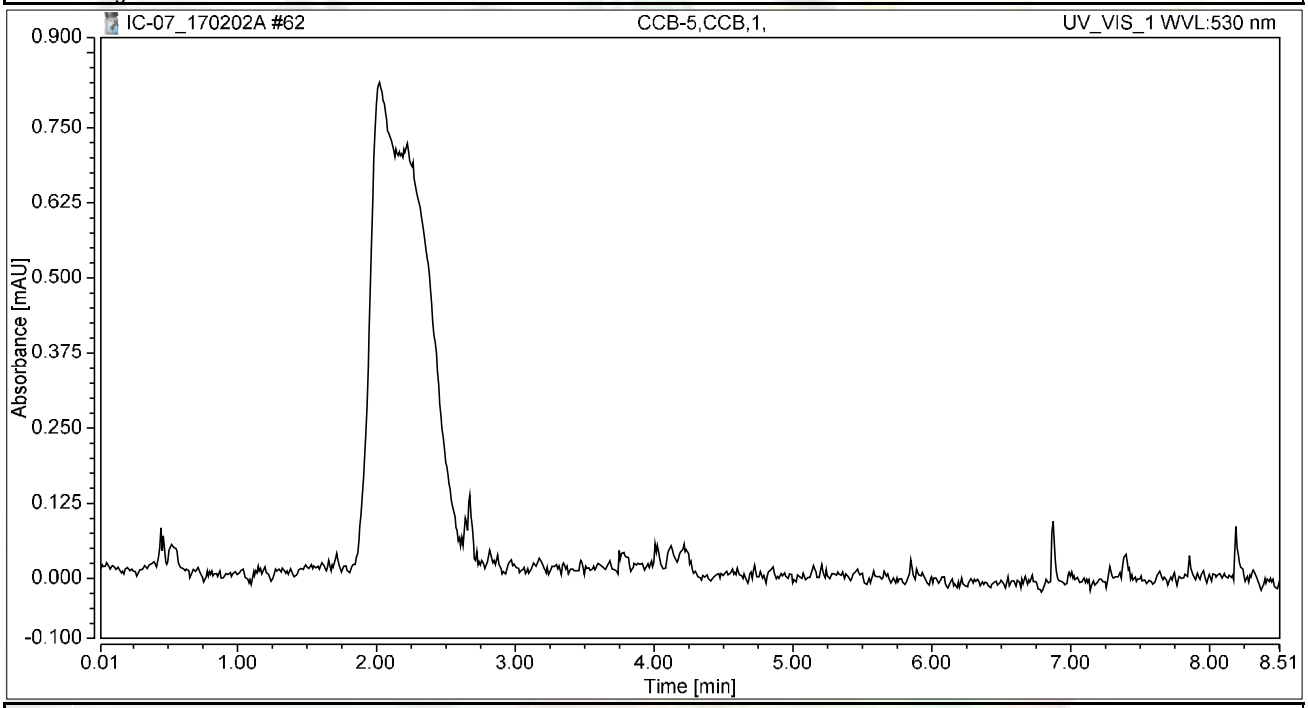
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	9.154	100.00	100.00	5.2123
Total:			**1.333**	**9.154**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

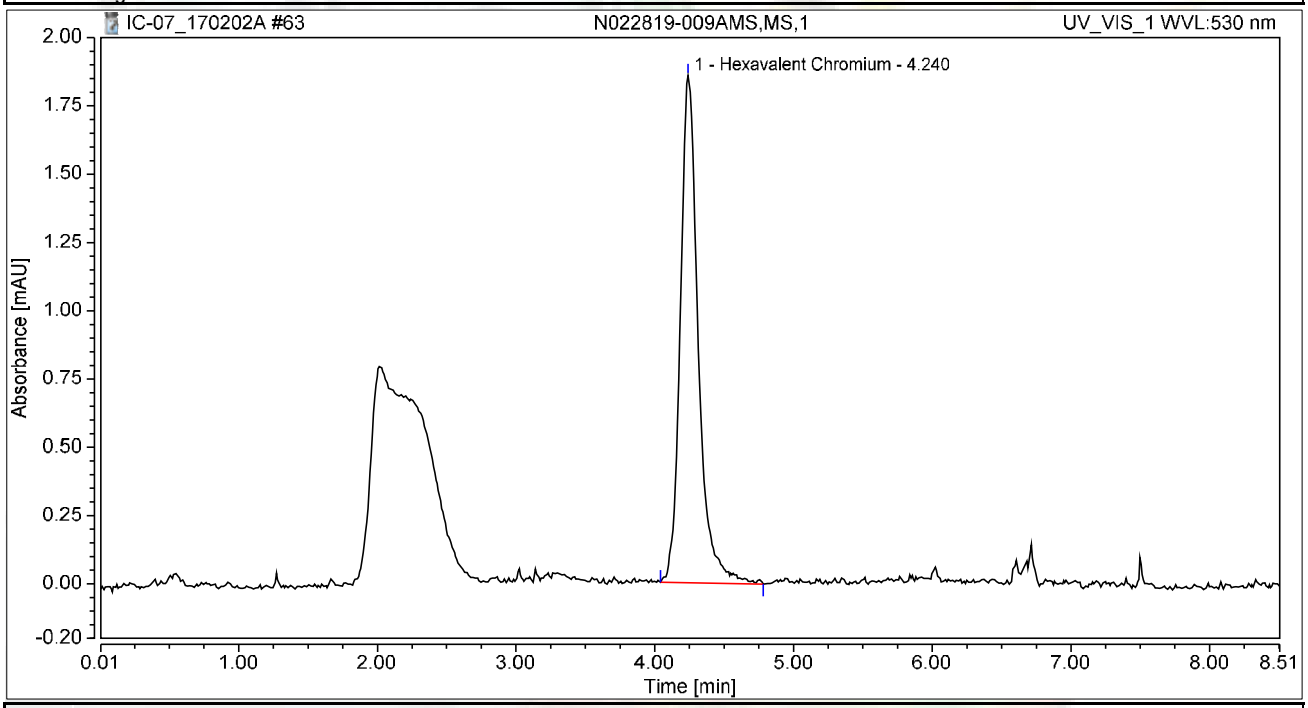
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

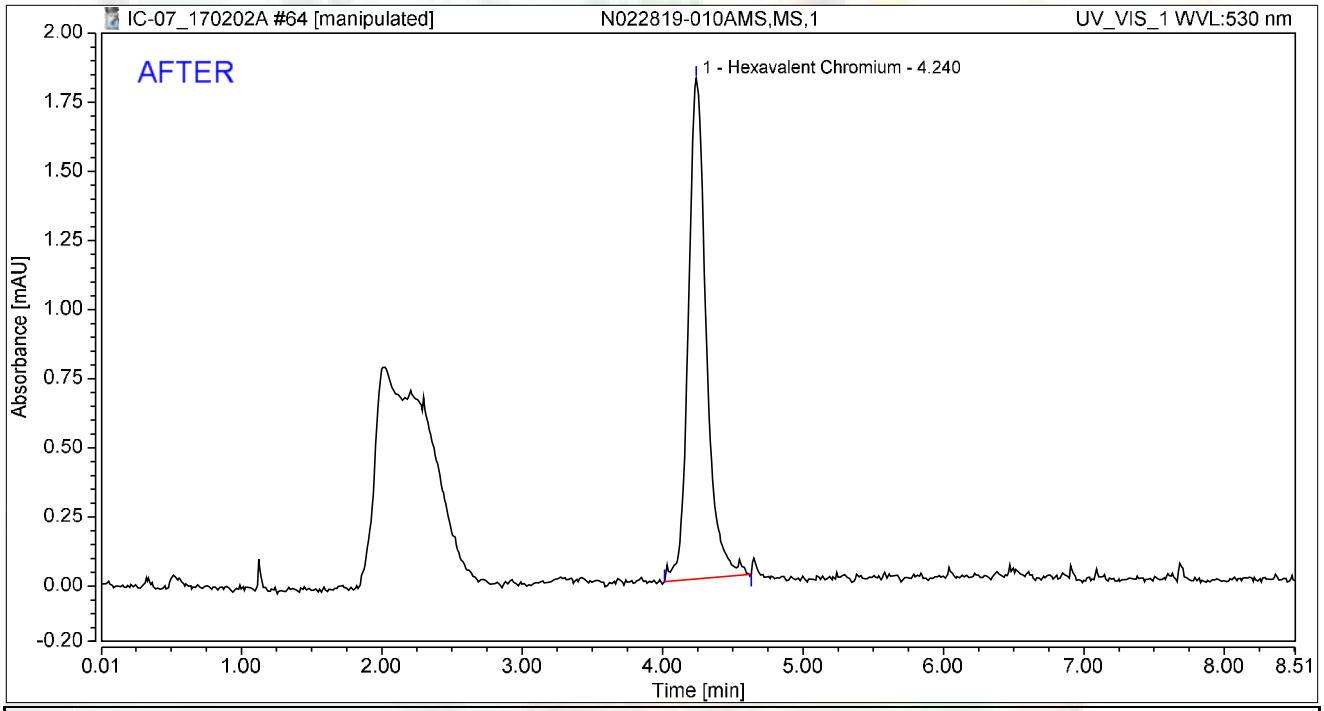
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.278	1.857	100.00	100.00	1.0888
Total:			**0.278**	**1.857**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.269	1.810	100.00	100.00	1.0514
Total:			**0.269**	**1.810**	**100.00**	**100.00**	

rba 2/6/2017

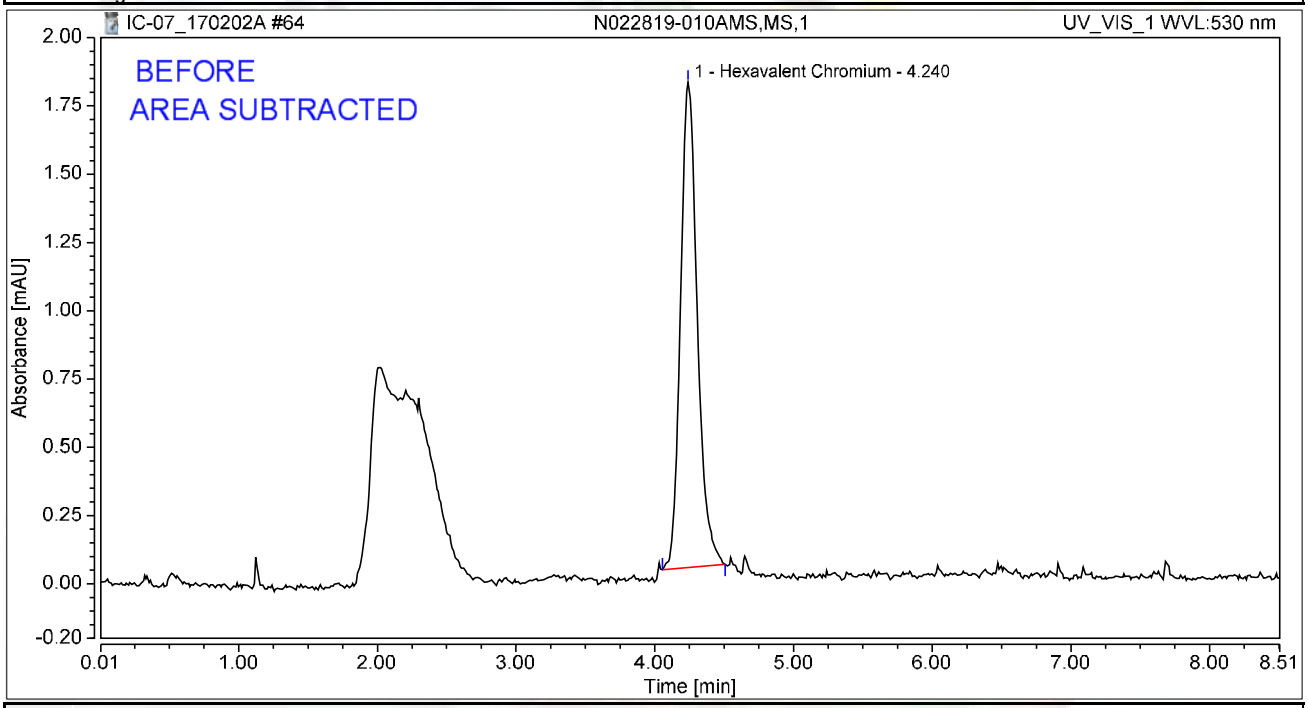
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022819-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.250	1.776	100.00	100.00	0.9760
Total:			**0.250**	**1.776**	**100.00**	**100.00**	

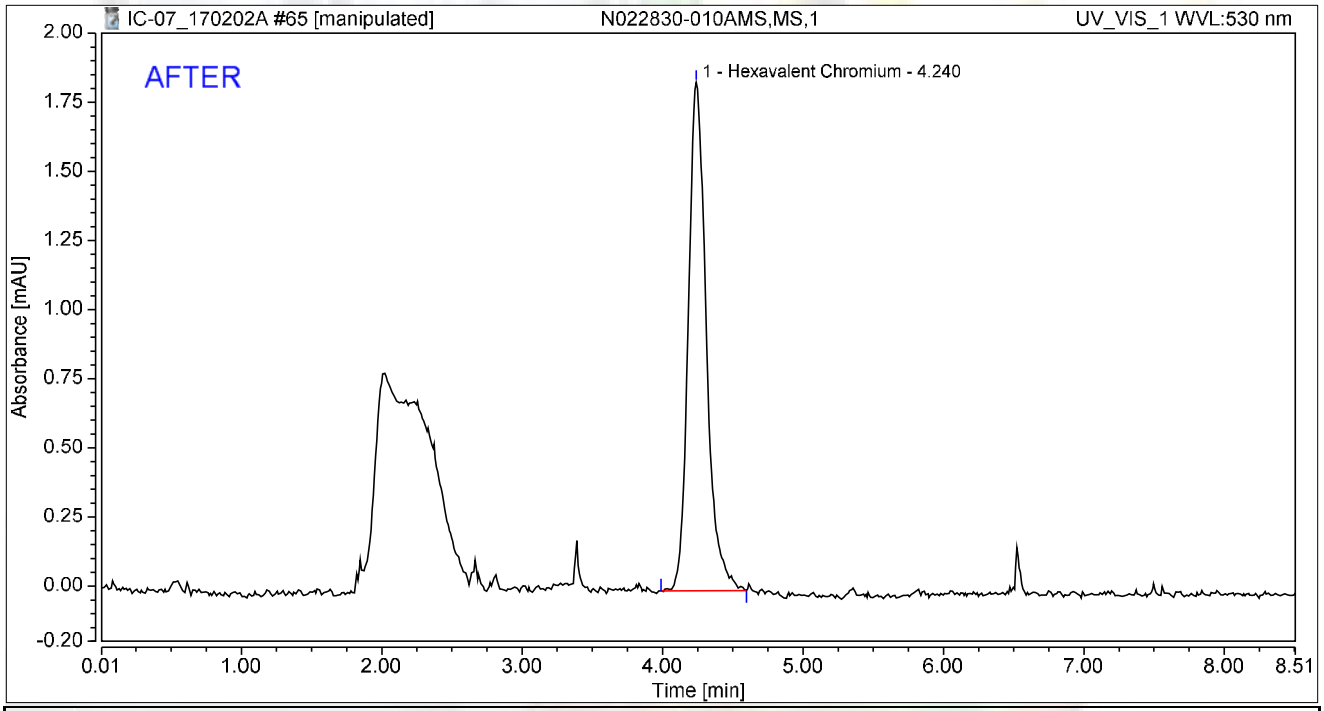
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.273	1.838	100.00	100.00	1.0692
Total:			**0.273**	**1.838**	**100.00**	**100.00**	

rba 2/6/2017

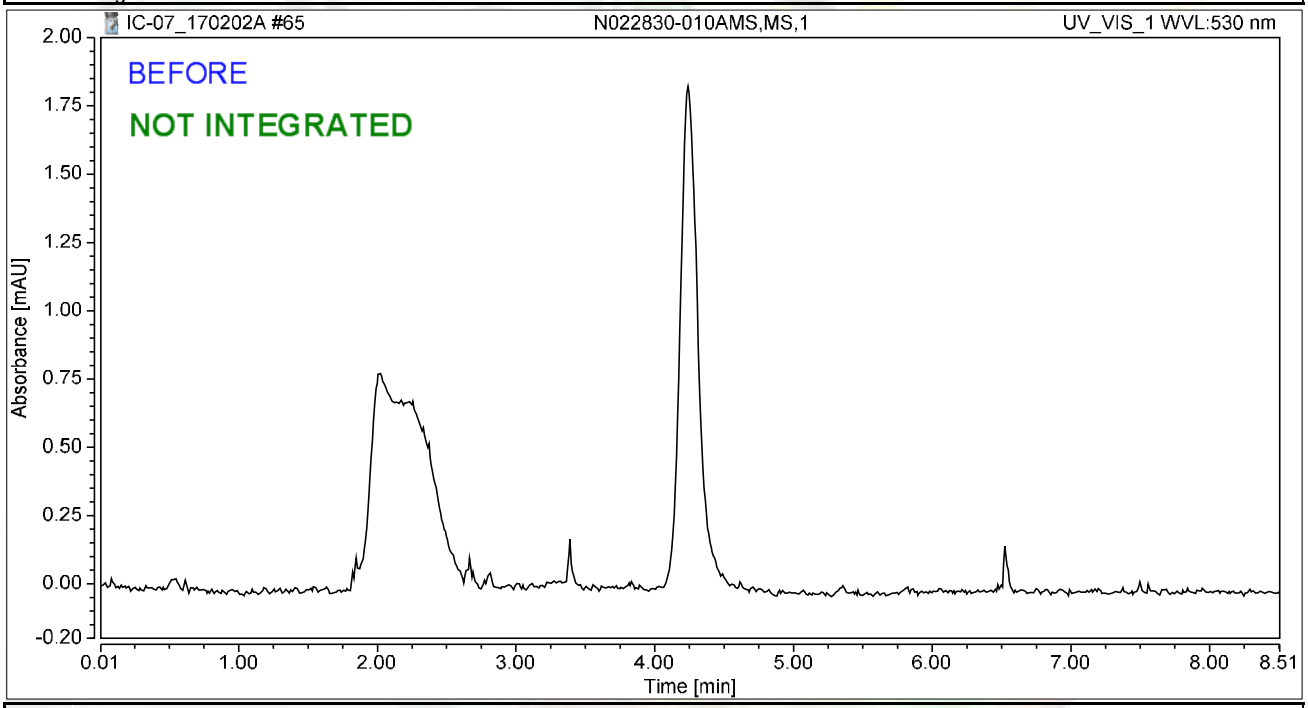
Reviewed by: Nancy 2/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022830-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

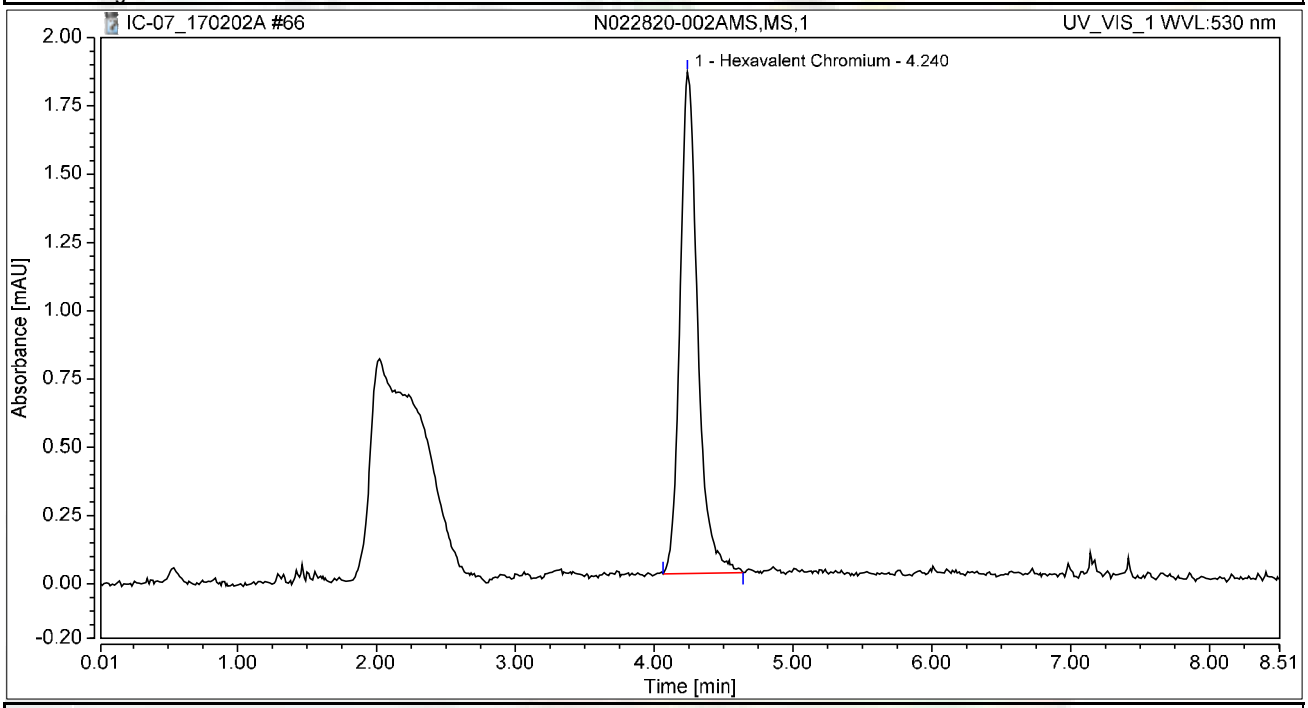
rba 2/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022820-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

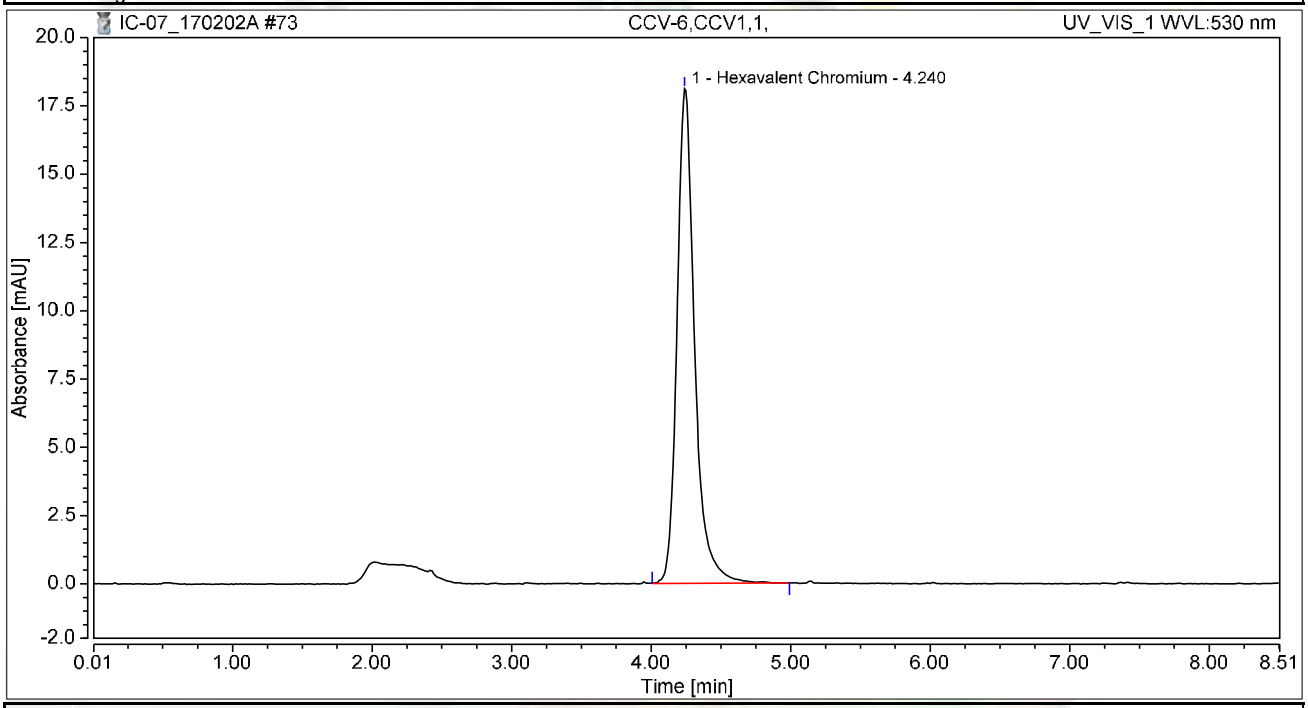
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.271	1.836	100.00	100.00	1.0603
Total:			**0.271**	**1.836**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

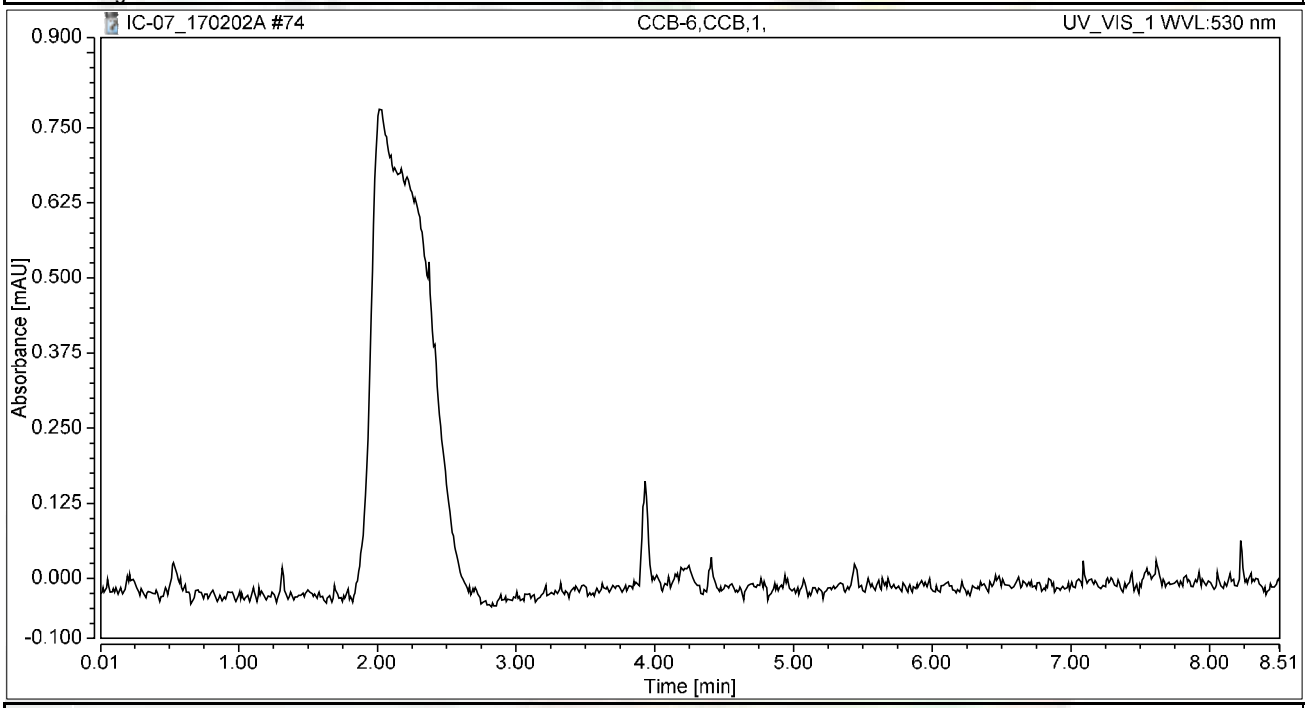
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.648	18.104	100.00	100.00	10.3586
Total:			**2.648**	**18.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Feb/17 20:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113228, R113333 **Analyst:** REB

ASSET #: N022830 **Date Analyzed:** 2/1/17, 2/6/17

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.			X			
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/07/17 Date:

2nd Level Reviewer Nancy 2/8/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022830-0013E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.3952*1

= 0.3952 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.40

RB 02/07/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

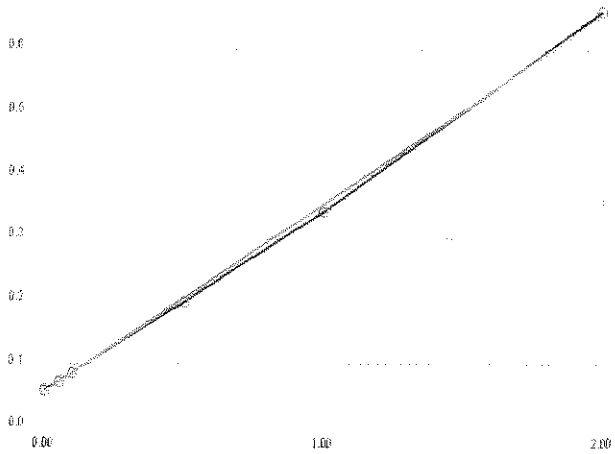
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2987x + 0.0547
Correlation	.999495



Calibrant	Energy	Set	Conc
1	0.0589	0.0000	0.0142
2	0.0728	0.0500	0.0607
3	0.0874	0.1000	0.1096
4	0.1990	0.5000	0.4831
5	0.3408	1.0000	0.9578
6	0.6595	2.0000	2.0246

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/07/17

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

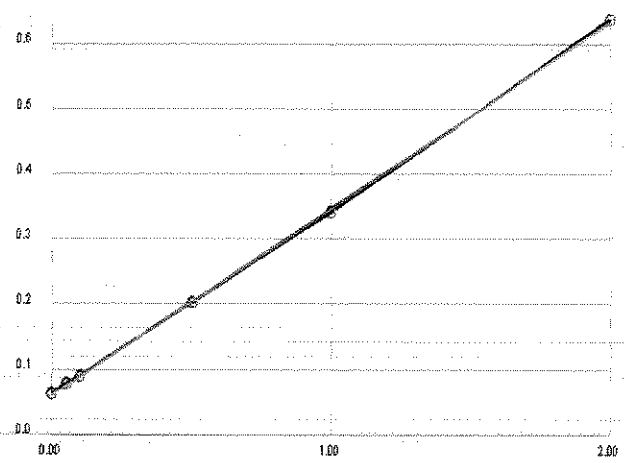
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2865x + 0.0613
Correlation	.999868



Calibrant	Energy	Set	Conc
1	0.0625	0.0000	0.0042
2	0.0778	0.0500	0.0576
3	0.0904	0.1000	0.1016
4	0.2041	0.5000	0.4985
5	0.3409	1.0000	0.9760
6	0.6377	2.0000	2.0121

Notes:

RB 02/07/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ICV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.518	0.050	0.5000	0	104	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCV** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ICV** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.6	90	110				

Sample ID **CCV-2** 1 SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCV** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	90	110				

Sample ID **CCV-3** 2 SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCV** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-4** 3 SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCV** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

2/8/2017

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **ICB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113228**
Client ID: **CCB** Batch ID: **R113228** TestNo: **SM4500-NO3** Analysis Date: **2/1/2017** SeqNo: **2552271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **ICB** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2557995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-~~2~~** 1 SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCB** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-~~3~~** 2 SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCB** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-~~4~~** 3 SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113333**
Client ID: **CCB** Batch ID: **R113333** TestNo: **SM4500-NO3** Analysis Date: **2/6/2017** SeqNo: **2558019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

2/8/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

-Cil

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-01-2017 14:43
Time end: 02-01-2017 17:38

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	16:57:44	0.0229		0.0615
2	<BLANK>	16:58:43	0.0165		0.0596
3	<CAL1>	16:59:39	0.0142	[0]	0.0589
4	<CAL2>	17:00:34	0.0607	[0.05]	0.0728
5	<CAL3>	17:01:35	0.1096	[0.1]	0.0874
6	<CAL4>	17:02:29	0.4831	[0.5]	0.1990
7	<CAL5>	17:03:31	0.9578	[1]	0.3408
8	<CAL6>	17:04:26	2.0246	[2]	0.6595
9	,BLANK,BLANK,1,	17:05:20	0.0313		0.0640
10	,ICV,ICV,1,	17:06:22	0.5200		0.2100
11	,ICB,ICB,1,	17:07:17	0.0199		0.0606
12	,MB-H2O,MBLK,1,	17:08:13	0.0075		0.0569
13	,LCS-H2O,LCS,1,	17:09:13	0.5313		0.2134
14	,N022820-001E,SAMP,1,	17:10:08	0.4011		0.1745
15	,N022820-001EDUP,DUP,1,	17:11:04	0.4098		0.1771
16	,N022820-001EMS,MS,1,	17:12:06	0.8718		0.3151
17	,N022820-001EMSD,MSD,1,	17:13:00	0.9464		0.3374
18	,N022820-002E,SAMP,1,	17:13:55	0.4199		0.1801
19	,N022820-003E,SAMP,1,	17:14:57	0.4179		0.1795
20	,N022820-004E,SAMP,1,	17:15:51	0.4058		0.1759
21	,BLANK,BLANK,1	17:16:46	0.0222		0.0613
22	,CCV-1,CCV,1,	17:17:48	0.5417		0.2165
23	,CCB-1,CCB,1,	17:18:43	0.0129		0.0585
24	,N022830-001E,SAMP,1,	17:19:43	0.3904		0.1713
25	,N022830-002E,SAMP,1,	17:20:39	0.4031		0.1751
26	,N022830-003E,SAMP,1,	17:21:34	0.3774		0.1674

RJB 02/07/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022830-004E,SAMP,1,	17:22:35	0.4008		0.1744
28	,N022830-005E,SAMP,1,	17:23:19	0.4269		0.1822
29	,N022830-006E,SAMP,1,	17:24:08	0.4222		0.1808
30	,N022830-007E,SAMP,1,	17:24:50	0.4112		0.1775
31	,N022830-008E,SAMP,1,	17:25:40	0.3864		0.1701
32	,N022830-009E,SAMP,1,	17:26:22	0.3921		0.1718
33	,BLANK,BLANK,1	17:27:05	0.0179		0.0600
34	,CCV-2,CCV,1,	17:27:53	0.5176		0.2093
35	,CCB-2,CCB,1,	17:28:36	0.0041		0.0559
36	,N022829-001I,SAMP,1,	17:29:20	0.8674		0.3138
37	,N022829-003I,SAMP,1,	17:30:08	0.3094		0.1471
38	,N022829-004I,SAMP,1,	17:30:51	0.0467		0.0686
39	,N022829-005D,SAMP,50,	17:31:33	0.8262		0.3015
40	,N022829-006I,SAMP,5,	17:32:23	0.7007		0.2640
41	,N022829-007I,SAMP,1,	17:33:05	0.0199		0.0606
42	,N022829-002I,SAMP,10,	17:33:48	0.0641		0.0738
43	,BLANK,BLANK,1	17:34:37	-0.0069		0.0526
44	,CCV-3,CCV,1,	17:35:19	0.5006		0.2042
45	,CCV-3,CCV,1, not used	17:36:08	0.5079		0.2064
46	,CCB-3,CCB,1,	17:36:50	0.0038		0.0558

RB 02/07/17 404

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-06-2017 17:49
Time end: 02-06-2017 20:27

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:50:44	0.0112		0.0645
2	<BLANK>	19:51:45	0.0094		0.0640
3	<CAL1>	19:52:39	0.0042	[0]	0.0625
4	<CAL2>	19:53:40	0.0576	[0.05]	0.0778
5	<CAL3>	19:54:36	0.1016	[0.1]	0.0904
6	<CAL4>	19:55:30	0.4985	[0.5]	0.2041
7	<CAL5>	19:56:31	0.9760	[1]	0.3409
8	<CAL6>	19:57:26	2.0121	[2]	0.6377
9	,BLANK,BLANK,1,	19:58:22	0.0171		0.0662
10	,ICV,ICV,1,	19:59:22	0.4978		0.2039
11	,ICB,ICB,1,	20:00:17	0.0112		0.0645
12	,MB-H2O,MBLK,1,	20:01:13	0.0094		0.0640
13	,LCS-H2O,LCS,1,	20:02:14	0.5355		0.2147
14	,N022830-010E,SAMP,1,	20:03:08	0.4126		0.1795
15	,N022830-010EDUP,DUP,1,	20:04:10	0.4074		0.1780
16	,N022830-010EMS,MS,1,	20:05:05	0.8591		0.3074
17	,N022830-010EMSD,MSD,1,	20:05:59	0.8612		0.3080
18	,N022830-011E,SAMP,1,	20:07:01	0.4060		0.1776
19	,N022830-012E,SAMP,1,	20:07:56	0.3896		0.1729
20	,N022830-013E,SAMP,1,	20:08:52	0.3952		0.1745
21	,BLANK,BLANK,1	20:09:52	0.0157		0.0658
22	,CCV-1,CCV,1,	20:10:47	0.5324		0.2138
23	,CCB-1,CCB,1,	20:11:37	0.0080		0.0636
24	,N022850-008I,SAMP,2,	20:12:19	0.1665		0.1090
25	,N022850-010D,SAMP,5,	20:13:08	0.5337		0.2142
26	,N022850-013H,SAMP,10,	20:13:50	0.5578		0.2211

RB 02/07/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022850-014I,SAMP,10,	20:14:34	0.4964		0.2035
28	,N022850-015I,SAMP,1,	20:15:21	0.0377		0.0721
29	,N022850-016I,SAMP,5,	20:16:05	0.0768		0.0833
30	,BLANK,BLANK,1	20:16:48	-0.0003		0.0612
31	,BLANK,BLANK,1	20:17:36	-0.0066		0.0594
32	,BLANK,BLANK,1	20:18:19	-0.0003		0.0612
33	,BLANK,BLANK,1	20:19:07	-0.0021		0.0607
34	,CCV-2,CCV,1,	20:19:50	0.5065		0.2064
35	,CCB-2,CCB,1,	20:20:32	0.0018		0.0618
36	,N022829-002I,SAMP,5,	20:21:21	0.0758		0.0830
37	,N022829-002IMS,MS,5,	20:22:05	0.5432		0.2169
38	,BLANK,BLANK,1	20:22:47	0.0045		0.0626
39	,CCV-3,CCV,1,	20:23:36	0.4915		0.2021
40	,CCV-3,CCV,1, not used	20:24:18	0.4657		0.1947
41	,CCB-3,CCB,1,	20:25:01	-0.0056		0.0597

RB 02/07/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/01/17
Time Analyzed: 02:43 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022820-001E		8.32						
2)	N022820-002E		6.92						
3)	N022820-003E		8.27						
4)	N022820-004E		7.48						
5)	N022829-001I		8.72						
6)	N022829-002I		6.21						
7)	N022829-003I		7.40						
8)	N022829-004I		8.47						
9)	N022829-005D		8.37						
10)	N022829-006I		8.77						
11)	N022829-007I		8.67						
12)	N022830-001E		8.49						
13)	N022830-002E		6.21						
14)	N022830-003E		7.42						
15)	N022830-004E		7.62						
16)	N022830-005E		6.78						
17)	N022830-006E		7.20						
18)	N022830-007E		7.28						
19)	N022830-008E		8.06						
20)	N022830-009E		8.01						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/07/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/06/17
Time Analyzed: 05:49 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022830-010E		7.13						
2)	N022830-011E		7.04						
3)	N022830-012E		6.98						
4)	N022830-013E		8.40						
5)	N022850-008I		7.50						
6)	N022850-010D		8.88						
7)	N022850-013H		7.51						
8)	N022850-014I		8.09						
9)	N022850-015I		7.59						
10)	N022850-016I		6.86						
11)									
12)									
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/07/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61094
ASSET #: N022830
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/6/2017

Method:
[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 2/8/17 Date: _____
2nd Level Reviewer _____ 2/8/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022830-004B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.0215 * 1 * (25/25) * 1000

Iron , ug/L = 21.5

Reporting results in two significant figures,

Iron , ug/L = 22

% RSD SUMMARY

RSD SUMMARY: 170206D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	20.52	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.5	15	PASS
Standard2	ICAL	1	Fe	0.05	0.8	15	PASS
Standard3	ICAL	1	Fe	2	0.58	15	PASS
Standard4	ICAL	1	Fe	5	0.28	15	PASS
Standard5	ICAL	1	Fe	7.5	0.97	15	PASS
Standard6	ICAL	1	Fe	10	0.58	15	PASS
Standard7	ICAL	1	Fe	20	0.033	15	PASS
ICV	ICV	1	Fe	10.25	0.44	15	PASS
ICB	ICB	1	Fe	-0.0012	16.42	15	<PQL
LLICV	CCV1	1	Fe	0.022	0.7	20	PASS
ICSA1	ICSA	1	Fe	178.38	0.047	15	PASS
ICSAB1	ICSAB	1	Fe	191.1	0.097	15	PASS
CCV1	CCV	1	Fe	10.38	0.42	15	PASS
CCB1	CCB	1	Fe	-0.0015	54.42	15	<PQL
CCV2	CCV	1	Fe	10.11	0.033	15	PASS
CCB2	CCB	1	Fe	-0.0017	17.66	15	<PQL
CCV3	CCV	1	Fe	10.16	0.024	15	PASS
CCB3	CCB	1	Fe	-0.0022	27.51	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.35	20	PASS
ICSA2	ICSA	1	Fe	181.92	0.1	15	PASS
ICSAB2	ICSAB	1	Fe	194.95	0.11	15	PASS
MB-61094	MBLK	1	Fe	0.00024	212.2	15	<PQL
LCS1-61094	LCS	1	Fe	0.11	0.43	15	PASS
N022830-001B	SAMP	1	Fe	0.005	14.55	15	PASS
N022830-001B	SAMP	5	Fe	0.00005	2049.97	15	<PQL
N022830-001B-PS	PS	1	Fe	0.11	0.78	15	PASS
N022830-001B-MS	MS	1	Fe	0.11	0.31	15	PASS
N022830-001B-MSD	MSD	1	Fe	0.11	0.65	15	PASS
N022830-002B	SAMP	1	Fe	0.0047	12.65	15	PASS
CCV4	CCV	1	Fe	10.086	0.027	15	PASS
CCB4	CCB	1	Fe	-0.0018	4.6	15	PASS
N022830-003B	SAMP	1	Fe	0.0097	8.66	15	PASS
N022830-004B	SAMP	1	Fe	0.022	2.36	15	PASS
N022830-005B	SAMP	1	Fe	0.012	0.54	15	PASS
N022830-006B	SAMP	1	Fe	0.016	4.21	15	PASS
N022830-007B	SAMP	1	Fe	0.0071	4.27	15	PASS
N022830-008B	SAMP	1	Fe	0.017	2.3	15	PASS
N022830-009B	SAMP	1	Fe	0.0054	18.43	15	<PQL
N022830-010B	SAMP	1	Fe	0.0057	13.48	15	PASS
N022830-011B	SAMP	1	Fe	0.0053	13.47	15	PASS
N022830-012B	SAMP	1	Fe	0.0047	6.33	15	PASS

RSD SUMMARY: 170206D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.11	0.052	15	PASS
CCB5	CCB	1	Fe	-0.002	14.82	15	PASS
N022830-013B	SAMP	1	Fe	0.0038	20.82	15	<PQL
N022866-001B	SAMP	1	Fe	0.0018	29.43	15	<PQL
N022866-002B	SAMP	1	Fe	1.49	0.65	15	PASS
N022866-003B	SAMP	1	Fe	1.46	0.7	15	PASS
N022866-005B	SAMP	1	Fe	0.0065	4.76	15	PASS
N022869-001B	SAMP	1	Fe	1.8	0.21	15	PASS
CCV6	CCV	1	Fe	10.097	0.032	15	PASS
CCB6	CCB	1	Fe	-0.00098	23.51	15	<PQL
LLCCV2	CCV2	1	Fe	0.023	3.42	20	PASS
ICSA3	ICSA	1	Fe	180.74	0.036	15	PASS
ICSAB3	ICSAB	1	Fe	193.97	0.13	15	PASS
CCV7	CCV	1	Fe	10.63	2.13	15	PASS
CCB7	CCB	1	Fe	-0.00098	38.63	15	<PQL
CCV8	CCV	1	Fe	10.4	1.096	15	PASS
CCB8	CCB	1	Fe	-0.0015	29.32	15	<PQL
LLCCV3	CCV2	1	Fe	0.022	0.96	20	PASS
ICSA4	ICSA	1	Fe	180.96	0.2	15	PASS
ICSAB4	ICSAB	1	Fe	191.52	0.11	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170206D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/06/2017	08:54:06 PM
2	Standard1	ICAL	1	02/06/2017	08:58:58 PM
3	Standard2	ICAL	1	02/06/2017	09:03:47 PM
4	Standard3	ICAL	1	02/06/2017	09:08:36 PM
5	Standard4	ICAL	1	02/06/2017	09:13:28 PM
6	Standard5	ICAL	1	02/06/2017	09:19:20 PM
7	Standard6	ICAL	1	02/06/2017	09:25:12 PM
8	Standard7	ICAL	1	02/06/2017	09:31:04 PM
9	ICV	ICV	1	02/06/2017	09:34:31 PM
1	ICB	ICB	1	02/06/2017	09:40:24 PM
2	LLICV	CCV1	1	02/06/2017	09:45:13 PM
4	ICSA1	ICSA	1	02/06/2017	09:50:03 PM
5	ICSAB1	ICSAB	1	02/06/2017	09:56:04 PM
38	MB-61079	MBLK	1	02/06/2017	10:02:06 PM
39	LCS1-61079	LCS	1	02/06/2017	10:11:41 PM
40	N022816-001A	SAMP	1	02/06/2017	10:17:32 PM
41	N022816-001A	SAMP	5	02/06/2017	10:22:56 PM
42	N022816-001A-PS	PS	1	02/06/2017	10:30:10 PM
43	N022816-001A-MS	MS	1	02/06/2017	10:35:11 PM
44	N022816-001A-MSD	MSD	1	02/06/2017	10:41:05 PM
45	N022816-002A	SAMP	1	02/06/2017	10:46:29 PM
46	N022816-003A	SAMP	1	02/06/2017	10:51:50 PM
47	N022816-004A	SAMP	1	02/06/2017	10:56:41 PM
7	CCV1	CCV	1	02/06/2017	11:02:33 PM
1	CCB1	CCB	1	02/06/2017	11:08:24 PM
48	N022816-005A	SAMP	1	02/06/2017	11:13:13 PM
49	N022816-006A	SAMP	1	02/06/2017	11:19:04 PM
50	N022816-007A	SAMP	1	02/06/2017	11:24:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N022816-008A	SAMP	1	02/06/2017	11:29:50 PM
52	N022817-001A	SAMP	1	02/06/2017	11:35:40 PM
53	N022817-002A	SAMP	1	02/06/2017	11:41:03 PM
54	N022817-003A	SAMP	1	02/06/2017	11:46:54 PM
55	N022817-004A	SAMP	1	02/06/2017	11:52:44 PM
56	N022817-005A	SAMP	1	02/07/2017	12:02:48 AM
57	N022817-006A	SAMP	1	02/07/2017	12:08:39 AM
7	CCV2	CCV	1	02/07/2017	12:14:34 AM
1	CCB2	CCB	1	02/07/2017	12:19:59 AM
58	N022817-007A	SAMP	1	02/07/2017	12:24:48 AM
59	N022817-008A	SAMP	1	02/07/2017	12:30:12 AM
60	N022817-009A	SAMP	1	02/07/2017	12:35:35 AM
61	N022817-010A	SAMP	1	02/07/2017	12:40:59 AM
62	N022817-011A	SAMP	1	02/07/2017	12:46:23 AM
63	N022817-012A	SAMP	1	02/07/2017	12:52:17 AM
88	N022816-001A	SAMP	25	02/07/2017	12:57:53 AM
89	N022816-001A-PS	PS	5	02/07/2017	01:02:45 AM
90	N022816-001A-MS1	MS	5	02/07/2017	01:08:37 AM
91	N022816-001A-MSD1	MSD	5	02/07/2017	01:14:30 AM
7	CCV3	CCV	1	02/07/2017	01:20:22 AM
1	CCB3	CCB	1	02/07/2017	01:25:47 AM
2	LLCCV1	CCV2	1	02/07/2017	01:30:36 AM
4	ICSA2	ICSA	1	02/07/2017	01:35:25 AM
5	ICSAB2	ICSAB	1	02/07/2017	01:41:26 AM
92	N022829-002E	SAMP	5	02/07/2017	01:47:28 AM
93	N022829-004E	SAMP	5	02/07/2017	01:52:22 AM
64	MB-61094	MBLK	1	02/07/2017	01:57:13 AM
65	LCS1-61094	LCS	1	02/07/2017	02:02:04 AM
66	N022830-001B	SAMP	1	02/07/2017	02:07:56 AM
67	N022830-001B	SAMP	5	02/07/2017	02:12:48 AM
68	N022830-001B-PS	PS	1	02/07/2017	02:17:39 AM
69	N022830-001B-MS	MS	1	02/07/2017	02:23:32 AM
70	N022830-001B-MSD	MSD	1	02/07/2017	02:29:26 AM
71	N022830-002B	SAMP	1	02/07/2017	02:35:19 AM
7	CCV4	CCV	1	02/07/2017	02:40:10 AM
1	CCB4	CCB	1	02/07/2017	02:45:35 AM
72	N022830-003B	SAMP	1	02/07/2017	02:50:24 AM
73	N022830-004B	SAMP	1	02/07/2017	02:55:16 AM
74	N022830-005B	SAMP	1	02/07/2017	03:00:08 AM
75	N022830-006B	SAMP	1	02/07/2017	03:05:01 AM
76	N022830-007B	SAMP	1	02/07/2017	03:09:54 AM
77	N022830-008B	SAMP	1	02/07/2017	03:14:46 AM
78	N022830-009B	SAMP	1	02/07/2017	03:19:38 AM
79	N022830-010B	SAMP	1	02/07/2017	03:24:30 AM
80	N022830-011B	SAMP	1	02/07/2017	03:29:22 AM
81	N022830-012B	SAMP	1	02/07/2017	03:34:14 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/07/2017	03:39:07 AM
1	CCB5	CCB	1	02/07/2017	03:44:32 AM
82	N022830-013B	SAMP	1	02/07/2017	03:49:21 AM
83	N022866-001B	SAMP	1	02/07/2017	03:54:12 AM
84	N022866-002B	SAMP	1	02/07/2017	04:00:04 AM
85	N022866-003B	SAMP	1	02/07/2017	04:05:57 AM
86	N022866-005B	SAMP	1	02/07/2017	04:11:50 AM
87	N022869-001B	SAMP	1	02/07/2017	04:16:42 AM
98	MB-61149	MBLK	1	02/07/2017	04:22:38 AM
99	LCS-61149	LCS	1	02/07/2017	04:27:30 AM
100	N022960-001A	SAMP	1	02/07/2017	04:32:57 AM
101	N022960-002A	SAMP	1	02/07/2017	04:37:49 AM
7	CCV6	CCV	1	02/07/2017	04:42:41 AM
1	CCB6	CCB	1	02/07/2017	04:48:06 AM
2	LLCCV2	CCV2	1	02/07/2017	04:52:55 AM
4	ICSA3	ICSA	1	02/07/2017	04:57:44 AM
5	ICSAB3	ICSAB	1	02/07/2017	05:03:45 AM
102	N022960-003A	SAMP	1	02/07/2017	05:09:47 AM
103	N022962-001B	SAMP	1	02/07/2017	05:14:39 AM
104	N022962-001B	SAMP	5	02/07/2017	05:19:31 AM
105	N022962-001B-PS	PS	1	02/07/2017	05:24:23 AM
106	N022962-001B-MS	MS	1	02/07/2017	05:29:50 AM
107	N022962-001B-MSD	MSD	1	02/07/2017	05:35:18 AM
108	N022962-002B	SAMP	1	02/07/2017	05:40:46 AM
109	N022962-003B	SAMP	1	02/07/2017	05:45:40 AM
110	N022962-004B	SAMP	1	02/07/2017	05:50:33 AM
7	CCV7	CCV	1	02/07/2017	06:13:26 AM
1	CCB7	CCB	1	02/07/2017	06:18:51 AM
108	N022962-002B	SAMP	1	02/07/2017	07:23:00 AM
109	N022962-003B	SAMP	1	02/07/2017	07:27:52 AM
111	N022817-006A	SAMP	5	02/07/2017	07:37:35 AM
7	CCV8	CCV	1	02/07/2017	07:43:29 AM
1	CCB8	CCB	1	02/07/2017	07:49:22 AM
2	LLCCV3	CCV2	1	02/07/2017	07:54:10 AM
4	ICSA4	ICSA	1	02/07/2017	07:59:00 AM
5	ICSAB4	ICSAB	1	02/07/2017	08:05:01 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/31/2017 8:00:00 A**
Prep End Date: **1/31/2017 12:30:00**

Reviewed/ Date: 2/8/2017
Initials/ Date: 2/8/17

Prep Batch **61094** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61094	Aqueous		25	☐	0	0	25	1.000		
MB-61094	Aqueous		25	☐	0	0	25	1.000		
N022830-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/31/2017 8:00:00 A**
Prep End Date: **1/31/2017 12:30:00**

Reviewed/ Date: 2/8/2017
Initials/ Date: for 2/8/17

Prep Batch **61094** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022830-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022869-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170206D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/06/2017	08:54:06 PM	Fe	273.953	-91	0.00	mg/L	
Standard1	02/06/2017	08:58:58 PM	Fe	273.953	592	0.0200	mg/L	
Standard2	02/06/2017	09:03:47 PM	Fe	273.953	1509	0.050	mg/L	
Standard3	02/06/2017	09:08:36 PM	Fe	273.953	53764	2.000	mg/L	
Standard4	02/06/2017	09:13:28 PM	Fe	273.953	134273	5.000	mg/L	
Standard5	02/06/2017	09:19:20 PM	Fe	273.953	199886	7.500	mg/L	
Standard6	02/06/2017	09:25:12 PM	Fe	273.953	267751	10.000	mg/L	
Standard7	02/06/2017	09:31:04 PM	Fe	273.953	513766	20.000	mg/L	0.9998

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10252.764	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ZZZZZZ** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.073	20	20.00	0	110	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10376.673	20	10000	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10104.964	20	10000	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10164.806	20	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ZZZZZZ** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.469	20	20.00	0	112	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10086.055	20	10000	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10107.660	20	10000	0	101	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCV** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10096.550	20	10000	0	101	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ZZZZZZ** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	23.005	20	20.00	0	115	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.225457	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.499682	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.705615	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.215125	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **CCB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.853152	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB5	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113332
Client ID:	CCB	Batch ID:	R113332	TestNo:	EPA 6010B			Analysis Date:	2/7/2017	SeqNo:	2557959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.982049	20									

Sample ID	CCB6	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113332
Client ID:	CCB	Batch ID:	R113332	TestNo:	EPA 6010B			Analysis Date:	2/7/2017	SeqNo:	2557971

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.981809	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSA** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494609.933	50	500000	0	98.9	80	120				
Calcium	488006.370	500	500000	0	97.6	80	120				
Iron	178383.470	20	200000	0	89.2	80	120				
Magnesium	481059.762	100	500000	0	96.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSAB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/6/2017** SeqNo: **2557896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549415.102	50	500000	0	110	80	120				
Calcium	538889.706	500	500000	0	108	80	120				
Iron	191099.724	20	200000	0	95.5	80	120				
Magnesium	510557.508	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSA** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	495653.477	50	500000	0	99.1	80	120				
Calcium	485285.634	500	500000	0	97.1	80	120				
Iron	181916.233	20	200000	0	91.0	80	120				
Magnesium	497738.594	100	500000	0	99.5	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSAB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	551296.160	50	500000	0	110	80	120				
Calcium	538393.702	500	500000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSAB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	194953.371	20	200000	0	97.5	80	120				
Magnesium	525255.189	100	500000	0	105	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSA** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	493364.215	50	500000	0	98.7	80	120				
Calcium	485054.691	500	500000	0	97.0	80	120				
Iron	180741.100	20	200000	0	90.4	80	120				
Magnesium	498870.501	100	500000	0	99.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113332**
Client ID: **ICSAB** Batch ID: **R113332** TestNo: **EPA 6010B** Analysis Date: **2/7/2017** SeqNo: **2557974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549292.053	50	500000	0	110	80	120				
Calcium	538723.849	500	500000	0	108	80	120				
Iron	193972.290	20	200000	0	97.0	80	120				
Magnesium	532447.909	100	500000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170206D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.011	101.06	65-125	PASS
Standard2	ICAL	1	1.013	101.32	65-125	PASS
Standard3	ICAL	1	1.034	103.45	65-125	PASS
Standard4	ICAL	1	1.022	102.17	65-125	PASS
Standard5	ICAL	1	1	100	65-125	PASS
Standard6	ICAL	1	0.98	97.64	65-125	PASS
Standard7	ICAL	1	0.96	95.52	65-125	PASS
ICV	ICV	1	0.97	96.86	65-125	PASS
ICB	ICB	1	1.0083	100.83	65-125	PASS
LLICV	CCV1	1	1.015	101.52	65-125	PASS
ICSA1	ICSA	1	0.92	91.57	65-125	PASS
ICSAB1	ICSAB	1	0.82	82.33	65-125	PASS
CCV1	CCV	1	0.98	98.23	65-125	PASS
CCB1	CCB	1	1.01	101.01	65-125	PASS
CCV2	CCV	1	0.99	98.78	65-125	PASS
CCB2	CCB	1	1.024	102.37	65-125	PASS
CCV3	CCV	1	0.98	98.098	65-125	PASS
CCB3	CCB	1	1.022	102.15	65-125	PASS
LLCCV1	CCV2	1	1.019	101.94	65-125	PASS
ICSA2	ICSA	1	0.92	92.052	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.62	65-125	PASS
MB-61094	MBLK	1	1.012	101.25	65-125	PASS
LCS1-61094	LCS	1	0.92	92.089	65-125	PASS
N022830-001B	SAMP	1	0.96	96.28	65-125	PASS
N022830-001B	SAMP	5	0.99	99.14	65-125	PASS
N022830-001B-PS	PS	1	0.98	97.5	65-125	PASS
N022830-001B-MS	MS	1	0.97	96.66	65-125	PASS
N022830-001B-MSD	MSD	1	0.96	95.86	65-125	PASS
N022830-002B	SAMP	1	0.97	97.47	65-125	PASS
CCV4	CCV	1	0.99	99.42	65-125	PASS
CCB4	CCB	1	1.029	102.93	65-125	PASS
N022830-003B	SAMP	1	0.98	98.44	65-125	PASS
N022830-004B	SAMP	1	0.98	98.08	65-125	PASS
N022830-005B	SAMP	1	0.99	99.23	65-125	PASS
N022830-006B	SAMP	1	0.97	97.15	65-125	PASS
N022830-007B	SAMP	1	0.98	98.5	65-125	PASS
N022830-008B	SAMP	1	0.99	99.38	65-125	PASS
N022830-009B	SAMP	1	1	99.57	65-125	PASS
N022830-010B	SAMP	1	0.96	95.95	65-125	PASS
N022830-011B	SAMP	1	0.97	97.26	65-125	PASS

INTERNAL STANDARD: 170206D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022830-012B	SAMP	1	1	99.72	65-125	PASS
CCV5	CCV	1	1.0066	100.66	65-125	PASS
CCB5	CCB	1	1.039	103.93	65-125	PASS
N022830-013B	SAMP	1	0.97	97.066	65-125	PASS
N022866-001B	SAMP	1	0.99	98.54	65-125	PASS
N022866-002B	SAMP	1	0.99	99.008	65-125	PASS
N022866-003B	SAMP	1	0.96	95.92	65-125	PASS
N022866-005B	SAMP	1	1.0006	100.06	65-125	PASS
N022869-001B	SAMP	1	0.99	98.82	65-125	PASS
CCV6	CCV	1	1.011	101.14	65-125	PASS
CCB6	CCB	1	1.05	105.03	65-125	PASS
LLCCV2	CCV2	1	1.048	104.8	65-125	PASS
ICSA3	ICSA	1	0.94	94.35	65-125	PASS
ICSAB3	ICSAB	1	0.84	84.091	65-125	PASS
CCV7	CCV	1	0.91	90.65	65-125	PASS
CCB7	CCB	1	1	99.9	65-125	PASS
CCV8	CCV	1	0.98	97.91	65-125	PASS
CCB8	CCB	1	1.0066	100.66	65-125	PASS
LLCCV3	CCV2	1	1.022	102.16	65-125	PASS
ICSA4	ICSA	1	0.91	90.61	65-125	PASS
ICSAB4	ICSAB	1	0.8	80.36	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022830
Test Method: EPA 6010B
Analysis Date: 2/6/2017

Matrix: Groundwater
Batch No.: 61079

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022830-001B DT 5X	Iron	ug/L	0	NA	4.97846	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N022830-001B-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**113332**
Client ID:	**ZZZZZZ**	Batch ID:	**61094**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/7/2017**	SeqNo:	**2557942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	111.862	20	100.0	4.978	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61084
ASSET #: N022830

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/3/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/7/17 Date:

2nd Level Reviewer 2/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022830-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.06281 * 1 * (25/25) * 1000

Iron , ug/L = 62.81

Reporting results in two significant figures,

Iron , ug/L = 63

% RSD SUMMARY

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	15.2	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.67	15	PASS
Standard2	ICAL	1	Fe	0.05	0.99	15	PASS
Standard3	ICAL	1	Fe	2	0.83	15	PASS
Standard4	ICAL	1	Fe	5	0.38	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.075	15	PASS
Standard7	ICAL	1	Fe	20	0.063	15	PASS
ICV	ICV	1	Fe	10.26	0.83	15	PASS
ICB	ICB	1	Fe	0.00038	151.043	15	<PQL
LLICV	CCV1	1	Fe	0.023	1.52	20	PASS
ICSA1	ICSA	1	Fe	2.034	0.53	15	PASS
ICB	ICB	1	Fe	-0.00017	109.48	15	<PQL
LLICV	CCV1	1	Fe	0.023	4.11	20	PASS
ICSA1	ICSA	1	Fe	193.58	0.22	15	PASS
ICSAB1	ICSAB	1	Fe	184.44	0.4	15	PASS
CCV1	CCV	1	Fe	10.039	0.0051	15	PASS
CCB1	CCB	1	Fe	-0.00009	616.8	15	<PQL
CCV2	CCV	1	Fe	9.97	0.13	15	PASS
CCB2	CCB	1	Fe	0.0052	14.6	15	PASS
CCV3	CCV	1	Fe	9.99	0.1	15	PASS
CCB3	CCB	1	Fe	0.0032	17.81	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.04	20	PASS
ICSA2	ICSA	1	Fe	197.71	0.16	15	PASS
ICSAB2	ICSAB	1	Fe	191.76	0.098	15	PASS
ICSAB2	ICSAB	1	Fe	188	0.051	15	PASS
CCV4	CCV	1	Fe	9.92	0.11	15	PASS
CCB4	CCB	1	Fe	0.0033	19.83	15	<PQL
CCV5	CCV	1	Fe	9.97	0.039	15	PASS
CCB5	CCB	1	Fe	0.00046	90.64	15	<PQL
CCV6	CCV	1	Fe	9.84	0.053	15	PASS
CCB6	CCB	1	Fe	0.00022	194.78	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.58	20	PASS
ICSA3	ICSA	1	Fe	193.88	0.64	15	PASS
ICSAB3	ICSAB	1	Fe	178.07	0.59	15	PASS
CCV7	CCV	1	Fe	9.78	0.095	15	PASS
CCB7	CCB	1	Fe	0.00065	63.87	15	<PQL
MB-61084	MBLK	1	Fe	-0.0002	268.36	15	<PQL
LCS-61084	LCS	1	Fe	0.1	0.43	15	PASS
CCV8	CCV	1	Fe	9.78	0.06	15	PASS
CCB8	CCB	1	Fe	0.00068	75.93	15	<PQL
N022830-001C	SAMP	1	Fe	0.063	1.3	15	PASS

RSD SUMMARY: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N022830-001C	SAMP	5	Fe	0.012	3.41	15	PASS
N022830-001C-PS	PS	1	Fe	0.17	0.46	15	PASS
N022830-001C-MS	MS	1	Fe	0.16	0.77	15	PASS
N022830-001C-MSD	MSD	1	Fe	0.16	0.34	15	PASS
N022830-002C	SAMP	1	Fe	0.058	3.68	15	PASS
N022830-003C	SAMP	1	Fe	0.56	0.4	15	PASS
N022830-004C	SAMP	1	Fe	0.89	0.61	15	PASS
N022830-005C	SAMP	1	Fe	0.075	0.3	15	PASS
N022830-006C	SAMP	1	Fe	0.1	0.65	15	PASS
CCV9	CCV	1	Fe	9.81	0.11	15	PASS
CCB9	CCB	1	Fe	0.0013	32.83	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.0073	20	PASS
ICSA4	ICSA	1	Fe	195.69	0.63	15	PASS
ICSAB4	ICSAB	1	Fe	177.4	0.14	15	PASS
N022830-007C	SAMP	1	Fe	0.077	4.57	15	PASS
N022830-008C	SAMP	1	Fe	0.058	1.56	15	PASS
N022830-009C	SAMP	1	Fe	0.06	0.86	15	PASS
N022830-010C	SAMP	1	Fe	0.052	1.7	15	PASS
N022830-011C	SAMP	1	Fe	0.045	1.82	15	PASS
N022830-012C	SAMP	1	Fe	0.036	2.26	15	PASS
N022830-013C	SAMP	1	Fe	0.038	0.79	15	PASS
CCV10	CCV	1	Fe	9.81	0.023	15	PASS
CCB10	CCB	1	Fe	0.0014	32.54	15	<PQL
LLCCV4	CCV2	1	Fe	0.019	6.97	20	PASS
ICSA5	ICSA	1	Fe	195.78	0.33	15	PASS
ICSAB5	ICSAB	1	Fe	184.48	0.057	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/03/2017	09:36:11 AM
2	Standard1	ICAL	1	02/03/2017	09:40:34 AM
3	Standard2	ICAL	1	02/03/2017	09:45:24 AM
4	Standard3	ICAL	1	02/03/2017	09:50:13 AM
5	Standard4	ICAL	1	02/03/2017	09:55:05 AM
6	Standard5	ICAL	1	02/03/2017	10:00:58 AM
7	Standard6	ICAL	1	02/03/2017	10:06:50 AM
8	Standard7	ICAL	1	02/03/2017	10:12:15 AM
9	ICV	ICV	1	02/03/2017	10:16:32 AM
1	ICB	ICB	1	02/03/2017	10:22:25 AM
2	LLICV	CCV1	1	02/03/2017	10:27:13 AM
4	ICSA1	ICSA	1	02/03/2017	10:32:03 AM
1	ICB	ICB	1	02/03/2017	10:52:50 AM
2	LLICV	CCV1	1	02/03/2017	10:57:39 AM
4	ICSA1	ICSA	1	02/03/2017	11:02:28 AM
5	ICSAB1	ICSAB	1	02/03/2017	11:08:30 AM
38	MB-61125	MBLK	1	02/03/2017	11:14:33 AM
39	LCS-61125	LCS	1	02/03/2017	11:19:23 AM
40	N022931-002E	SAMP	1	02/03/2017	11:25:14 AM
41	N022931-002E	SAMP	5	02/03/2017	11:31:05 AM
42	N022931-002E-PS	PS	1	02/03/2017	11:35:56 AM
43	N022931-002E-MS	MS	1	02/03/2017	11:41:48 AM
44	N022931-002E-MSD	MSD	1	02/03/2017	11:47:40 AM
45	MB-61083	MBLK	1	02/03/2017	11:53:33 AM
46	LCS1-61083	LCS	1	02/03/2017	11:58:24 AM
45	MB-61083	MBLK	1	02/03/2017	12:10:02 PM
7	CCV1	CCV	1	02/03/2017	12:14:51 PM
1	CCB1	CCB	1	02/03/2017	12:20:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
46	LCS1-61083	LCS	1	02/03/2017	12:25:05 PM
47	N022822-011B	SAMP	1	02/03/2017	12:30:58 PM
48	N022822-011B	SAMP	5	02/03/2017	12:35:49 PM
49	N022822-011B-PS	PS	1	02/03/2017	12:40:41 PM
50	N022822-011B-MS1	MS	1	02/03/2017	12:46:34 PM
51	N022822-011B-MSD1	MSD	1	02/03/2017	12:52:25 PM
52	N022822-014B	SAMP	1	02/03/2017	12:58:17 PM
53	N022846-011A	SAMP	1	02/03/2017	01:03:08 PM
54	N022829-001E	SAMP	1	02/03/2017	01:07:58 PM
55	N022829-002E	SAMP	1	02/03/2017	01:13:50 PM
7	CCV2	CCV	1	02/03/2017	01:19:51 PM
1	CCB2	CCB	1	02/03/2017	01:25:15 PM
56	N022829-003E	SAMP	1	02/03/2017	01:34:46 PM
57	N022829-004E	SAMP	1	02/03/2017	01:40:10 PM
58	N022829-005C	SAMP	1	02/03/2017	01:45:33 PM
59	N022829-006E	SAMP	1	02/03/2017	01:50:57 PM
60	N022829-007E	SAMP	1	02/03/2017	01:55:49 PM
61	N022829-004E	SAMP	5	02/03/2017	02:01:42 PM
62	MB-1	MBLK	1	02/03/2017	02:07:34 PM
63	MB-61119 STLC	MBLK	5	02/03/2017	02:12:26 PM
64	LCS-1	LCS	1	02/03/2017	02:17:17 PM
65	N022646-015A	SAMP	5	02/03/2017	02:22:44 PM
7	CCV3	CCV	1	02/03/2017	02:28:37 PM
1	CCB3	CCB	1	02/03/2017	02:34:02 PM
2	LLCCV1	CCV2	1	02/03/2017	02:42:04 PM
4	ICSA2	ICSA	1	02/03/2017	02:56:52 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:03:22 PM
5	ICSAB2	ICSAB	1	02/03/2017	03:08:33 PM
66	N022646-016A	SAMP	5	02/03/2017	03:14:30 PM
67	N022646-017A	SAMP	5	02/03/2017	03:20:22 PM
68	N022873-001A	SAMP	5	02/03/2017	03:26:16 PM
69	N022873-002A	SAMP	5	02/03/2017	03:32:08 PM
70	N022873-003A	SAMP	5	02/03/2017	03:38:01 PM
97	N022873-003A-DUP	DUP	5	02/03/2017	03:43:54 PM
71	N022873-003A	SAMP	25	02/03/2017	03:49:47 PM
72	N022873-003A-MS	MS	5	02/03/2017	03:54:39 PM
73	N022873-003A-MSD	MSD	5	02/03/2017	04:00:32 PM
98	MB-61046	MBLK	1	02/03/2017	04:06:27 PM
7	CCV4	CCV	1	02/03/2017	04:11:18 PM
1	CCB4	CCB	1	02/03/2017	04:16:43 PM
99	LCS-61046	LCS	1	02/03/2017	04:21:32 PM
100	N022819-001B	SAMP	1	02/03/2017	04:27:25 PM
101	N022819-001B	SAMP	5	02/03/2017	04:32:18 PM
102	N022819-001B-PS	PS	1	02/03/2017	04:37:10 PM
103	N022819-001B-MS	MS	1	02/03/2017	04:43:04 PM
104	N022819-001B-MSD	MSD	1	02/03/2017	04:48:58 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N022819-002B	SAMP	1	02/03/2017	04:54:51 PM
106	N022819-003B	SAMP	1	02/03/2017	04:59:43 PM
118	LCS-61045	LCS	1	02/03/2017	05:04:02 PM
107	N022819-004B	SAMP	1	02/03/2017	05:12:24 PM
7	CCV5	CCV	1	02/03/2017	05:17:16 PM
1	CCB5	CCB	1	02/03/2017	05:22:40 PM
108	N022819-005B	SAMP	1	02/03/2017	05:27:28 PM
109	N022819-006B	SAMP	1	02/03/2017	05:32:21 PM
110	N022819-007B	SAMP	1	02/03/2017	05:37:14 PM
111	N022819-008B	SAMP	1	02/03/2017	05:42:06 PM
112	N022819-009B	SAMP	1	02/03/2017	05:46:58 PM
113	N022820-001B	SAMP	1	02/03/2017	05:52:17 PM
114	N022820-002B	SAMP	1	02/03/2017	05:57:10 PM
115	N022820-003B	SAMP	1	02/03/2017	06:02:03 PM
116	N022819-004B	SAMP	1	02/03/2017	06:06:57 PM
117	MB-61045	MBLK	1	02/03/2017	06:11:49 PM
7	CCV6	CCV	1	02/03/2017	06:16:41 PM
1	CCB6	CCB	1	02/03/2017	06:22:06 PM
2	LLCCV2	CCV2	1	02/03/2017	06:26:54 PM
4	ICSA3	ICSA	1	02/03/2017	06:31:43 PM
5	ICSAB3	ICSAB	1	02/03/2017	06:37:44 PM
118	LCS-61045	LCS	1	02/03/2017	06:43:48 PM
119	N022819-001C	SAMP	1	02/03/2017	06:49:42 PM
120	N022819-001C	SAMP	5	02/03/2017	06:54:36 PM
121	N022819-001C-PS	PS	1	02/03/2017	06:59:27 PM
122	N022819-001C-MS	MS	1	02/03/2017	07:05:21 PM
123	N022819-001C-MSD	MSD	1	02/03/2017	07:11:16 PM
124	N022819-002C	SAMP	1	02/03/2017	07:17:09 PM
125	N022819-003C	SAMP	1	02/03/2017	07:22:02 PM
126	N022819-004C	SAMP	1	02/03/2017	07:26:55 PM
127	N022819-005C	SAMP	1	02/03/2017	07:31:47 PM
7	CCV7	CCV	1	02/03/2017	07:36:41 PM
1	CCB7	CCB	1	02/03/2017	07:42:05 PM
128	N022819-006C	SAMP	1	02/03/2017	07:46:53 PM
129	N022819-007C	SAMP	1	02/03/2017	07:51:46 PM
130	N022819-008C	SAMP	1	02/03/2017	07:56:39 PM
131	N022819-009C	SAMP	1	02/03/2017	08:01:31 PM
132	N022820-001C	SAMP	1	02/03/2017	08:06:25 PM
133	N022820-002C	SAMP	1	02/03/2017	08:11:18 PM
134	N022820-003C	SAMP	1	02/03/2017	08:16:11 PM
135	N022819-004C	SAMP	1	02/03/2017	08:21:05 PM
38	MB-61084	MBLK	1	02/03/2017	08:25:59 PM
39	LCS-61084	LCS	1	02/03/2017	08:30:49 PM
7	CCV8	CCV	1	02/03/2017	08:36:42 PM
1	CCB8	CCB	1	02/03/2017	08:42:06 PM
40	N022830-001C	SAMP	1	02/03/2017	08:46:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
41	N022830-001C	SAMP	5	02/03/2017	08:51:45 PM
42	N022830-001C-PS	PS	1	02/03/2017	08:56:36 PM
43	N022830-001C-MS	MS	1	02/03/2017	09:02:29 PM
44	N022830-001C-MSD	MSD	1	02/03/2017	09:08:20 PM
45	N022830-002C	SAMP	1	02/03/2017	09:14:12 PM
46	N022830-003C	SAMP	1	02/03/2017	09:19:03 PM
47	N022830-004C	SAMP	1	02/03/2017	09:23:56 PM
48	N022830-005C	SAMP	1	02/03/2017	09:28:48 PM
49	N022830-006C	SAMP	1	02/03/2017	09:33:41 PM
7	CCV9	CCV	1	02/03/2017	09:38:34 PM
1	CCB9	CCB	1	02/03/2017	09:43:59 PM
2	LLCCV3	CCV2	1	02/03/2017	09:48:47 PM
4	ICSA4	ICSA	1	02/03/2017	09:53:36 PM
5	ICSAB4	ICSAB	1	02/03/2017	09:59:38 PM
50	N022830-007C	SAMP	1	02/03/2017	10:05:42 PM
51	N022830-008C	SAMP	1	02/03/2017	10:10:33 PM
52	N022830-009C	SAMP	1	02/03/2017	10:15:24 PM
53	N022830-010C	SAMP	1	02/03/2017	10:20:15 PM
54	N022830-011C	SAMP	1	02/03/2017	10:25:06 PM
55	N022830-012C	SAMP	1	02/03/2017	10:30:09 PM
56	N022830-013C	SAMP	1	02/03/2017	10:35:02 PM
7	CCV10	CCV	1	02/03/2017	10:39:53 PM
1	CCB10	CCB	1	02/03/2017	10:45:18 PM
2	LLCCV4	CCV2	1	02/03/2017	10:50:06 PM
4	ICSA5	ICSA	1	02/03/2017	10:54:56 PM
5	ICSAB5	ICSAB	1	02/03/2017	11:00:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 11:21:23**
Prep End Date: **1/30/2017 4:00:00 P**

Reviewed/ Date: 2/7/2017
Initials/ Date: 2/7/17

Prep Batch **61084** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61084	Aqueous		25	☐	0	0	25	1.000		
MB-61084	Aqueous		25	☐	0	0	25	1.000		
N022830-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-010C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP SOLUTION C	LCS/MS/MSD	0.5
MWST-161205D	ICP SOLUTION A	LCS/MS/MSD	0.5
MWST-170107E	ICP SOLUTION B	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/30/2017 11:21:23**
Prep End Date: **1/30/2017 4:00:00 P**

Reviewed/ Date: 2/7/2017

Initials/ Date: 2/7/17

Prep Batch **61084** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022830-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8741	HYDROCHLORIC ACID
8748	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP SOLUTION C	LCS/MS/MSD	0.5
MWST-161205D	ICP SOLUTION A	LCS/MS/MSD	0.5
MWST-170107E	ICP SOLUTION B	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170203A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/03/2017	09:36:11 AM	Fe	273.953	-115	0.00	mg/L	
Standard1	02/03/2017	09:40:34 AM	Fe	273.953	638	0.0200	mg/L	
Standard2	02/03/2017	09:45:24 AM	Fe	273.953	1611	0.050	mg/L	
Standard3	02/03/2017	09:50:13 AM	Fe	273.953	55940	2.000	mg/L	
Standard4	02/03/2017	09:55:05 AM	Fe	273.953	139157	5.000	mg/L	
Standard5	02/03/2017	10:00:58 AM	Fe	273.953	213525	7.500	mg/L	
Standard6	02/03/2017	10:06:50 AM	Fe	273.953	275662	10.000	mg/L	
Standard7	02/03/2017	10:12:15 AM	Fe	273.953	546752	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10263.962	20	10000	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.713	20	20.00	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10038.799	20	10000	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9974.098	20	10000	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9990.814	20	10000	0	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.319	20	20.00	0	107	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9920.896	20	10000	0	99.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.432	20	10000	0	99.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9839.474	20	10000	0	98.4	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.618	20	20.00	0	93.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9777.080	20	10000	0	97.8	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9780.883	20	10000	0	97.8	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9807.103	20	10000	0	98.1	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.263	20	20.00	0	96.3	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCV** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9812.023	20	10000	0	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **LLCCV4** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ZZZZZZ** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.011	20	20.00	0	95.1	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.174296	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.088133	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.224	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.179	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.311	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.460	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.220	20									

Sample ID **CCB7** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.650	20									

Sample ID **CCB8** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.682	20									

Sample ID **CCB9** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.336	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB10** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **CCB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.398	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460033.480	50	500000	0	92.0	80	120				
Calcium	459446.095	500	500000	0	91.9	80	120				
Iron	193578.155	20	200000	0	96.8	80	120				
Magnesium	485934.752	100	500000	0	97.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553675.376	50	500000	0	111	80	120				
Calcium	545836.870	500	500000	0	109	80	120				
Iron	184443.233	20	200000	0	92.2	80	120				
Magnesium	493866.675	100	500000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479168.987	50	500000	0	95.8	80	120				
Calcium	459494.936	500	500000	0	91.9	80	120				
Iron	197710.808	20	200000	0	98.9	80	120				
Magnesium	465996.866	100	500000	0	93.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	546002.338	50	500000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	532681.050	500	500000	0	107	80	120				
Iron	188002.655	20	200000	0	94.0	80	120				
Magnesium	503028.516	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	475680.154	50	500000	0	95.1	80	120				
Calcium	456809.811	500	500000	0	91.4	80	120				
Iron	193880.663	20	200000	0	96.9	80	120				
Magnesium	456210.447	100	500000	0	91.2	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535909.119	50	500000	0	107	80	120				
Calcium	511085.094	500	500000	0	102	80	120				
Iron	178068.387	20	200000	0	89.0	80	120				
Magnesium	471025.199	100	500000	0	94.2	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	473457.689	50	500000	0	94.7	80	120				
Calcium	461054.232	500	500000	0	92.2	80	120				
Iron	195691.460	20	200000	0	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	477579.044	100	500000	0	95.5	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533737.355	50	500000	0	107	80	120				
Calcium	515514.967	500	500000	0	103	80	120				
Iron	177397.487	20	200000	0	88.7	80	120				
Magnesium	485007.402	100	500000	0	97.0	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSA** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	472931.070	50	500000	0	94.6	80	120				
Calcium	460970.478	500	500000	0	92.2	80	120				
Iron	195776.193	20	200000	0	97.9	80	120				
Magnesium	480369.987	100	500000	0	96.1	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113277**
Client ID: **ICSAB** Batch ID: **R113277** TestNo: **EPA 6010B** Analysis Date: **2/3/2017** SeqNo: **2554803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533549.111	50	500000	0	107	80	120				
Calcium	515394.609	500	500000	0	103	80	120				
Iron	184484.035	20	200000	0	92.2	80	120				
Magnesium	489540.184	100	500000	0	97.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.019	101.94	65-125	PASS
Standard2	ICAL	1	1.013	101.33	65-125	PASS
Standard3	ICAL	1	1.016	101.65	65-125	PASS
Standard4	ICAL	1	1.0013	100.13	65-125	PASS
Standard5	ICAL	1	1	99.54	65-125	PASS
Standard6	ICAL	1	0.99	98.97	65-125	PASS
Standard7	ICAL	1	0.96	96.38	65-125	PASS
ICV	ICV	1	1	99.92	65-125	PASS
ICB	ICB	1	1.025	102.5	65-125	PASS
LLICV	CCV1	1	1.014	101.44	65-125	PASS
ICSA1	ICSA	1	1.021	102.06	65-125	PASS
ICB	ICB	1	1.024	102.37	65-125	PASS
LLICV	CCV1	1	1.026	102.62	65-125	PASS
ICSA1	ICSA	1	1.1	109.96	65-125	PASS
ICSAB1	ICSAB	1	0.83	82.82	65-125	PASS
CCV1	CCV	1	1.0056	100.56	65-125	PASS
CCB1	CCB	1	1.034	103.37	65-125	PASS
CCV2	CCV	1	1.02	102.01	65-125	PASS
CCB2	CCB	1	1.047	104.66	65-125	PASS
CCV3	CCV	1	0.99	98.77	65-125	PASS
CCB3	CCB	1	1.027	102.7	65-125	PASS
LLCCV1	CCV2	1	1.044	104.36	65-125	PASS
ICSA2	ICSA	1	1.095	109.48	65-125	PASS
ICSAB2	ICSAB	1	0.83	83.49	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.66	65-125	PASS
CCV4	CCV	1	0.99	98.68	65-125	PASS
CCB4	CCB	1	1.009	100.9	65-125	PASS
CCV5	CCV	1	1.04	103.99	65-125	PASS
CCB5	CCB	1	1.05	105.05	65-125	PASS
CCV6	CCV	1	1.031	103.11	65-125	PASS
CCB6	CCB	1	1.042	104.23	65-125	PASS
LLCCV2	CCV2	1	1.062	106.18	65-125	PASS
ICSA3	ICSA	1	1.12	112.08	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.24	65-125	PASS
CCV7	CCV	1	1.036	103.64	65-125	PASS
CCB7	CCB	1	1.059	105.86	65-125	PASS
MB-61084	MBLK	1	1.049	104.87	65-125	PASS
LCS-61084	LCS	1	1.043	104.3	65-125	PASS
CCV8	CCV	1	1.036	103.57	65-125	PASS
CCB8	CCB	1	1.059	105.9	65-125	PASS

INTERNAL STANDARD: 170203A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N022830-001C	SAMP	1	1	99.67	65-125	PASS
N022830-001C	SAMP	5	1.029	102.87	65-125	PASS
N022830-001C-PS	PS	1	1.014	101.35	65-125	PASS
N022830-001C-MS	MS	1	0.99	99.36	65-125	PASS
N022830-001C-MSD	MSD	1	1.0003	100.03	65-125	PASS
N022830-002C	SAMP	1	0.89	89.15	65-125	PASS
N022830-003C	SAMP	1	0.96	96.11	65-125	PASS
N022830-004C	SAMP	1	0.99	98.9	65-125	PASS
N022830-005C	SAMP	1	1.0015	100.15	65-125	PASS
N022830-006C	SAMP	1	1.0034	100.34	65-125	PASS
CCV9	CCV	1	1.033	103.32	65-125	PASS
CCB9	CCB	1	1.052	105.17	65-125	PASS
LLCCV3	CCV2	1	1.056	105.56	65-125	PASS
ICSA4	ICSA	1	1.11	111.04	65-125	PASS
ICSAB4	ICSAB	1	0.86	85.83	65-125	PASS
N022830-007C	SAMP	1	0.99	99.49	65-125	PASS
N022830-008C	SAMP	1	0.98	98.21	65-125	PASS
N022830-009C	SAMP	1	1	99.63	65-125	PASS
N022830-010C	SAMP	1	1.0088	100.88	65-125	PASS
N022830-011C	SAMP	1	1.0007	100.07	65-125	PASS
N022830-012C	SAMP	1	1.0087	100.87	65-125	PASS
N022830-013C	SAMP	1	1.027	102.66	65-125	PASS
CCV10	CCV	1	1.036	103.62	65-125	PASS
CCB10	CCB	1	1.052	105.16	65-125	PASS
LLCCV4	CCV2	1	1.058	105.76	65-125	PASS
ICSA5	ICSA	1	1.11	111.2	65-125	PASS
ICSAB5	ICSAB	1	0.86	85.93	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022830
Test Method: EPA 6010B
Analysis Date: 2/3/2017

Matrix: Groundwater
Batch No.: 61084

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022830-001C DT 5X	Iron	ug/L	61.96726	NA	62.80826	1.34%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *05-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N022830-001C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**113277**
Client ID:	**ZZZZZZ**	Batch ID:	**61084**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/3/2017**	SeqNo:	**2554779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	165.124	20	100.0	62.81	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61101 **Instrument ID:** ICPMS-02
ASSET #: N022830 **Analyst:** CEI
Method: **Date Analyzed:** 1/31/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in STD 1 & LLCCV2 failed > 15 & 20%. However %RSD of LLICV & %Rec of LLCCV2 passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/8/17 Date: —

2nd Level Reviewer 2/8/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022830-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.2114 * 1 * (25/25)

Arsenic , ug/L = 2.2114

Reporting results in two significant figures,

Arsenic , ug/L = 2.2

% RSD SUMMARY

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.09	15	PASS	0.097	9.58	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	1.84	15	PASS	0.52	6.49	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	0.79	15	PASS	5.23	1.42	15	PASS
Std4-10/100 ppb	ICAL	1	10.065	1.057	15	PASS	10.19	0.17	15	PASS
Std5-20/200 ppb	ICAL	1	20.16	0.68	15	PASS	20.36	1.11	15	PASS
Std6-40/400 ppb	ICAL	1	39.89	0.52	15	PASS	40.36	0.7	15	PASS
Std7-100/1000 ppb	ICAL	1	101.37	0.88	15	PASS	99.76	1.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.32	0.8	15	PASS	200	0.81	15	PASS
ICV	ICV	1	106.17	1.28	15	PASS	10.21	0.76	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0039	173.74	15	<PQL
LLICV	CCV1	1	1.1	3.14	20	PASS	0.99	1.12	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.16	8.37	15	PASS
ICSAB1	ICSAB	1	19	0.68	15	PASS	19.58	0.68	15	PASS
CCV1	CCV	1	20.13	0.29	15	PASS	20.36	1.65	15	PASS
CCB1	CCB	1	0.0067	74.71	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.99	0.76	15	PASS	20.37	1.64	15	PASS
CCB2	CCB	1	0.0032	54.24	15	<PQL	0.0035	155.95	15	<PQL
LLCCV1	CCV2	1	1.12	0.37	20	PASS	1.049	2.18	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.16	5.98	15	PASS
ICSAB2	ICSAB	1	19.027	0.24	15	PASS	19.47	0.36	15	PASS
CCV3	CCV	1	20.61	0.63	15	PASS	21.044	1.42	15	PASS
CCB3	CCB	1	0.0074	29.56	15	<PQL	0.011	43.76	15	<PQL
CCV4	CCV	1	20.69	0.45	15	PASS	20.8	2.083	15	PASS
CCB4	CCB	1	0.017	22.15	15	<PQL	0.0003	2049.41	15	<PQL
CCV5	CCV	1	21.16	0.31	15	PASS	20.62	0.81	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.12	1.42	20	PASS	0.99	2.87	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.15	14.62	15	PASS
ICSAB3	ICSAB	1	19.97	0.11	15	PASS	19.47	0.43	15	PASS
MB-61101	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61101	LCS	1	103.67	1.22	15	PASS	9.66	2.8	15	PASS
N022830-001B	SAMP	1	120.39	0.61	15	PASS	<0.000	N/A	15	<PQL
N022830-001B	SAMP	5	25.32	0.48	15	PASS	<0.000	N/A	15	<PQL
N022830-001B	SAMP	25	5.34	1.006	15	PASS	0.072	19.38	15	<PQL
N022830-001B-PS	PS	1	217.4	0.57	15	PASS	9.18	0.82	15	PASS
N022830-001B-PS	PS	5	46.13	1.19	15	PASS	1.93	3.073	15	PASS
N022830-001B-MS	MS	1	215.57	0.58	15	PASS	9.37	1.21	15	PASS
N022830-001B-MS	MS	5	46.8	0.53	15	PASS	2.0038	1.4	15	PASS
CCV6	CCV	1	20.94	1.0051	15	PASS	20.58	1	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022830-001B-MSD	MSD	1	215.2	0.37	15	PASS	9.19	0.82	15	PASS
N022830-001B-MSD	MSD	5	46.69	0.26	15	PASS	2.0046	4.77	15	PASS
N022830-002B	SAMP	1	116.92	0.61	15	PASS	<0.000	N/A	15	<PQL
N022830-003B	SAMP	1	126.92	1.24	15	PASS	0.015	57.13	15	<PQL
N022830-004B	SAMP	1	130.16	0.45	15	PASS	<0.000	N/A	15	<PQL
N022830-005B	SAMP	1	121.38	1.5	15	PASS	<0.000	N/A	15	<PQL
N022830-006B	SAMP	1	121.049	0.99	15	PASS	<0.000	N/A	15	<PQL
N022830-007B	SAMP	1	128.2	0.47	15	PASS	<0.000	N/A	15	<PQL
N022830-008B	SAMP	1	119.26	0.039	15	PASS	<0.000	N/A	15	<PQL
N022830-009B	SAMP	1	129.035	1.26	15	PASS	<0.000	N/A	15	<PQL
CCV7	CCV	1	21.26	0.77	15	PASS	20.78	1.9	15	PASS
CCB7	CCB	1	0.000015	11366.74	15	<PQL	<0.000	N/A	15	<PQL
N022830-010B	SAMP	1	122.024	0.74	15	PASS	<0.000	N/A	15	<PQL
N022830-011B	SAMP	1	121	0.54	15	PASS	<0.000	N/A	15	<PQL
N022830-012B	SAMP	1	125.13	0.84	15	PASS	<0.000	N/A	15	<PQL
N022830-013B	SAMP	1	130.29	1.2	15	PASS	<0.000	N/A	15	<PQL
N022866-001B	SAMP	1	96.57	0.43	15	PASS	780.92	0.3	15	PASS
N022866-002B	SAMP	1	120.053	1.019	15	PASS	2.75	1.26	15	PASS
N022866-003B	SAMP	1	124.76	0.45	15	PASS	1.91	1.85	15	PASS
N022866-004B	SAMP	1	131.9	0.4	15	PASS	0.17	6.61	15	PASS
N022866-005B	SAMP	1	126.053	0.23	15	PASS	434.2	0.89	15	PASS
N022869-001B	SAMP	1	280.2	0.59	15	PASS	0.43	3.087	15	PASS
CCV8	CCV	1	21.42	0.76	15	PASS	20.38	0.61	15	PASS
CCB8	CCB	1	0.012	29.75	15	<PQL	0.012	57.47	15	<PQL
LLCCV3	CCV2	1	1.2	0.9	20	PASS	0.98	2.36	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.16	10.61	15	PASS
ICSAB4	ICSAB	1	20.59	0.52	15	PASS	19.61	0.44	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.0071	15	PASS	0.1	25.73	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.53	3.086	15	PASS	0.54	7.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	1.38	15	PASS	5.11	4.75	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	1.01	15	PASS	9.94	1.53	15	PASS
Std5-20/200 ppb	ICAL	1	20.48	0.55	15	PASS	20.23	0.8	15	PASS
Std6-40/400 ppb	ICAL	1	40.67	1.45	15	PASS	39.97	0.77	15	PASS
Std7-100/1000 ppb	ICAL	1	100.42	1.37	15	PASS	99.98	1.22	15	PASS
Std8-200/2000 ppb	ICAL	1	199.59	0.49	15	PASS	199.99	1.51	15	PASS
ICV	ICV	1	103.65	1.73	15	PASS	10.29	0.96	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.024	27.68	15	<PQL
LLICV	CCV1	1	0.58	4.19	20	PASS	0.1	6.97	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.43	0.2	15	PASS	19.91	0.65	15	PASS
CCV1	CCV	1	20.45	1.58	15	PASS	20.21	2.17	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.014	61.009	15	<PQL
CCV2	CCV	1	20.51	0.76	15	PASS	20.021	0.83	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0085	86.81	15	<PQL
LLCCV1	CCV2	1	0.62	0.49	20	PASS	0.11	11.15	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.36	1.028	15	PASS	19.54	1.44	15	PASS
CCV3	CCV	1	20.92	1.74	15	PASS	20.035	2.12	15	PASS
CCB3	CCB	1	0.0016	316.89	15	<PQL	0.0057	172.31	15	<PQL
CCV4	CCV	1	20.057	0.93	15	PASS	20.41	0.33	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0093	126.17	15	<PQL
CCV5	CCV	1	20.78	2.18	15	PASS	20.32	1.49	15	PASS
CCB5	CCB	1	0.019	35.83	15	<PQL	0.0072	62.93	15	<PQL
LLCCV2	CCV2	1	0.64	3.41	20	PASS	0.11	20.51	20	FAILED
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.18	0.42	15	PASS	20.092	0.52	15	PASS
MB-61101	MBLK	1	<0.000	N/A	15	<PQL	0.002	548.44	15	<PQL
LCS-61101	LCS	1	98.55	0.65	15	PASS	9.78	4.063	15	PASS
N022830-001B	SAMP	1	0.11	58.87	15	<PQL	2.21	2.46	15	PASS
N022830-001B	SAMP	5	0.018	170.34	15	<PQL	0.47	10.83	15	PASS
N022830-001B	SAMP	25	0.23	19	15	<PQL	0.097	2.7	15	PASS
N022830-001B-PS	PS	1	91.7	0.49	15	PASS	11.66	1.93	15	PASS
N022830-001B-PS	PS	5	19.69	1.9	15	PASS	2.38	4.87	15	PASS
N022830-001B-MS	MS	1	93.028	0.87	15	PASS	11.66	2.083	15	PASS
N022830-001B-MS	MS	5	20.17	0.52	15	PASS	2.57	2.52	15	PASS
CCV6	CCV	1	20.7	0.86	15	PASS	20.3	2.31	15	PASS
CCB6	CCB	1	0.0011	364.016	15	<PQL	0.026	51.49	15	<PQL

%RSD of As in LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022830-001B-MSD	MSD	1	92.95	0.34	15	PASS	11.82	1.33	15	PASS
N022830-001B-MSD	MSD	5	20.13	3.12	15	PASS	2.53	2.22	15	PASS
N022830-002B	SAMP	1	0.056	78.71	15	<PQL	2.17	3.36	15	PASS
N022830-003B	SAMP	1	43.14	0.97	15	PASS	2.056	1.018	15	PASS
N022830-004B	SAMP	1	69.27	1.47	15	PASS	1.97	4.081	15	PASS
N022830-005B	SAMP	1	<0.000	N/A	15	<PQL	2.19	2.92	15	PASS
N022830-006B	SAMP	1	0.34	5.57	15	PASS	2.24	2.31	15	PASS
N022830-007B	SAMP	1	<0.000	N/A	15	<PQL	2.26	3.24	15	PASS
N022830-008B	SAMP	1	<0.000	N/A	15	<PQL	2.13	3.39	15	PASS
N022830-009B	SAMP	1	<0.000	N/A	15	<PQL	2.27	2.4	15	PASS
CCV7	CCV	1	20.34	1.68	15	PASS	20.38	1.051	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0085	69.49	15	<PQL
N022830-010B	SAMP	1	<0.000	N/A	15	<PQL	2.18	1.44	15	PASS
N022830-011B	SAMP	1	<0.000	N/A	15	<PQL	2.12	3.64	15	PASS
N022830-012B	SAMP	1	0.6	4.37	15	PASS	2.22	0.86	15	PASS
N022830-013B	SAMP	1	0.57	9.06	15	PASS	2.38	1.6	15	PASS
N022866-001B	SAMP	1	<0.000	N/A	15	<PQL	5.068	1.7	15	PASS
N022866-002B	SAMP	1	3262.39	0.91	15	PASS	19.3	1.6	15	PASS
N022866-003B	SAMP	1	3514.2	0.61	15	PASS	21.91	1.8	15	PASS
N022866-004B	SAMP	1	2291.66	1.42	15	PASS	13.97	0.23	15	PASS
N022866-005B	SAMP	1	0.95	1.13	15	PASS	1.25	2.49	15	PASS
N022869-001B	SAMP	1	5520.21	1.14	15	PASS	5.4	0.79	15	PASS
CCV8	CCV	1	20.39	0.7	15	PASS	20.62	1.14	15	PASS
CCB8	CCB	1	0.13	13.74	15	PASS	0.0066	76.2	15	<PQL
LLCCV3	CCV2	1	0.62	7.38	20	PASS	0.099	22.06	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.43	0.6	15	PASS	19.7	1.11	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.081	33.12	15	<PQL	0.076	14.89	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.43	1.93	15	PASS	0.45	6.9	15	PASS
Std3-5/50 ppb	ICAL	1	5.16	3.52	15	PASS	4.73	2.96	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	2.022	15	PASS	9.63	0.74	15	PASS
Std5-20/200 ppb	ICAL	1	20.097	2.78	15	PASS	19.37	1.49	15	PASS
Std6-40/400 ppb	ICAL	1	39.87	1.32	15	PASS	39.51	1.084	15	PASS
Std7-100/1000 ppb	ICAL	1	100.35	1.38	15	PASS	100.38	2.13	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.49	15	PASS	199.29	1.14	15	PASS
ICV	ICV	1	10.43	2.27	15	PASS	10.99	0.68	15	PASS
ICB	ICB	1	0.031	109.058	15	<PQL	0.22	3.91	15	PASS
LLICV	CCV1	1	0.47	14.4	20	PASS	0.5	4.2	20	PASS
ICSA1	ICSA	1	0.017	98.94	15	<PQL	0.065	21.41	15	<PQL
ICSAB1	ICSAB	1	18.26	4.59	15	PASS	22.87	1.15	15	PASS
CCV1	CCV	1	20.65	0.48	15	PASS	19.61	1.63	15	PASS
CCB1	CCB	1	0.034	52.43	15	<PQL	0.11	5.75	15	PASS
CCV2	CCV	1	20.64	2.74	15	PASS	19.45	2.084	15	PASS
CCB2	CCB	1	0.0042	446.91	15	<PQL	0.1	12.28	15	PASS
LLCCV1	CCV2	1	0.57	19.55	20	PASS	0.52	0.71	20	PASS
ICSA2	ICSA	1	0.038	72.95	15	<PQL	0.028	41.89	15	<PQL
ICSAB2	ICSAB	1	18.34	3.082	15	PASS	22.91	0.83	15	PASS
CCV3	CCV	1	20.47	3.15	15	PASS	19.051	0.07	15	PASS
CCB3	CCB	1	0.011	34.76	15	<PQL	0.041	21.87	15	<PQL
CCV4	CCV	1	21.18	0.63	15	PASS	19.65	0.75	15	PASS
CCB4	CCB	1	0.033	57.077	15	<PQL	0.1	15.51	15	<PQL
CCV5	CCV	1	20.67	3.08	15	PASS	20.08	1.44	15	PASS
CCB5	CCB	1	0.024	52.64	15	<PQL	0.083	18.54	15	<PQL
LLCCV2	CCV2	1	0.46	4.29	20	PASS	0.49	4.59	20	PASS
ICSA3	ICSA	1	0.0088	274.25	15	<PQL	0.015	50.38	15	<PQL
ICSAB3	ICSAB	1	18.98	3.4	15	PASS	23.7	1.03	15	PASS
MB-61101	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61101	LCS	1	9.41	3.12	15	PASS	9.82	0.92	15	PASS
N022830-001B	SAMP	1	1.6	5.74	15	PASS	5.38	1.37	15	PASS
N022830-001B	SAMP	5	0.34	23.92	15	<PQL	1.004	1.69	15	PASS
N022830-001B	SAMP	25	0.072	23.78	15	<PQL	0.21	5.4	15	PASS
N022830-001B-PS	PS	1	10.74	6.091	15	PASS	16.19	1.3	15	PASS
N022830-001B-PS	PS	5	2.34	2.48	15	PASS	3.23	2.39	15	PASS
N022830-001B-MS	MS	1	10.6	3.55	15	PASS	16.35	1.12	15	PASS
N022830-001B-MS	MS	5	2.43	4.48	15	PASS	3.22	1.27	15	PASS
CCV6	CCV	1	20.5	1.11	15	PASS	19.84	1.67	15	PASS
CCB6	CCB	1	0.02	34.39	15	<PQL	0.1	5.69	15	PASS

PERCENT RSD SUMMARY: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022830-001B-MSD	MSD	1	10.89	3.64	15	PASS	16.47	0.37	15	PASS
N022830-001B-MSD	MSD	5	2.38	4.5	15	PASS	3.25	0.44	15	PASS
N022830-002B	SAMP	1	1.53	6.25	15	PASS	5.12	2.85	15	PASS
N022830-003B	SAMP	1	1.38	6.67	15	PASS	5.34	0.97	15	PASS
N022830-004B	SAMP	1	1.68	4.53	15	PASS	5.47	2.014	15	PASS
N022830-005B	SAMP	1	1.48	10.32	15	PASS	5.18	0.97	15	PASS
N022830-006B	SAMP	1	1.72	6	15	PASS	5.21	1.062	15	PASS
N022830-007B	SAMP	1	1.64	7.13	15	PASS	5.53	0.81	15	PASS
N022830-008B	SAMP	1	1.68	6.82	15	PASS	5.11	0.56	15	PASS
N022830-009B	SAMP	1	1.73	2.56	15	PASS	5.37	0.28	15	PASS
CCV7	CCV	1	21.13	3.35	15	PASS	20	0.99	15	PASS
CCB7	CCB	1	0.025	99.26	15	<PQL	0.097	10.41	15	PASS
N022830-010B	SAMP	1	1.69	8.68	15	PASS	5.25	2.83	15	PASS
N022830-011B	SAMP	1	1.58	7.59	15	PASS	5.065	1.53	15	PASS
N022830-012B	SAMP	1	1.69	10.33	15	PASS	5.22	0.82	15	PASS
N022830-013B	SAMP	1	1.64	10.075	15	PASS	5.53	1.94	15	PASS
N022866-001B	SAMP	1	1.25	13.14	15	PASS	2.42	3.76	15	PASS
N022866-002B	SAMP	1	0.0014	664.49	15	<PQL	3.62	1.41	15	PASS
N022866-003B	SAMP	1	<0.000	N/A	15	<PQL	3.23	1.74	15	PASS
N022866-004B	SAMP	1	<0.000	N/A	15	<PQL	10.41	0.6	15	PASS
N022866-005B	SAMP	1	0.34	34.11	15	<PQL	2.11	0.96	15	PASS
N022869-001B	SAMP	1	<0.000	N/A	15	<PQL	10.57	1.11	15	PASS
CCV8	CCV	1	21.7	1.57	15	PASS	19.97	1.52	15	PASS
CCB8	CCB	1	0.03	30.14	15	<PQL	0.1	7.32	15	PASS
LLCCV3	CCV2	1	0.5	14.26	20	PASS	0.43	2.76	20	PASS
ICSA4	ICSA	1	0.018	97.66	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	18.97	2.24	15	PASS	23.67	1.56	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131001.D	RINSE	RINSE	1	01/31/17 11:19 AM
B0131002.D	Cal Blank	IBLK	1	01/31/17 11:25 AM
B0131003.D	Std1-0.1/1 ppb	ICAL	1	01/31/17 11:31 AM
B0131004.D	Std2-0.5/5 ppb	ICAL	1	01/31/17 11:37 AM
B0131005.D	Std3-5/50 ppb	ICAL	1	01/31/17 11:43 AM
B0131006.D	Std4-10/100 ppb	ICAL	1	01/31/17 11:49 AM
B0131007.D	Std5-20/200 ppb	ICAL	1	01/31/17 11:55 AM
B0131008.D	Std6-40/400 ppb	ICAL	1	01/31/17 12:01 PM
B0131009.D	Std7-100/1000 ppb	ICAL	1	01/31/17 12:07 PM
B0131010.D	Std8-200/2000 ppb	ICAL	1	01/31/17 12:14 PM
B0131011.D	ICV	ICV	1	01/31/17 12:20 PM
B0131012.D	ICB	ICB	1	01/31/17 12:26 PM
B0131013.D	LLICV	CCV1	1	01/31/17 12:32 PM
B0131014.D	ICSA1	ICSA	1	01/31/17 12:37 PM
B0131015.D	ICSAB1	ICSAB	1	01/31/17 12:43 PM
B0131016.D	N022702-011B	SAMP	5	01/31/17 12:49 PM
B0131017.D	N022702-012B	SAMP	1	01/31/17 12:55 PM
B0131018.D	N022702-012A	SAMP	1	01/31/17 1:00 PM
B0131019.D	MB-61017	MBLK	1	01/31/17 1:06 PM
B0131020.D	LCS-61017	LCS	1	01/31/17 1:12 PM
B0131021.D	N022713-001B	SAMP	5	01/31/17 1:18 PM
B0131022.D	N022713-001B	SAMP	25	01/31/17 1:23 PM
B0131023.D	N022713-001B-PS	PS	5	01/31/17 1:29 PM
B0131024.D	N022713-001B-MS	MS	5	01/31/17 1:35 PM
B0131025.D	N022713-001B-MSD	MSD	5	01/31/17 1:41 PM
B0131026.D	CCV1	CCV	1	01/31/17 1:47 PM
B0131027.D	CCB1	CCB	1	01/31/17 1:53 PM
B0131028.D	N022713-002B	SAMP	5	01/31/17 1:59 PM
B0131029.D	N022713-003B	SAMP	5	01/31/17 2:06 PM
B0131030.D	N022713-004B	SAMP	5	01/31/17 2:12 PM
B0131031.D	CCV2	CCV	1	01/31/17 2:18 PM
B0131032.D	CCB2	CCB	1	01/31/17 2:24 PM
B0131033.D	LLCCV1	CCV2	1	01/31/17 2:32 PM
B0131034.D	ICSA2	ICSA	1	01/31/17 2:38 PM
B0131035.D	ICSAB2	ICSAB	1	01/31/17 2:44 PM
B0131036.D	MB-61090	MBLK	1	01/31/17 3:09 PM
B0131037.D	LCS-61090	LCS	1	01/31/17 3:15 PM
B0131038.D	N022819-001B	SAMP	1	01/31/17 3:20 PM
B0131039.D	N022819-002B	SAMP	1	01/31/17 3:26 PM
B0131040.D	N022819-003B	SAMP	1	01/31/17 3:31 PM
B0131041.D	N022819-004B	SAMP	1	01/31/17 3:37 PM
B0131042.D	N022819-005B	SAMP	1	01/31/17 3:42 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131043.D	N022819-006B	SAMP	1	01/31/17 3:48 PM
B0131044.D	N022819-007B	SAMP	1	01/31/17 3:53 PM
B0131045.D	N022819-008B	SAMP	1	01/31/17 3:59 PM
B0131046.D	CCV3	CCV	1	01/31/17 4:05 PM
B0131047.D	CCB3	CCB	1	01/31/17 4:11 PM
B0131048.D	N022819-009B	SAMP	1	01/31/17 4:17 PM
B0131049.D	N022819-010B	SAMP	1	01/31/17 4:23 PM
B0131050.D	N022819-011B	SAMP	1	01/31/17 4:29 PM
B0131051.D	N022820-001B	SAMP	1	01/31/17 4:35 PM
B0131052.D	N022765-001A	SAMP	1	01/31/17 4:42 PM
B0131053.D	N022820-002B	SAMP	1	01/31/17 4:48 PM
B0131054.D	N022820-003B	SAMP	1	01/31/17 4:55 PM
B0131055.D	N022820-004B	SAMP	1	01/31/17 5:01 PM
B0131056.D	N022820-005B	SAMP	1	01/31/17 5:07 PM
B0131057.D	N022828-001B	SAMP	1	01/31/17 5:13 PM
B0131058.D	CCV4	CCV	1	01/31/17 5:20 PM
B0131059.D	CCB4	CCB	1	01/31/17 5:26 PM
B0131060.D	N022828-002B	SAMP	1	01/31/17 5:32 PM
B0131061.D	N022819-001B	SAMP	5	01/31/17 5:38 PM
B0131062.D	N022819-001B	SAMP	25	01/31/17 5:44 PM
B0131063.D	N022819-001B-PS	PS	1	01/31/17 5:51 PM
B0131064.D	N022819-001B-PS	PS	5	01/31/17 5:57 PM
B0131065.D	N022819-001B-MS	MS	1	01/31/17 6:03 PM
B0131066.D	N022819-001B-MS	MS	5	01/31/17 6:11 PM
B0131067.D	N022819-001B-MSD	MSD	1	01/31/17 6:17 PM
B0131068.D	N022819-001B-MSD	MSD	5	01/31/17 6:23 PM
B0131069.D	N022828-001B	SAMP	10	01/31/17 6:27 PM
B0131070.D	CCV5	CCV	1	01/31/17 6:33 PM
B0131071.D	CCB5	CCB	1	01/31/17 6:39 PM
B0131072.D	LLCCV2	CCV2	1	01/31/17 6:45 PM
B0131073.D	ICSA3	ICSA	1	01/31/17 6:52 PM
B0131074.D	ICSAB3	ICSAB	1	01/31/17 6:58 PM
B0131075.D	N022828-002B	SAMP	10	01/31/17 7:04 PM
B0131076.D	MB-61101	MBLK	1	01/31/17 7:10 PM
B0131077.D	LCS-61101	LCS	1	01/31/17 7:17 PM
B0131078.D	N022830-001B	SAMP	1	01/31/17 7:23 PM
B0131079.D	N022830-001B	SAMP	5	01/31/17 7:30 PM
B0131080.D	N022830-001B	SAMP	25	01/31/17 7:36 PM
B0131081.D	N022830-001B-PS	PS	1	01/31/17 7:41 PM
B0131082.D	N022830-001B-PS	PS	5	01/31/17 7:47 PM
B0131083.D	N022830-001B-MS	MS	1	01/31/17 7:54 PM
B0131084.D	N022830-001B-MS	MS	5	01/31/17 8:00 PM

INJECTION LOG: 170131B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0131085.D	CCV6	CCV	1	01/31/17 8:06 PM
B0131086.D	CCB6	CCB	1	01/31/17 8:12 PM
B0131087.D	N022830-001B-MSD	MSD	1	01/31/17 8:19 PM
B0131088.D	N022830-001B-MSD	MSD	5	01/31/17 8:25 PM
B0131089.D	N022830-002B	SAMP	1	01/31/17 8:31 PM
B0131090.D	N022830-003B	SAMP	1	01/31/17 8:37 PM
B0131091.D	N022830-004B	SAMP	1	01/31/17 8:43 PM
B0131092.D	N022830-005B	SAMP	1	01/31/17 8:49 PM
B0131093.D	N022830-006B	SAMP	1	01/31/17 8:56 PM
B0131094.D	N022830-007B	SAMP	1	01/31/17 9:02 PM
B0131095.D	N022830-008B	SAMP	1	01/31/17 9:08 PM
B0131096.D	N022830-009B	SAMP	1	01/31/17 9:14 PM
B0131097.D	CCV7	CCV	1	01/31/17 9:20 PM
B0131098.D	CCB7	CCB	1	01/31/17 9:27 PM
B0131099.D	N022830-010B	SAMP	1	01/31/17 9:33 PM
B0131100.D	N022830-011B	SAMP	1	01/31/17 9:39 PM
B0131101.D	N022830-012B	SAMP	1	01/31/17 9:45 PM
B0131102.D	N022830-013B	SAMP	1	01/31/17 9:51 PM
B0131103.D	N022866-001B	SAMP	1	01/31/17 9:58 PM
B0131104.D	N022866-002B	SAMP	1	01/31/17 10:04 PM
B0131105.D	N022866-003B	SAMP	1	01/31/17 10:10 PM
B0131106.D	N022866-004B	SAMP	1	01/31/17 10:16 PM
B0131107.D	N022866-005B	SAMP	1	01/31/17 10:23 PM
B0131108.D	N022869-001B	SAMP	1	01/31/17 10:29 PM
B0131109.D	CCV8	CCV	1	01/31/17 10:35 PM
B0131110.D	CCB8	CCB	1	01/31/17 10:41 PM
B0131111.D	LLCCV3	CCV2	1	01/31/17 10:46 PM
B0131112.D	ICSA4	ICSA	1	01/31/17 10:52 PM
B0131113.D	ICSAB4	ICSAB	1	01/31/17 10:59 PM
B0131114.D	RINSE	RINSE	1	01/31/17 11:05 PM
B0131115.D	RINSE	RINSE	1	01/31/17 11:11 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/31/2017 2:43:07 P**
Prep End Date: **1/31/2017 7:00:00 P**

Reviewed/ Date: 2/8/2017
Initials/ Date: 2/8/17

Prep Batch **61101** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61101	Aqueous		25	☐	0	0	25	1.000		
MB-61101	Aqueous		25	☐	0	0	25	1.000		
N022830-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/31/2017 2:43:07 P**
Prep End Date: **1/31/2017 7:00:00 P**

Reviewed/ Date: 2/8/2017
Initials/ Date: 2/8/17

Prep Batch **61101** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022830-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N022830-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N022866-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022869-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 31 Jan 2017 04:01:54 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	131611.00	0.00	
24 Mg	638961.00	0.00	
25 Mg	85332.30	0.00	
26 Mg	99587.20	0.00	
59 Co	1051940.00	0.00	
115 In	1763610.00	0.00	
206 Pb	408165.00	0.00	
207 Pb	356161.00	0.00	
208 Pb	871166.00	0.00	

RSD (%)

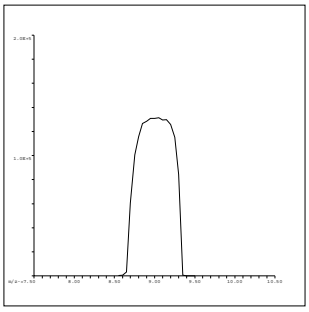
Element	Actual	Required	Flag
9 Be	0.79	5.00	
24 Mg	0.67	5.00	
25 Mg	1.60	5.00	
26 Mg	0.77	5.00	
59 Co	0.26	5.00	
115 In	1.17	5.00	
206 Pb	0.70	5.00	
207 Pb	0.78	5.00	
208 Pb	1.14	5.00	

Ion Ratio

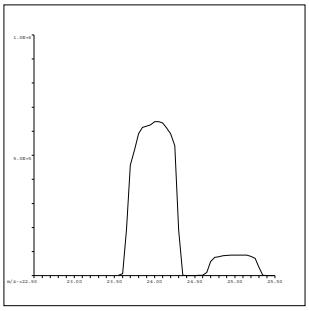
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

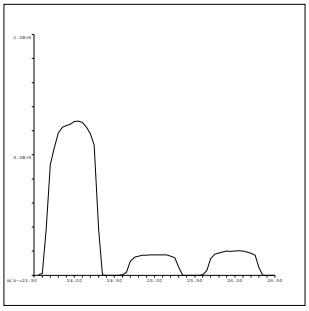
Element	Actual	Required	Flag



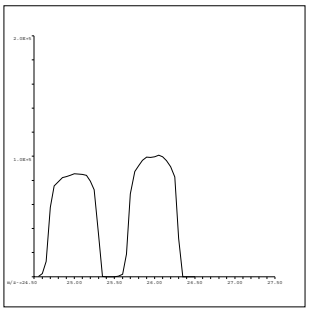
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



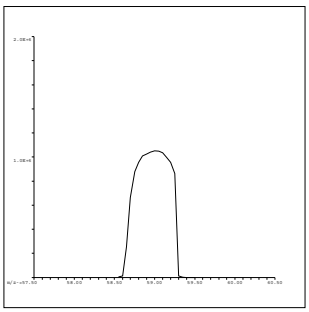
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



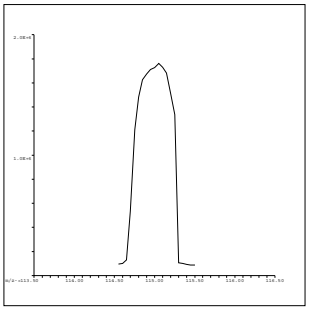
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



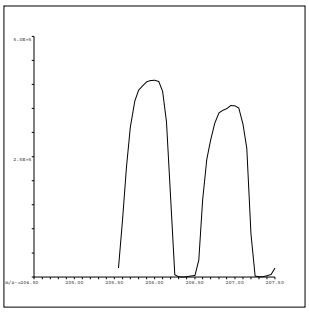
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



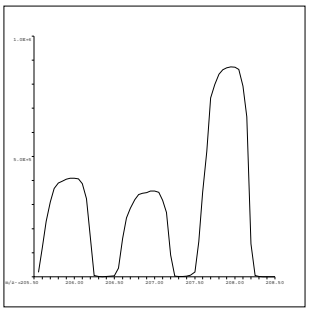
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



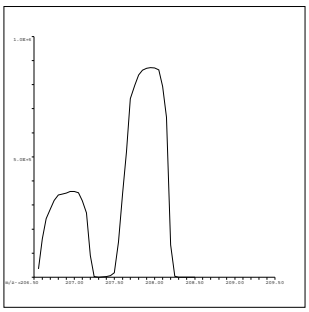
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170131B

Instrument ID: ICPMS-02

Analyte	Data File	B0131002.D	B0131003.D	B0131004.D	B0131005.D	B0131006.D	B0131007.D	B0131008.D	B0131009.D	B0131010.D	
	Acq. Date-Time	01/31/2017 11:25 AM	01/31/2017 11:31 AM	01/31/2017 11:37 AM	01/31/2017 11:43 AM	01/31/2017 11:49 AM	01/31/2017 11:55 AM	01/31/2017 12:01 PM	01/31/2017 12:07 PM	01/31/2017 12:14 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	115641.6		111759.4	109659.2	111454.2	109672.4	110666.9	109640	108137.5	
55 Mn [2]	CPS	192.3		2815	25416.3	51109.5	100548.8	201287.8	492134.9	964700.6	1.0000
52 Cr [2]	CPS	334.4		5067.6	46987	92737.2	182033.3	363831.2	890396.2	1760595.8	1.0000
72 Ge (ISTD) [1]	CPS	119129.6		118555.4	117753.1	118443.8	115207.4	117526.3	114837.2	113955.7	
78 Se [1]	CPS	8.9		231.1	2631.4	5175.5	9996.8	20223.3	49717	98236.2	1.0000
72 Ge (ISTD) [2]	CPS	86650.6	86828.6	85526.1	84109.1	85664.4	83615.3	84373.7	83251.3	81836.4	
75 As [2]	CPS	17.3	116	530.7	4825.2	9540.2	18936.9	37741.7	93131.7	183099.2	1.0000
103 Rh (ISTD) [2]	CPS	2797828.2		2762455	2752620.4	2748370.7	2731148.9	2709646.6	2657339.1	2617508.9	
95 Mo [2]	CPS	265.6		3083.8	29869.9	60383.5	120496.4	243546.6	606391.1	1185819.6	1.0000
159 Tb (ISTD) [3]	CPS	10020482.6		10003866.8	9983591.8	9979748.6	9926777.7	9925572.8	9862566	9824120.2	
137 Ba [3]	CPS	654.1		10250.5	86843.5	169686.1	337356.4	666969.9	1683188.6	3295940.6	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.292	0.10	10.00	0	103	90	110				
Barium	106.172	1.0	100.0	0	106	90	110				
Manganese	103.645	0.50	100.0	0	104	90	110				
Molybdenum	10.990	0.50	10.00	0	110	90	110				
Selenium	10.430	0.50	10.00	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.100	0.10	0.1000	0	99.6	80	120				
Barium	1.103	1.0	1.000	0	110	80	120				
Manganese	0.581	0.50	0.5000	0	116	80	120				
Molybdenum	0.496	0.50	0.5000	0	99.1	80	120				
Selenium	0.471	0.50	0.5000	0	94.2	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.215	0.10	20.00	0	101	90	110				
Barium	20.135	1.0	20.00	0	101	90	110				
Manganese	20.447	0.50	20.00	0	102	90	110				
Molybdenum	19.611	0.50	20.00	0	98.1	90	110				
Selenium	20.654	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.021	0.10	20.00	0	100	90	110				
Barium	19.988	1.0	20.00	0	99.9	90	110				
Manganese	20.507	0.50	20.00	0	103	90	110				
Molybdenum	19.449	0.50	20.00	0	97.2	90	110				
Selenium	20.642	0.50	20.00	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Barium	1.121	1.0	1.000	0	112	70	130				
Manganese	0.624	0.50	0.5000	0	125	70	130				
Molybdenum	0.518	0.50	0.5000	0	104	70	130				
Selenium	0.568	0.50	0.5000	0	114	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.035	0.10	20.00	0	100	90	110				
Barium	20.611	1.0	20.00	0	103	90	110				
Manganese	20.924	0.50	20.00	0	105	90	110				
Molybdenum	19.051	0.50	20.00	0	95.3	90	110				
Selenium	20.471	0.50	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.411	0.10	20.00	0	102	90	110				
Barium	20.692	1.0	20.00	0	103	90	110				
Manganese	20.057	0.50	20.00	0	100	90	110				
Molybdenum	19.646	0.50	20.00	0	98.2	90	110				
Selenium	21.185	0.50	20.00	0	106	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.319	0.10	20.00	0	102	90	110				
Barium	21.165	1.0	20.00	0	106	90	110				
Manganese	20.783	0.50	20.00	0	104	90	110				
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	20.671	0.50	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Barium	1.123	1.0	1.000	0	112	70	130				
Manganese	0.635	0.50	0.5000	0	127	70	130				
Molybdenum	0.488	0.50	0.5000	0	97.6	70	130				
Selenium	0.463	0.50	0.5000	0	92.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.301	0.10	20.00	0	102	90	110				
Barium	20.943	1.0	20.00	0	105	90	110				
Manganese	20.697	0.50	20.00	0	103	90	110				
Molybdenum	19.839	0.50	20.00	0	99.2	90	110				
Selenium	20.498	0.50	20.00	0	102	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.381	0.10	20.00	0	102	90	110				
Barium	21.255	1.0	20.00	0	106	90	110				
Manganese	20.336	0.50	20.00	0	102	90	110				
Molybdenum	19.995	0.50	20.00	0	100	90	110				
Selenium	21.128	0.50	20.00	0	106	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCV** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.619	0.10	20.00	0	103	90	110				
Barium	21.418	1.0	20.00	0	107	90	110				
Manganese	20.391	0.50	20.00	0	102	90	110				
Molybdenum	19.972	0.50	20.00	0	99.9	90	110				
Selenium	21.696	0.50	20.00	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	99.0	70	130				
Barium	1.199	1.0	1.000	0	120	70	130				
Manganese	0.618	0.50	0.5000	0	124	70	130				
Molybdenum	0.428	0.50	0.5000	0	85.5	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.210	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.990	1.0	1.000	0	99.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.362	1.0	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.369	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.049	1.0	1.000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.044	1.0	20.00	0	105	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.801	1.0	20.00	0	104	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.618	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.987	1.0	1.000	0	98.7	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.575	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.778	1.0	20.00	0	104	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCV** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.377	1.0	20.00	0	102	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.216	0.50									
Selenium	0.031	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.106	0.50									
Selenium	0.034	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **CCB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.101	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.041	0.50									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549957

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.103	0.50									
Selenium	0.033	0.50									

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549969

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB6	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.026	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.100	0.50									
Selenium	ND	0.50									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.097	0.50									
Selenium	ND	0.50									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113196
Client ID:	CCB	Batch ID:	R113196	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2550008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	0.129	0.50									
Molybdenum	0.103	0.50									
Selenium	0.030	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **CCB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.065	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.908	0.10	20.00	0	99.5	80	120				
Barium	18.998	1.0	20.00	0	95.0	80	120				
Manganese	19.426	0.50	20.00	0	97.1	80	120				
Molybdenum	22.873	0.50	20.00	0	114	80	120				
Selenium	18.260	0.50	20.00	0	91.3	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	0.038	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.542	0.10	20.00	0	97.7	80	120				
Barium	19.027	1.0	20.00	0	95.1	80	120				
Manganese	19.359	0.50	20.00	0	96.8	80	120				
Molybdenum	22.906	0.50	20.00	0	115	80	120				
Selenium	18.342	0.50	20.00	0	91.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.092	0.10	20.00	0	100	80	120				
Barium	19.972	1.0	20.00	0	99.9	80	120				
Manganese	20.179	0.50	20.00	0	101	80	120				
Molybdenum	23.699	0.50	20.00	0	118	80	120				
Selenium	18.981	0.50	20.00	0	94.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSA** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ICSAB** Batch ID: **R113196** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2550011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.704	0.10	20.00	0	98.5	80	120				
Barium	20.592	1.0	20.00	0	103	80	120				
Manganese	20.428	0.50	20.00	0	102	80	120				
Molybdenum	23.674	0.50	20.00	0	118	80	120				
Selenium	18.970	0.50	20.00	0	94.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.158	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.582	1.0	20.00	0	97.9	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.160	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSAB** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.466	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ICSA** Batch ID: **R113195** TestNo: **EPA 6020** Analysis Date: **1/31/2017** SeqNo: **2549868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.148	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSAB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.465	1.0	20.00	0	97.3	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSA	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.155	1.0									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113195
Client ID:	ICSAB	Batch ID:	R113195	TestNo:	EPA 6020			Analysis Date:	1/31/2017	SeqNo:	2549908

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.611	1.0	20.00	0	98.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	10020482.6	10020482.6	100	PASS	70-125	115641.6	115641.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	10053104.1	10020482.6	100.33	PASS	70-125	115171.3	115641.6	99.59	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	10003866.8	10020482.6	99.83	PASS	70-125	111759.4	115641.6	96.64	PASS	70-125
Std3-5/50 ppb	ICAL	1	9983591.8	10020482.6	99.63	PASS	70-125	109659.2	115641.6	94.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	9979748.6	10020482.6	99.59	PASS	70-125	111454.2	115641.6	96.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	9926777.7	10020482.6	99.065	PASS	70-125	109672.4	115641.6	94.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	9925572.8	10020482.6	99.053	PASS	70-125	110666.9	115641.6	95.7	PASS	70-125
Std7-100/1000 ppb	ICAL	1	9862566	10020482.6	98.42	PASS	70-125	109640	115641.6	94.81	PASS	70-125
Std8-200/2000 ppb	ICAL	1	9824120.2	10020482.6	98.04	PASS	70-125	108137.5	115641.6	93.51	PASS	70-125
ICV	ICV	1	9804283.1	10020482.6	97.84	PASS	70-125	106355.6	115641.6	91.97	PASS	70-125
ICB	ICB	1	10073009.6	10020482.6	100.52	PASS	70-125	106153.2	115641.6	91.79	PASS	70-125
LLICV	CCV1	1	10732899.8	10020482.6	107.11	PASS	70-125	123572.2	115641.6	106.86	PASS	70-125
ICSA1	ICSA	1	9289624.2	10020482.6	92.71	PASS	70-125	118531.5	115641.6	102.5	PASS	70-125
ICSAB1	ICSAB	1	9507913.7	10020482.6	94.88	PASS	70-125	132732.4	115641.6	114.78	PASS	70-125
CCV1	CCV	1	9934727.1	10020482.6	99.14	PASS	70-125	106383.8	115641.6	91.99	PASS	70-125
CCB1	CCB	1	9967357.5	10020482.6	99.47	PASS	70-125	104859.8	115641.6	90.68	PASS	70-125
CCV2	CCV	1	9844606.3	10020482.6	98.24	PASS	70-125	102664.5	115641.6	88.78	PASS	70-125
CCB2	CCB	1	9829258.7	10020482.6	98.092	PASS	70-125	99374.5	115641.6	85.93	PASS	70-125
LLCCV1	CCV2	1	9858625.2	10020482.6	98.38	PASS	70-125	98006.8	115641.6	84.75	PASS	70-125
ICSA2	ICSA	1	9258985.2	10020482.6	92.4	PASS	70-125	114165.4	115641.6	98.72	PASS	70-125
ICSAB2	ICSAB	1	9615935.3	10020482.6	95.96	PASS	70-125	129066.5	115641.6	111.61	PASS	70-125
CCV3	CCV	1	10632956.5	10020482.6	106.11	PASS	70-125	117248.8	115641.6	101.39	PASS	70-125
CCB3	CCB	1	10309530.1	10020482.6	102.88	PASS	70-125	112825.1	115641.6	97.56	PASS	70-125
CCV4	CCV	1	10919281.4	10020482.6	108.97	PASS	70-125	113102.9	115641.6	97.8	PASS	70-125
CCB4	CCB	1	10537319.4	10020482.6	105.16	PASS	70-125	105071.5	115641.6	90.86	PASS	70-125
CCV5	CCV	1	10770414	10020482.6	107.48	PASS	70-125	110236.4	115641.6	95.33	PASS	70-125
CCB5	CCB	1	10255698.5	10020482.6	102.35	PASS	70-125	102201.4	115641.6	88.38	PASS	70-125
LLCCV2	CCV2	1	10279482.4	10020482.6	102.58	PASS	70-125	100963.9	115641.6	87.31	PASS	70-125
ICSA3	ICSA	1	9405000.8	10020482.6	93.86	PASS	70-125	112168.4	115641.6	97	PASS	70-125
ICSAB3	ICSAB	1	9568124.4	10020482.6	95.49	PASS	70-125	122390.1	115641.6	105.84	PASS	70-125
MB-61101	MBLK	1	9618479.5	10020482.6	95.99	PASS	70-125	99594.9	115641.6	86.12	PASS	70-125
LCS-61101	LCS	1	9628277.8	10020482.6	96.086	PASS	70-125	103253.3	115641.6	89.29	PASS	70-125
N022830-001B	SAMP	1	9305432.2	10020482.6	92.86	PASS	70-125	100217.3	115641.6	86.66	PASS	70-125
N022830-001B	SAMP	5	9590342.2	10020482.6	95.71	PASS	70-125	102341.3	115641.6	88.5	PASS	70-125
N022830-001B	SAMP	25	9186832.2	10020482.6	91.68	PASS	70-125	85205.5	115641.6	73.68	PASS	70-125
N022830-001B-PS	PS	1	9517851.7	10020482.6	94.98	PASS	70-125	101425.4	115641.6	87.71	PASS	70-125
N022830-001B-PS	PS	5	9652037.8	10020482.6	96.32	PASS	70-125	101035.6	115641.6	87.37	PASS	70-125
N022830-001B-MS	MS	1	9648574.1	10020482.6	96.29	PASS	70-125	103314	115641.6	89.34	PASS	70-125
N022830-001B-MS	MS	5	9701463.7	10020482.6	96.82	PASS	70-125	101325.2	115641.6	87.62	PASS	70-125
CCV6	CCV	1	9908022.9	10020482.6	98.88	PASS	70-125	101073.4	115641.6	87.4	PASS	70-125
CCB6	CCB	1	9685679.7	10020482.6	96.66	PASS	70-125	95721.1	115641.6	82.77	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022830-001B-MSD	MSD	1	9565996.3	10020482.6	95.46	PASS	70-125	99833.7	115641.6	86.33	PASS	70-125
N022830-001B-MSD	MSD	5	9564955.1	10020482.6	95.45	PASS	70-125	98239.9	115641.6	84.95	PASS	70-125
N022830-002B	SAMP	1	9426958.1	10020482.6	94.077	PASS	70-125	98970.9	115641.6	85.58	PASS	70-125
N022830-003B	SAMP	1	9612735.3	10020482.6	95.93	PASS	70-125	102753.6	115641.6	88.86	PASS	70-125
N022830-004B	SAMP	1	9433921.3	10020482.6	94.15	PASS	70-125	99919.1	115641.6	86.4	PASS	70-125
N022830-005B	SAMP	1	9935245.2	10020482.6	99.15	PASS	70-125	105856.3	115641.6	91.54	PASS	70-125
N022830-006B	SAMP	1	9932157.7	10020482.6	99.12	PASS	70-125	107215.5	115641.6	92.71	PASS	70-125
N022830-007B	SAMP	1	9966271.4	10020482.6	99.46	PASS	70-125	107047.3	115641.6	92.57	PASS	70-125
N022830-008B	SAMP	1	9954916.4	10020482.6	99.35	PASS	70-125	107057.2	115641.6	92.58	PASS	70-125
N022830-009B	SAMP	1	9829699.2	10020482.6	98.096	PASS	70-125	106936.5	115641.6	92.47	PASS	70-125
CCV7	CCV	1	10392425.3	10020482.6	103.71	PASS	70-125	110331.7	115641.6	95.41	PASS	70-125
CCB7	CCB	1	10103658.7	10020482.6	100.83	PASS	70-125	106064.2	115641.6	91.72	PASS	70-125
N022830-010B	SAMP	1	9215292	10020482.6	91.96	PASS	70-125	100460	115641.6	86.87	PASS	70-125
N022830-011B	SAMP	1	9586854.2	10020482.6	95.67	PASS	70-125	104452	115641.6	90.32	PASS	70-125
N022830-012B	SAMP	1	9886838.8	10020482.6	98.67	PASS	70-125	108769.2	115641.6	94.057	PASS	70-125
N022830-013B	SAMP	1	9631273.6	10020482.6	96.12	PASS	70-125	106114.7	115641.6	91.76	PASS	70-125
N022866-001B	SAMP	1	9138620.6	10020482.6	91.2	PASS	70-125	98909.5	115641.6	85.53	PASS	70-125
N022866-002B	SAMP	1	9577471.4	10020482.6	95.58	PASS	70-125	104310.6	115641.6	90.2	PASS	70-125
N022866-003B	SAMP	1	9499091.7	10020482.6	94.8	PASS	70-125	103559.6	115641.6	89.55	PASS	70-125
N022866-004B	SAMP	1	9664309.7	10020482.6	96.45	PASS	70-125	106337	115641.6	91.95	PASS	70-125
N022866-005B	SAMP	1	9676911	10020482.6	96.57	PASS	70-125	104924.4	115641.6	90.73	PASS	70-125
N022869-001B	SAMP	1	9492047.4	10020482.6	94.73	PASS	70-125	102978.2	115641.6	89.049	PASS	70-125
CCV8	CCV	1	10150045.4	10020482.6	101.29	PASS	70-125	106783.4	115641.6	92.34	PASS	70-125
CCB8	CCB	1	9800453	10020482.6	97.8	PASS	70-125	100083.1	115641.6	86.55	PASS	70-125
LLCCV3	CCV2	1	9826397.4	10020482.6	98.063	PASS	70-125	95323.6	115641.6	82.43	PASS	70-125
ICSA4	ICSA	1	8528649.5	10020482.6	85.11	PASS	70-125	94431.8	115641.6	81.66	PASS	70-125
ICSAB4	ICSAB	1	8681534.8	10020482.6	86.64	PASS	70-125	104320.1	115641.6	90.21	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	86650.6	86650.6	100	PASS	70-125	119129.6	119129.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	86828.6	86650.6	100.21	PASS	70-125	120519.3	119129.6	101.17	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	85526.1	86650.6	98.7	PASS	70-125	118555.4	119129.6	99.52	PASS	70-125
Std3-5/50 ppb	ICAL	1	84109.1	86650.6	97.067	PASS	70-125	117753.1	119129.6	98.84	PASS	70-125
Std4-10/100 ppb	ICAL	1	85664.4	86650.6	98.86	PASS	70-125	118443.8	119129.6	99.42	PASS	70-125
Std5-20/200 ppb	ICAL	1	83615.3	86650.6	96.5	PASS	70-125	115207.4	119129.6	96.71	PASS	70-125
Std6-40/400 ppb	ICAL	1	84373.7	86650.6	97.37	PASS	70-125	117526.3	119129.6	98.65	PASS	70-125
Std7-100/1000 ppb	ICAL	1	83251.3	86650.6	96.077	PASS	70-125	114837.2	119129.6	96.4	PASS	70-125
Std8-200/2000 ppb	ICAL	1	81836.4	86650.6	94.44	PASS	70-125	113955.7	119129.6	95.66	PASS	70-125
ICV	ICV	1	81640.7	86650.6	94.22	PASS	70-125	112487.7	119129.6	94.42	PASS	70-125
ICB	ICB	1	82942.7	86650.6	95.72	PASS	70-125	117295.1	119129.6	98.46	PASS	70-125
LLICV	CCV1	1	92019.1	86650.6	106.2	PASS	70-125	123404	119129.6	103.59	PASS	70-125
ICSA1	ICSA	1	81922.3	86650.6	94.54	PASS	70-125	105532	119129.6	88.59	PASS	70-125
ICSAB1	ICSAB	1	88377.8	86650.6	101.99	PASS	70-125	116783.2	119129.6	98.03	PASS	70-125
CCV1	CCV	1	81692.3	86650.6	94.28	PASS	70-125	112612.8	119129.6	94.53	PASS	70-125
CCB1	CCB	1	81896.6	86650.6	94.51	PASS	70-125	110931.5	119129.6	93.12	PASS	70-125
CCV2	CCV	1	79707.1	86650.6	91.99	PASS	70-125	109401.4	119129.6	91.83	PASS	70-125
CCB2	CCB	1	79914.7	86650.6	92.23	PASS	70-125	107547.8	119129.6	90.28	PASS	70-125
LLCCV1	CCV2	1	74912.2	86650.6	86.45	PASS	70-125	99434	119129.6	83.47	PASS	70-125
ICSA2	ICSA	1	77372.4	86650.6	89.29	PASS	70-125	96982.8	119129.6	81.41	PASS	70-125
ICSAB2	ICSAB	1	85742.9	86650.6	98.95	PASS	70-125	111380.1	119129.6	93.49	PASS	70-125
CCV3	CCV	1	90983.9	86650.6	105	PASS	70-125	124453.1	119129.6	104.47	PASS	70-125
CCB3	CCB	1	85690.1	86650.6	98.89	PASS	70-125	118080.7	119129.6	99.12	PASS	70-125
CCV4	CCV	1	85665.9	86650.6	98.86	PASS	70-125	111621.8	119129.6	93.7	PASS	70-125
CCB4	CCB	1	81976	86650.6	94.61	PASS	70-125	107424.1	119129.6	90.17	PASS	70-125
CCV5	CCV	1	88530.9	86650.6	102.17	PASS	70-125	121640.2	119129.6	102.11	PASS	70-125
CCB5	CCB	1	82518.7	86650.6	95.23	PASS	70-125	111911.2	119129.6	93.94	PASS	70-125
LLCCV2	CCV2	1	81416.8	86650.6	93.96	PASS	70-125	112011	119129.6	94.024	PASS	70-125
ICSA3	ICSA	1	78303.6	86650.6	90.37	PASS	70-125	99333.7	119129.6	83.38	PASS	70-125
ICSAB3	ICSAB	1	83837.1	86650.6	96.75	PASS	70-125	111367.5	119129.6	93.48	PASS	70-125
MB-61101	MBLK	1	80084	86650.6	92.42	PASS	70-125	109143.1	119129.6	91.62	PASS	70-125
LCS-61101	LCS	1	80426.4	86650.6	92.82	PASS	70-125	113038.8	119129.6	94.89	PASS	70-125
N022830-001B	SAMP	1	73761.7	86650.6	85.13	PASS	70-125	101068.1	119129.6	84.84	PASS	70-125
N022830-001B	SAMP	5	78559.1	86650.6	90.66	PASS	70-125	109177.6	119129.6	91.65	PASS	70-125
N022830-001B	SAMP	25	66486	86650.6	76.73	PASS	70-125	86624	119129.6	72.71	PASS	70-125
N022830-001B-PS	PS	1	74617.5	86650.6	86.11	PASS	70-125	98871.4	119129.6	82.99	PASS	70-125
N022830-001B-PS	PS	5	78598.4	86650.6	90.71	PASS	70-125	106817.2	119129.6	89.66	PASS	70-125
N022830-001B-MS	MS	1	76787.5	86650.6	88.62	PASS	70-125	101457.3	119129.6	85.17	PASS	70-125
N022830-001B-MS	MS	5	78838.3	86650.6	90.98	PASS	70-125	105552	119129.6	88.6	PASS	70-125
CCV6	CCV	1	79904.7	86650.6	92.21	PASS	70-125	109233.8	119129.6	91.69	PASS	70-125
CCB6	CCB	1	75962.5	86650.6	87.67	PASS	70-125	103028.2	119129.6	86.48	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022830-001B-MSD	MSD	1	74309.7	86650.6	85.76	PASS	70-125	96985.1	119129.6	81.41	PASS	70-125
N022830-001B-MSD	MSD	5	75751.8	86650.6	87.42	PASS	70-125	104082.8	119129.6	87.37	PASS	70-125
N022830-002B	SAMP	1	73697.9	86650.6	85.052	PASS	70-125	98003.2	119129.6	82.27	PASS	70-125
N022830-003B	SAMP	1	75181.3	86650.6	86.76	PASS	70-125	98964.8	119129.6	83.073	PASS	70-125
N022830-004B	SAMP	1	73553.3	86650.6	84.88	PASS	70-125	95545.8	119129.6	80.2	PASS	70-125
N022830-005B	SAMP	1	78041.1	86650.6	90.064	PASS	70-125	100157.2	119129.6	84.074	PASS	70-125
N022830-006B	SAMP	1	78119.4	86650.6	90.15	PASS	70-125	100293.8	119129.6	84.19	PASS	70-125
N022830-007B	SAMP	1	78862.9	86650.6	91.013	PASS	70-125	98803.7	119129.6	82.94	PASS	70-125
N022830-008B	SAMP	1	78347.4	86650.6	90.42	PASS	70-125	100084.3	119129.6	84.013	PASS	70-125
N022830-009B	SAMP	1	78463.3	86650.6	90.55	PASS	70-125	99032.4	119129.6	83.13	PASS	70-125
CCV7	CCV	1	85041.3	86650.6	98.14	PASS	70-125	111786.2	119129.6	93.84	PASS	70-125
CCB7	CCB	1	82740	86650.6	95.49	PASS	70-125	108286.3	119129.6	90.9	PASS	70-125
N022830-010B	SAMP	1	75046.4	86650.6	86.61	PASS	70-125	95793.9	119129.6	80.41	PASS	70-125
N022830-011B	SAMP	1	77403.6	86650.6	89.33	PASS	70-125	99590.8	119129.6	83.6	PASS	70-125
N022830-012B	SAMP	1	79877.6	86650.6	92.18	PASS	70-125	101118.4	119129.6	84.88	PASS	70-125
N022830-013B	SAMP	1	77500.7	86650.6	89.44	PASS	70-125	99177.9	119129.6	83.25	PASS	70-125
N022866-001B	SAMP	1	72732.4	86650.6	83.94	PASS	70-125	91943	119129.6	77.18	PASS	70-125
N022866-002B	SAMP	1	77223.9	86650.6	89.12	PASS	70-125	96955.8	119129.6	81.39	PASS	70-125
N022866-003B	SAMP	1	77680.6	86650.6	89.65	PASS	70-125	99831.2	119129.6	83.8	PASS	70-125
N022866-004B	SAMP	1	76918.1	86650.6	88.77	PASS	70-125	99340.5	119129.6	83.39	PASS	70-125
N022866-005B	SAMP	1	77151.5	86650.6	89.037	PASS	70-125	100512.4	119129.6	84.37	PASS	70-125
N022869-001B	SAMP	1	74651.8	86650.6	86.15	PASS	70-125	96244.8	119129.6	80.79	PASS	70-125
CCV8	CCV	1	82137.6	86650.6	94.79	PASS	70-125	108607.1	119129.6	91.17	PASS	70-125
CCB8	CCB	1	79493.8	86650.6	91.74	PASS	70-125	104186.6	119129.6	87.46	PASS	70-125
LLCCV3	CCV2	1	74766.1	86650.6	86.28	PASS	70-125	98224.8	119129.6	82.45	PASS	70-125
ICSA4	ICSA	1	66722.5	86650.6	77.002	PASS	70-125	86685.5	119129.6	72.77	PASS	70-125
ICSAB4	ICSAB	1	72819.4	86650.6	84.038	PASS	70-125	94150.6	119129.6	79.032	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2797828.2	2797828.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2805376.1	2797828.2	100.27	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2762455	2797828.2	98.74	PASS	70-125
Std3-5/50 ppb	ICAL	1	2752620.4	2797828.2	98.38	PASS	70-125
Std4-10/100 ppb	ICAL	1	2748370.7	2797828.2	98.23	PASS	70-125
Std5-20/200 ppb	ICAL	1	2731148.9	2797828.2	97.62	PASS	70-125
Std6-40/400 ppb	ICAL	1	2709646.6	2797828.2	96.85	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2657339.1	2797828.2	94.98	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2617508.9	2797828.2	93.56	PASS	70-125
ICV	ICV	1	2652600.7	2797828.2	94.81	PASS	70-125
ICB	ICB	1	2717451.5	2797828.2	97.13	PASS	70-125
LLICV	CCV1	1	2998384.4	2797828.2	107.17	PASS	70-125
ICSA1	ICSA	1	2385775.1	2797828.2	85.27	PASS	70-125
ICSAB1	ICSAB	1	2542331.7	2797828.2	90.87	PASS	70-125
CCV1	CCV	1	2674762.6	2797828.2	95.6	PASS	70-125
CCB1	CCB	1	2656966.9	2797828.2	94.97	PASS	70-125
CCV2	CCV	1	2614872	2797828.2	93.46	PASS	70-125
CCB2	CCB	1	2600393.7	2797828.2	92.94	PASS	70-125
LLCCV1	CCV2	1	2546810.5	2797828.2	91.028	PASS	70-125
ICSA2	ICSA	1	2312772.1	2797828.2	82.66	PASS	70-125
ICSAB2	ICSAB	1	2521638.1	2797828.2	90.13	PASS	70-125
CCV3	CCV	1	2931609.3	2797828.2	104.78	PASS	70-125
CCB3	CCB	1	2803351.9	2797828.2	100.2	PASS	70-125
CCV4	CCV	1	2887714.1	2797828.2	103.21	PASS	70-125
CCB4	CCB	1	2749885.5	2797828.2	98.29	PASS	70-125
CCV5	CCV	1	2879092.5	2797828.2	102.9	PASS	70-125
CCB5	CCB	1	2716176	2797828.2	97.082	PASS	70-125
LLCCV2	CCV2	1	2653245.6	2797828.2	94.83	PASS	70-125
ICSA3	ICSA	1	2297724.7	2797828.2	82.13	PASS	70-125
ICSAB3	ICSAB	1	2437034.8	2797828.2	87.1	PASS	70-125
MB-61101	MBLK	1	2551143.2	2797828.2	91.18	PASS	70-125
LCS-61101	LCS	1	2552188.1	2797828.2	91.22	PASS	70-125
N022830-001B	SAMP	1	2203949.4	2797828.2	78.77	PASS	70-125
N022830-001B	SAMP	5	2422989.8	2797828.2	86.6	PASS	70-125
N022830-001B	SAMP	25	2161797.5	2797828.2	77.27	PASS	70-125
N022830-001B-PS	PS	1	2234085.3	2797828.2	79.85	PASS	70-125
N022830-001B-PS	PS	5	2411610	2797828.2	86.2	PASS	70-125
N022830-001B-MS	MS	1	2299373.7	2797828.2	82.18	PASS	70-125
N022830-001B-MS	MS	5	2444366.7	2797828.2	87.37	PASS	70-125
CCV6	CCV	1	2621609.7	2797828.2	93.7	PASS	70-125
CCB6	CCB	1	2523095.8	2797828.2	90.18	PASS	70-125

INTERNAL STANDARD: 170131B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N022830-001B-MSD	MSD	1	2211311.9	2797828.2	79.037	PASS	70-125
N022830-001B-MSD	MSD	5	2396394.6	2797828.2	85.65	PASS	70-125
N022830-002B	SAMP	1	2213673.2	2797828.2	79.12	PASS	70-125
N022830-003B	SAMP	1	2277877.5	2797828.2	81.42	PASS	70-125
N022830-004B	SAMP	1	2233014	2797828.2	79.81	PASS	70-125
N022830-005B	SAMP	1	2364990.7	2797828.2	84.53	PASS	70-125
N022830-006B	SAMP	1	2381558.8	2797828.2	85.12	PASS	70-125
N022830-007B	SAMP	1	2353289.7	2797828.2	84.11	PASS	70-125
N022830-008B	SAMP	1	2371063.2	2797828.2	84.75	PASS	70-125
N022830-009B	SAMP	1	2355586.8	2797828.2	84.19	PASS	70-125
CCV7	CCV	1	2777302.3	2797828.2	99.27	PASS	70-125
CCB7	CCB	1	2691696.7	2797828.2	96.21	PASS	70-125
N022830-010B	SAMP	1	2220694.1	2797828.2	79.37	PASS	70-125
N022830-011B	SAMP	1	2314653.2	2797828.2	82.73	PASS	70-125
N022830-012B	SAMP	1	2371456.9	2797828.2	84.76	PASS	70-125
N022830-013B	SAMP	1	2318678.1	2797828.2	82.87	PASS	70-125
N022866-001B	SAMP	1	2156756.7	2797828.2	77.087	PASS	70-125
N022866-002B	SAMP	1	2293495.5	2797828.2	81.97	PASS	70-125
N022866-003B	SAMP	1	2298118.8	2797828.2	82.14	PASS	70-125
N022866-004B	SAMP	1	2313154.6	2797828.2	82.68	PASS	70-125
N022866-005B	SAMP	1	2325392.6	2797828.2	83.11	PASS	70-125
N022869-001B	SAMP	1	2258615.5	2797828.2	80.73	PASS	70-125
CCV8	CCV	1	2675179.7	2797828.2	95.62	PASS	70-125
CCB8	CCB	1	2547880	2797828.2	91.066	PASS	70-125
LLCCV3	CCV2	1	2450913.3	2797828.2	87.6	PASS	70-125
ICSA4	ICSA	1	1976676.7	2797828.2	70.65	PASS	70-125
ICSAB4	ICSAB	1	2093965	2797828.2	74.84	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022830
Test Method: EPA 6020
Analysis Date: 1/31/2017

Matrix: Groundwater
Batch No.: 61101

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022830-001B DT 5X	Arsenic	ug/L	2.331172	NA	2.211402	5.42%	10
N022830-001B DT 25X	Barium	ug/L	133.4645	PASS	126.5804	5.44%	10
N022830-001B DT 5X	Chromium	ug/L	0	NA	0		10
N022830-001B DT 5X	Manganese	ug/L	0	NA	0.108264	100.00%	10
N022830-001B DT 5X	Molybdenum	ug/L	5.020241	NA	5.382771	6.74%	10
N022830-001B DT 5X	Selenium	ug/L	1.695403	NA	1.600656	5.92%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022830-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.664	0.10	10.00	2.211	94.5	80	120				
Manganese	91.699	0.50	100.0	0.1083	91.6	80	120				
Molybdenum	16.192	0.50	10.00	5.383	108	80	120				
Selenium	10.739	0.50	10.00	1.601	91.4	80	120				

Sample ID **N022830-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113196**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.625	5.0	100.0	126.6	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022830
Project: PG&E Topock - RMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N022830-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113195**
Client ID: **ZZZZZZ** Batch ID: **61101** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **1/31/2017** SeqNo: **2549876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.179	1.0	10.00	0	91.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022985

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 06, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Lucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N022985-001, N022985-003 and N022985-004 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022985
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022985-001A	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-001B	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-001C	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-002A	MW-701-Q117	Groundwater	2/6/2017 4:10:00 PM	2/6/2017	2/21/2017
N022985-003A	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-003B	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-003C	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-004A	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017
N022985-004B	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017
N022985-004C	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.33	1.0		µg/L	5	2/10/2017 06:03 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170216B** QC Batch: **61215**				PrepDate		**2/9/2017**	Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	2/16/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/10/2017 06:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	45	0.33	1.0		µg/L	5	2/10/2017 06:54 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170216B** QC Batch: **61215** PrepDate **2/9/2017**							Analyst: **CEI**
Chromium	43	0.019	1.0		µg/L	1	2/16/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	44	0.33	1.0		µg/L	5	2/10/2017 07:14 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170216B** QC Batch: **61215**				PrepDate		**2/9/2017**	Analyst: **CEI**
Chromium	40	0.019	1.0		µg/L	1	2/16/2017 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113441** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **PBW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113441** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **LCSW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	90	110				

Sample ID **N022985-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.360	1.0	25.00	17.77	98.4	90	110				

Sample ID **N022985-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.549	1.0	25.00	17.77	99.1	90	110	42.36	0.445	20	

Sample ID **N022985-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.531	1.0	25.00	44.86	98.7	90	110				

Sample ID **N022985-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.515	1.0	25.00	43.77	103	90	110				

Sample ID **N022966-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	104	90	110				

Sample ID **N022999-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.909	0.20	1.000	1.883	103	90	110				

Sample ID **N022999-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1094.710	20	500.0	598.7	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.960	1.0						43.77	0.427	20	

Sample ID **N022999-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.888	0.20	1.000	1.889	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61215** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **PBW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61215** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **LCSW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.806	1.0	10.00	0	98.1	85	115				

Sample ID **N022951-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.265	1.0	10.00	3.189	90.8	75	125				

Sample ID **N022951-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.185	1.0	10.00	3.189	90.0	75	125	12.26	0.657	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.15	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.19	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.18	0.022	0.050		mg/L	1	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170216C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	5.2	0.12	0.50		µg/L	5	2/16/2017 03:38 PM
Manganese	4.5	0.056	0.50		µg/L	1	2/16/2017 02:48 PM
Molybdenum	75	0.19	2.5		µg/L	5	2/16/2017 03:38 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	1.2	0.12	0.50		µg/L	5	2/19/2017 06:49 PM
Manganese	25	0.056	0.50		µg/L	1	2/16/2017 02:54 PM
Molybdenum	52	0.19	2.5		µg/L	5	2/16/2017 03:49 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170216C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	1.4	0.12	0.50		µg/L	5	2/16/2017 04:00 PM
Manganese	24	0.056	0.50		µg/L	1	2/16/2017 02:59 PM
Molybdenum	53	0.19	2.5		µg/L	5	2/16/2017 04:00 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61215** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **PBW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-61215** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **LCSW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.271	0.10	10.00	0	92.7	85	115				
Manganese	99.879	0.50	100.0	0	99.9	85	115				
Molybdenum	9.942	0.50	10.00	0	99.4	85	115				

Sample ID **N022951-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.778	0.10	10.00	2.064	97.1	75	125				
Manganese	93.322	0.50	100.0	1.296	92.0	75	125				
Molybdenum	14.216	0.50	10.00	3.764	105	75	125				

Sample ID **N022951-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.682	0.10	10.00	2.064	96.2	75	125	11.78	0.818	20	
Manganese	93.493	0.50	100.0	1.296	92.2	75	125	93.32	0.183	20	
Molybdenum	14.110	0.50	10.00	3.764	103	75	125	14.22	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-61298	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	PBW	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-61298	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	LCSW	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572417

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.749	0.50	10.00	0	97.5	85	115				

Sample ID	N023063-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572421

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.757	0.50	10.00	0.5798	81.8	75	125				

Sample ID	N023063-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572422

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.553	0.50	10.00	0.5798	79.7	75	125	8.757	2.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact Us
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.7659 F: 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@nivox.com	P.O.#:
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: [illegible] Date: 2/6/17	Sampled By: Alexis McIntyre		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: [illegible] Date: 2/6/17		
Project Number: RC000753.601A			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number: 2		
		Regulatory		6. Method of Cooling: ICE		
Global ID		Specify State: CA		Sample Temp: 2.1°C		

Courier: LAB
Tracking No:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: CrVI (E218.6); (NH4)2 SO4, NH4 OH	2 X 250 mL poly: CrVI (E218.6); (NH4)2 SO4, NH4 OH	500 mL poly: Metals Dissolved (6020AFF); As; HNO3	500 mL poly: Metals Dissolved (6020AFF); Mo; HNO3	500 mL poly: Metals Dissolved (6020AFF); Se; HNO3	500 mL poly: Metals Dissolved (6020AFF); Cr; HNO3	500 mL poly: Metals Dissolved (6020AFF); Mn; HNO3	125 mL poly: Nitrate/Nitrite (SM4500NO3); Nitrate; H2SO4	500 mL poly: Calcium, Dissolved (EPA 200.7); HNO3	500 mL poly: IRON, Dissolved (EPA 200.7); HNO3	500 mL poly: Sodium, Dissolved (EPA 200.7); HNO3	500 mL poly: Boron, Dissolved (EPA 200.7); HNO3	500 mL poly: Magnesium, Dissolved (EPA 200.7); HNO3	1000 mL poly: Chloride, E300	1000 mL poly: Alkalinity (SM2320B); Total as CaCO3	1000 mL poly: TDS, SM2540C	1000 mL poly: Bromide, E300	1000 mL poly: Sulfate, E300	1000 mL poly: Specific conductance 120.1	1000 mL poly: pH (SM4500-HB)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022985 - 01	MW-44-115-Q117	02/06/17	1449		X		X	X	X	X	X	X																m	3	P	BNS	
2	- 02	MW-701-Q117	02/06/17	1610		X																							m	1	P	BNS	
3	- 03	MW-34-100-Q117	02/06/17	1545		X		X	X	X	X	X	X																m	3	P	BNS	
4	- 04	MW-902-Q117	02/06/17	1555		X		X	X	X	X	X	X																m	3	P	BNS	
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		
13																																		
14																																		

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/6/17 1638	[illegible]	2/6/17 @ 1638
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/6/17 @ 1846	[illegible]	2/6/17 @ 1846
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO3	S=H2SO4	C=4°C
Z=Zn(AC)2	O=NaOH	T=Na2S2O3	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms:
1. All samples will be disposed in 45 days and records will be destroyed at 5 years upon submittal of final report.
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis.
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35% 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applies on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/6/2017	Workorder:	N022985
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 2/7/2017

Reviewed By: 2/15/17

ASSET Laboratories

WORK ORDER Summary

06-Feb-17

WorkOrder: N022985

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022985-001A	MW-44-115-Q117	2/6/2017 2:49:00 PM	2/20/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-001B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-001C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-002A	MW-701-Q117	2/6/2017 4:10:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-003A	MW-34-100-Q117	2/6/2017 3:45:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-003B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-003C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-004A	MW-902-Q117	2/6/2017 3:55:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-004B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-004C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-005A	FOLDER	2/20/2017	2/20/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/20/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.801A

ASSET Laboratories Work Order:
N022985

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS
RAW DATA

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022985

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-23
Sample Receiving Items	24-27
List of Analysts	28
Raw Data	
EPA 218.6	29-216
SM 4500-NO3F	217-247
EPA 6020_Dissolved	248-796

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022985

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 06, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Lucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N022985-001, N022985-003 and N022985-004 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022985
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022985-001A	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-001B	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-001C	MW-44-115-Q117	Groundwater	2/6/2017 2:49:00 PM	2/6/2017	2/21/2017
N022985-002A	MW-701-Q117	Groundwater	2/6/2017 4:10:00 PM	2/6/2017	2/21/2017
N022985-003A	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-003B	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-003C	MW-34-100-Q117	Groundwater	2/6/2017 3:45:00 PM	2/6/2017	2/21/2017
N022985-004A	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017
N022985-004B	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017
N022985-004C	MW-902-Q117	Groundwater	2/6/2017 3:55:00 PM	2/6/2017	2/21/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	18	0.33	1.0		µg/L	5	2/10/2017 06:03 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170216B** QC Batch: **61215** PrepDate **2/9/2017**							Analyst: **CEI**
Chromium	16	0.019	1.0		µg/L	1	2/16/2017 02:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/10/2017 06:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	45	0.33	1.0		µg/L	5	2/10/2017 06:54 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170216B** QC Batch: **61215**				PrepDate		**2/9/2017**	Analyst: **CEI**
Chromium	43	0.019	1.0		µg/L	1	2/16/2017 02:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	44	0.33	1.0		µg/L	5	2/10/2017 07:14 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **NV00922-ICP7_170216B** QC Batch: **61215**				PrepDate		**2/9/2017**	Analyst: **CEI**
Chromium	40	0.019	1.0		µg/L	1	2/16/2017 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113441** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **PBW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113441** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **LCSW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	90	110				

Sample ID **N022985-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.360	1.0	25.00	17.77	98.4	90	110				

Sample ID **N022985-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.549	1.0	25.00	17.77	99.1	90	110	42.36	0.445	20	

Sample ID **N022985-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.531	1.0	25.00	44.86	98.7	90	110				

Sample ID **N022985-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.515	1.0	25.00	43.77	103	90	110				

Sample ID **N022966-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	104	90	110				

Sample ID **N022999-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.909	0.20	1.000	1.883	103	90	110				

Sample ID **N022999-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1094.710	20	500.0	598.7	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.960	1.0						43.77	0.427	20	

Sample ID **N022999-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.888	0.20	1.000	1.889	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61215** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **PBW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61215** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **LCSW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.806	1.0	10.00	0	98.1	85	115				

Sample ID **N022951-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.265	1.0	10.00	3.189	90.8	75	125				

Sample ID **N022951-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.185	1.0	10.00	3.189	90.0	75	125	12.26	0.657	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.15	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.19	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.18	0.022	0.050		mg/L	1	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170216C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	5.2	0.12	0.50		µg/L	5	2/16/2017 03:38 PM
Manganese	4.5	0.056	0.50		µg/L	1	2/16/2017 02:48 PM
Molybdenum	75	0.19	2.5		µg/L	5	2/16/2017 03:38 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	1.2	0.12	0.50		µg/L	5	2/19/2017 06:49 PM
Manganese	25	0.056	0.50		µg/L	1	2/16/2017 02:54 PM
Molybdenum	52	0.19	2.5		µg/L	5	2/16/2017 03:49 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q117
Lab Order:	N022985	**Collection Date:**	2/6/2017 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022985-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170216C**	QC Batch: **61215**				PrepDate	**2/9/2017**	Analyst: **CEI**
Arsenic	1.4	0.12	0.50		µg/L	5	2/16/2017 04:00 PM
Manganese	24	0.056	0.50		µg/L	1	2/16/2017 02:59 PM
Molybdenum	53	0.19	2.5		µg/L	5	2/16/2017 04:00 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61215** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **PBW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-61215** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **LCSW** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.271	0.10	10.00	0	92.7	85	115				
Manganese	99.879	0.50	100.0	0	99.9	85	115				
Molybdenum	9.942	0.50	10.00	0	99.4	85	115				

Sample ID **N022951-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.778	0.10	10.00	2.064	97.1	75	125				
Manganese	93.322	0.50	100.0	1.296	92.0	75	125				
Molybdenum	14.216	0.50	10.00	3.764	105	75	125				

Sample ID **N022951-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/9/2017** RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.682	0.10	10.00	2.064	96.2	75	125	11.78	0.818	20	
Manganese	93.493	0.50	100.0	1.296	92.2	75	125	93.32	0.183	20	
Molybdenum	14.110	0.50	10.00	3.764	103	75	125	14.22	0.753	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-61298	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	PBW	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-61298	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	LCSW	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572417

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.749	0.50	10.00	0	97.5	85	115				

Sample ID	N023063-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572421

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.757	0.50	10.00	0.5798	81.8	75	125				

Sample ID	N023063-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/17/2017	RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61298	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2572422

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.553	0.50	10.00	0.5798	79.7	75	125	8.757	2.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

Contact Us
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702 307 7659 F: 702 307 2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219 7435 F: 562.219 7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@nivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: [illegible] Date: 2/6/17	Sampled By: Alexis McIntyre		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: [illegible] Date: 2/6/17		
Project Number: RC000753.601A			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number: 2		
		Regulatory		6. Method of Cooling: ICE		
Global ID		Specify State: CA		Sample Temp: 2.1°C		

Courier: LAB
Tracking No:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6); (NH4)2 SO4, NH4 OH (250 mL poly)	Cr(VI) FF (E218.6); (NH4)2, SO4, NH4 OH (2 X 250 mL poly)	Metals Dissolved (6020AFF); As; HNO3 (500 mL poly)	Metals Dissolved (6020AFF); Mo; HNO3 (500 mL poly)	Metals Dissolved (6020AFF); Se; HNO3 (500 mL poly)	Metals Dissolved (6020AFF); Cr; HNO3 (500 mL poly)	Metals Dissolved (6020AFF); Mn; HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500NO3); Nitrate; H2SO4 (125 mL poly)	Calcium, Dissolved (EPA 200.7); HNO3 (500 mL poly)	IRON, Dissolved (EPA 200.7); HNO3 (500 mL poly)	Sodium, Dissolved (EPA 200.7); HNO3 (500 mL poly)	Boron, Dissolved (EPA 200.7); HNO3 (500 mL poly)	Magnesium, Dissolved (EPA 200.7); HNO3 (500 mL poly)	Chloride, E300 (1000 mL poly)	Alkalinity (SM2320B); Total as CaCO3 (1000 mL poly)	TDS, SM2540C (1000 mL poly)	Bromide, E300 (1000 mL poly)	Sulfate, E300 (1000 mL poly)	Specific conductance 120.1 (1000 mL poly)	pH (SM4500-HB) (1000 mL poly)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022985 - 01	MW-44-115-Q117	02/06/17	1449		X		X	X	X	X	X	X																m	3	P	BNS	
2	- 02	MW-701-Q117	02/06/17	1610		X																							m	1	P	BNS	
3	- 03	MW-34-100-Q117	02/06/17	1545		X		X	X	X	X	X	X																m	3	P	BNS	
4	- 04	MW-902-Q117	02/06/17	1555		X		X	X	X	X	X	X																m	3	P	BNS	
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			
13																																			
14																																			

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/6/17 1638	[illegible]	2/6/17 @ 1638
[illegible]	2/6/17 @ 1846	[illegible]	2/6/17 @ 1846
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO3	S=H2SO4	C=4°C
Z=Zn(AC)2	O=NaOH	T=Na2S2O3	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms:
1. All samples will be disposed in 45 days and records will be destroyed at 5 years upon submittal of final report.
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis.
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35% 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applies on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/6/2017	Workorder:	N022985
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 2/7/2017

Reviewed By: 2/15/17

ASSET Laboratories

WORK ORDER Summary

06-Feb-17

WorkOrder: N022985

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/6/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022985-001A	MW-44-115-Q117	2/6/2017 2:49:00 PM	2/20/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-001B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-001C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-002A	MW-701-Q117	2/6/2017 4:10:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-003A	MW-34-100-Q117	2/6/2017 3:45:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-003B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-003C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-004A	MW-902-Q117	2/6/2017 3:55:00 PM	2/20/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022985-004B			2/20/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/20/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022985-004C			2/20/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022985-005A	FOLDER	2/20/2017	2/20/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/20/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022985**

NAME	TEST METHOD
Claire Ignacio	EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113441
ASSET #: N022985

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/9/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/14/2017

2nd Level Reviewer 2/20/2017 Date: ____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N022985-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 3.5531 * 5$$

$$Cr^{+6}, \mu g/L = 17.77$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 18}$$

rba 2/14/2017

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/09/17 11:07 PM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/09/17 11:18 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/09/17 11:28 PM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/09/17 11:37 PM	Reported
14	MB-R113441	MBLK	1	Hexavalent Chromium	02/09/17 11:47 PM	Reported
15	LCS-R113441	LCS	1	Hexavalent Chromium	02/09/17 11:56 PM	Reported
16	N023040-006D	SAMP	1	Hexavalent Chromium	02/10/17 12:08 AM	Reported
17	N023041-006B	SAMP	1	Hexavalent Chromium	02/10/17 12:19 AM	Reported
18	N023040-004D	SAMP	1	Hexavalent Chromium	02/10/17 12:29 AM	Reported
19	N023040-008C	SAMP	1	Hexavalent Chromium	02/10/17 12:38 AM	Reported
20	N023040-009C	SAMP	100	Hexavalent Chromium	02/10/17 12:48 AM	Not Reported
21	N023040-003D	SAMP	1	Hexavalent Chromium	02/10/17 12:57 AM	Reported
22	N023041-003C	SAMP	1	Hexavalent Chromium	02/10/17 1:08 AM	Not Reported
23	N023040-009C	SAMP	5	Hexavalent Chromium	02/10/17 1:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/10/17 1:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/10/17 1:38 AM	Reported
26	N023040-010D	SAMP	1	Hexavalent Chromium	02/10/17 1:48 AM	Reported
27	N023040-011D	SAMP	1	Hexavalent Chromium	02/10/17 1:57 AM	Reported
28	N023041-005D	SAMP	1	Hexavalent Chromium	02/10/17 2:06 AM	Reported
29	N023041-007C	SAMP	10	Hexavalent Chromium	02/10/17 2:16 AM	Reported
30	N023041-003C	SAMP	5	Hexavalent Chromium	02/10/17 2:25 AM	Reported
31	N023040-006DREP	DUP	1	Hexavalent Chromium	02/10/17 2:35 AM	Reported
32	N023041-006BREP	DUP	1	Hexavalent Chromium	02/10/17 2:44 AM	Reported
33	N023040-004DREP	DUP	1	Hexavalent Chromium	02/10/17 2:54 AM	Reported
34	N023040-008CREP	DUP	1	Hexavalent Chromium	02/10/17 3:03 AM	Reported
35	N023040-009CREP	DUP	5	Hexavalent Chromium	02/10/17 3:13 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/10/17 3:22 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/10/17 3:32 AM	Reported
38	N023040-003DREP	DUP	1	Hexavalent Chromium	02/10/17 3:41 AM	Reported
39	N023041-003CREP	DUP	5	Hexavalent Chromium	02/10/17 3:51 AM	Reported
40	N023040-010DREP	DUP	1	Hexavalent Chromium	02/10/17 4:00 AM	Reported
41	N023040-011DREP	DUP	1	Hexavalent Chromium	02/10/17 4:09 AM	Reported
42	N023041-005DREP	DUP	1	Hexavalent Chromium	02/10/17 4:19 AM	Reported

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023041-007CREP	DUP	10	Hexavalent Chromium	02/10/17 4:28 AM	Reported
44	N023040-010DMS	MS	1	Hexavalent Chromium	02/10/17 4:38 AM	Reported
45	N023041-005DMS	MS	1	Hexavalent Chromium	02/10/17 4:47 AM	Reported
46	N023040-010D	SAMP	2	Hexavalent Chromium	02/10/17 5:05 AM	Not Reported
47	N023040-010DMS	MS	2	Hexavalent Chromium	02/10/17 5:16 AM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/10/17 5:25 AM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/10/17 5:35 AM	Reported
50	N023040-010DREP	DUP	2	Hexavalent Chromium	02/10/17 5:44 AM	Not Reported
51	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 5:54 AM	Not Reported
52	N022985-001A	SAMP	5	Hexavalent Chromium	02/10/17 6:03 AM	Reported
53	N022985-001AMS	MS	5	Hexavalent Chromium	02/10/17 6:13 AM	Reported
54	N022985-001AMSD	MSD	5	Hexavalent Chromium	02/10/17 6:22 AM	Reported
55	N022985-002A	SAMP	1	Hexavalent Chromium	02/10/17 6:31 AM	Reported
56	N022985-002AMS	MS	1	Hexavalent Chromium	02/10/17 6:41 AM	Reported
57	N022985-003A	SAMP	5	Hexavalent Chromium	02/10/17 6:54 AM	Reported
58	N022985-003AMS	MS	5	Hexavalent Chromium	02/10/17 7:05 AM	Reported
59	N022985-004A	SAMP	5	Hexavalent Chromium	02/10/17 7:14 AM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/10/17 7:24 AM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:33 AM	Not Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:59 AM	Reported
63	N022985-004AMS	MS	5	Hexavalent Chromium	02/10/17 8:10 AM	Reported
64	N022966-013A	SAMP	1	Hexavalent Chromium	02/10/17 8:20 AM	Reported
65	N022966-013AMS	MS	1	Hexavalent Chromium	02/10/17 8:29 AM	Reported
66	N022999-001A	SAMP	1	Hexavalent Chromium	02/10/17 8:39 AM	Reported
67	N022999-001AMS	MS	1	Hexavalent Chromium	02/10/17 8:48 AM	Reported
68	N022999-002A	SAMP	100	Hexavalent Chromium	02/10/17 8:58 AM	Reported
69	N022999-002AMS	MS	100	Hexavalent Chromium	02/10/17 9:07 AM	Reported
70	N022999-003A	SAMP	100	Hexavalent Chromium	02/10/17 9:17 AM	Not Reported
71	N022999-003AMS	MS	100	Hexavalent Chromium	02/10/17 9:26 AM	Not Reported
72	N022985-004ADUP	DUP	5	Hexavalent Chromium	02/10/17 9:35 AM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/10/17 9:45 AM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/10/17 9:54 AM	Reported
75	N022908-009A	SAMP	1	Hexavalent Chromium	02/10/17 10:04 AM	Not Reported
76	N022908-009AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:13 AM	Not Reported
77	N022910-006A	SAMP	1	Hexavalent Chromium	02/10/17 10:23 AM	Not Reported
78	N022910-006AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:32 AM	Not Reported
79	N022999-003A	SAMP	1	Hexavalent Chromium	02/10/17 10:42 AM	Reported
80	N022999-003AMS	MS	1	Hexavalent Chromium	02/10/17 10:51 AM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	02/10/17 11:01 AM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	02/10/17 11:10 AM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 11:20 AM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170209A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**10/Feb/17 11:50:23**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	2	1000	Unknown		02/09/2017 23:07	Finished	
11	CCV-1,CCV,1,	3	1000	Unknown		02/09/2017 23:18	Finished	CCV @5ppb, IWST-161114C
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/09/2017 23:28	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/09/2017 23:37	Finished	CCB R170123B
14	MB-H2O,MBLK,1	6	1000	Unknown		02/09/2017 23:47	Finished	MB R170123B
15	LCS-H2O,LCS,1	7	1000	Unknown		02/09/2017 23:56	Finished	LCS, IWST-161114D
16	N023040-006D,SAMP	9	1000	Unknown		02/10/2017 00:08	Finished	SAMP, 10mL
17	N023041-006B,SAMP	10	1000	Unknown		02/10/2017 00:19	Finished	SAMP, 10mL
18	N023040-004D,SAMP	11	1000	Unknown		02/10/2017 00:29	Finished	SAMP, 10mL
19	N023040-008C,SAMP	12	1000	Unknown		02/10/2017 00:38	Finished	SAMP, 10mL
20	N023040-009C,SAMP	13	1000	Unknown		02/10/2017 00:48	Finished	SAMP, 0.1>10mL
21	N023040-003D,SAMP	14	1000	Unknown		02/10/2017 00:57	Finished	SAMP, 10mL
22	N023041-003C,SAMP	16	1000	Unknown		02/10/2017 01:08	Finished	SAMP, 10mL
23	N023040-009C,SAMP	17	1000	Unknown		02/10/2017 01:19	Finished	SAMP, 2>10mL
24	CCV-2,CCV1,1,	18	1000	Unknown		02/10/2017 01:29	Finished	CCV @10ppb, IWST-161114C
25	CCB-2,CCB,1,	19	1000	Unknown		02/10/2017 01:38	Finished	CCB R170123B
26	N023040-010D,SAMP	20	1000	Unknown		02/10/2017 01:48	Finished	SAMP, 10mL
27	N023040-011D,SAMP	21	1000	Unknown		02/10/2017 01:57	Finished	SAMP, 10mL
28	N023041-005D,SAMP	22	1000	Unknown		02/10/2017 02:06	Finished	SAMP, 10mL
29	N023041-007C,SAMP	23	1000	Unknown		02/10/2017 02:16	Finished	SAMP, 1>10mL
30	N023041-003C,SAMP	24	1000	Unknown		02/10/2017 02:25	Finished	SAMP, 2>10mL
31	N023040-006DREP,D	25	1000	Unknown		02/10/2017 02:35	Finished	REP, 10mL
32	N023041-006BREP,D	26	1000	Unknown		02/10/2017 02:44	Finished	REP, 10mL
33	N023040-004DREP,D	27	1000	Unknown		02/10/2017 02:54	Finished	REP, 10mL
34	N023040-008CREP,D	28	1000	Unknown		02/10/2017 03:03	Finished	REP, 10mL
35	N023040-009CREP,D	29	1000	Unknown		02/10/2017 03:13	Finished	REP, 2>10mL
36	CCV-3,CCV,1,	30	1000	Unknown		02/10/2017 03:22	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	31	1000	Unknown		02/10/2017 03:32	Finished	CCB R170123B
38	N023040-003DREP,D	32	1000	Unknown		02/10/2017 03:41	Finished	REP, 10mL
39	N023041-003CREP,D	33	1000	Unknown		02/10/2017 03:51	Finished	REP, 2>10mL
40	N023040-010DREP,D	34	1000	Unknown		02/10/2017 04:00	Finished	REP, 10mL
41	N023040-011DREP,D	35	1000	Unknown		02/10/2017 04:09	Finished	REP, 10mL
42	N023041-005DREP,D	36	1000	Unknown		02/10/2017 04:19	Finished	REP, 10mL
43	N023041-007CREP,D	37	1000	Unknown		02/10/2017 04:28	Finished	REP, 1>10mL
44	N023040-010DMS,MS	38	1000	Unknown		02/10/2017 04:38	Finished	MS (5ppb), IWST-161114D,10
45	N023041-005DMS,MS	39	1000	Unknown		02/10/2017 04:47	Finished	MS (5ppb), IWST-161114D,10
46	N023040-010D,SAMP	40	1000	Unknown		02/10/2017 05:05	Finished	SAMP, 5>10mL
47	N023040-010DMS,MS	41	1000	Unknown		02/10/2017 05:16	Finished	MS (5ppb), IWST-161114D,5>1
48	CCV-4,CCV1,1,	42	1000	Unknown		02/10/2017 05:25	Finished	CCV @10ppb, IWST-161114C
49	CCB-4,CCB,1,	43	1000	Unknown		02/10/2017 05:35	Finished	CCB R170123B
50	N023040-010DREP,D	44	1000	Unknown		02/10/2017 05:44	Finished	REP,5>10mL
51	BLANK	45	1000	Unknown		02/10/2017 05:54	Finished	BLANK
52	N022985-001A,SAMP	46	1000	Unknown		02/10/2017 06:03	Finished	SAMP,2>10mL
53	N022985-001AMS,MS	47	1000	Unknown		02/10/2017 06:13	Finished	MS (5ppb), IWST-161114D,2>1
54	N022985-001AMSD,M	48	1000	Unknown		02/10/2017 06:22	Finished	MSD (5ppb), IWST-161114D,2
55	N022985-002A,SAMP	49	1000	Unknown		02/10/2017 06:31	Finished	SAMP, 10mL
56	N022985-002AMS,MS	50	1000	Unknown		02/10/2017 06:41	Finished	MS (1ppb), IWST-161114D,10
57	N022985-003A,SAMP	1	1000	Unknown		02/10/2017 06:54	Finished	SAMP,2>10mL
58	N022985-003AMS,MS	2	1000	Unknown		02/10/2017 07:05	Finished	MS (5ppb), IWST-161114D,2>1
59	N022985-004A,SAMP	3	1000	Unknown		02/10/2017 07:14	Finished	SAMP,2>10mL
60	CCV-5,CCV,1,	4	1000	Unknown		02/10/2017 07:24	Finished	CCV @5ppb, IWST-161114C

61	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:33	Finished	CCB R170123B
62	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:59	Finished	CCB R170123B
63	N022985-004AMS,MS	6	1000	Unknown		02/10/2017 08:10	Finished	MS (5ppb), IWST-161114D,2>1
64	N022966-013A,SAMP	7	1000	Unknown		02/10/2017 08:20	Finished	SAMP, 10mL
65	N022966-013AMS,MS,1	8	1000	Unknown		02/10/2017 08:29	Finished	MS (1ppb), IWST-161114D,10
66	N022999-001A,SAMP	9	1000	Unknown		02/10/2017 08:39	Finished	SAMP, 10mL
67	N022999-001AMS,MS	10	1000	Unknown		02/10/2017 08:48	Finished	MS (1ppb), IWST-161114D,10
68	N022999-002A,SAMP	11	1000	Unknown		02/10/2017 08:58	Finished	SAMP, 0.1>10mL
69	N022999-002AMS,MS	12	1000	Unknown		02/10/2017 09:07	Finished	MS (5ppb), IWST-161114D,0.1
70	N022999-003A,SAMP	13	1000	Unknown		02/10/2017 09:17	Finished	SAMP, 0.1>10mL
71	N022999-003AMS,MS	14	1000	Unknown		02/10/2017 09:26	Finished	MS (5ppb), IWST-161114D,0.1
72	N022985-004ADUP,D	15	1000	Unknown		02/10/2017 09:35	Finished	DUP, 2>10mL
73	CCV-6,CCV1,1,	16	1000	Unknown		02/10/2017 09:45	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	17	1000	Unknown		02/10/2017 09:54	Finished	CCB R170123B
75	N022908-009A,SAMP	18	1000	Unknown		02/10/2017 10:04	Finished	SAMP, 10mL
76	N022908-009AMS,SA	19	1000	Unknown		02/10/2017 10:13	Finished	MS (1ppb), IWST-161114D,10
77	N022910-006A,SAMP	20	1000	Unknown		02/10/2017 10:23	Finished	SAMP, 10mL
78	N022910-006AMS,SA	21	1000	Unknown		02/10/2017 10:32	Finished	SAMP, 10mL
79	N022999-003A,SAMP	22	1000	Unknown		02/10/2017 10:42	Finished	SAMP, 10mL
80	N022999-003AMS,MS	23	1000	Unknown		02/10/2017 10:51	Finished	SAMP, 10mL
81	CCV-7,CCV,1,	24	1000	Unknown		02/10/2017 11:01	Finished	CCV @5ppb, IWST-161114C
82	CCB-7,CCB,1,	25	1000	Unknown		02/10/2017 11:10	Finished	CCB R170123B
83	BLANK	26	1000	Unknown		02/10/2017 11:20	Finished	BLANK
84	SHUTDOWN	27	1000	Unknown		02/10/2017 11:29	Finished	
85	Eluent: R170209B	28	1000	Unknown		n.a.	Finished	Eluent
86	PCR: R170209C	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/7/17
Time Prepared: 1230 PM
Prepared By: 2

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170209B
NH4OH + NH4SO4 buffer: R170123B

Mm: 98.7%
pH 4: 4.010 22.4°C
7: 7.000 22.5°C
10: 10.010 22.5°C
LS: 7.02C 22.4°C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N022979-001A	9.31	–	~ 250 ml	~ 250 ml	–	R170103B
2)	N022985-001A	9.46	–			–	R170123B
3)	2A	9.46	–			–	
4)	3A	9.39	–			–	
5)	4A	9.39	–			–	
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/7/17
Time Prepared: 0020H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170207A
NH4OH + NH4SO4 buffer: ~~R170~~ R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023003-001D	8.50	9.30	~125 ml	~125 ml	0.2 ml / 10 ml PV	1 drop
2)	2D	8.41	9.25				
3)	3D	8.37	9.26				
4)	4D	7.95	9.18				
5)	5D	8.57	9.32				
6)	7C	6.20	9.07				
7)	9D	8.36	9.19				
8)	10D	6.84	9.15				ppt formed
9)	11C	8.36	9.22				
10)	12C	8.19	9.12				
11)	13D	8.40	9.27				
12)	14D	8.44	9.25				
13)	15D	8.47	9.20				
14)	18C	8.20	9.16				
15)	19D	6.97	9.14				ppt formed
	20D	8.10	9.18				

Logbook No. 12

rba 2/14/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ICV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2562998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2562999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.158	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.881	0.20	5.000	0	97.6	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.124	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	0.20	5.000	0	101	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.201	0.20	10.00	0	102	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ICB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563045

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-7	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
MB-R113441	N.A.	N.A.
LCS-R113441	4.223	PASS
N023040-006D	4.206	PASS
N023041-006B	4.190	PASS
N023040-004D	N.A.	N.A.
N023040-008C	N.A.	N.A.
N023040-009C	4.215	PASS
N023040-003D	4.206	PASS
N023041-003C	4.206	PASS
N023040-009C	4.215	PASS
N023040-010D	N.A.	N.A.
N023040-011D	4.198	PASS
N023041-005D	N.A.	N.A.
N023041-007C	4.215	PASS
N023041-003C	4.215	PASS
N023040-006DREP	4.206	PASS
N023041-006BREP	4.190	PASS
N023040-004DREP	N.A.	N.A.
N023040-008CREP	N.A.	N.A.
N023040-009CREP	4.215	PASS
N023040-003DREP	4.198	PASS
N023041-003CREP	4.215	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
N023040-010DREP	N.A.	N.A.
N023040-011DREP	4.198	PASS
N023041-005DREP	N.A.	N.A.
N023041-007CREP	4.215	PASS
N023040-010DMS	4.165	PASS
N023041-005DMS	4.181	PASS
N023040-010D	4.056	PASS
N023040-010DMS	4.190	PASS
N023040-010DREP	4.081	PASS
N022985-001A	4.181	PASS
N022985-001AMS	4.173	PASS
N022985-001AMSD	4.181	PASS
N022985-002A	N.A.	N.A.
N022985-002AMS	4.206	PASS
N022985-003A	4.165	PASS
N022985-003AMS	4.165	PASS
N022985-004A	4.165	PASS
N022985-004AMS	4.165	PASS
N022966-013A	N.A.	N.A.
N022966-013AMS	4.206	PASS
N022999-001A	4.148	PASS
N022999-001AMS	4.148	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
N022999-002A	4.215	PASS
N022999-002AMS	4.206	PASS
N022999-003A	N.A.	N.A.
N022999-003AMS	4.215	PASS
N022985-004ADUP	4.156	PASS
N022908-009A	N.A.	N.A.
N022908-009AMS	4.206	PASS
N022910-006A	4.206	PASS
N022910-006AMS	4.215	PASS
N022999-003A	4.148	PASS
N022999-003AMS	4.148	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

INITIAL CALIBRATION

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

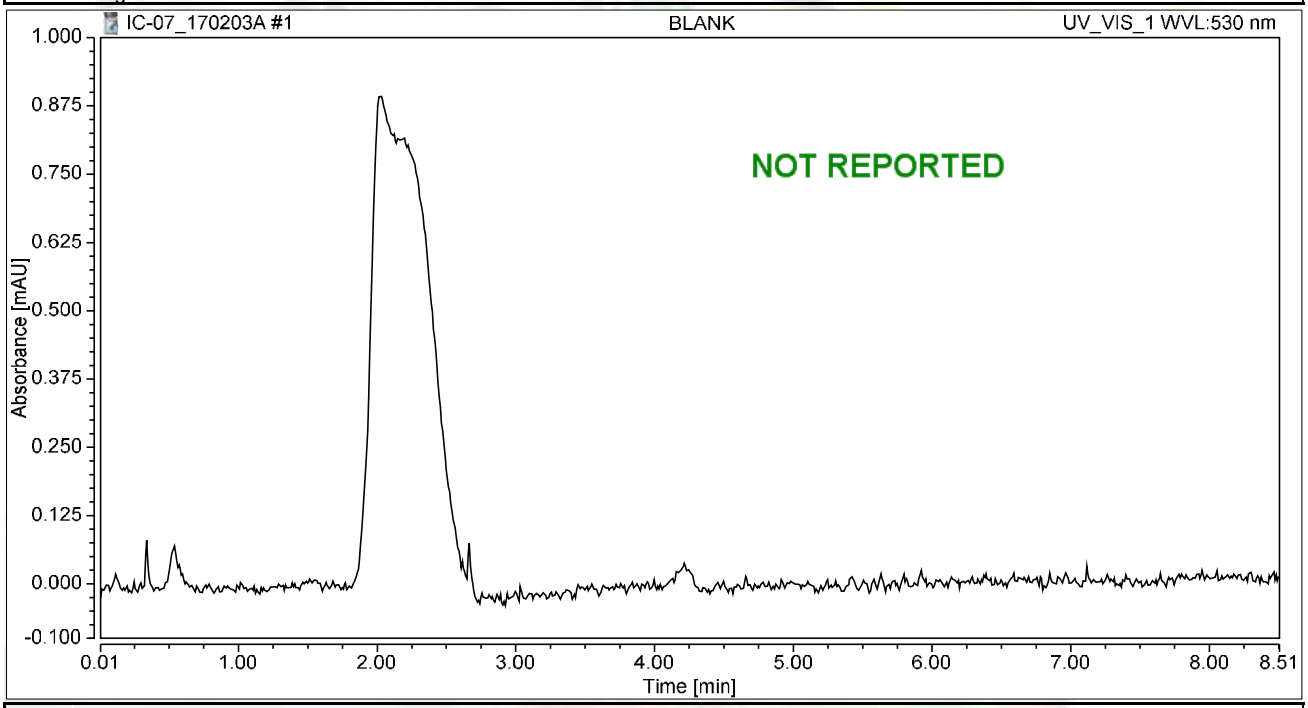
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

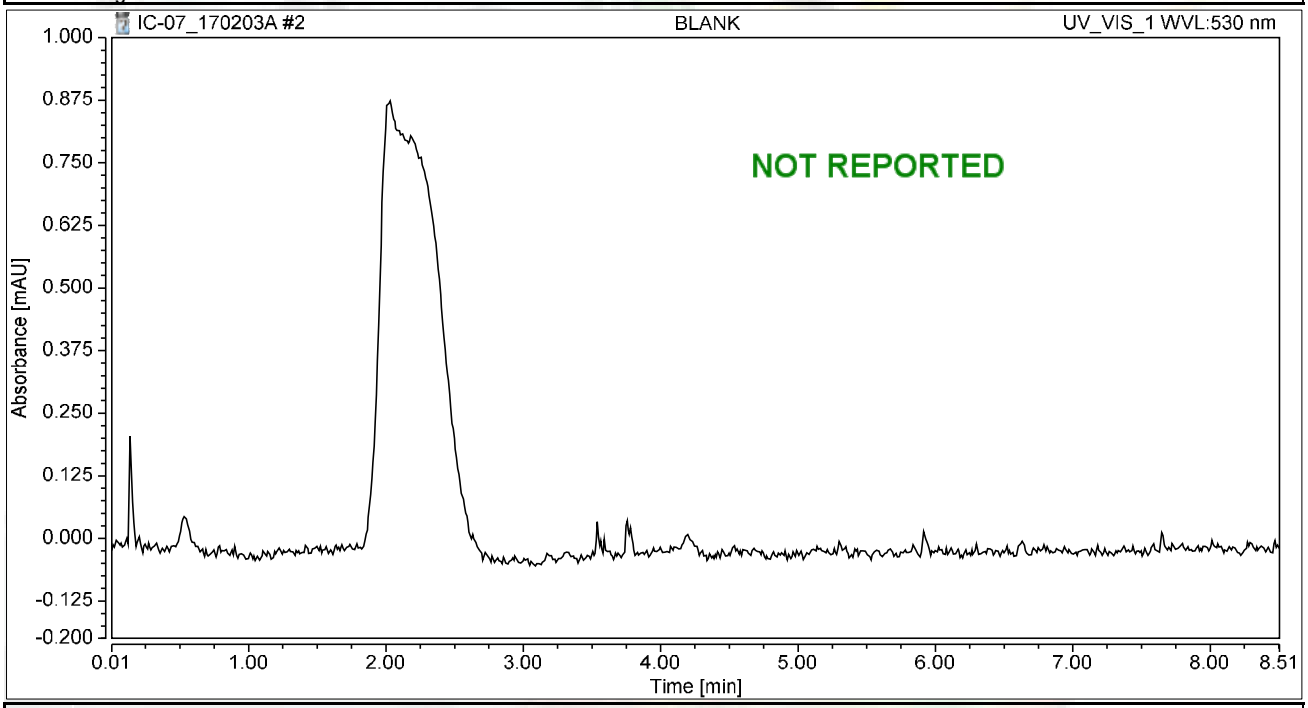
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

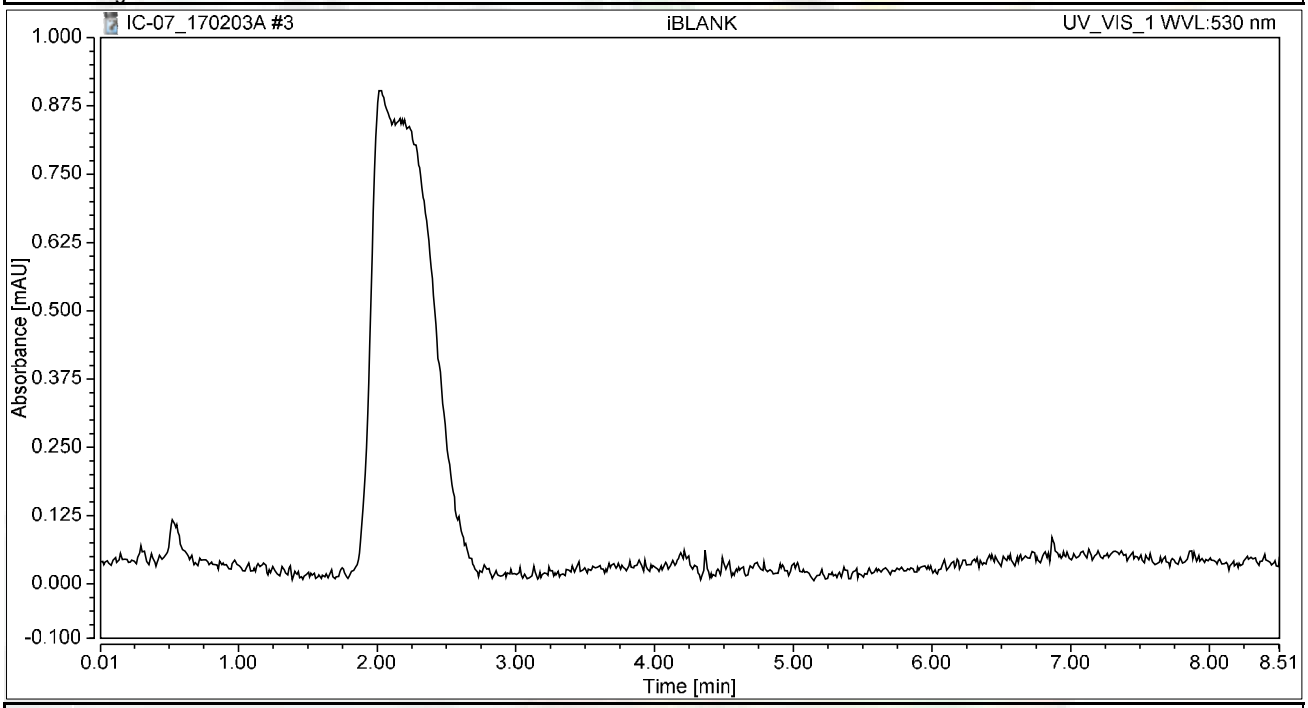
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

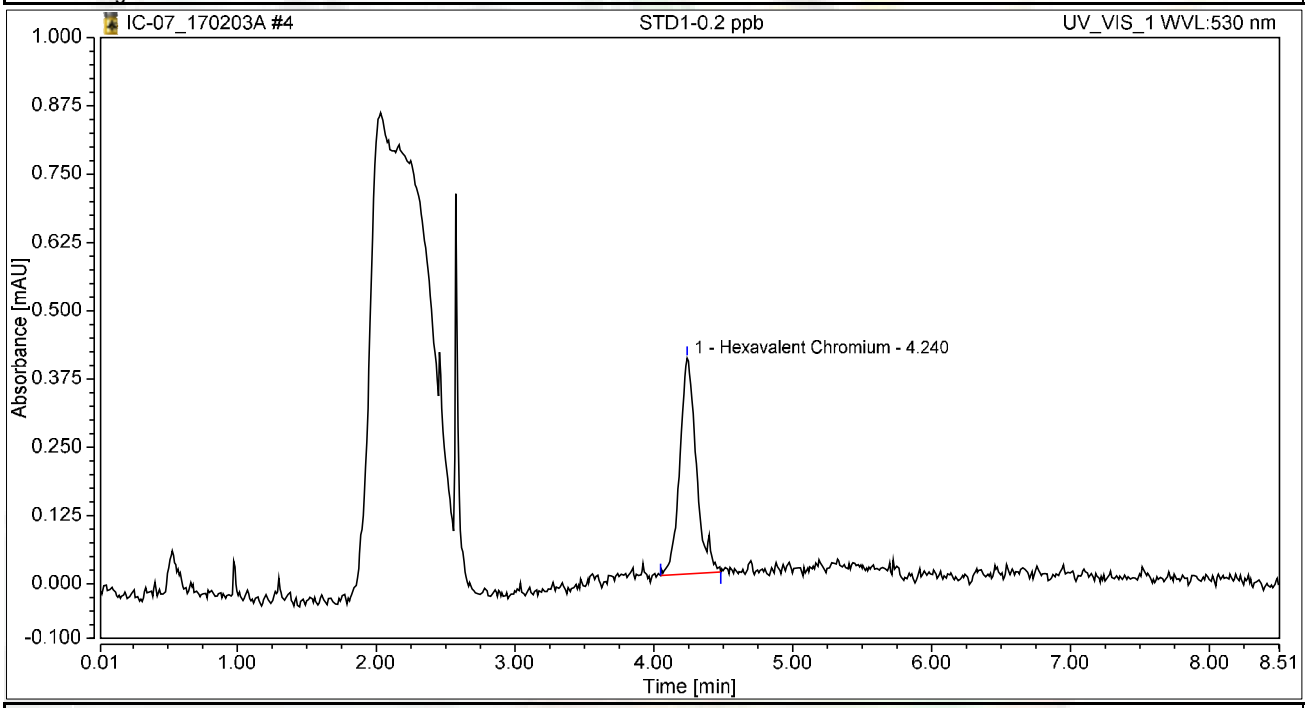
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

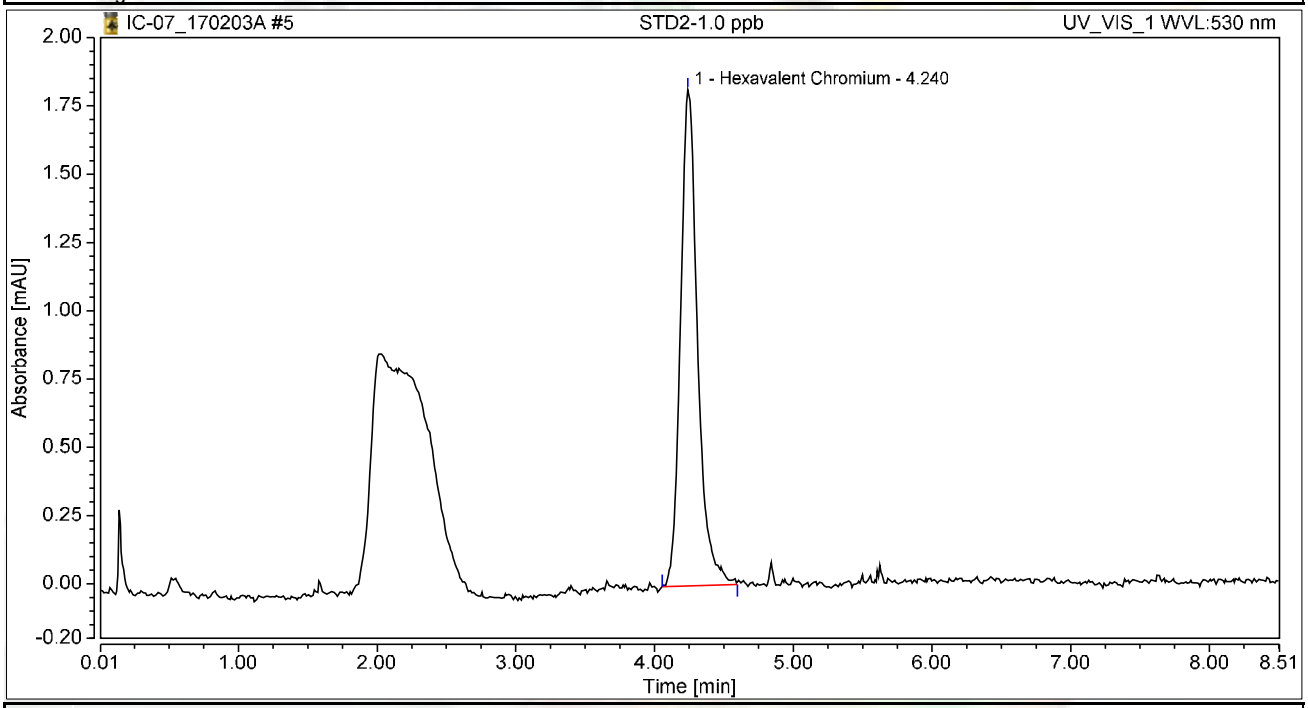
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

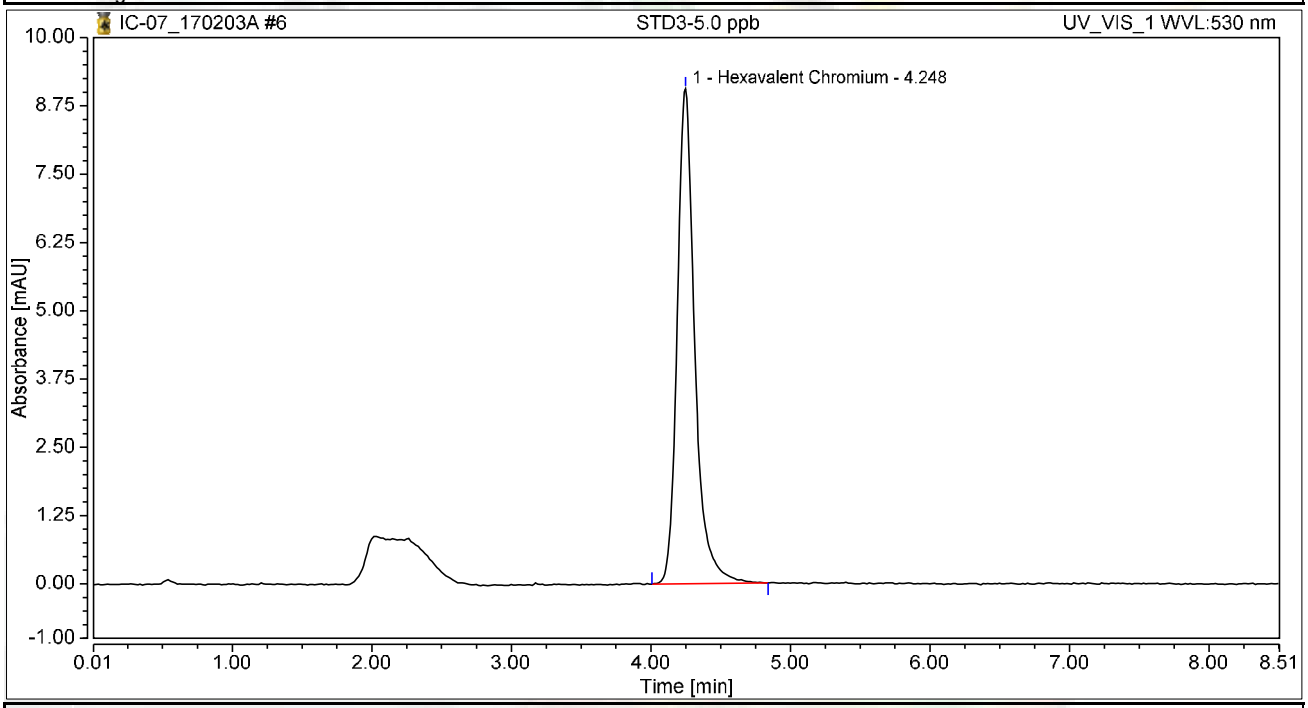
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

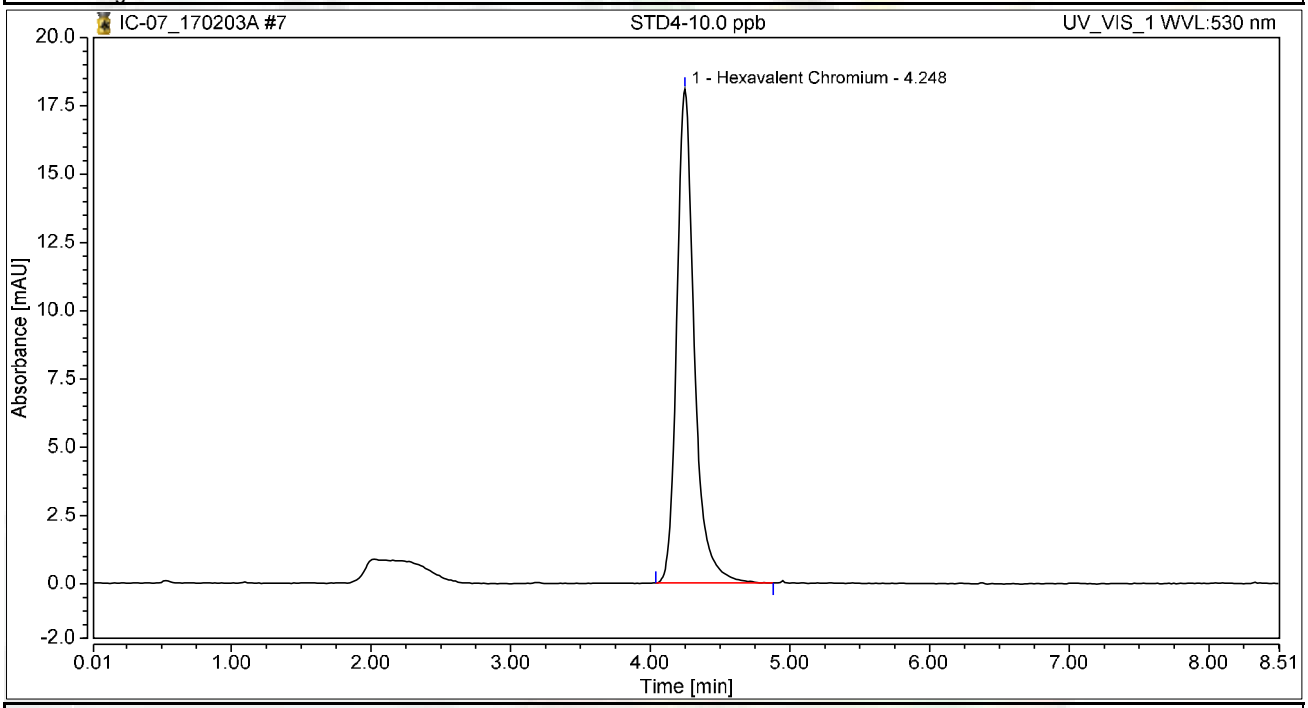
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

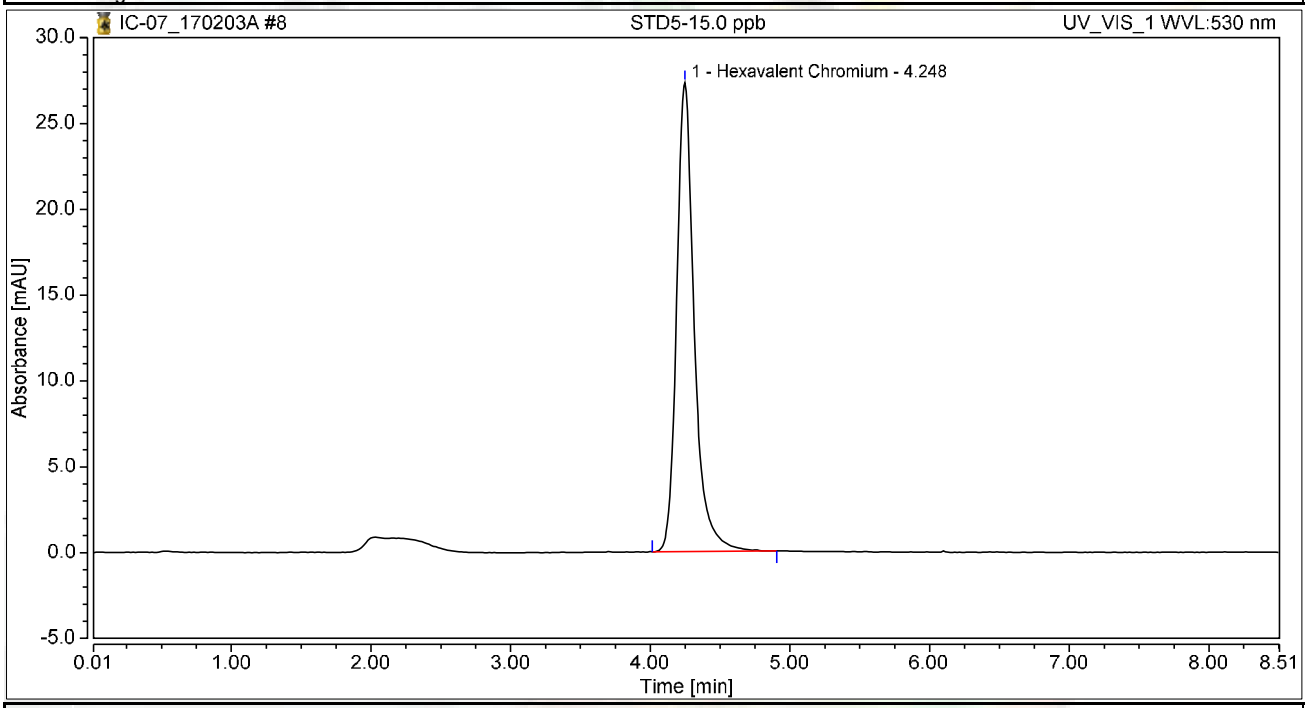
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

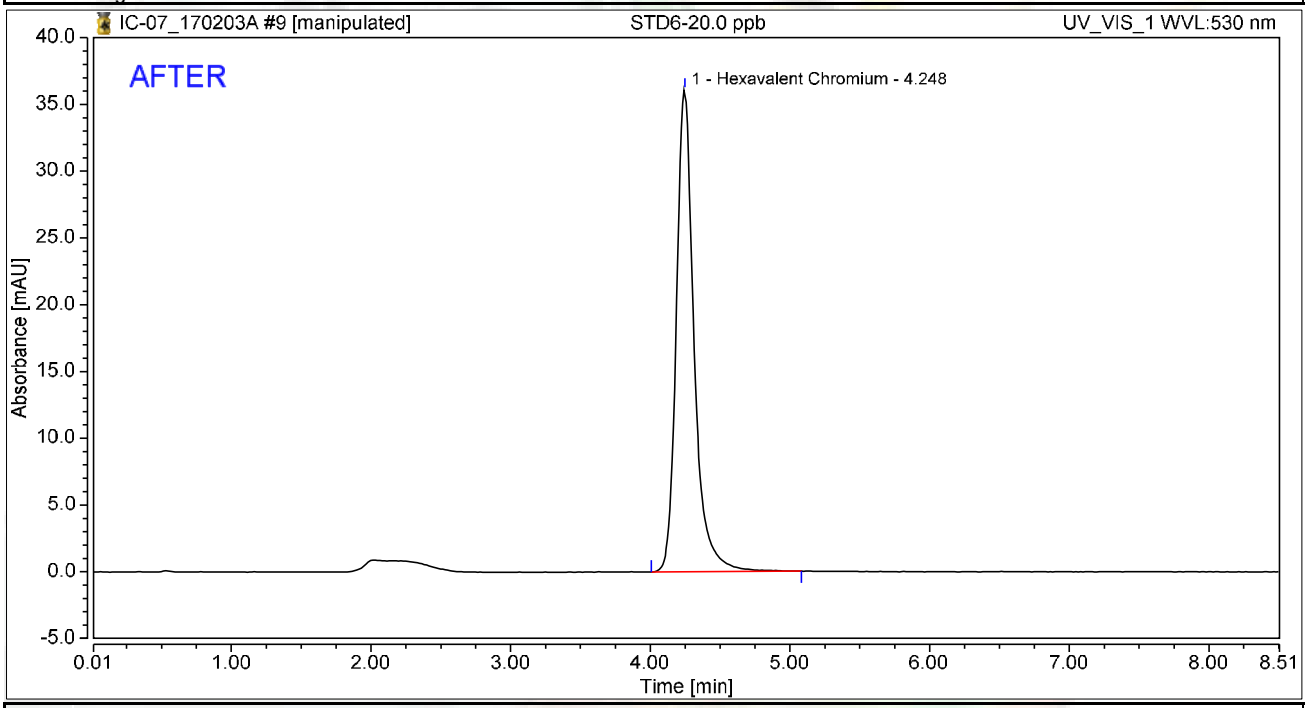
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

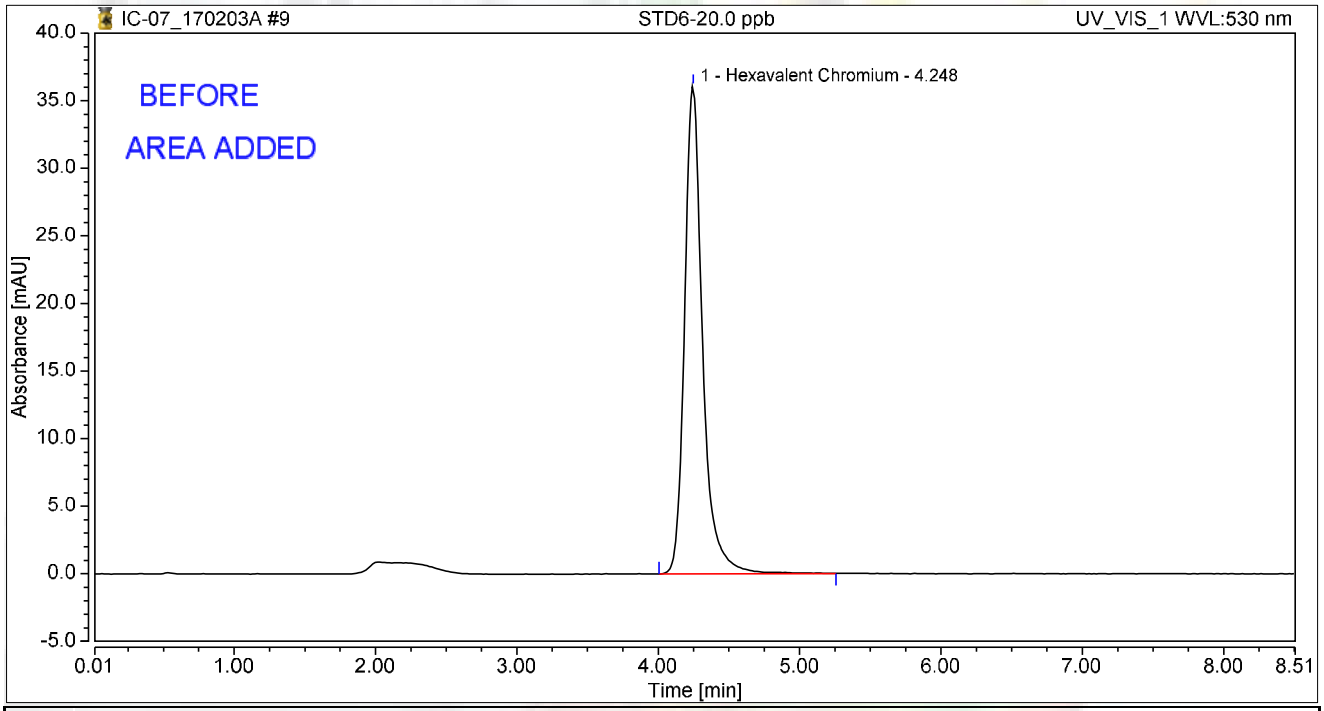
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

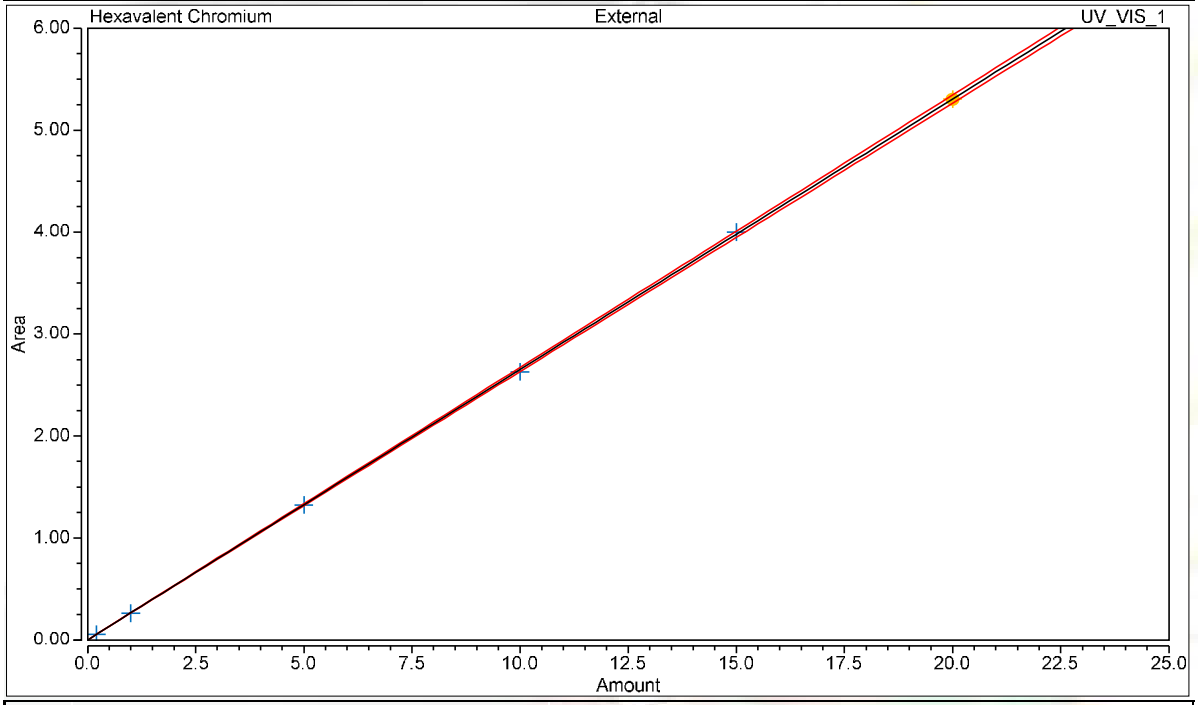
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

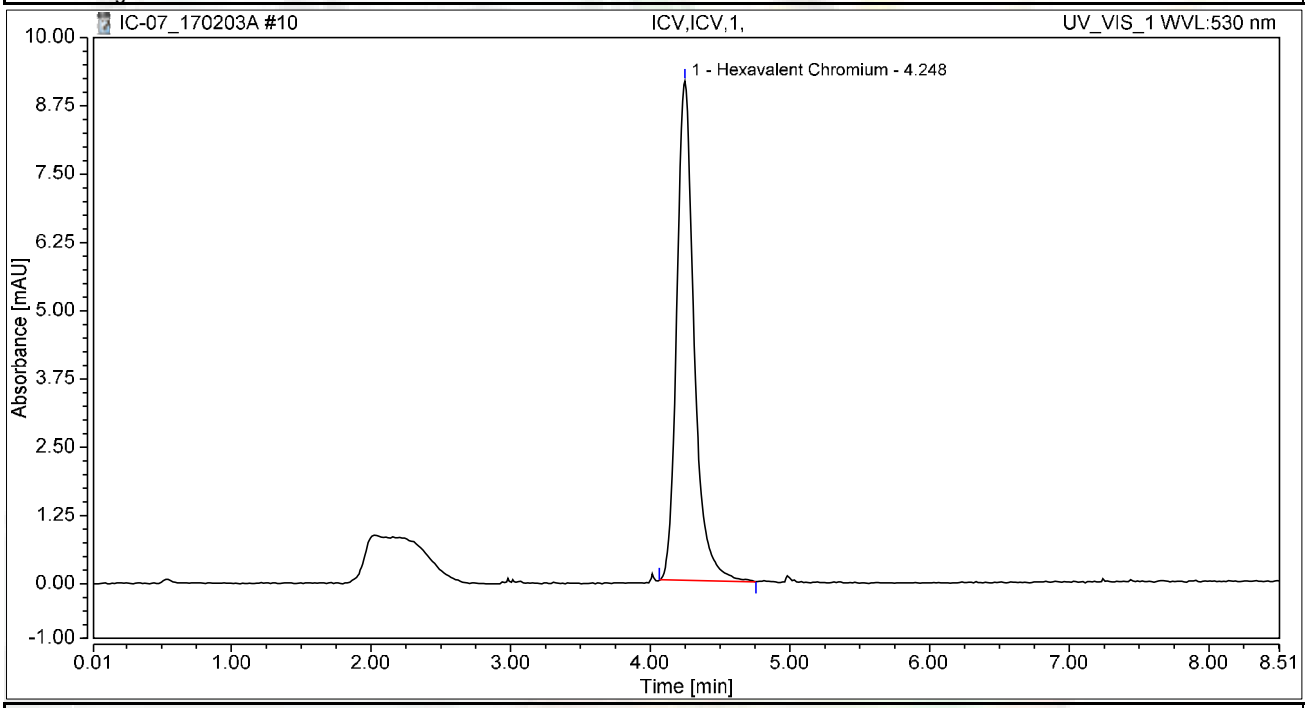
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

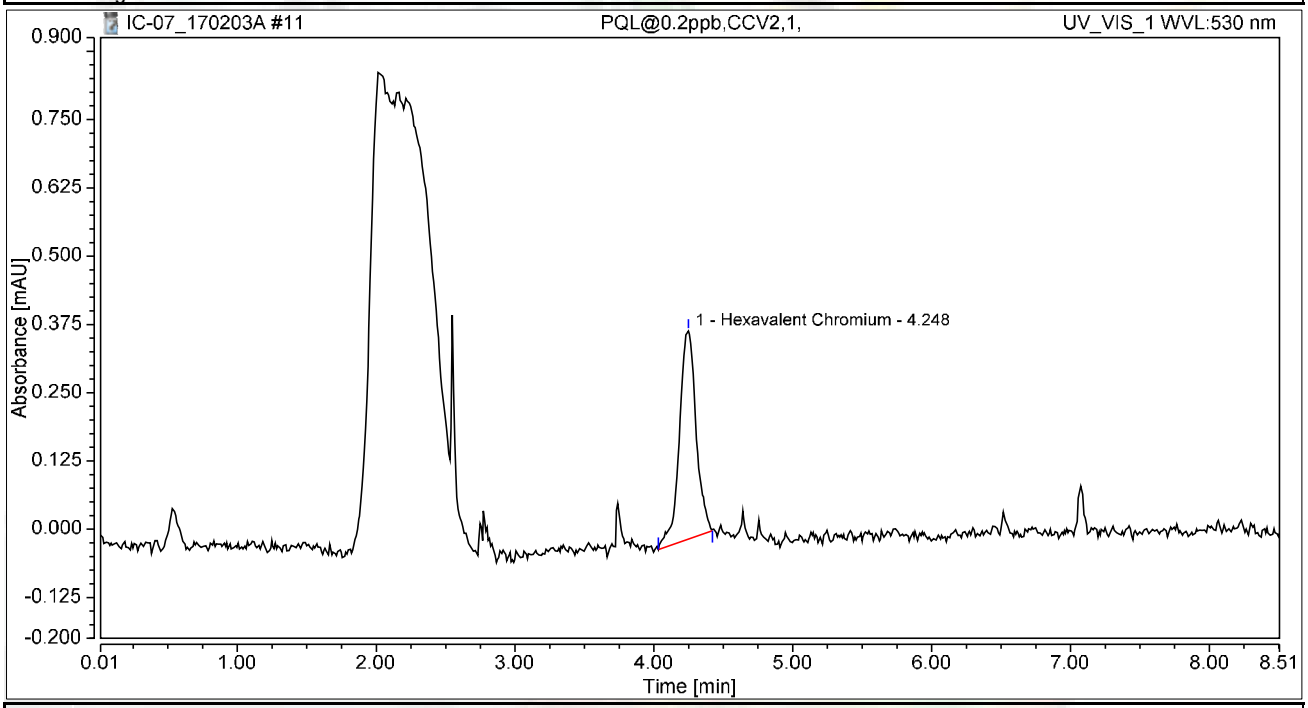
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

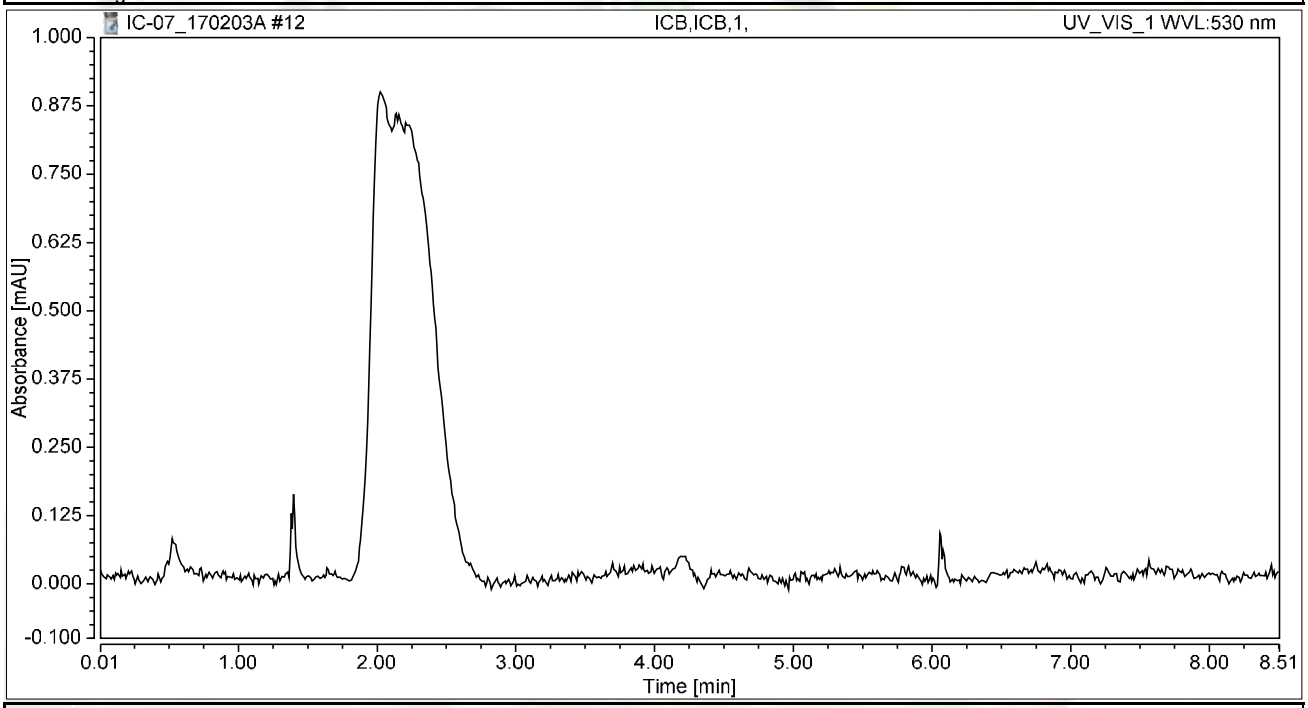
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/09/17 11:07 PM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/09/17 11:18 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/09/17 11:28 PM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/09/17 11:37 PM	Reported
14	MB-R113441	MBLK	1	Hexavalent Chromium	02/09/17 11:47 PM	Reported
15	LCS-R113441	LCS	1	Hexavalent Chromium	02/09/17 11:56 PM	Reported
16	N023040-006D	SAMP	1	Hexavalent Chromium	02/10/17 12:08 AM	Reported
17	N023041-006B	SAMP	1	Hexavalent Chromium	02/10/17 12:19 AM	Reported
18	N023040-004D	SAMP	1	Hexavalent Chromium	02/10/17 12:29 AM	Reported
19	N023040-008C	SAMP	1	Hexavalent Chromium	02/10/17 12:38 AM	Reported
20	N023040-009C	SAMP	100	Hexavalent Chromium	02/10/17 12:48 AM	Not Reported
21	N023040-003D	SAMP	1	Hexavalent Chromium	02/10/17 12:57 AM	Reported
22	N023041-003C	SAMP	1	Hexavalent Chromium	02/10/17 1:08 AM	Not Reported
23	N023040-009C	SAMP	5	Hexavalent Chromium	02/10/17 1:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/10/17 1:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/10/17 1:38 AM	Reported
26	N023040-010D	SAMP	1	Hexavalent Chromium	02/10/17 1:48 AM	Reported
27	N023040-011D	SAMP	1	Hexavalent Chromium	02/10/17 1:57 AM	Reported
28	N023041-005D	SAMP	1	Hexavalent Chromium	02/10/17 2:06 AM	Reported
29	N023041-007C	SAMP	10	Hexavalent Chromium	02/10/17 2:16 AM	Reported
30	N023041-003C	SAMP	5	Hexavalent Chromium	02/10/17 2:25 AM	Reported
31	N023040-006DREP	DUP	1	Hexavalent Chromium	02/10/17 2:35 AM	Reported
32	N023041-006BREP	DUP	1	Hexavalent Chromium	02/10/17 2:44 AM	Reported
33	N023040-004DREP	DUP	1	Hexavalent Chromium	02/10/17 2:54 AM	Reported
34	N023040-008CREP	DUP	1	Hexavalent Chromium	02/10/17 3:03 AM	Reported
35	N023040-009CREP	DUP	5	Hexavalent Chromium	02/10/17 3:13 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/10/17 3:22 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/10/17 3:32 AM	Reported
38	N023040-003DREP	DUP	1	Hexavalent Chromium	02/10/17 3:41 AM	Reported
39	N023041-003CREP	DUP	5	Hexavalent Chromium	02/10/17 3:51 AM	Reported
40	N023040-010DREP	DUP	1	Hexavalent Chromium	02/10/17 4:00 AM	Reported
41	N023040-011DREP	DUP	1	Hexavalent Chromium	02/10/17 4:09 AM	Reported
42	N023041-005DREP	DUP	1	Hexavalent Chromium	02/10/17 4:19 AM	Reported

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023041-007CREP	DUP	10	Hexavalent Chromium	02/10/17 4:28 AM	Reported
44	N023040-010DMS	MS	1	Hexavalent Chromium	02/10/17 4:38 AM	Reported
45	N023041-005DMS	MS	1	Hexavalent Chromium	02/10/17 4:47 AM	Reported
46	N023040-010D	SAMP	2	Hexavalent Chromium	02/10/17 5:05 AM	Not Reported
47	N023040-010DMS	MS	2	Hexavalent Chromium	02/10/17 5:16 AM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/10/17 5:25 AM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/10/17 5:35 AM	Reported
50	N023040-010DREP	DUP	2	Hexavalent Chromium	02/10/17 5:44 AM	Not Reported
51	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 5:54 AM	Not Reported
52	N022985-001A	SAMP	5	Hexavalent Chromium	02/10/17 6:03 AM	Reported
53	N022985-001AMS	MS	5	Hexavalent Chromium	02/10/17 6:13 AM	Reported
54	N022985-001AMSD	MSD	5	Hexavalent Chromium	02/10/17 6:22 AM	Reported
55	N022985-002A	SAMP	1	Hexavalent Chromium	02/10/17 6:31 AM	Reported
56	N022985-002AMS	MS	1	Hexavalent Chromium	02/10/17 6:41 AM	Reported
57	N022985-003A	SAMP	5	Hexavalent Chromium	02/10/17 6:54 AM	Reported
58	N022985-003AMS	MS	5	Hexavalent Chromium	02/10/17 7:05 AM	Reported
59	N022985-004A	SAMP	5	Hexavalent Chromium	02/10/17 7:14 AM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/10/17 7:24 AM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:33 AM	Not Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:59 AM	Reported
63	N022985-004AMS	MS	5	Hexavalent Chromium	02/10/17 8:10 AM	Reported
64	N022966-013A	SAMP	1	Hexavalent Chromium	02/10/17 8:20 AM	Reported
65	N022966-013AMS	MS	1	Hexavalent Chromium	02/10/17 8:29 AM	Reported
66	N022999-001A	SAMP	1	Hexavalent Chromium	02/10/17 8:39 AM	Reported
67	N022999-001AMS	MS	1	Hexavalent Chromium	02/10/17 8:48 AM	Reported
68	N022999-002A	SAMP	100	Hexavalent Chromium	02/10/17 8:58 AM	Reported
69	N022999-002AMS	MS	100	Hexavalent Chromium	02/10/17 9:07 AM	Reported
70	N022999-003A	SAMP	100	Hexavalent Chromium	02/10/17 9:17 AM	Not Reported
71	N022999-003AMS	MS	100	Hexavalent Chromium	02/10/17 9:26 AM	Not Reported
72	N022985-004ADUP	DUP	5	Hexavalent Chromium	02/10/17 9:35 AM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/10/17 9:45 AM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/10/17 9:54 AM	Reported
75	N022908-009A	SAMP	1	Hexavalent Chromium	02/10/17 10:04 AM	Not Reported
76	N022908-009AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:13 AM	Not Reported
77	N022910-006A	SAMP	1	Hexavalent Chromium	02/10/17 10:23 AM	Not Reported
78	N022910-006AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:32 AM	Not Reported
79	N022999-003A	SAMP	1	Hexavalent Chromium	02/10/17 10:42 AM	Reported
80	N022999-003AMS	MS	1	Hexavalent Chromium	02/10/17 10:51 AM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	02/10/17 11:01 AM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	02/10/17 11:10 AM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 11:20 AM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170209A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**10/Feb/17 11:50:23**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	2	1000	Unknown		02/09/2017 23:07	Finished	
11	CCV-1,CCV,1,	3	1000	Unknown		02/09/2017 23:18	Finished	CCV @5ppb, IWST-161114C
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/09/2017 23:28	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/09/2017 23:37	Finished	CCB R170123B
14	MB-H2O,MBLK,1	6	1000	Unknown		02/09/2017 23:47	Finished	MB R170123B
15	LCS-H2O,LCS,1	7	1000	Unknown		02/09/2017 23:56	Finished	LCS, IWST-161114D
16	N023040-006D,SAMP	9	1000	Unknown		02/10/2017 00:08	Finished	SAMP, 10mL
17	N023041-006B,SAMP	10	1000	Unknown		02/10/2017 00:19	Finished	SAMP, 10mL
18	N023040-004D,SAMP	11	1000	Unknown		02/10/2017 00:29	Finished	SAMP, 10mL
19	N023040-008C,SAMP	12	1000	Unknown		02/10/2017 00:38	Finished	SAMP, 10mL
20	N023040-009C,SAMP	13	1000	Unknown		02/10/2017 00:48	Finished	SAMP, 0.1>10mL
21	N023040-003D,SAMP	14	1000	Unknown		02/10/2017 00:57	Finished	SAMP, 10mL
22	N023041-003C,SAMP	16	1000	Unknown		02/10/2017 01:08	Finished	SAMP, 10mL
23	N023040-009C,SAMP	17	1000	Unknown		02/10/2017 01:19	Finished	SAMP, 2>10mL
24	CCV-2,CCV1,1,	18	1000	Unknown		02/10/2017 01:29	Finished	CCV @10ppb, IWST-161114C
25	CCB-2,CCB,1,	19	1000	Unknown		02/10/2017 01:38	Finished	CCB R170123B
26	N023040-010D,SAMP	20	1000	Unknown		02/10/2017 01:48	Finished	SAMP, 10mL
27	N023040-011D,SAMP	21	1000	Unknown		02/10/2017 01:57	Finished	SAMP, 10mL
28	N023041-005D,SAMP	22	1000	Unknown		02/10/2017 02:06	Finished	SAMP, 10mL
29	N023041-007C,SAMP	23	1000	Unknown		02/10/2017 02:16	Finished	SAMP, 1>10mL
30	N023041-003C,SAMP	24	1000	Unknown		02/10/2017 02:25	Finished	SAMP, 2>10mL
31	N023040-006DREP,D	25	1000	Unknown		02/10/2017 02:35	Finished	REP, 10mL
32	N023041-006BREP,D	26	1000	Unknown		02/10/2017 02:44	Finished	REP, 10mL
33	N023040-004DREP,D	27	1000	Unknown		02/10/2017 02:54	Finished	REP, 10mL
34	N023040-008CREP,D	28	1000	Unknown		02/10/2017 03:03	Finished	REP, 10mL
35	N023040-009CREP,D	29	1000	Unknown		02/10/2017 03:13	Finished	REP, 2>10mL
36	CCV-3,CCV,1,	30	1000	Unknown		02/10/2017 03:22	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	31	1000	Unknown		02/10/2017 03:32	Finished	CCB R170123B
38	N023040-003DREP,D	32	1000	Unknown		02/10/2017 03:41	Finished	REP, 10mL
39	N023041-003CREP,D	33	1000	Unknown		02/10/2017 03:51	Finished	REP, 2>10mL
40	N023040-010DREP,D	34	1000	Unknown		02/10/2017 04:00	Finished	REP, 10mL
41	N023040-011DREP,D	35	1000	Unknown		02/10/2017 04:09	Finished	REP, 10mL
42	N023041-005DREP,D	36	1000	Unknown		02/10/2017 04:19	Finished	REP, 10mL
43	N023041-007CREP,D	37	1000	Unknown		02/10/2017 04:28	Finished	REP, 1>10mL
44	N023040-010DMS,MS	38	1000	Unknown		02/10/2017 04:38	Finished	MS (5ppb), IWST-161114D,10
45	N023041-005DMS,MS	39	1000	Unknown		02/10/2017 04:47	Finished	MS (5ppb), IWST-161114D,10
46	N023040-010D,SAMP	40	1000	Unknown		02/10/2017 05:05	Finished	SAMP, 5>10mL
47	N023040-010DMS,MS	41	1000	Unknown		02/10/2017 05:16	Finished	MS (5ppb), IWST-161114D,5>1
48	CCV-4,CCV1,1,	42	1000	Unknown		02/10/2017 05:25	Finished	CCV @10ppb, IWST-161114C
49	CCB-4,CCB,1,	43	1000	Unknown		02/10/2017 05:35	Finished	CCB R170123B
50	N023040-010DREP,D	44	1000	Unknown		02/10/2017 05:44	Finished	REP,5>10mL
51	BLANK	45	1000	Unknown		02/10/2017 05:54	Finished	BLANK
52	N022985-001A,SAMP	46	1000	Unknown		02/10/2017 06:03	Finished	SAMP,2>10mL
53	N022985-001AMS,MS	47	1000	Unknown		02/10/2017 06:13	Finished	MS (5ppb), IWST-161114D,2>1
54	N022985-001AMSD,M	48	1000	Unknown		02/10/2017 06:22	Finished	MSD (5ppb), IWST-161114D,2
55	N022985-002A,SAMP	49	1000	Unknown		02/10/2017 06:31	Finished	SAMP, 10mL
56	N022985-002AMS,MS	50	1000	Unknown		02/10/2017 06:41	Finished	MS (1ppb), IWST-161114D,10
57	N022985-003A,SAMP	1	1000	Unknown		02/10/2017 06:54	Finished	SAMP,2>10mL
58	N022985-003AMS,MS	2	1000	Unknown		02/10/2017 07:05	Finished	MS (5ppb), IWST-161114D,2>1
59	N022985-004A,SAMP	3	1000	Unknown		02/10/2017 07:14	Finished	SAMP,2>10mL
60	CCV-5,CCV,1,	4	1000	Unknown		02/10/2017 07:24	Finished	CCV @5ppb, IWST-161114C

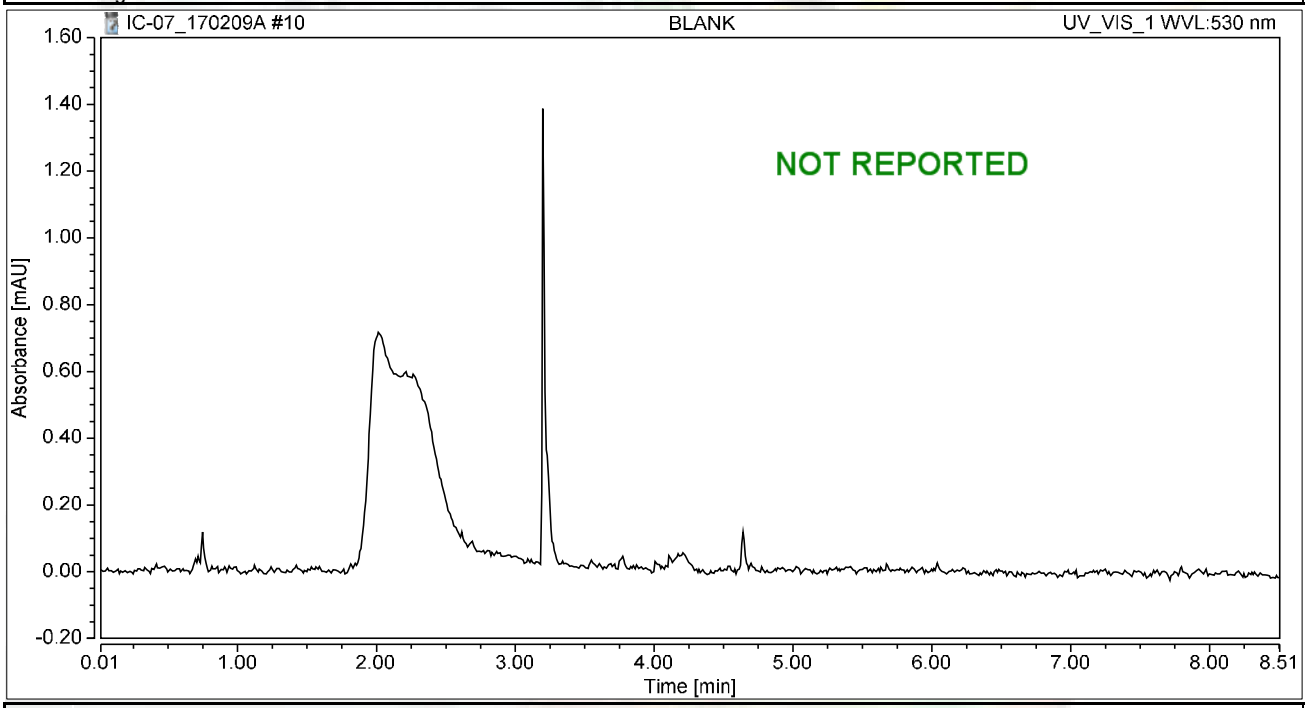
61	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:33	Finished	CCB R170123B	
62	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:59	Finished	CCB R170123B	
63	N022985-004AMS,MS	6	1000	Unknown		02/10/2017 08:10	Finished	MS (5ppb), IWST-161114D,2>1	
64	~~N022966-001A~~,SAMP	7	1000	Unknown		02/10/2017 08:20	Finished	SAMP, 10mL	N022966-013A
65	~~N022966-001AM~~S,MS	8	1000	Unknown		02/10/2017 08:29	Finished	MS (1ppb), IWST-161114D,10	N022966-013AMS
66	N022999-001A,SAMP	9	1000	Unknown		02/10/2017 08:39	Finished	SAMP, 10mL	
67	N022999-001AMS,MS	10	1000	Unknown		02/10/2017 08:48	Finished	MS (1ppb), IWST-161114D,10	
68	N022999-002A,SAMP	11	1000	Unknown		02/10/2017 08:58	Finished	SAMP, 0.1>10mL	
69	N022999-002AMS,MS	12	1000	Unknown		02/10/2017 09:07	Finished	MS (5ppb), IWST-161114D,0.1	
70	N022999-003A,SAMP	13	1000	Unknown		02/10/2017 09:17	Finished	SAMP, 0.1>10mL	
71	N022999-003AMS,MS	14	1000	Unknown		02/10/2017 09:26	Finished	MS (5ppb), IWST-161114D,0.1	
72	N022985-004ADUP,D	15	1000	Unknown		02/10/2017 09:35	Finished	DUP, 2>10mL	
73	CCV-6,CCV1,1,	16	1000	Unknown		02/10/2017 09:45	Finished	CCV @10ppb, IWST-161114C	
74	CCB-6,CCB,1,	17	1000	Unknown		02/10/2017 09:54	Finished	CCB R170123B	
75	N022908-009A,SAMP	18	1000	Unknown		02/10/2017 10:04	Finished	SAMP, 10mL	
76	N022908-009AMS,SA	19	1000	Unknown		02/10/2017 10:13	Finished	MS (1ppb), IWST-161114D,10	
77	N022910-006A,SAMP	20	1000	Unknown		02/10/2017 10:23	Finished	SAMP, 10mL	
78	N022910-006AMS,SA	21	1000	Unknown		02/10/2017 10:32	Finished	SAMP, 10mL	
79	N022999-003A,SAMP	22	1000	Unknown		02/10/2017 10:42	Finished	SAMP, 10mL	
80	N022999-003AMS,MS	23	1000	Unknown		02/10/2017 10:51	Finished	SAMP, 10mL	
81	CCV-7,CCV,1,	24	1000	Unknown		02/10/2017 11:01	Finished	CCV @5ppb, IWST-161114C	
82	CCB-7,CCB,1,	25	1000	Unknown		02/10/2017 11:10	Finished	CCB R170123B	
83	BLANK	26	1000	Unknown		02/10/2017 11:20	Finished	BLANK	
84	SHUTDOWN	27	1000	Unknown		02/10/2017 11:29	Finished		
85	Eluent: R170209B	28	1000	Unknown		n.a.	Finished	Eluent	
86	PCR: R170209C	29	1000	Unknown		n.a.	Finished	Post-Column Reagent	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

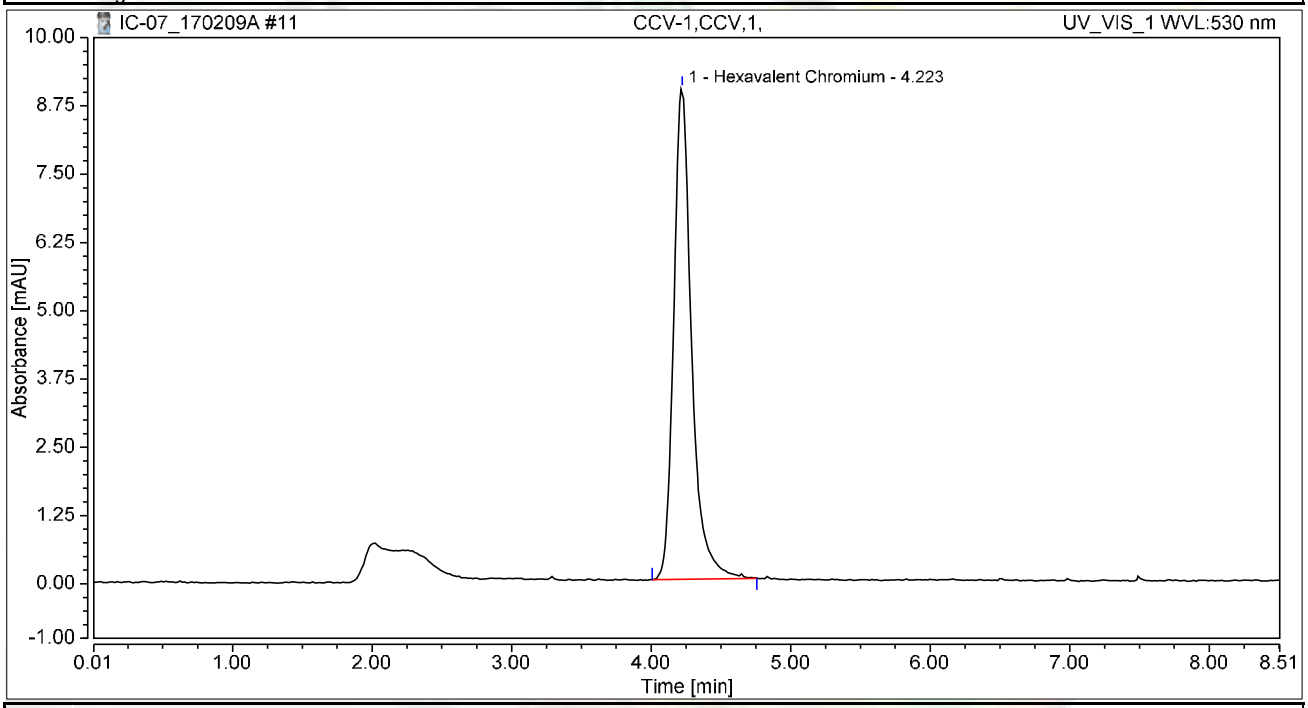
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

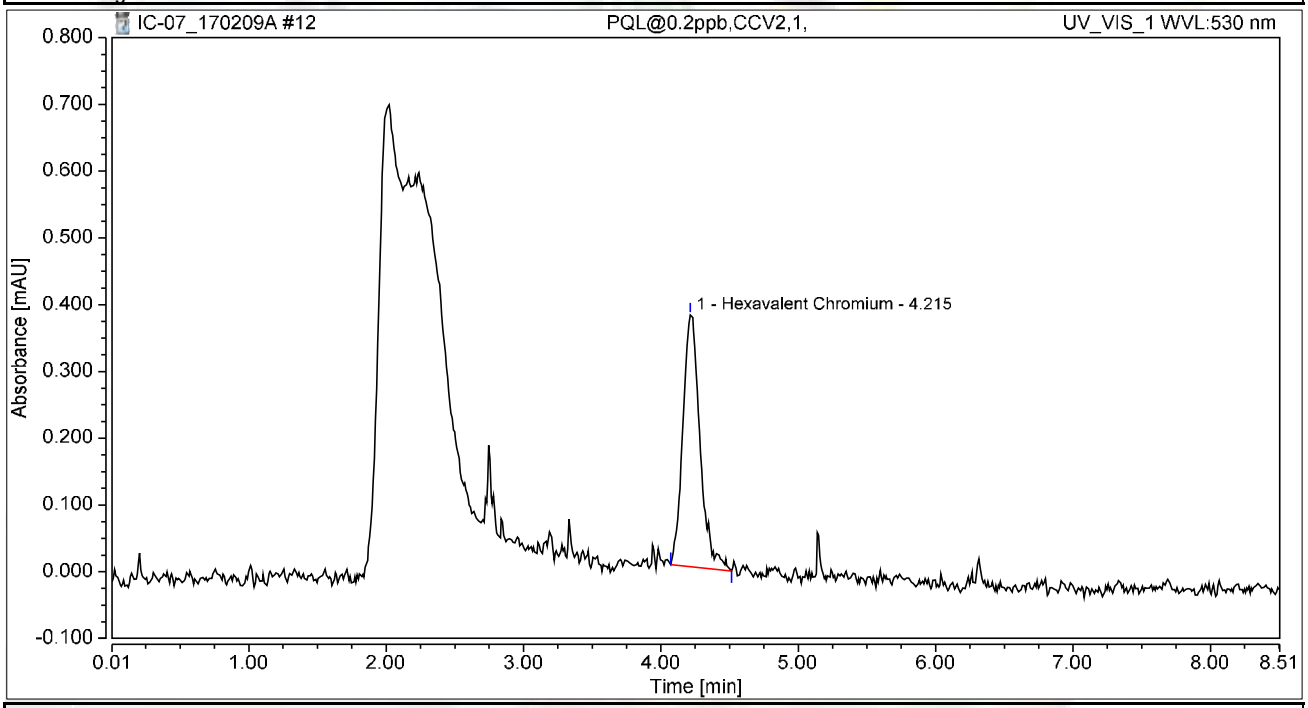
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.336	8.992	100.00	100.00	5.0386
Total:			**1.336**	**8.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

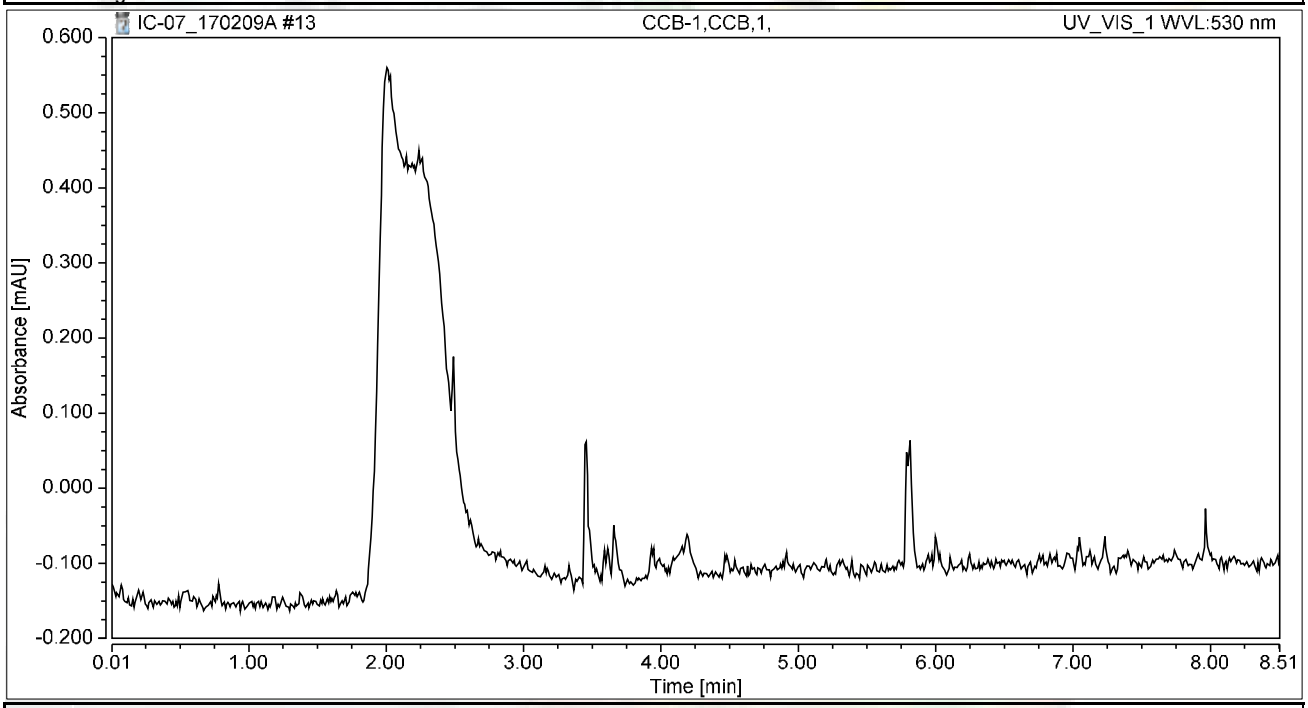
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.055	0.377	100.00	100.00	0.2061
Total:			**0.055**	**0.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

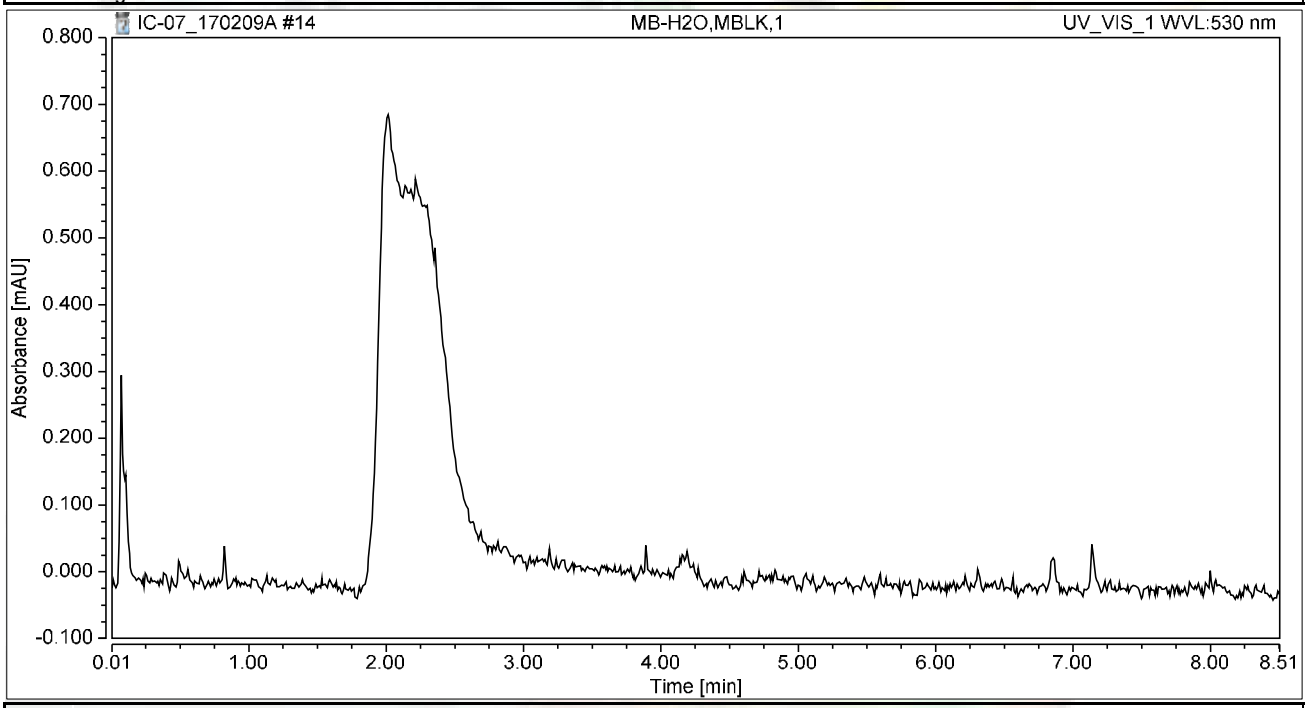
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

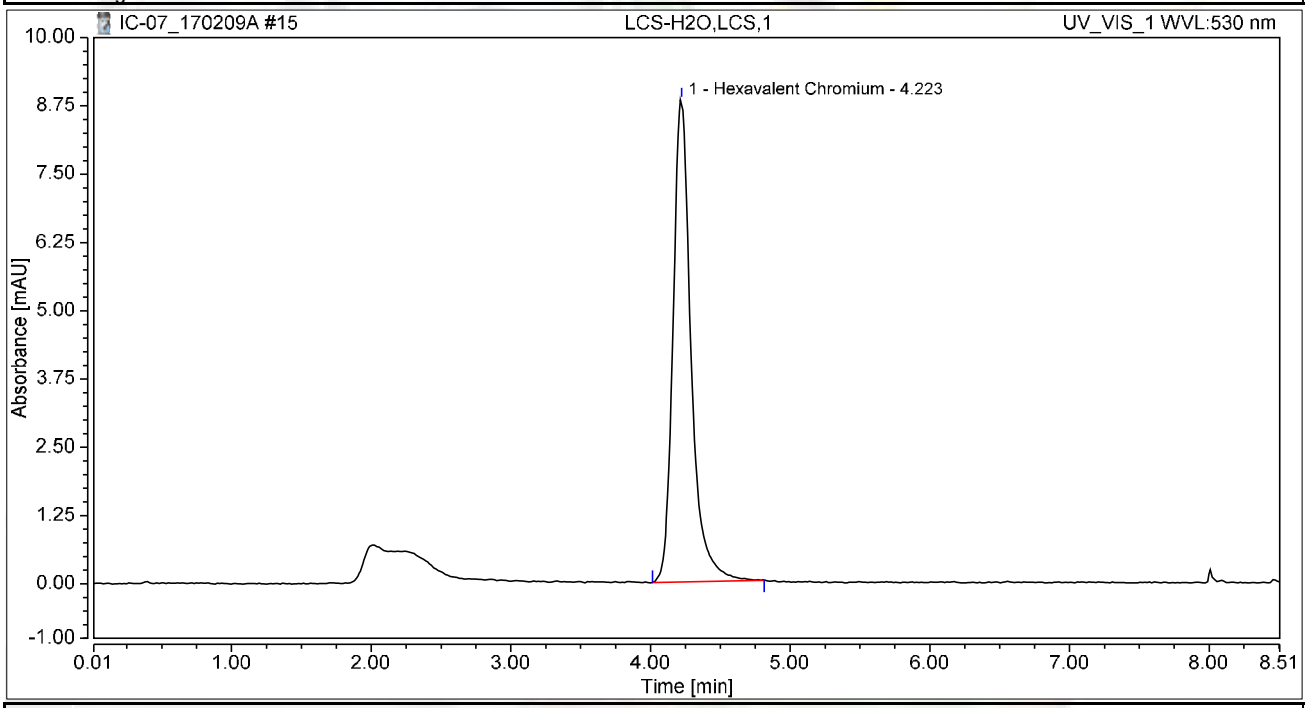
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

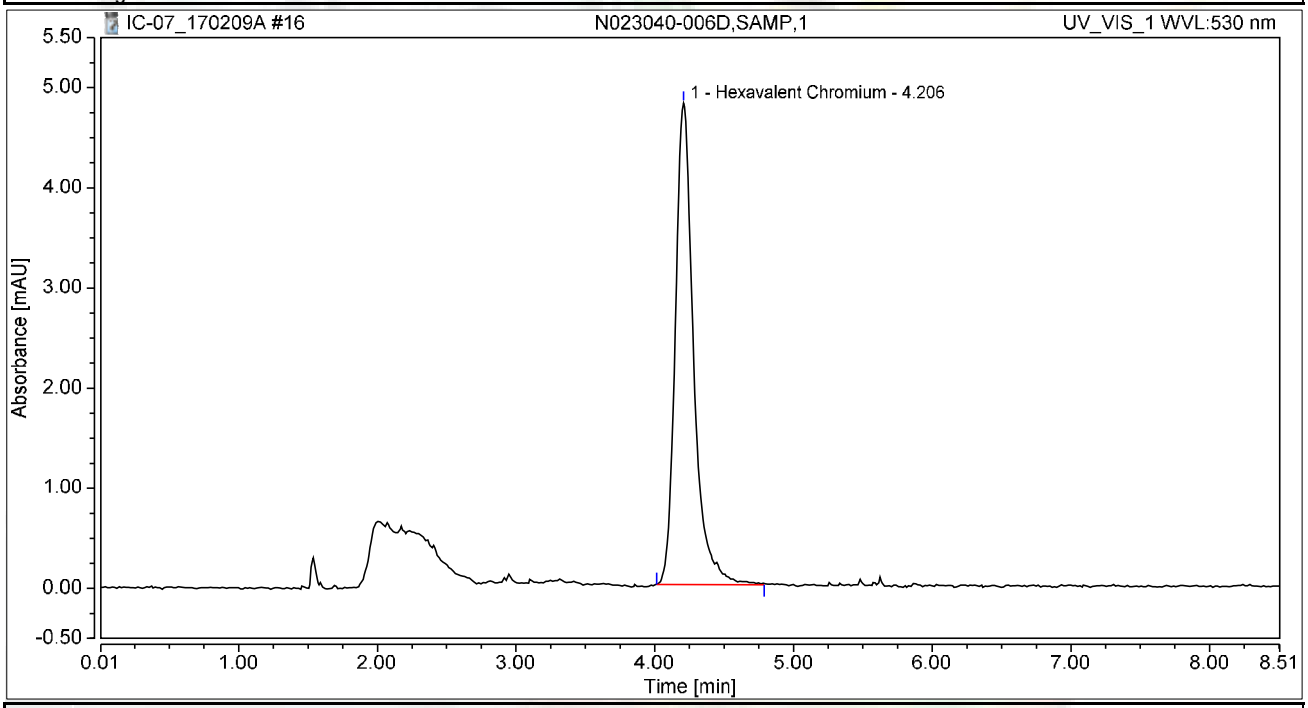
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.325	8.825	100.00	100.00	4.9947
Total:			**1.325**	**8.825**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-006D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

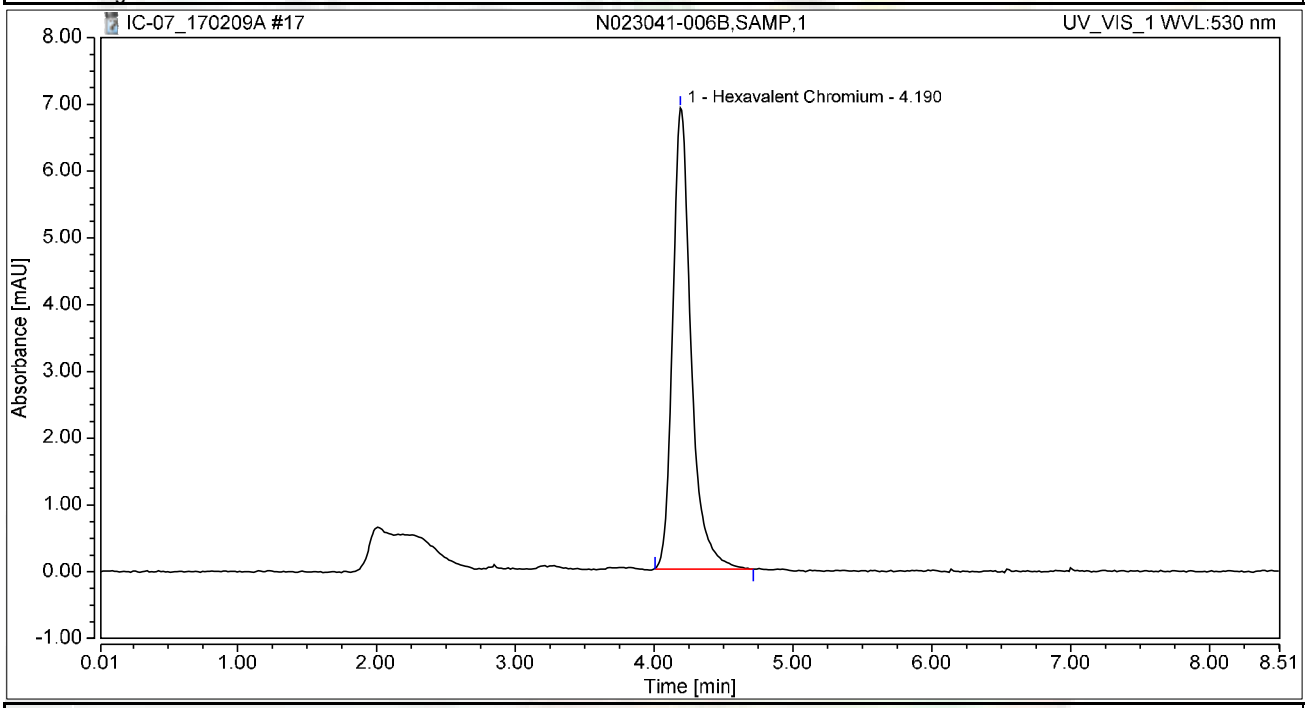
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.735	4.807	100.00	100.00	2.7703
Total:			**0.735**	**4.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-006B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

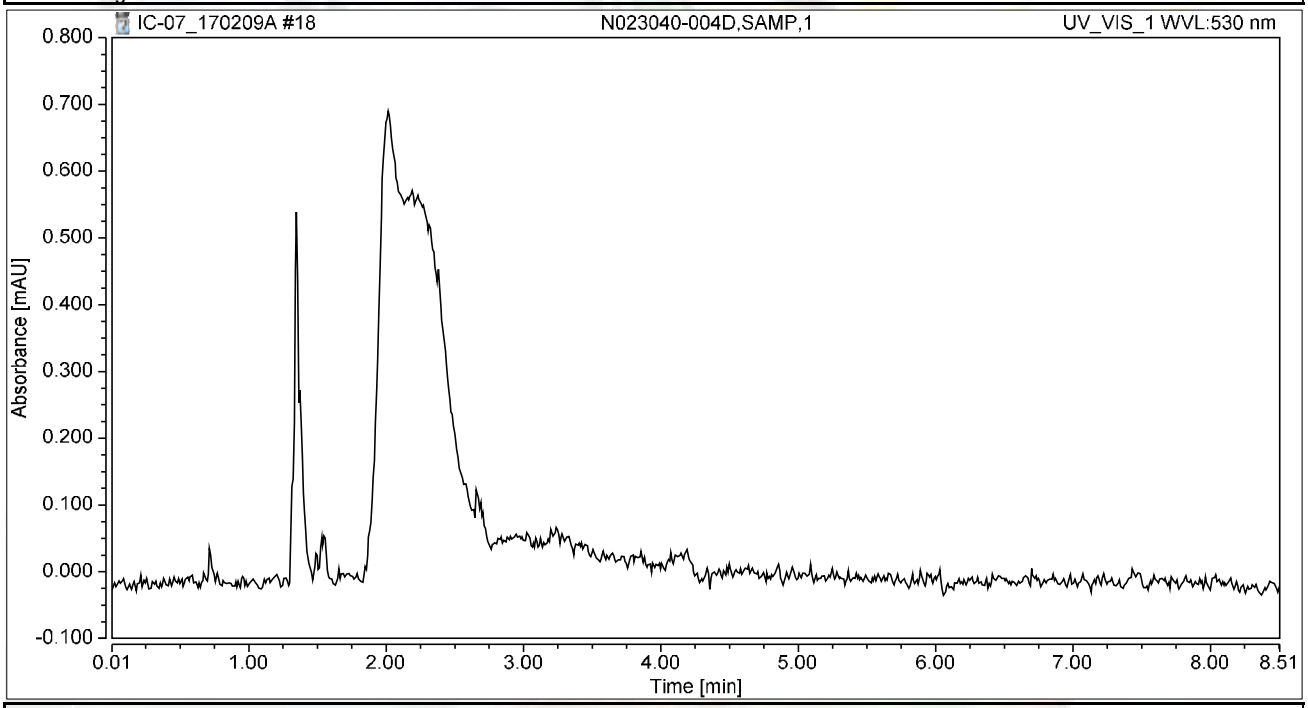
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.060	6.904	100.00	100.00	3.9961
Total:			**1.060**	**6.904**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-004D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

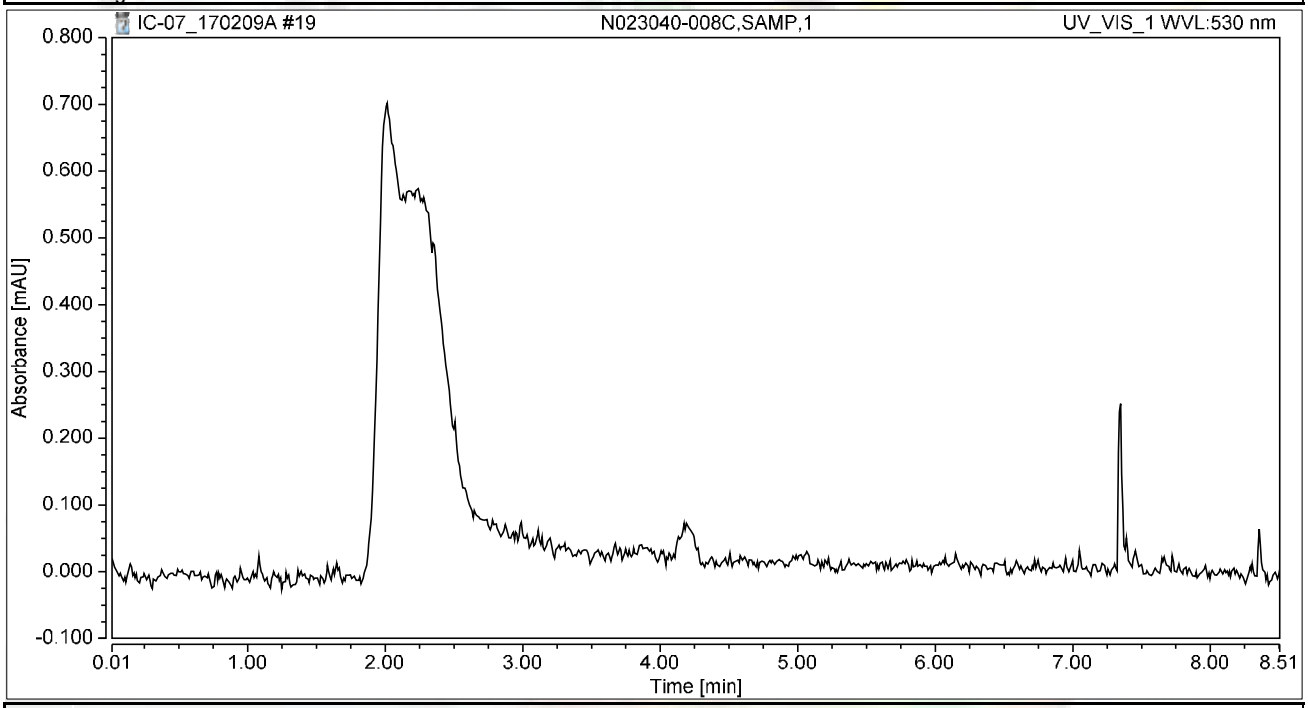
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-008C,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

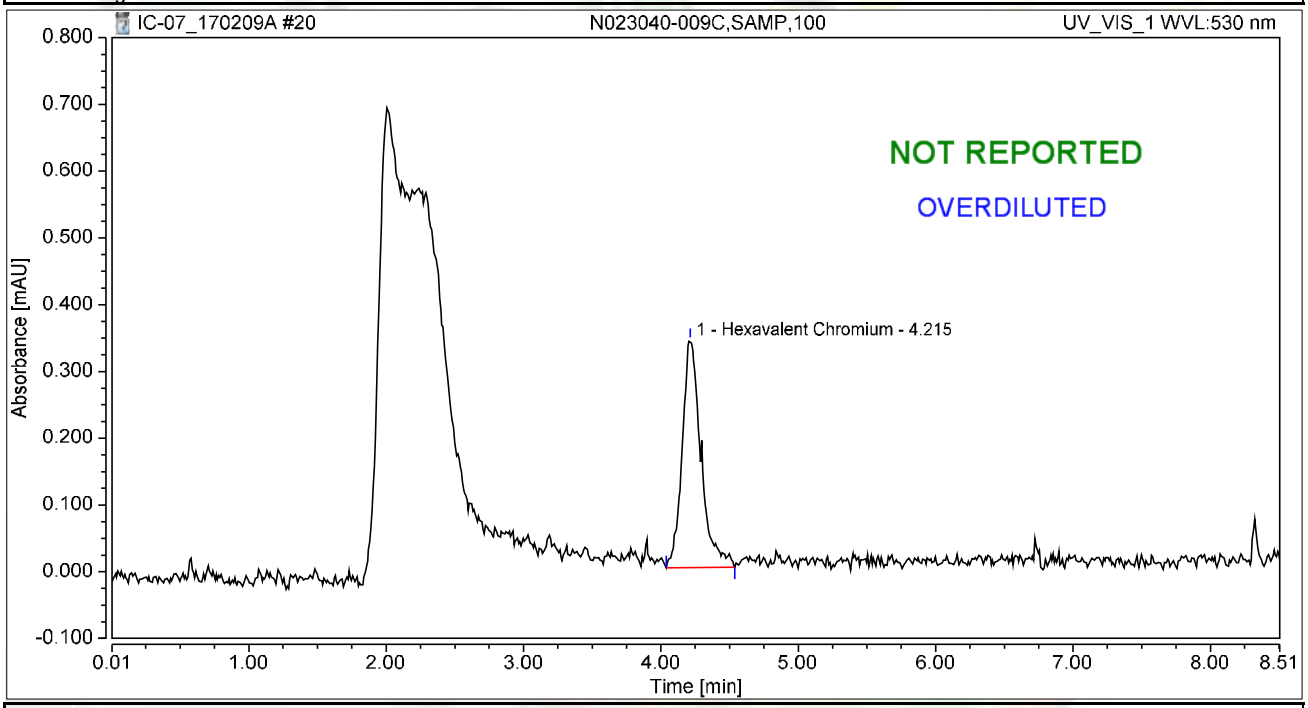
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009C,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

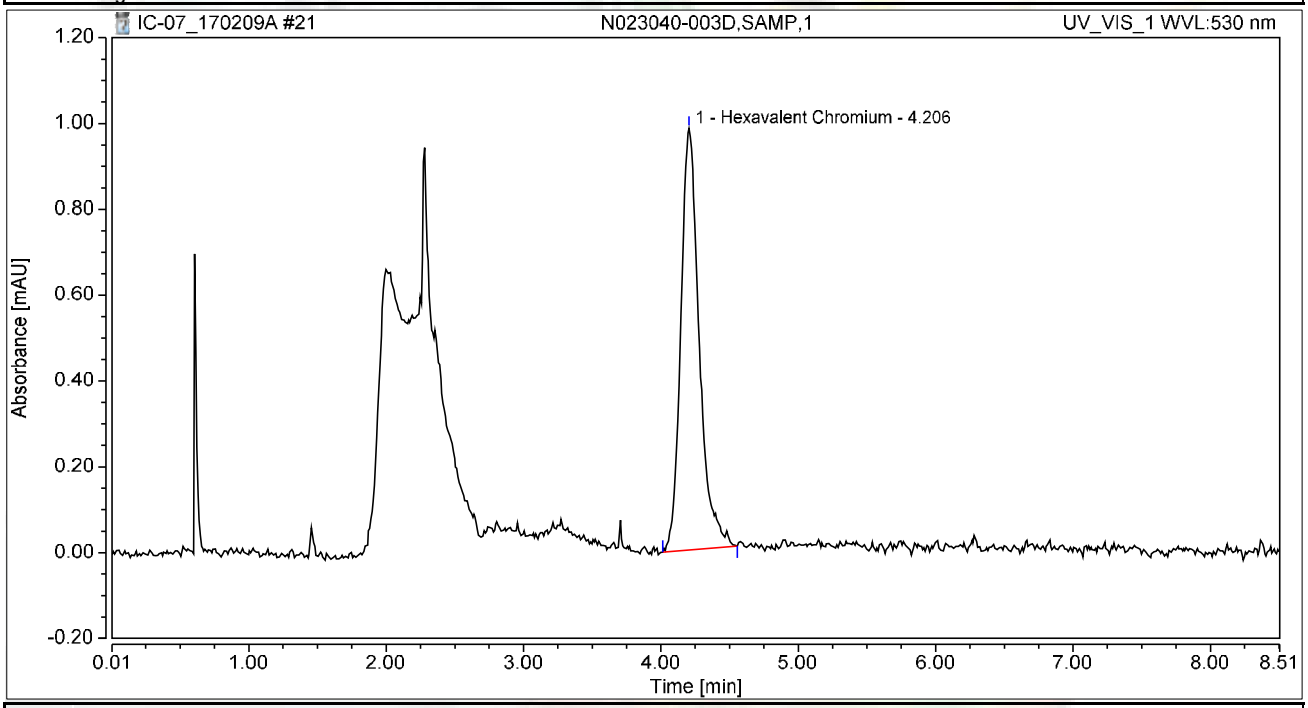
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.054	0.340	100.00	100.00	0.2052
Total:			**0.054**	**0.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-003D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

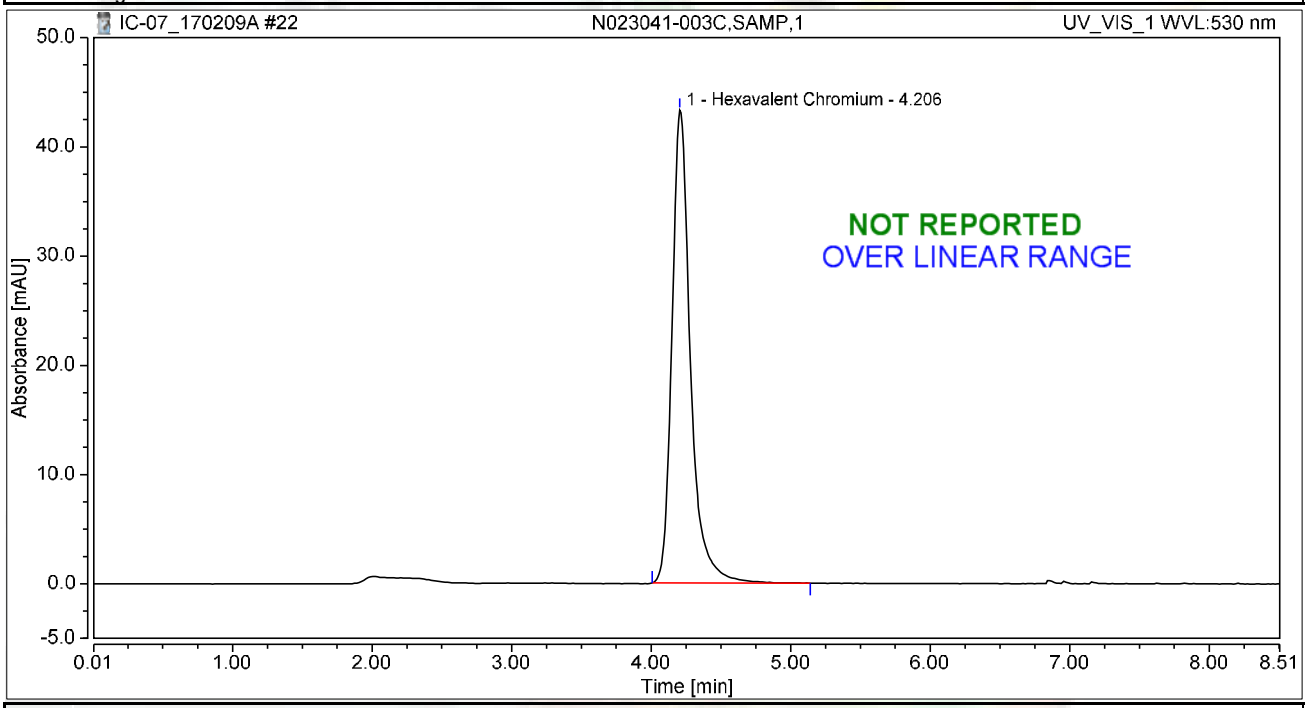
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.153	0.982	100.00	100.00	0.5762
Total:			**0.153**	**0.982**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003C,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

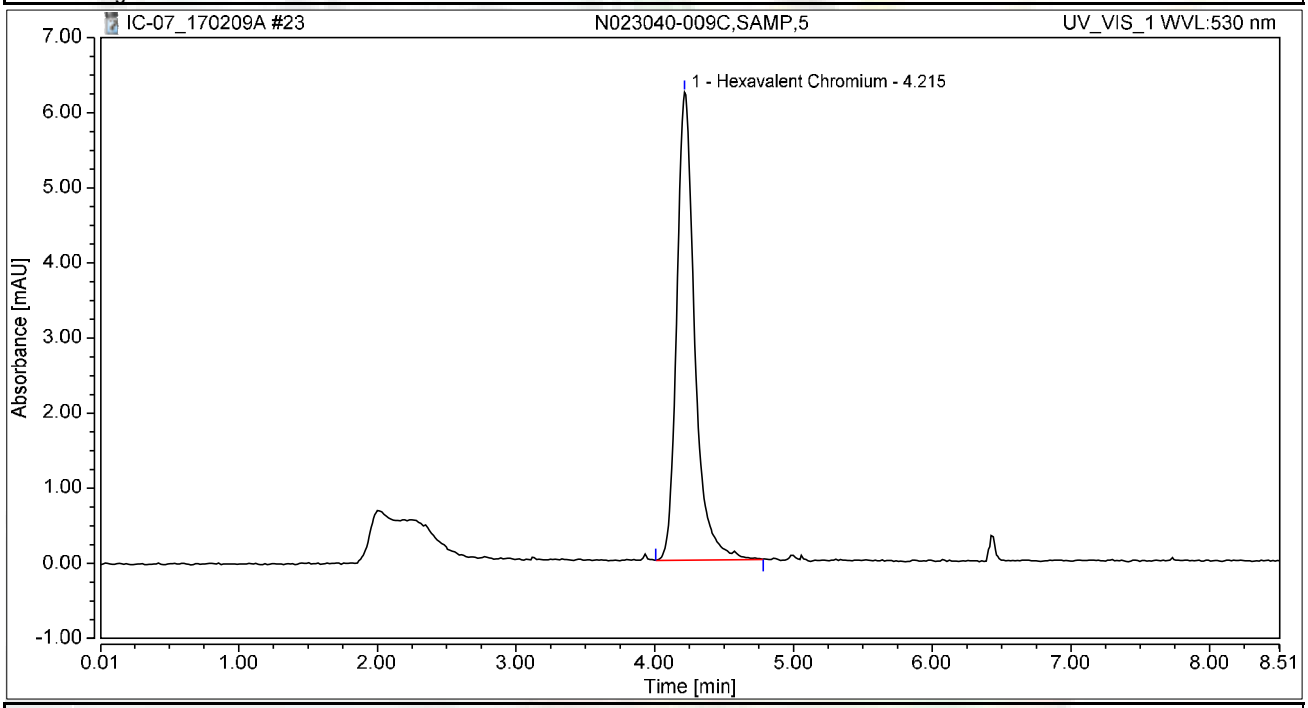
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	6.642	43.284	100.00	100.00	25.0427
Total:			**6.642**	**43.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009C,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

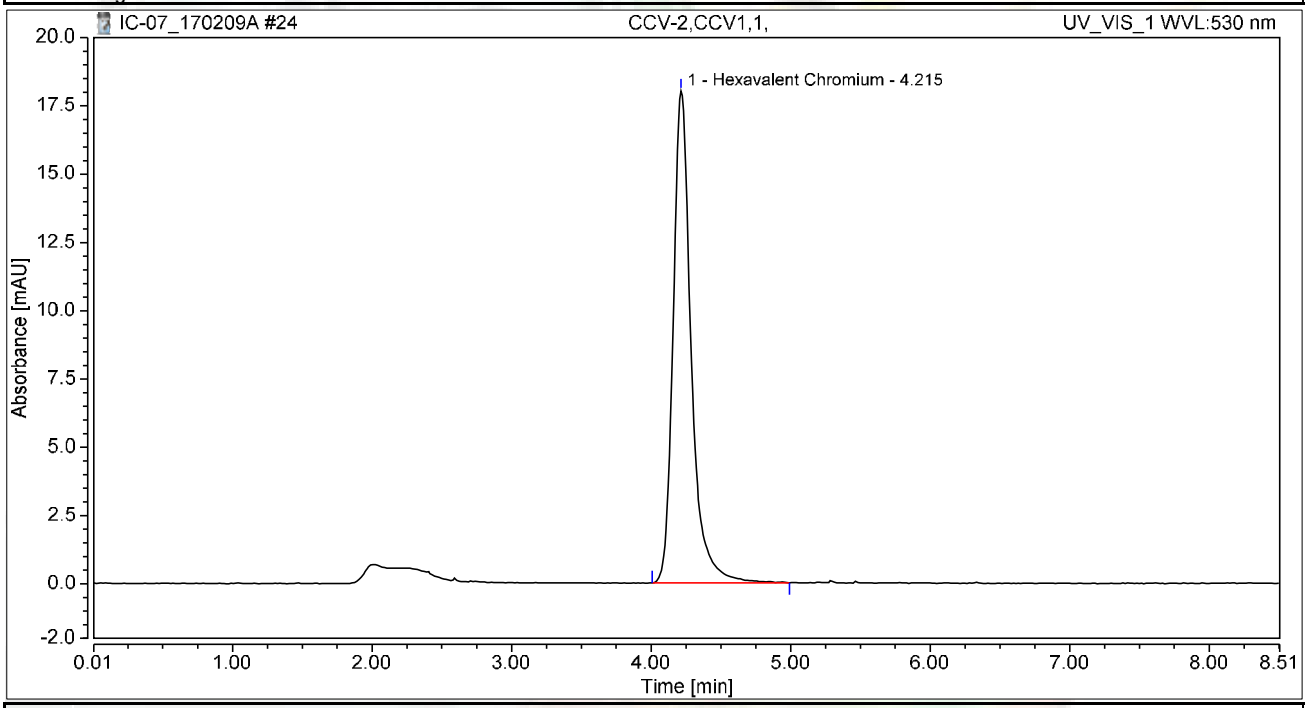
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.936	6.228	100.00	100.00	3.5275
Total:			**0.936**	**6.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

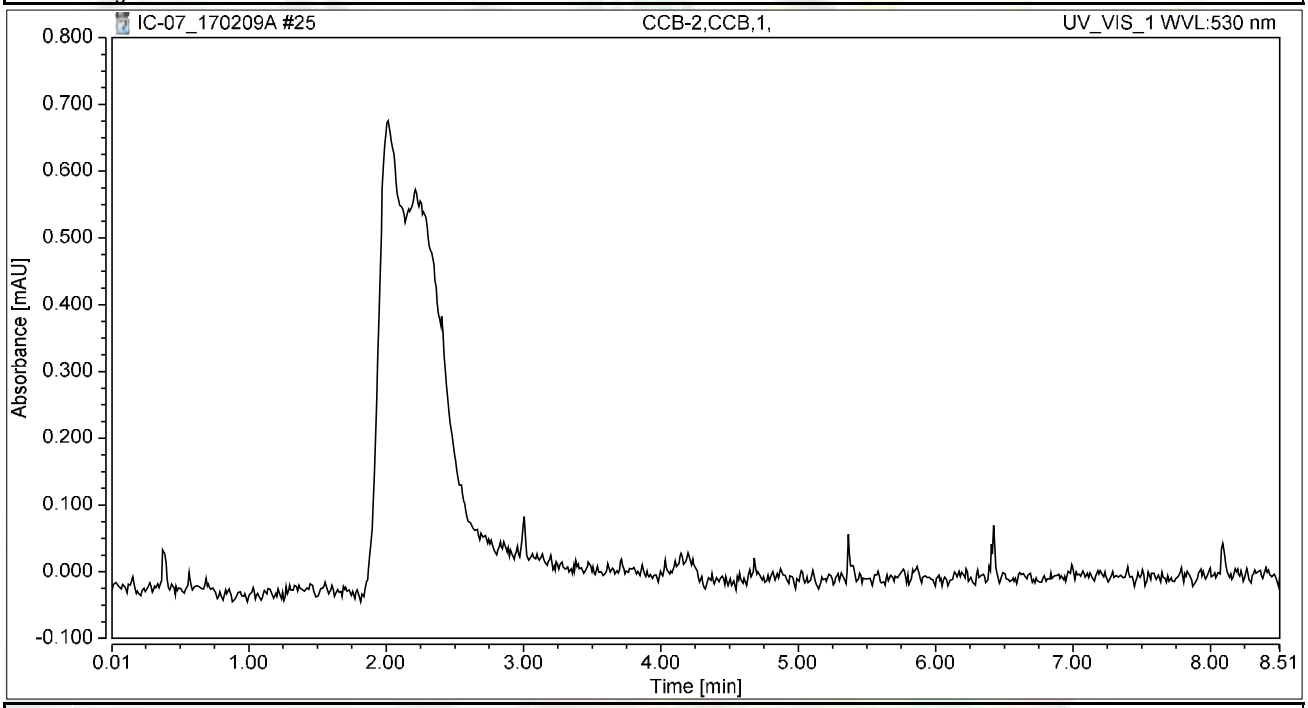
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.694	18.004	100.00	100.00	10.1579
Total:			**2.694**	**18.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

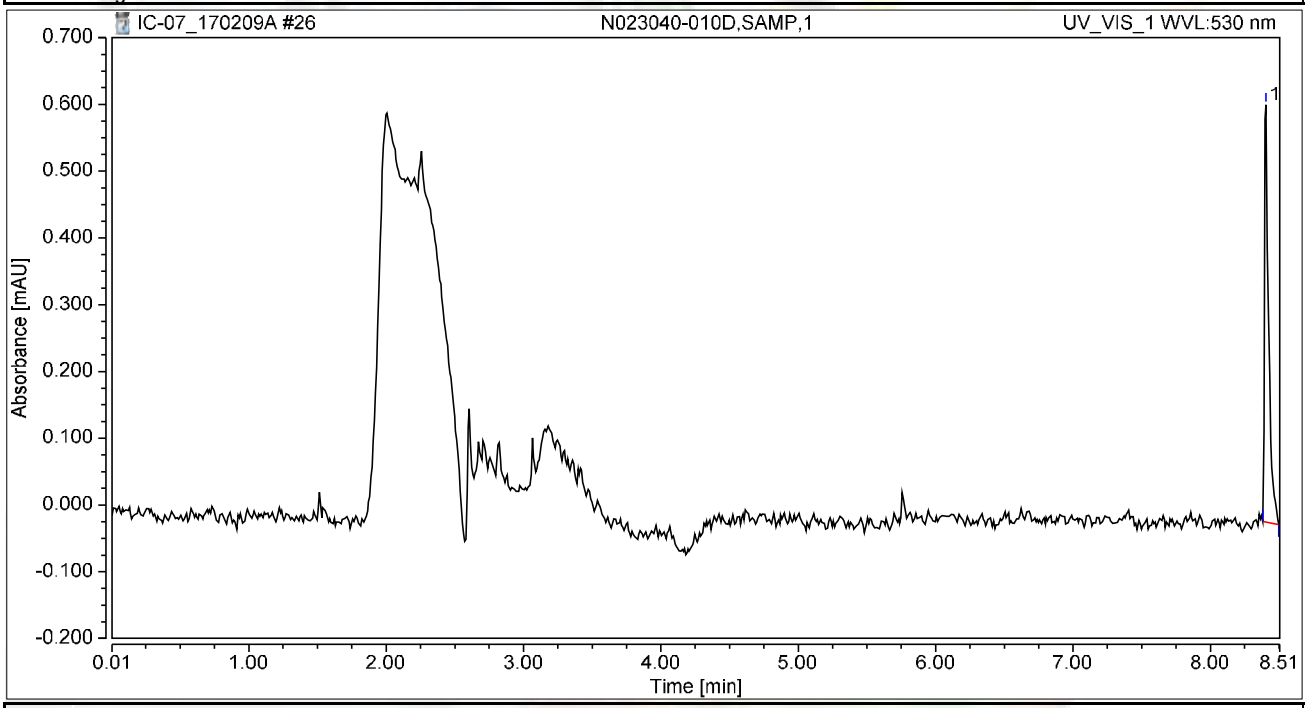
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

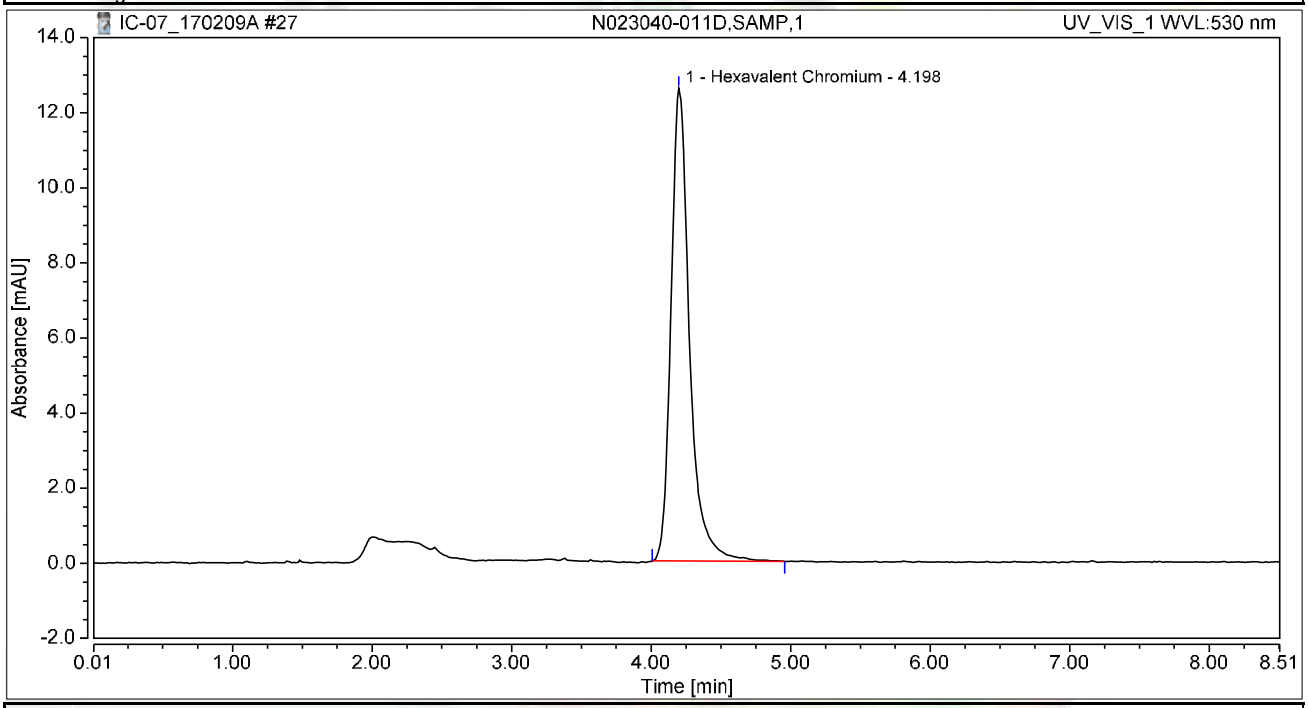
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.406	0.022	0.625	100.00	100.00	n.a.
Total:			**0.022**	**0.625**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-011D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

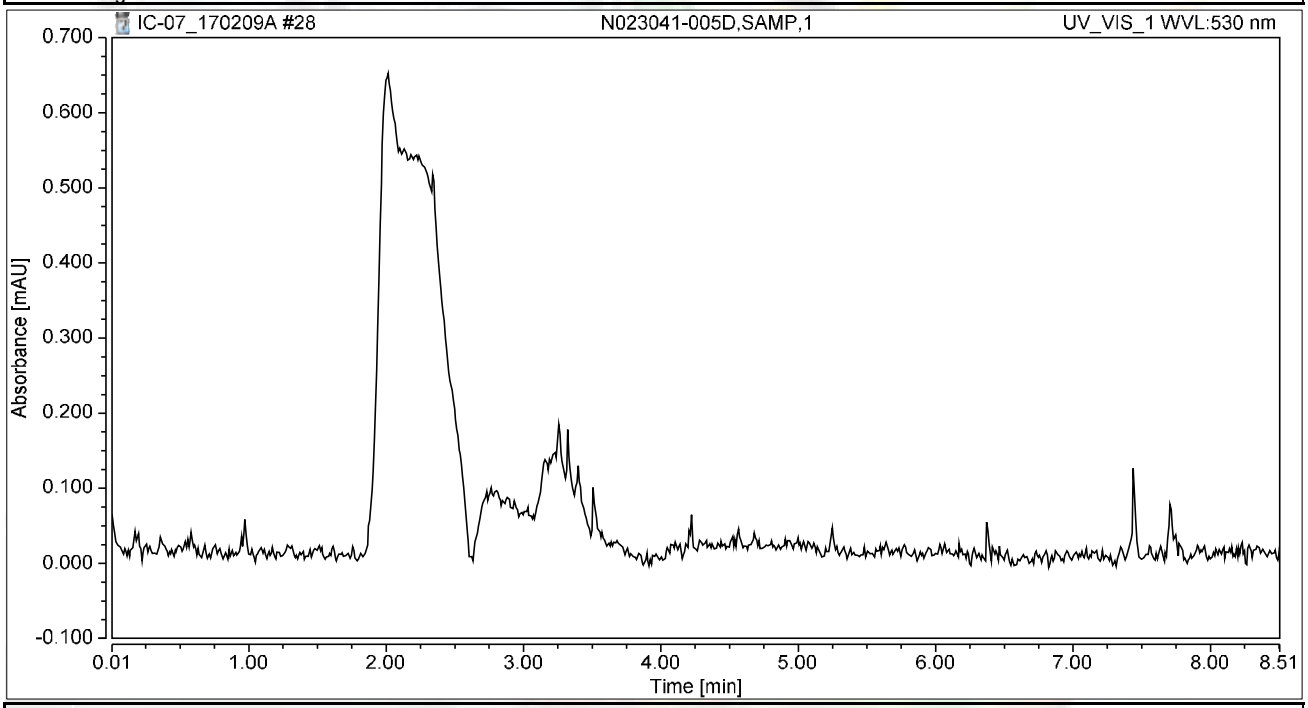
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.936	12.593	100.00	100.00	7.2995
Total:			**1.936**	**12.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

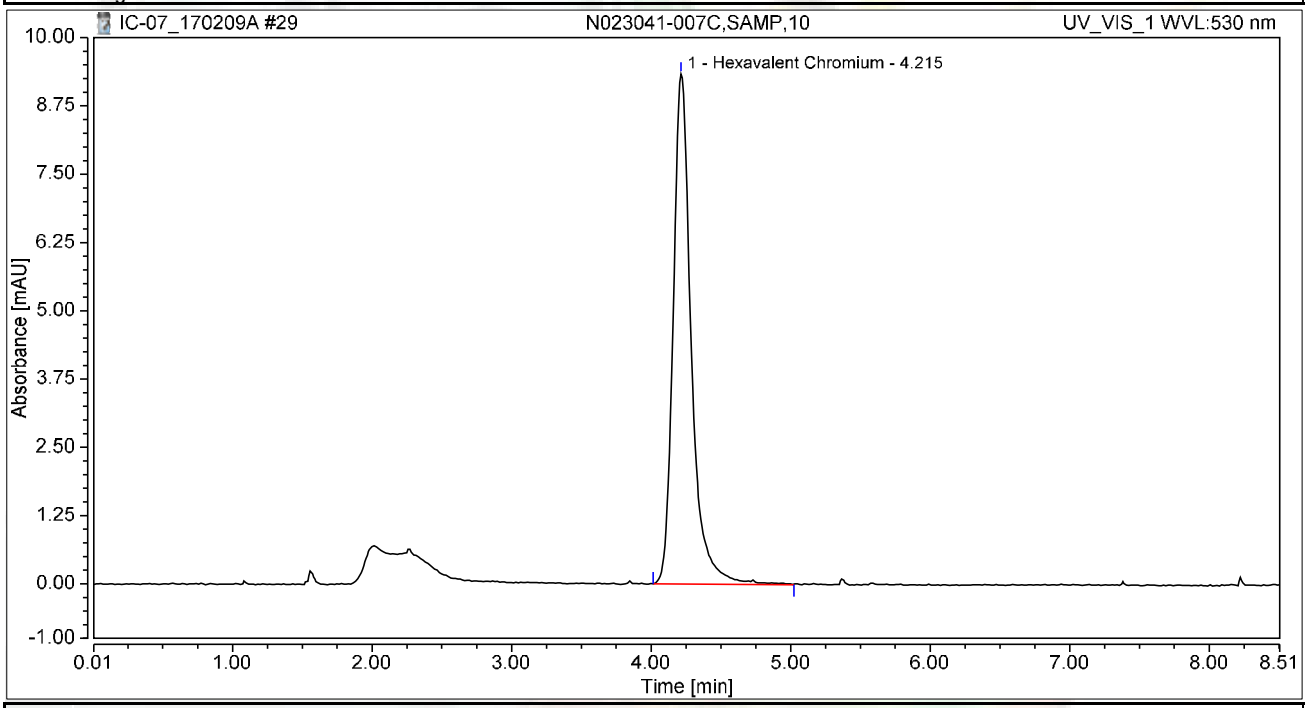
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-007C,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

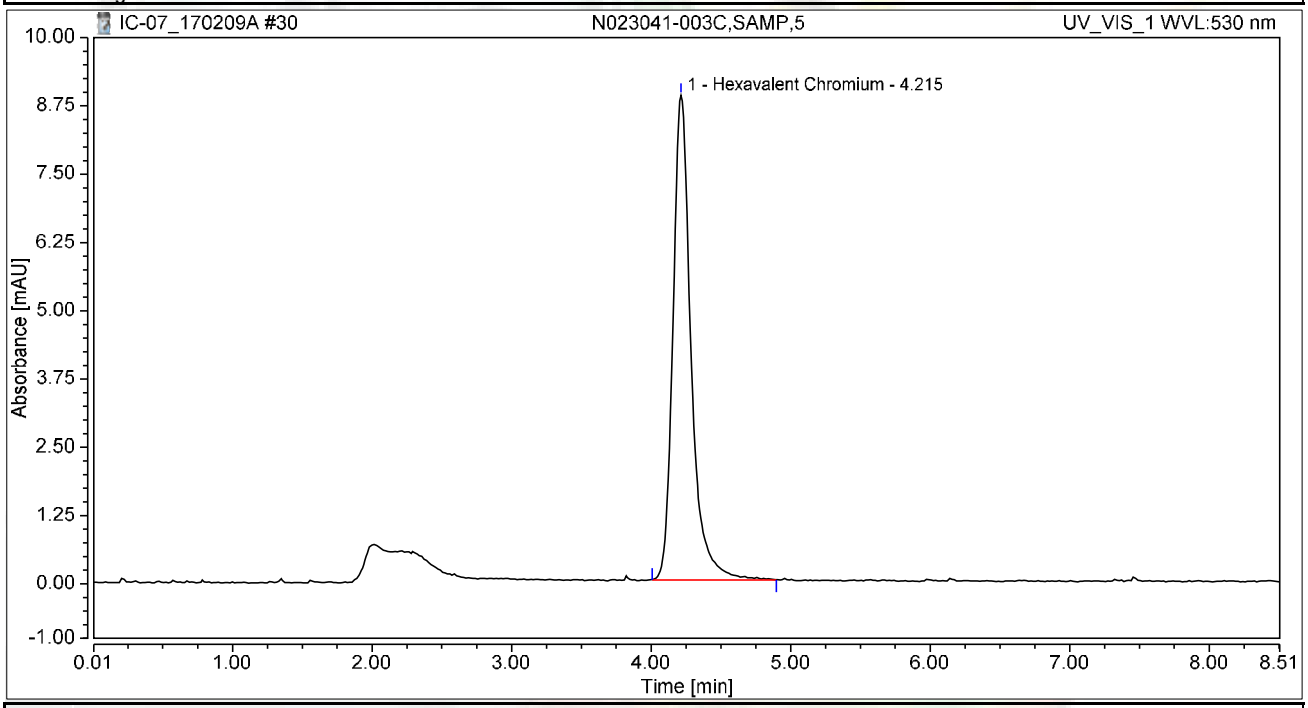
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.401	9.336	100.00	100.00	5.2828
Total:			**1.401**	**9.336**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003C,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

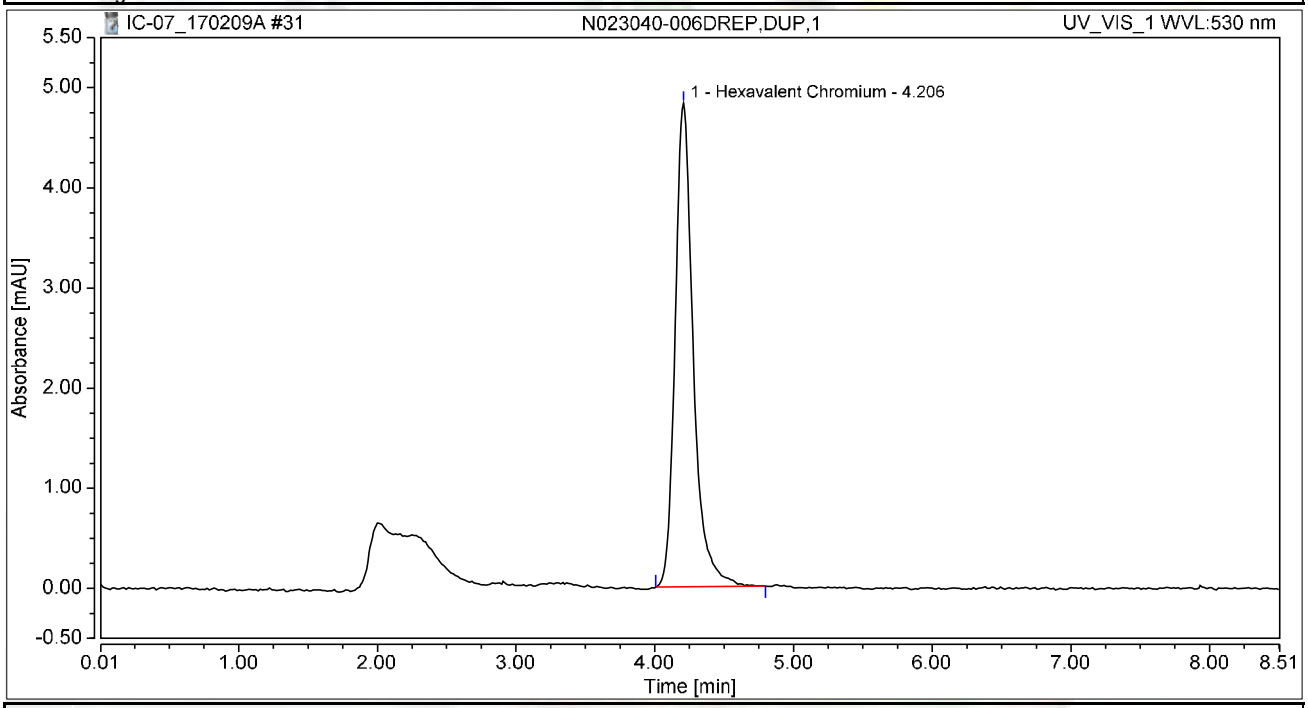
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.336	8.875	100.00	100.00	5.0365
Total:			**1.336**	**8.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-006DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

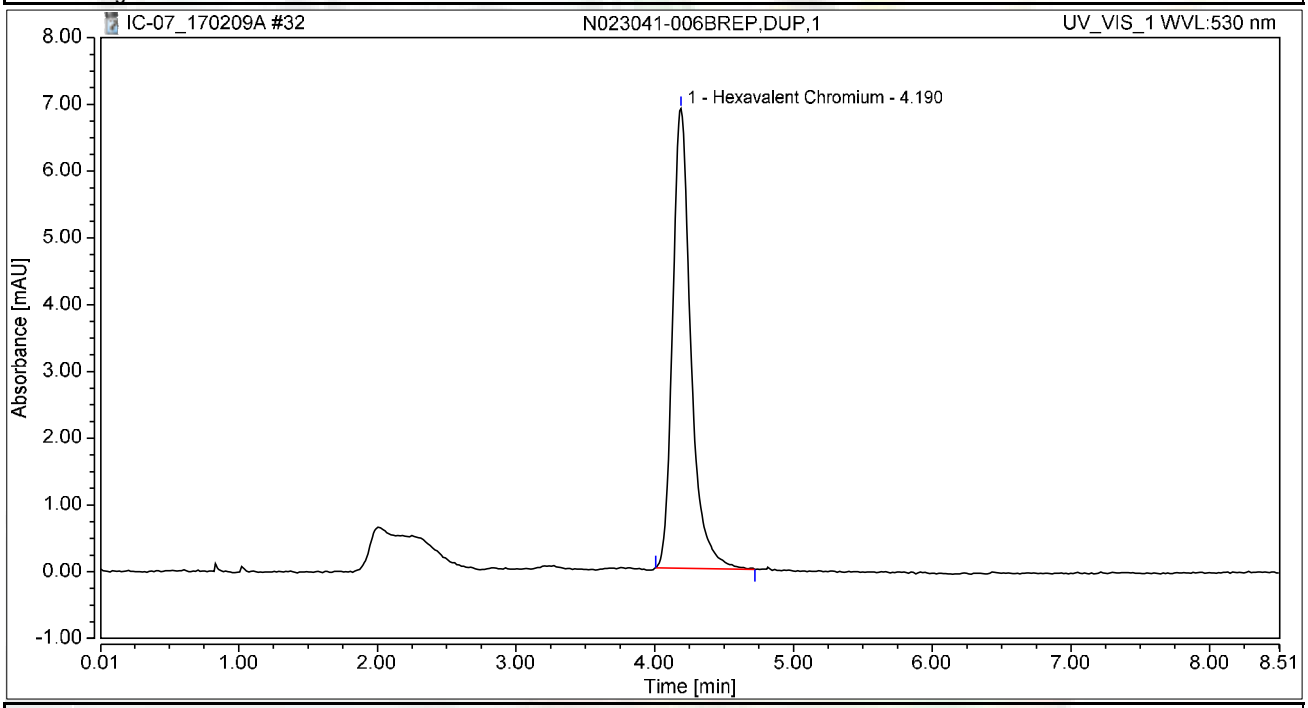
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.730	4.827	100.00	100.00	2.7525
Total:			**0.730**	**4.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-006BREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

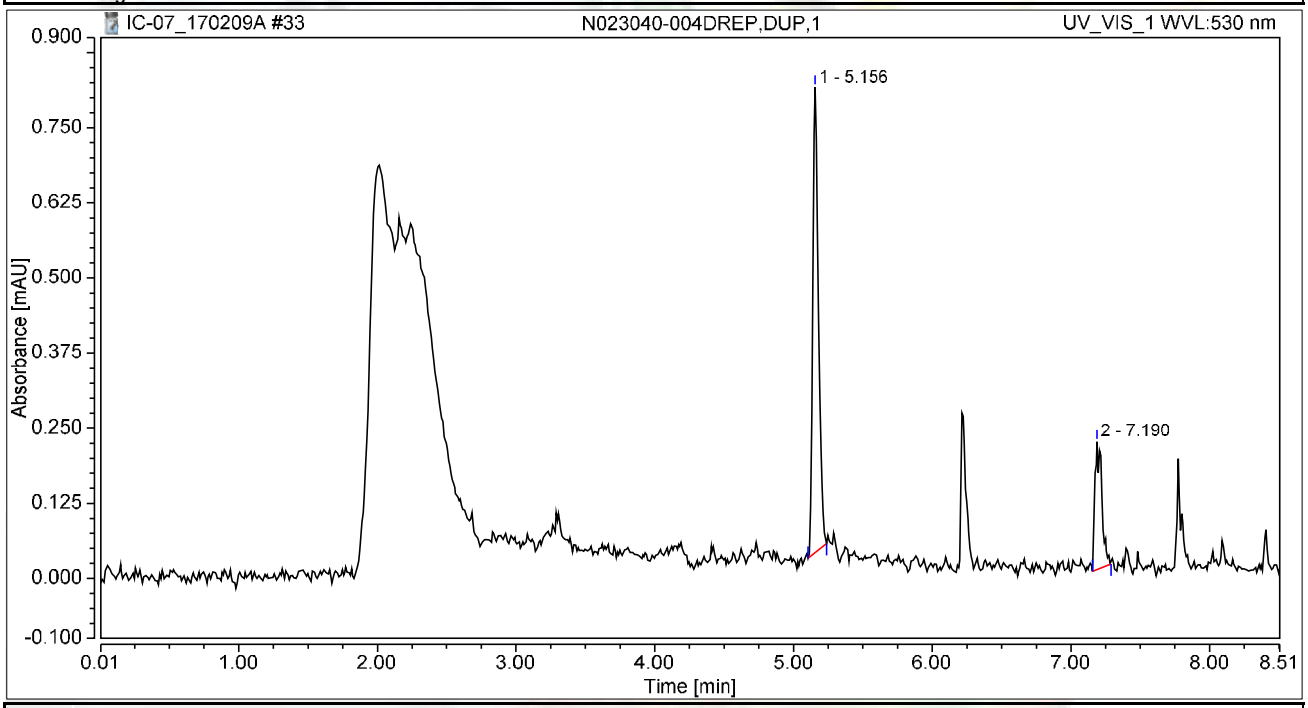
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.052	6.886	100.00	100.00	3.9655
Total:			**1.052**	**6.886**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-004DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

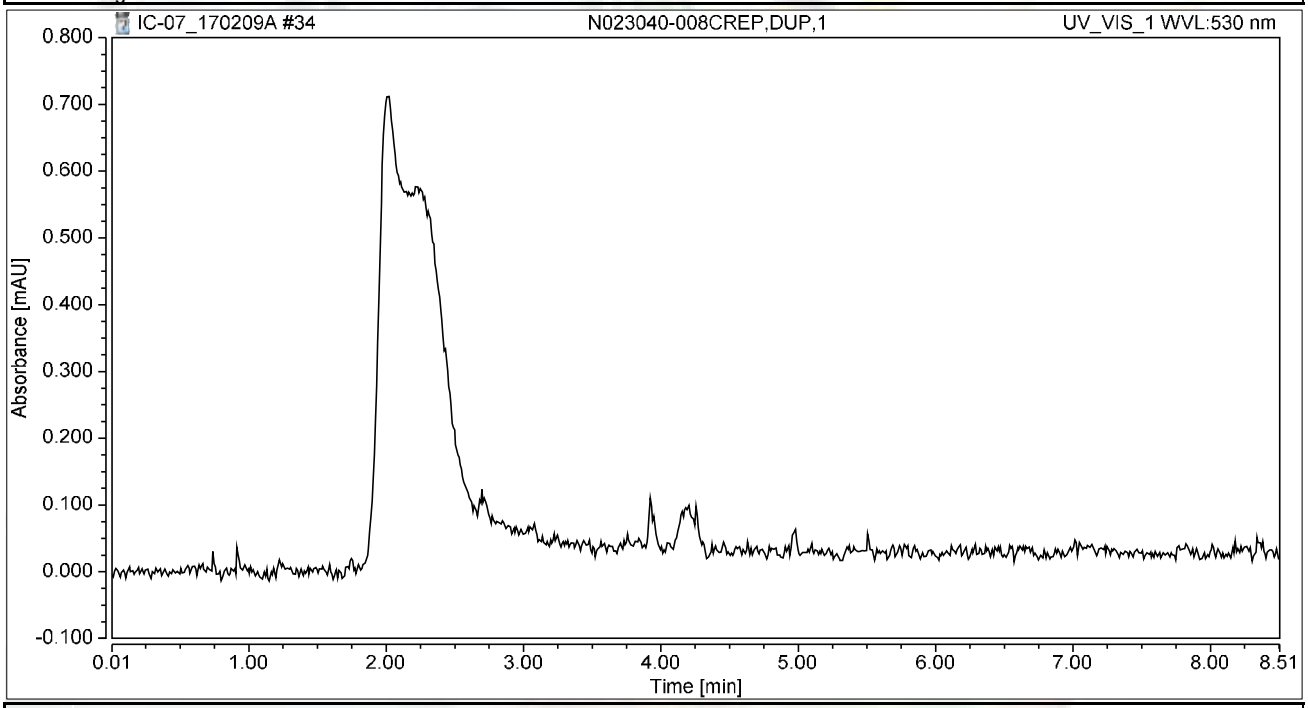
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.156	0.037	0.774	74.80	78.45	n.a.
2		7.190	0.013	0.213	25.20	21.55	n.a.
Total:			**0.050**	**0.987**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-008CREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

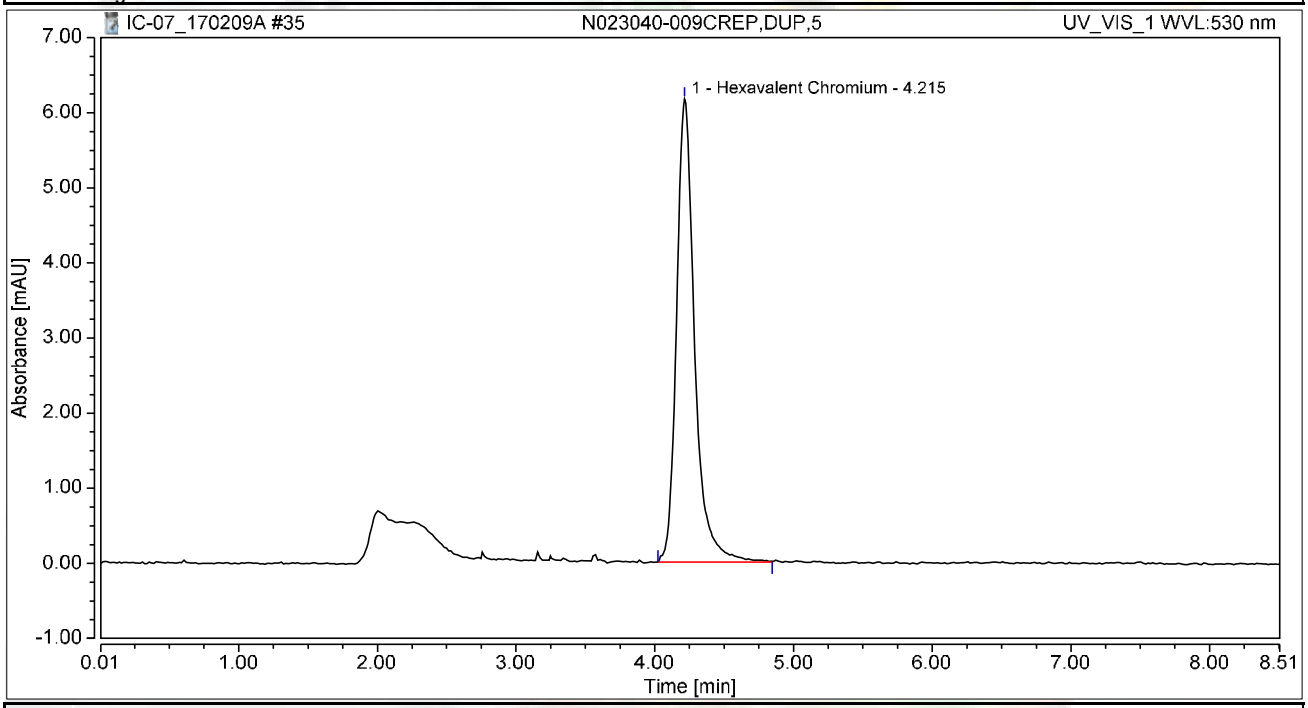
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009CREP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

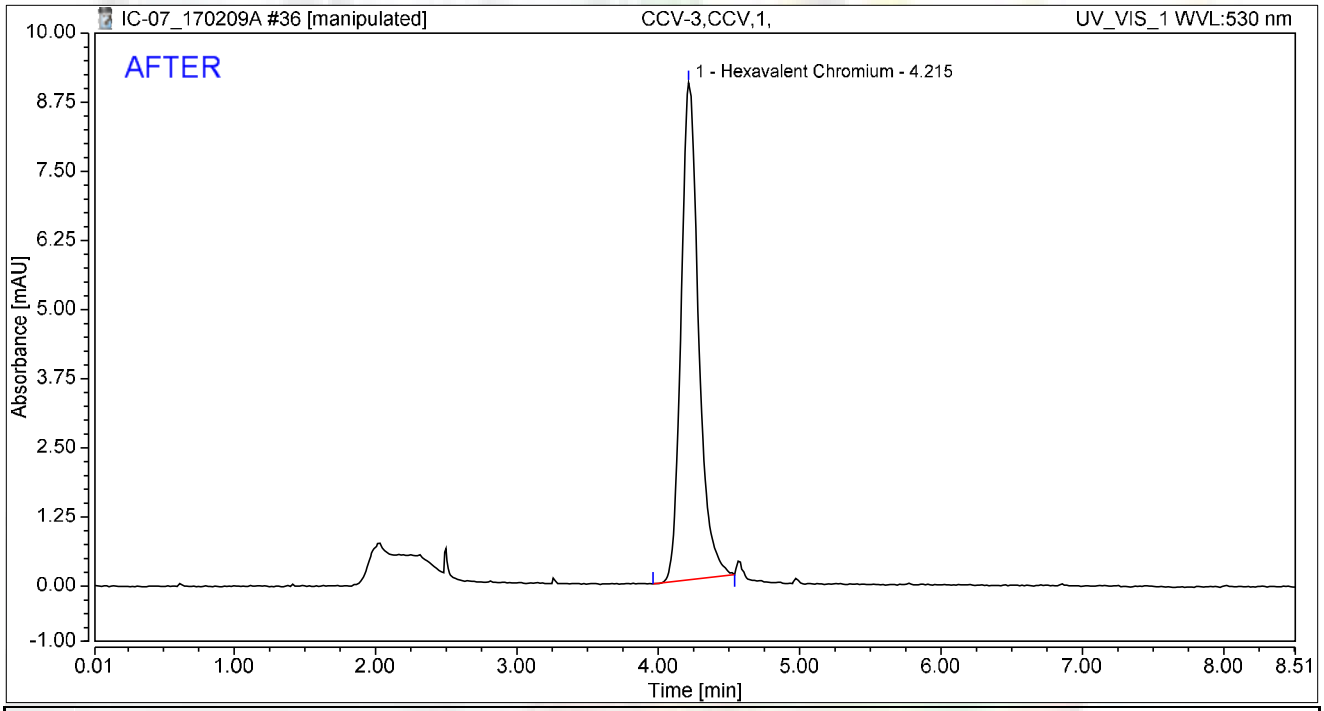
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.929	6.166	100.00	100.00	3.5035
Total:			**0.929**	**6.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.295	8.986	100.00	100.00	4.8808
Total:			**1.295**	**8.986**	**100.00**	**100.00**	

rba 2/14/2017

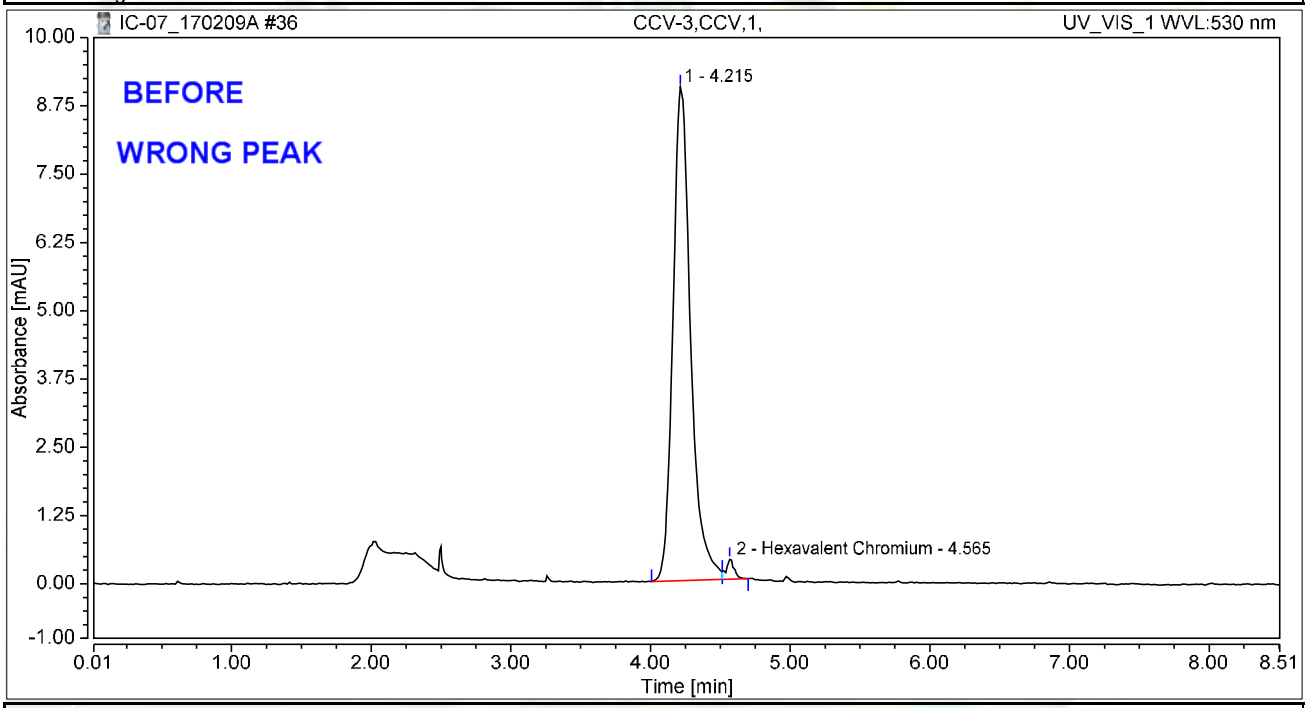
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.215	1.327	9.041	98.17	96.10	n.a.
2	Hexavalent Chromium	4.565	0.025	0.366	1.83	3.90	0.0931
Total:			**1.352**	**9.407**	**100.00**	**100.00**	

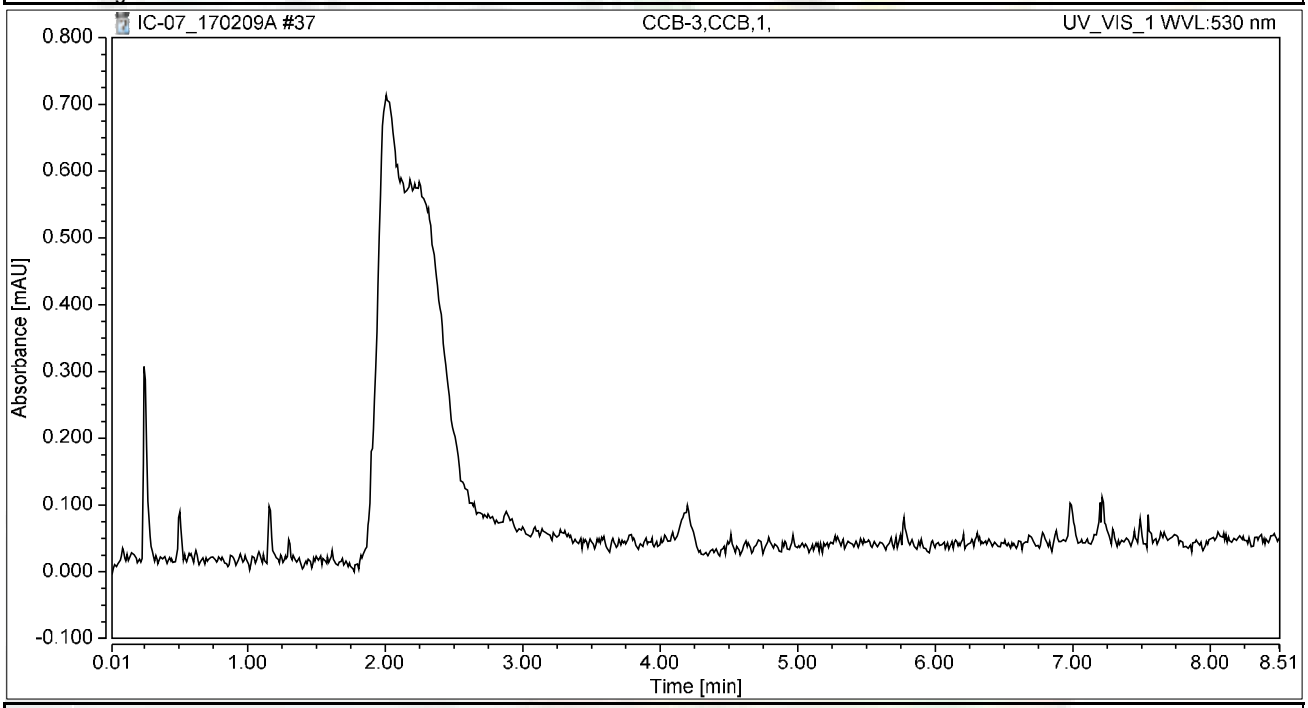
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

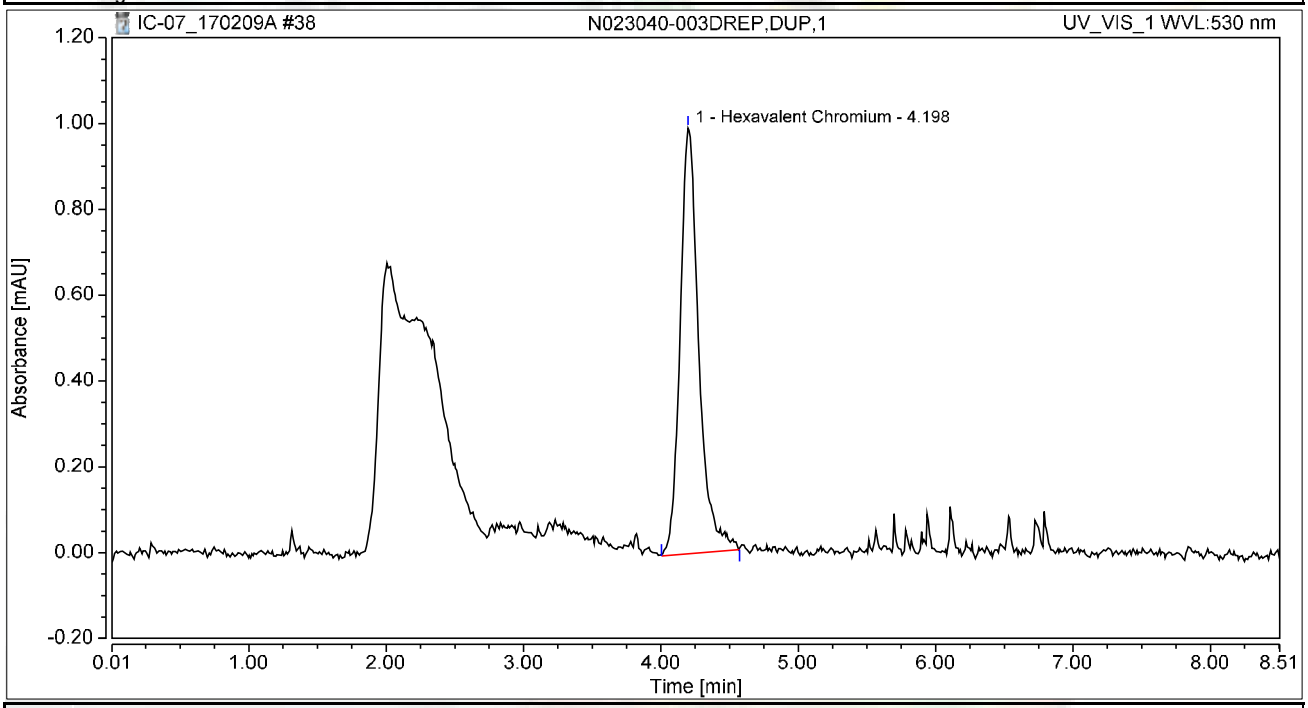
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-003DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

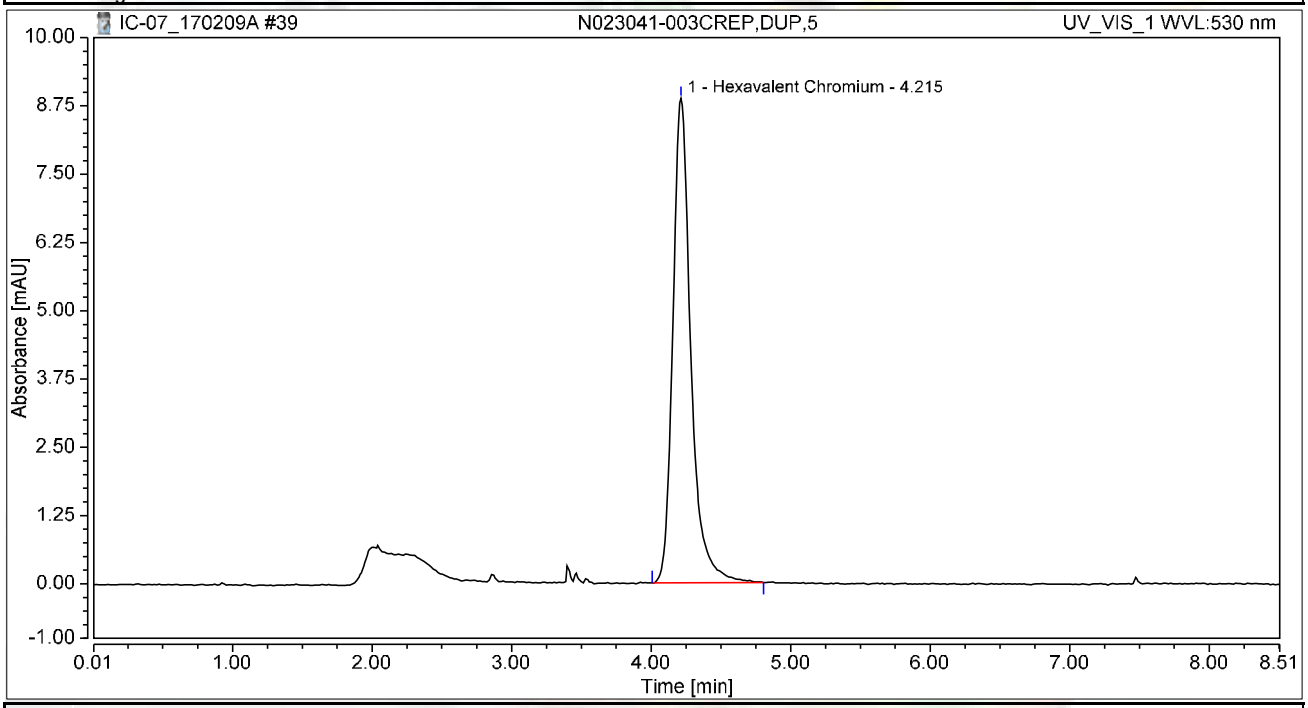
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.157	0.993	100.00	100.00	0.5906
Total:			**0.157**	**0.993**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003CREP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

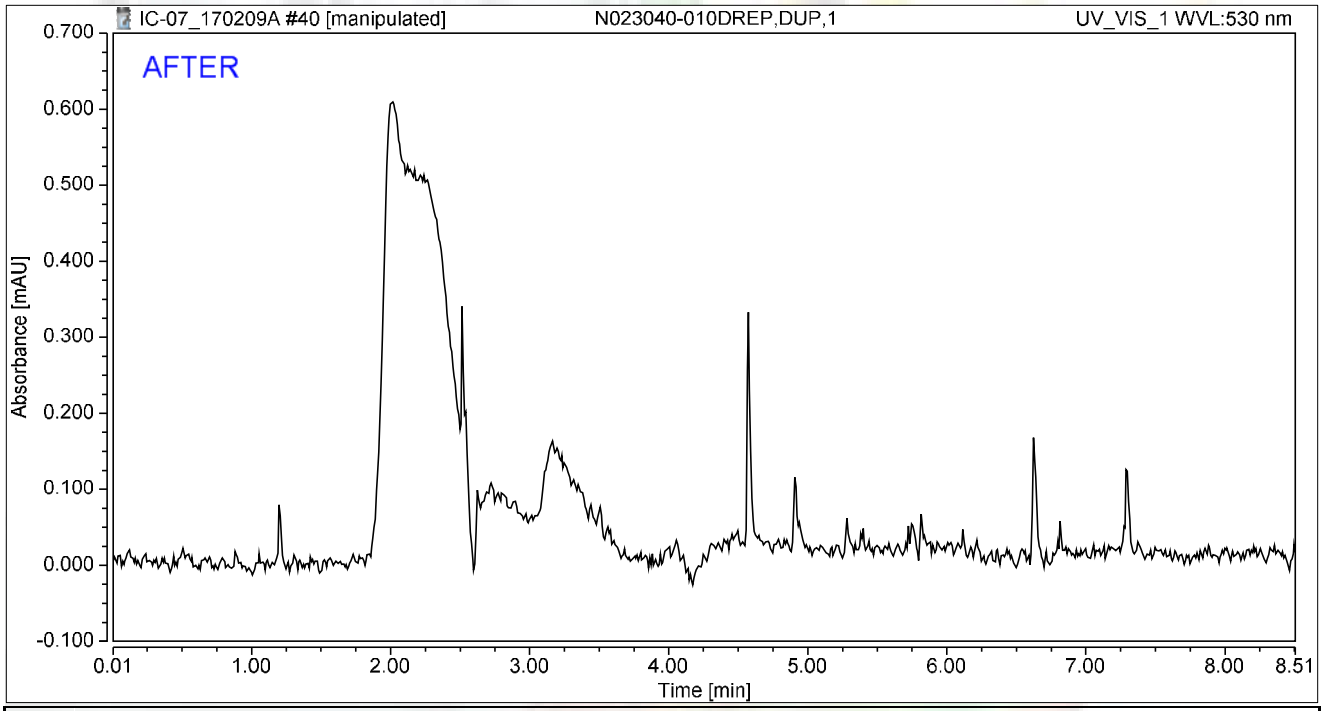
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.322	8.868	100.00	100.00	4.9847
Total:			**1.322**	**8.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

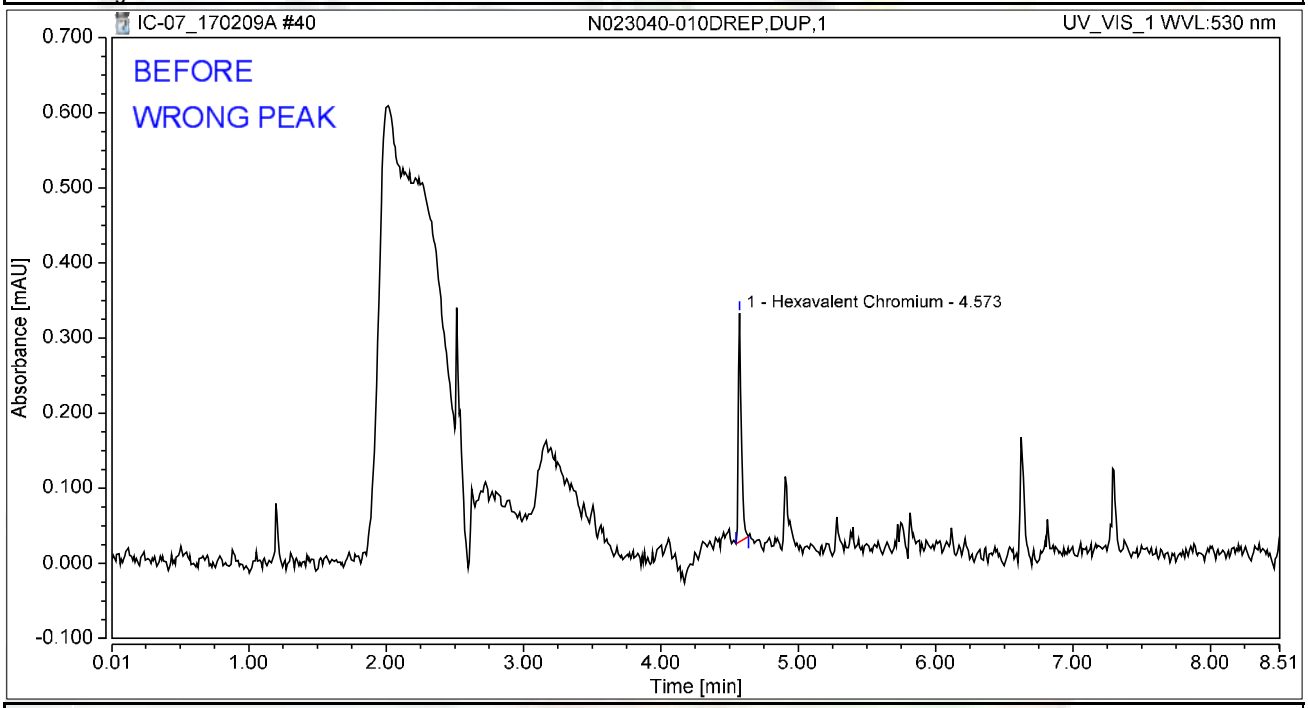
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.573	0.008	0.305	100.00	100.00	0.0308
Total:			**0.008**	**0.305**	**100.00**	**100.00**	

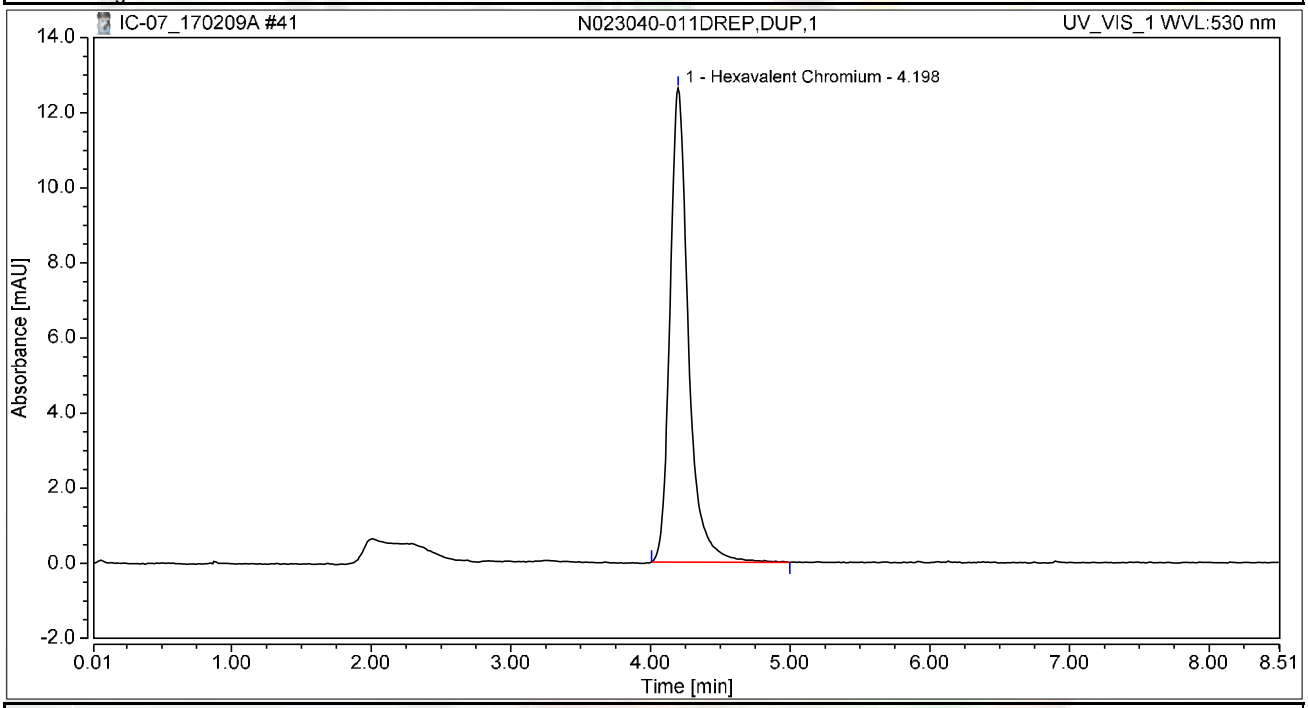
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-011DREP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

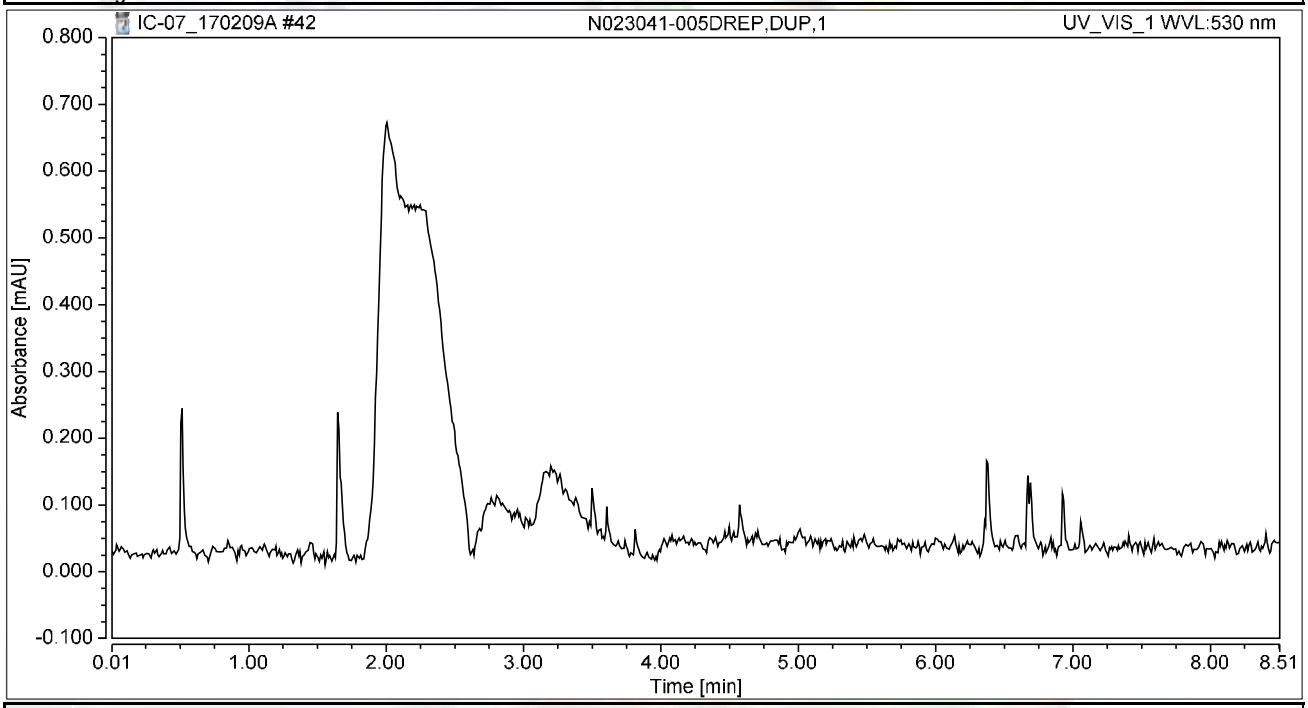
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.933	12.620	100.00	100.00	7.2863
Total:			**1.933**	**12.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

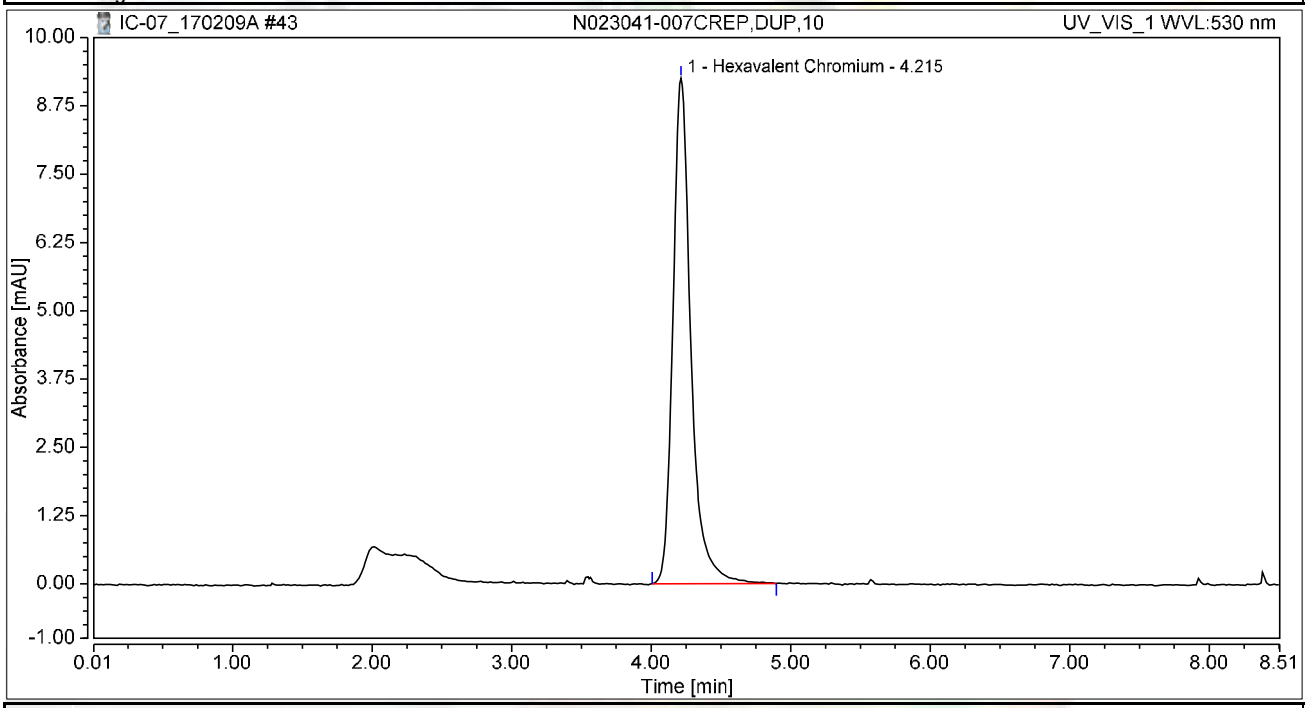
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-007CREP,DUP,10**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

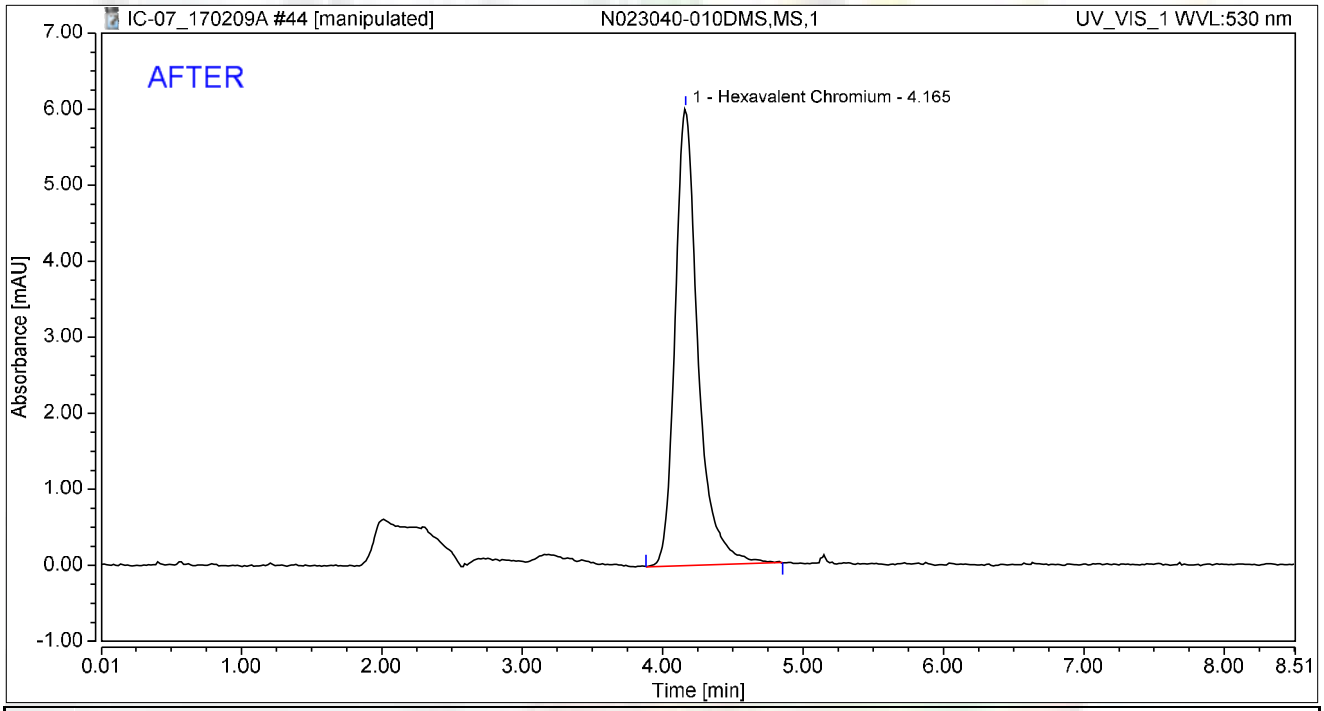
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.382	9.262	100.00	100.00	5.2119
Total:			**1.382**	**9.262**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.136	6.012	100.00	100.00	4.2820
Total:			**1.136**	**6.012**	**100.00**	**100.00**	

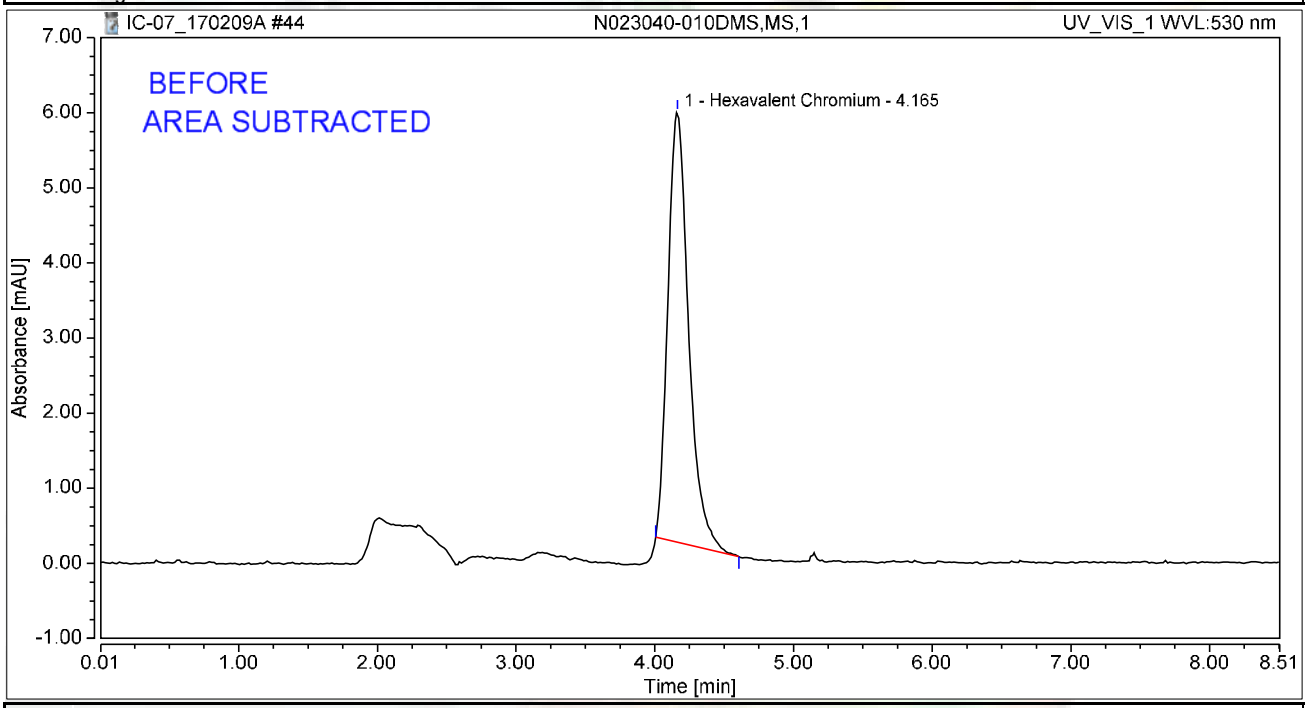
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.993	5.733	100.00	100.00	3.7453
Total:			**0.993**	**5.733**	**100.00**	**100.00**	

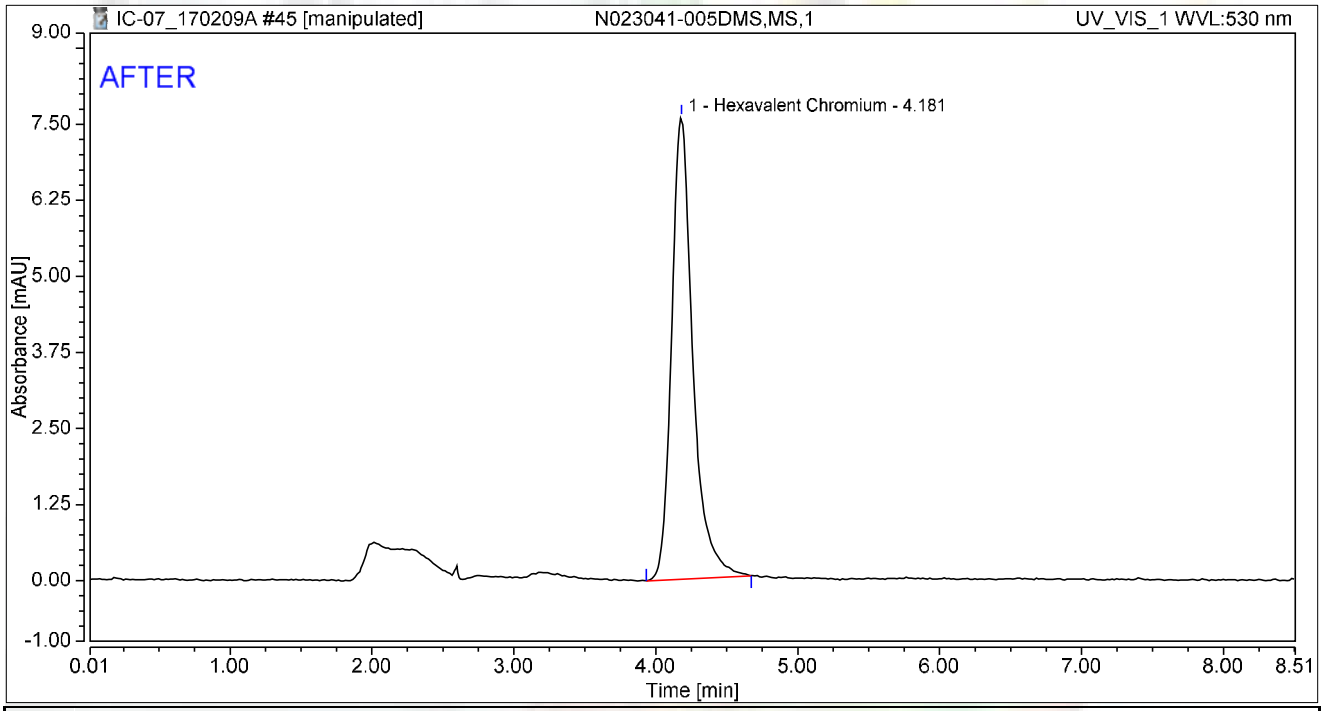
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.319	7.599	100.00	100.00	4.9729
Total:			**1.319**	**7.599**	**100.00**	**100.00**	

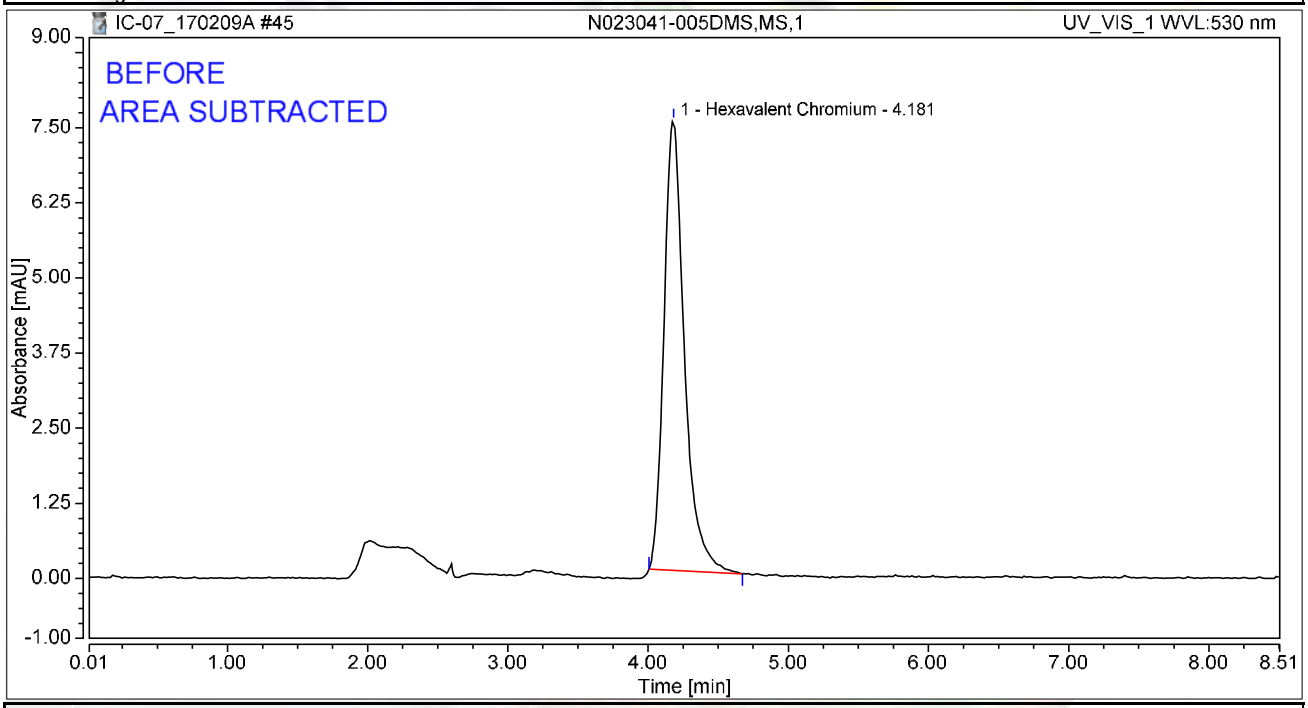
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.264	7.485	100.00	100.00	4.7673
Total:			**1.264**	**7.485**	**100.00**	**100.00**	

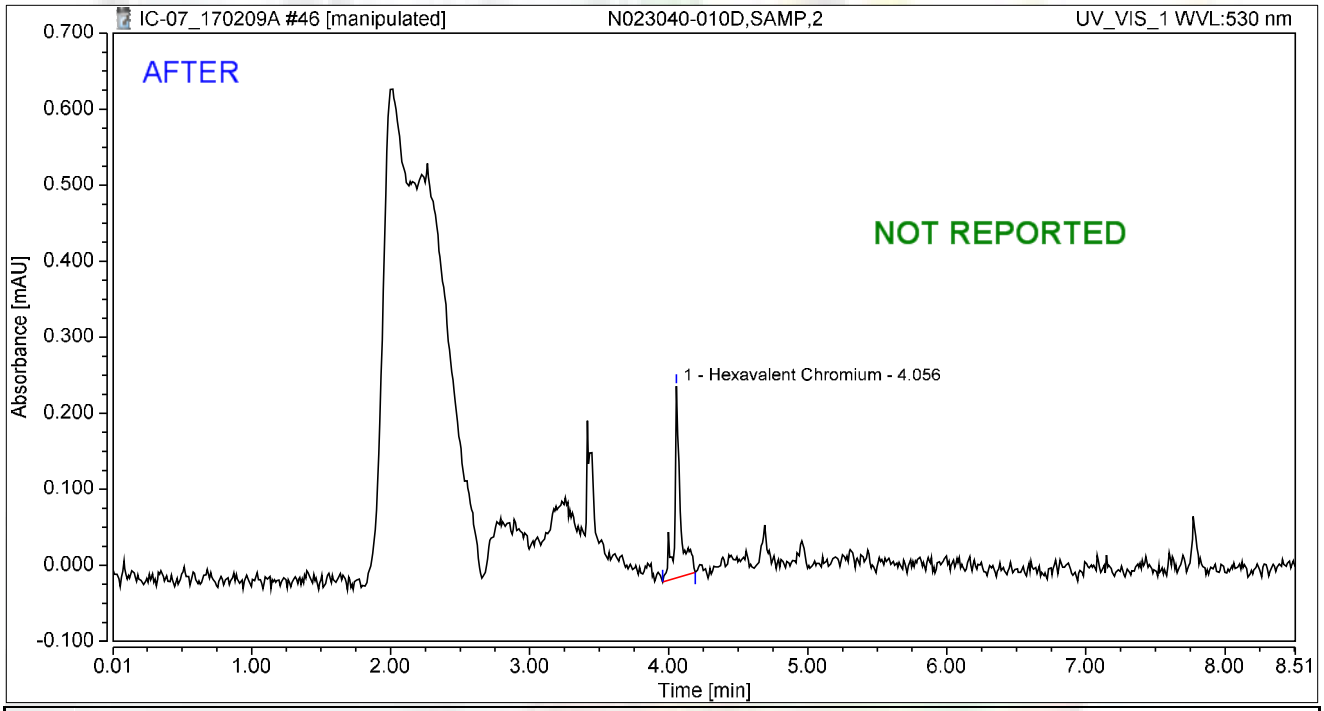
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.012	0.252	100.00	100.00	0.0438
Total:			**0.012**	**0.252**	**100.00**	**100.00**	

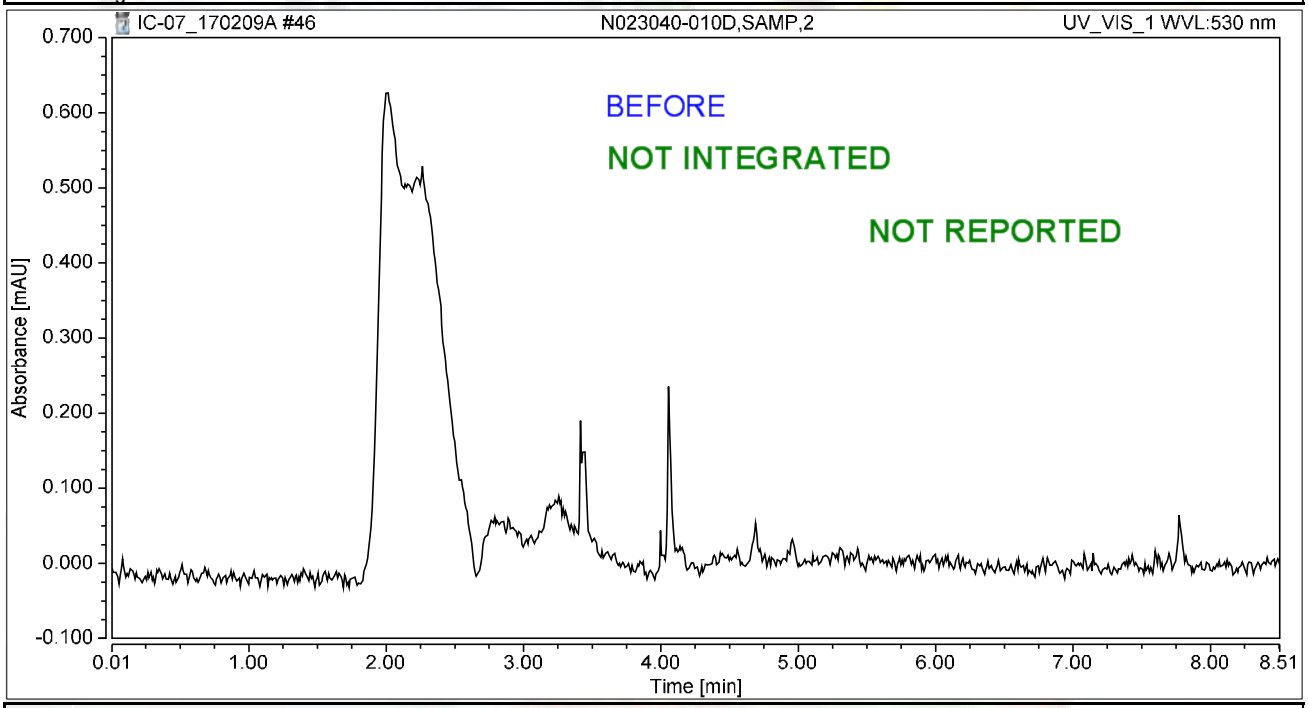
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

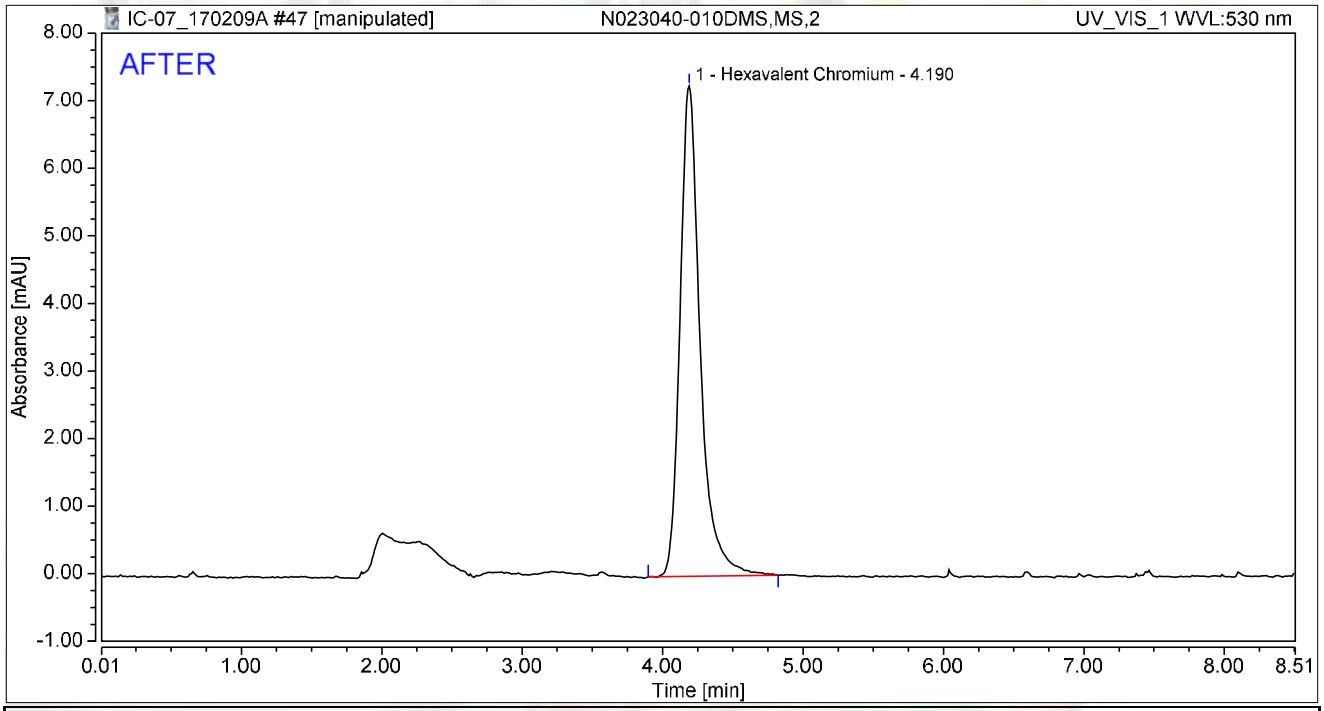
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.207	7.259	100.00	100.00	4.5516
Total:			**1.207**	**7.259**	**100.00**	**100.00**	

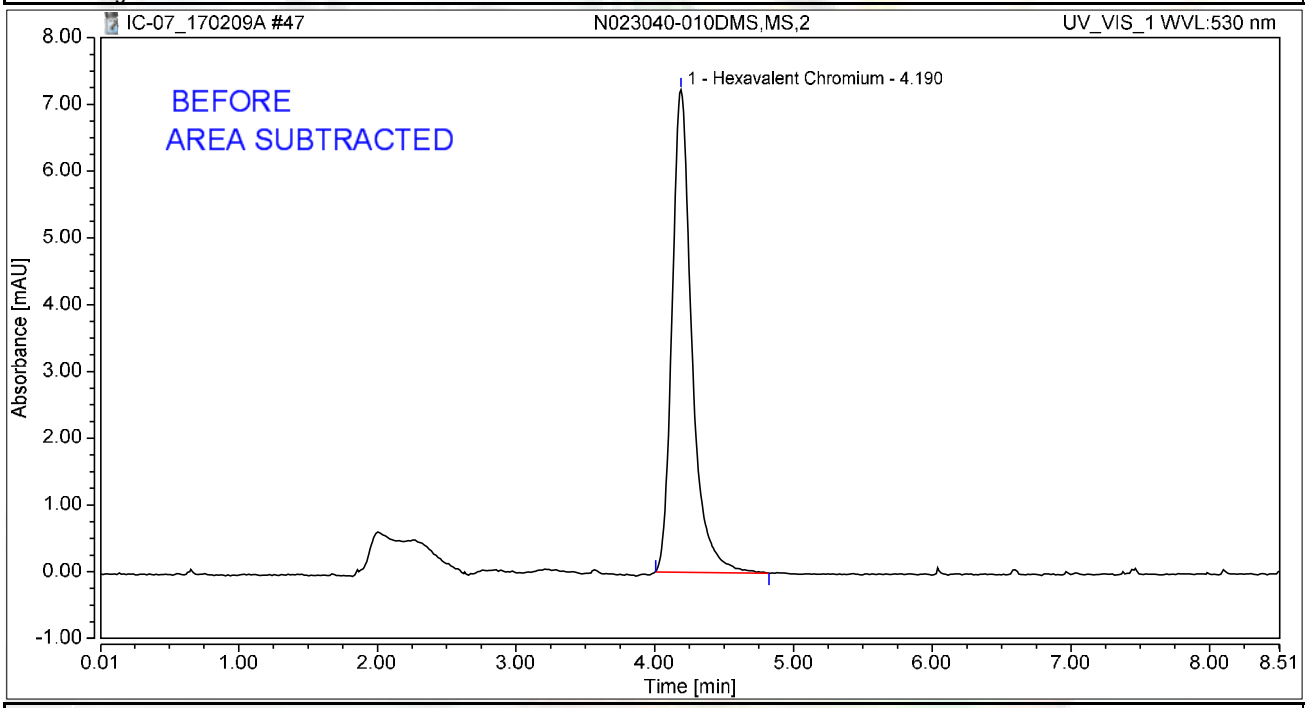
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.190	7.227	100.00	100.00	4.4852
Total:			**1.190**	**7.227**	**100.00**	**100.00**	

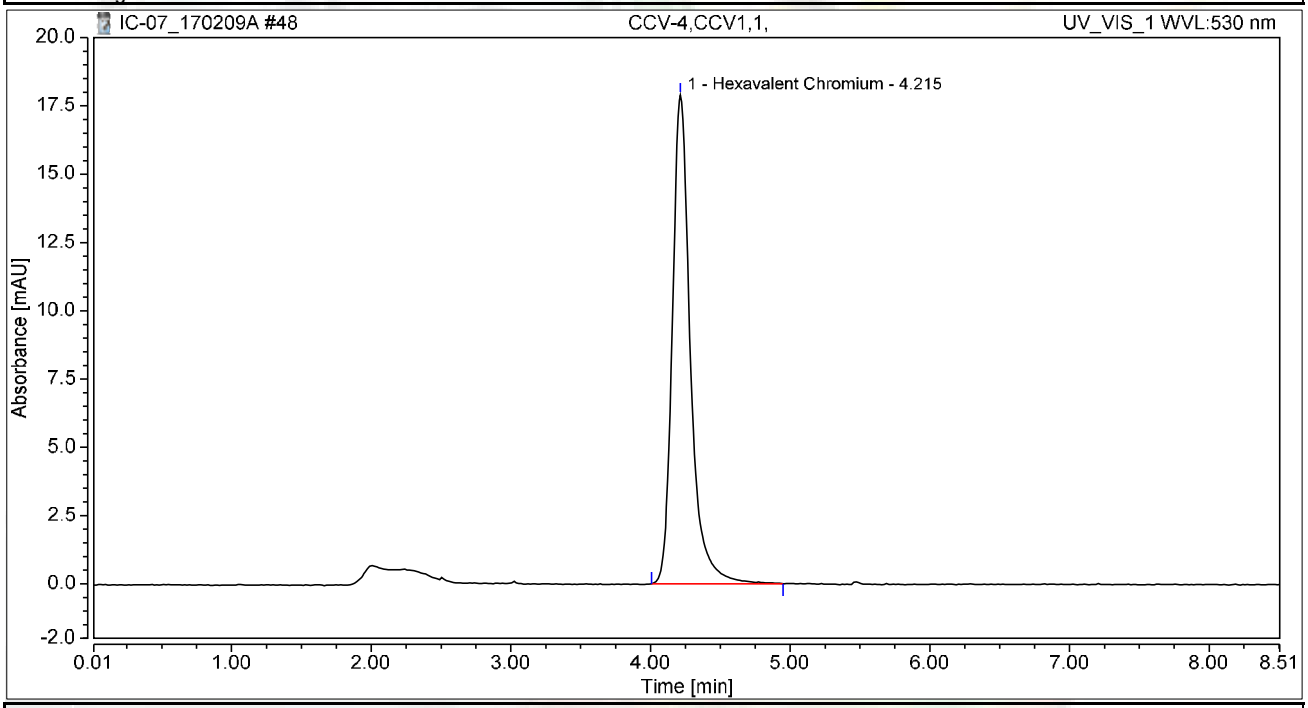
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

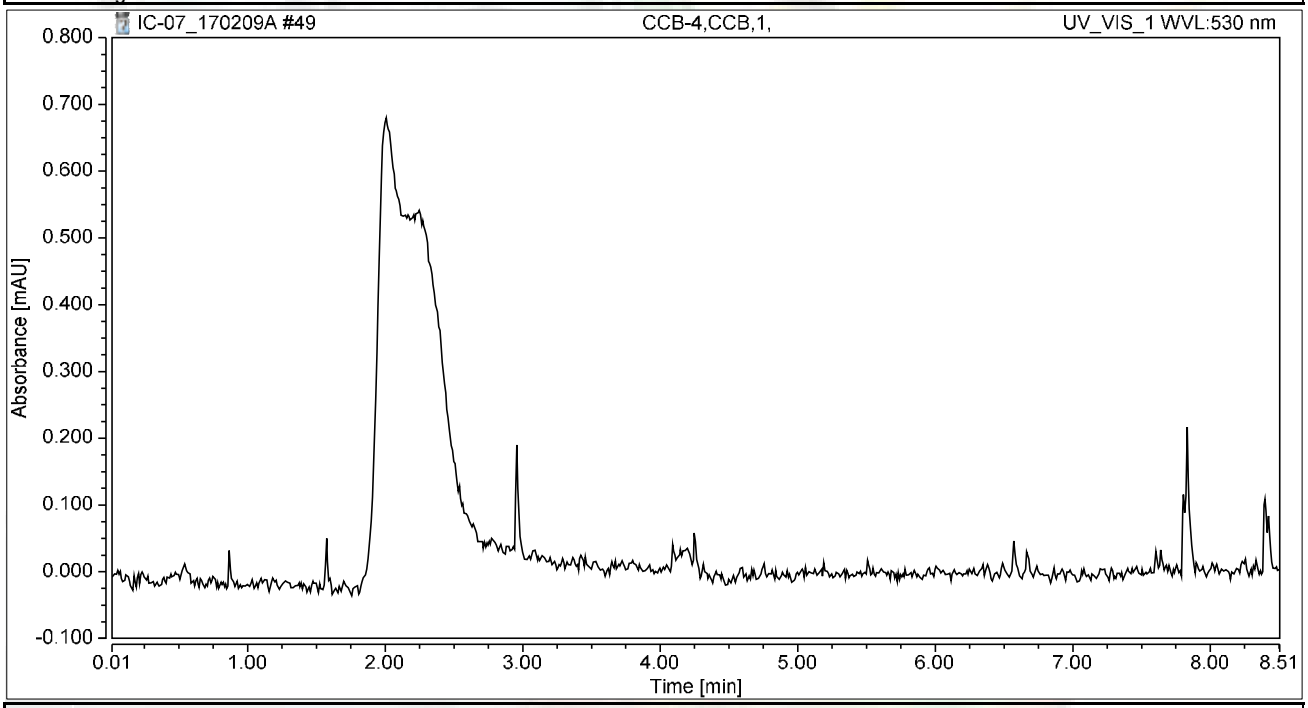
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.685	17.902	100.00	100.00	10.1235
Total:			**2.685**	**17.902**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

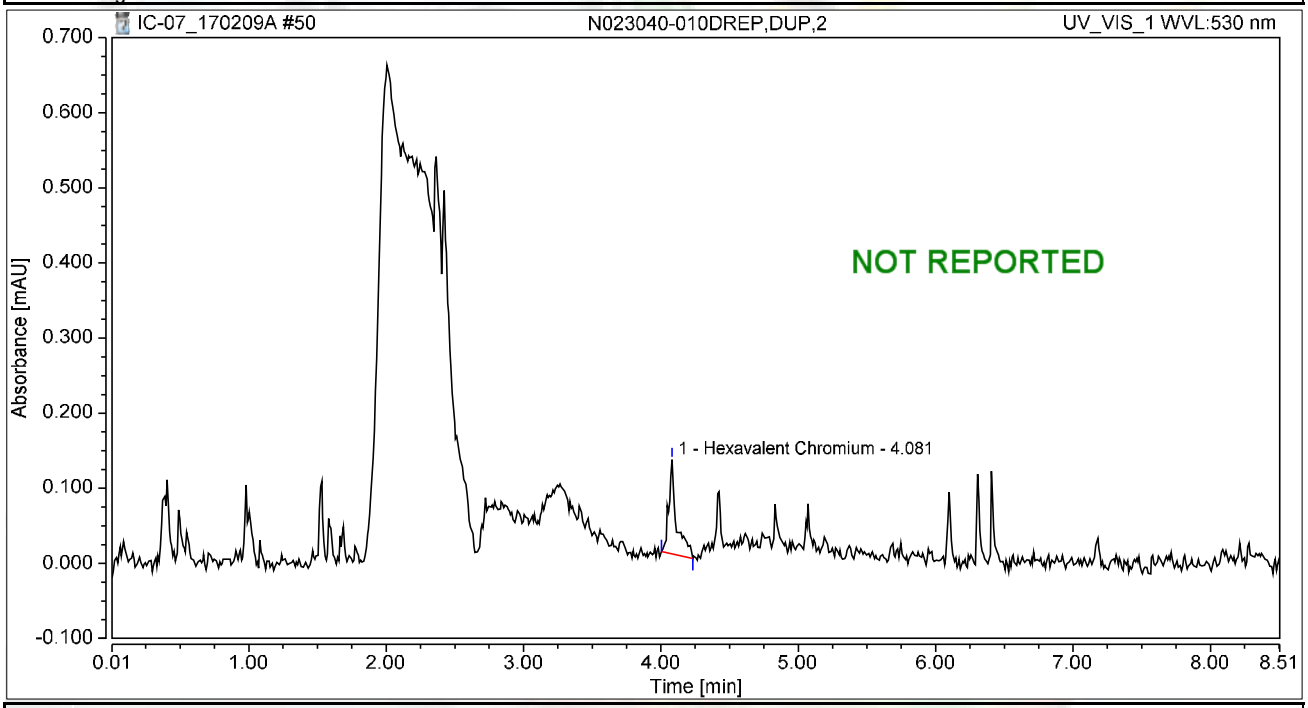
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,2**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

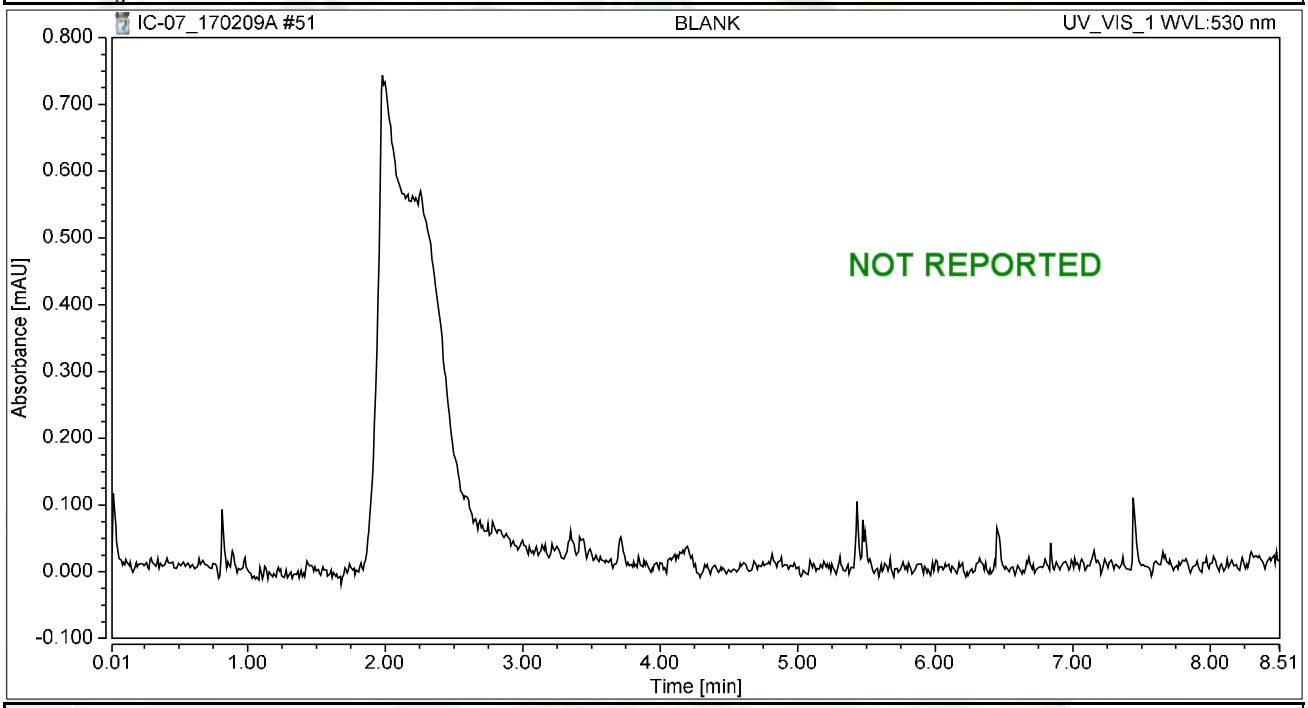
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.008	0.125	100.00	100.00	0.0310
Total:			**0.008**	**0.125**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

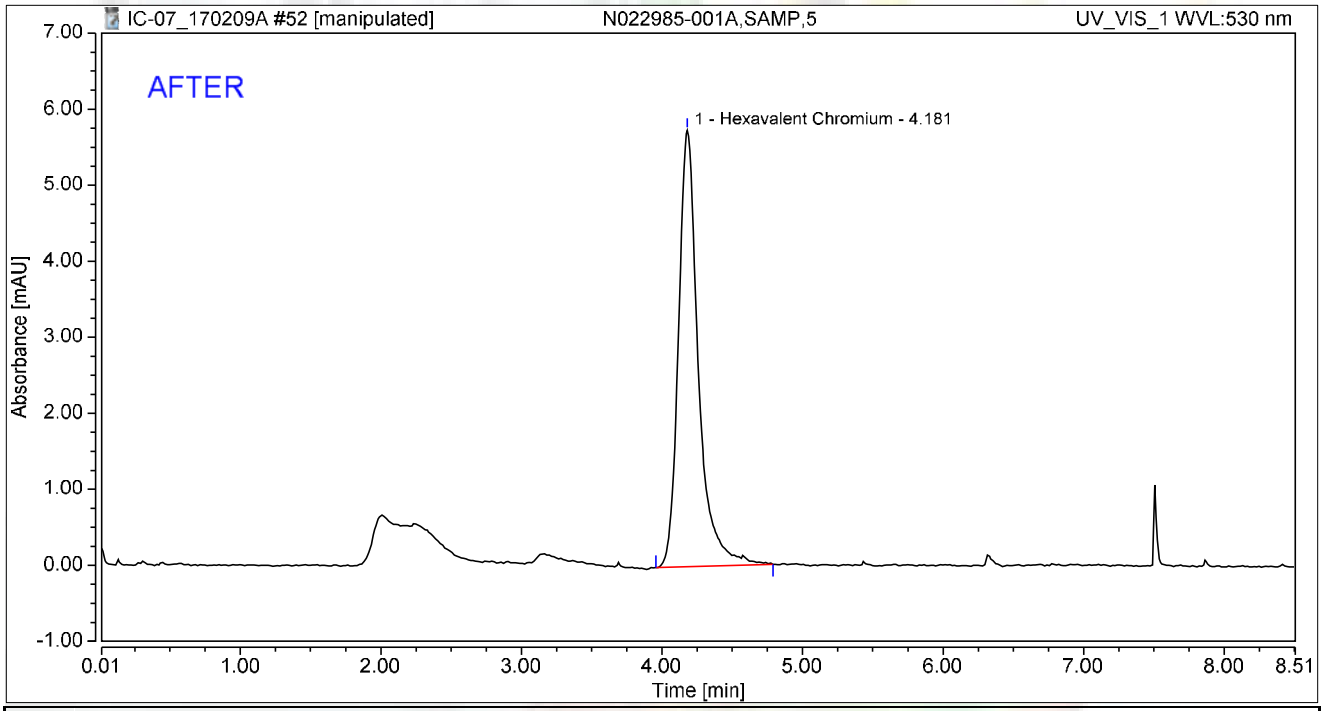
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.942	5.741	100.00	100.00	3.5531
Total:			**0.942**	**5.741**	**100.00**	**100.00**	

rba 2/14/2017

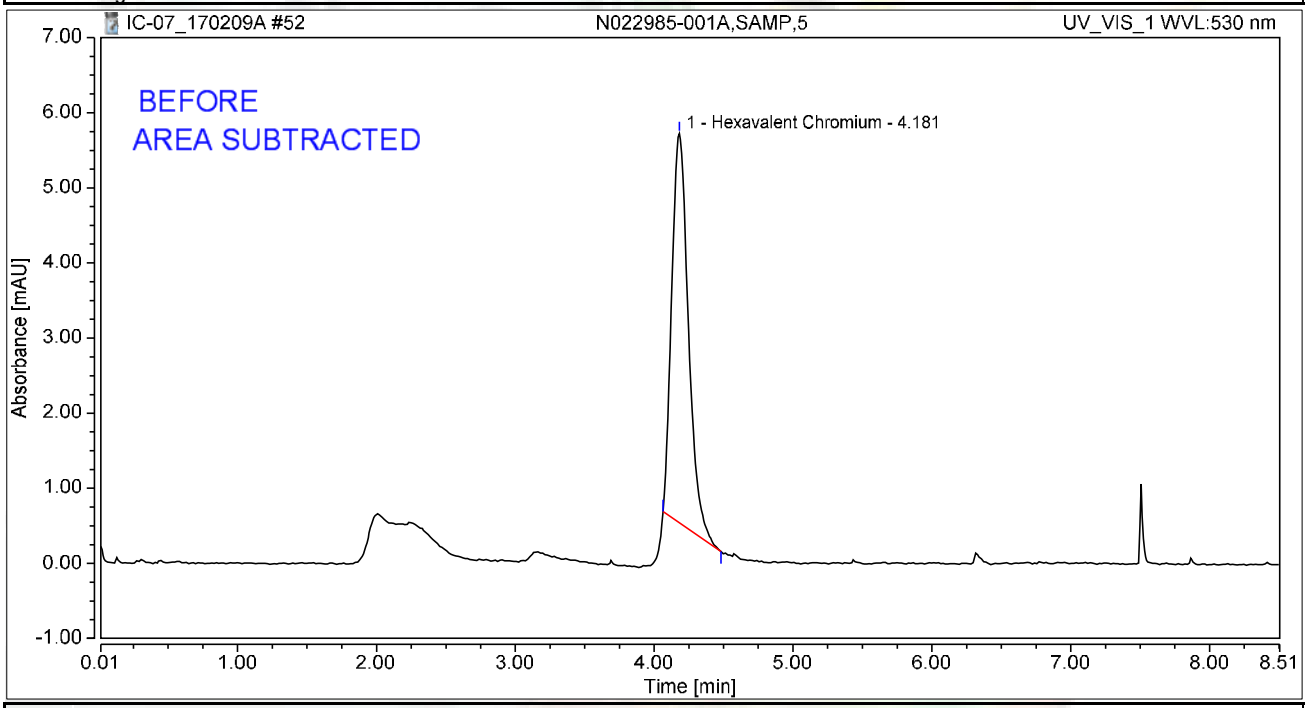
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.722	5.180	100.00	100.00	2.7213
Total:			**0.722**	**5.180**	**100.00**	**100.00**	

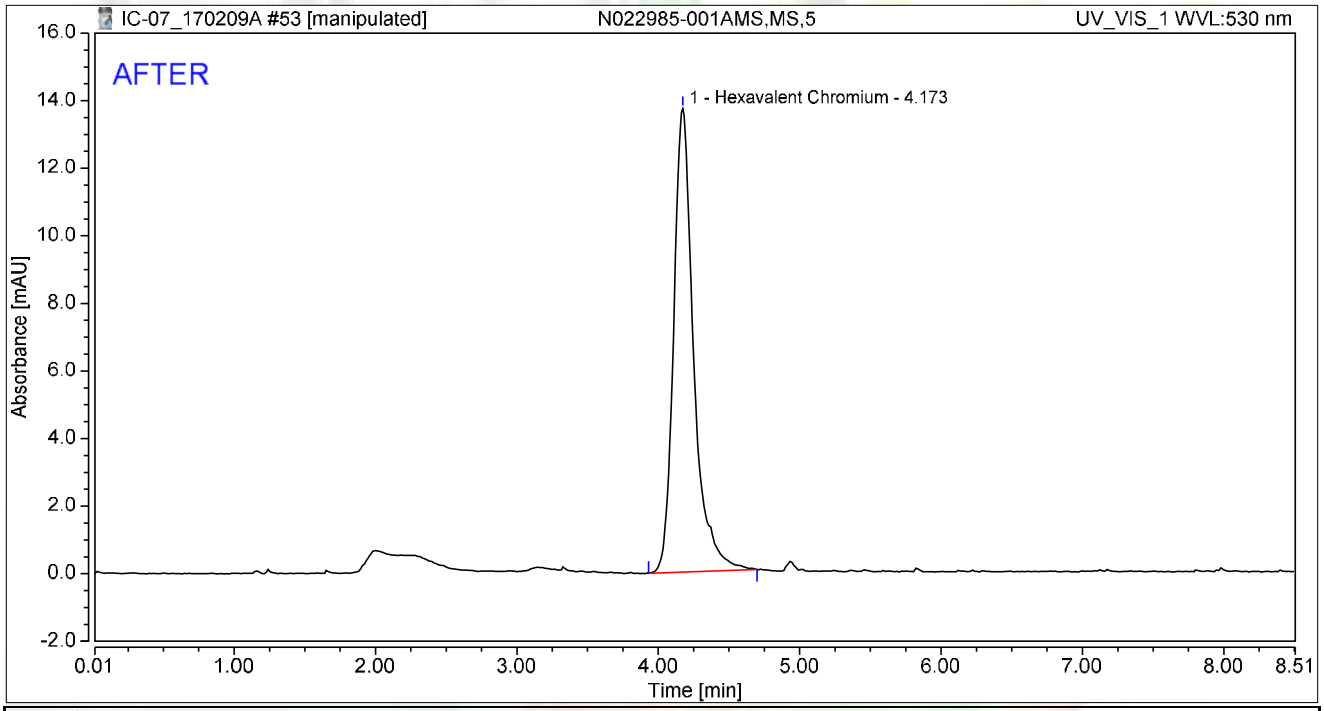
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.247	13.720	100.00	100.00	8.4719
Total:			**2.247**	**13.720**	**100.00**	**100.00**	

rba 2/14/2017

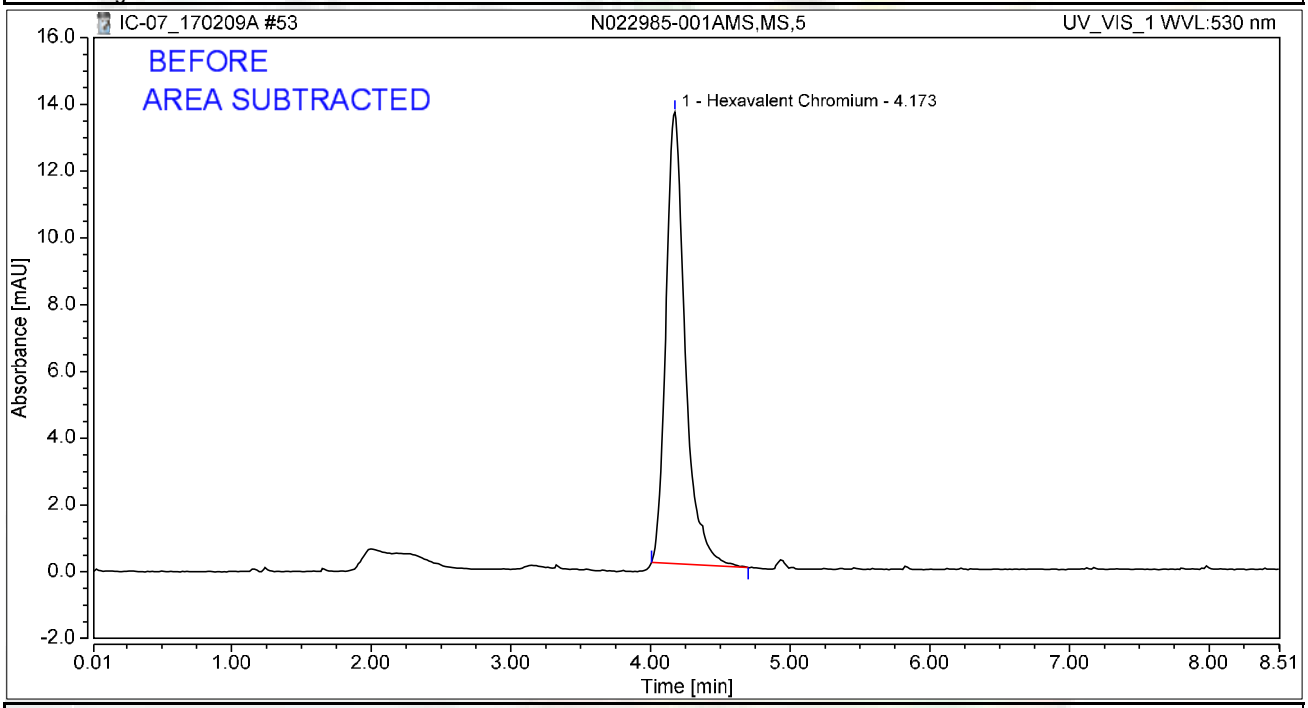
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.154	13.527	100.00	100.00	8.1219
Total:			**2.154**	**13.527**	**100.00**	**100.00**	

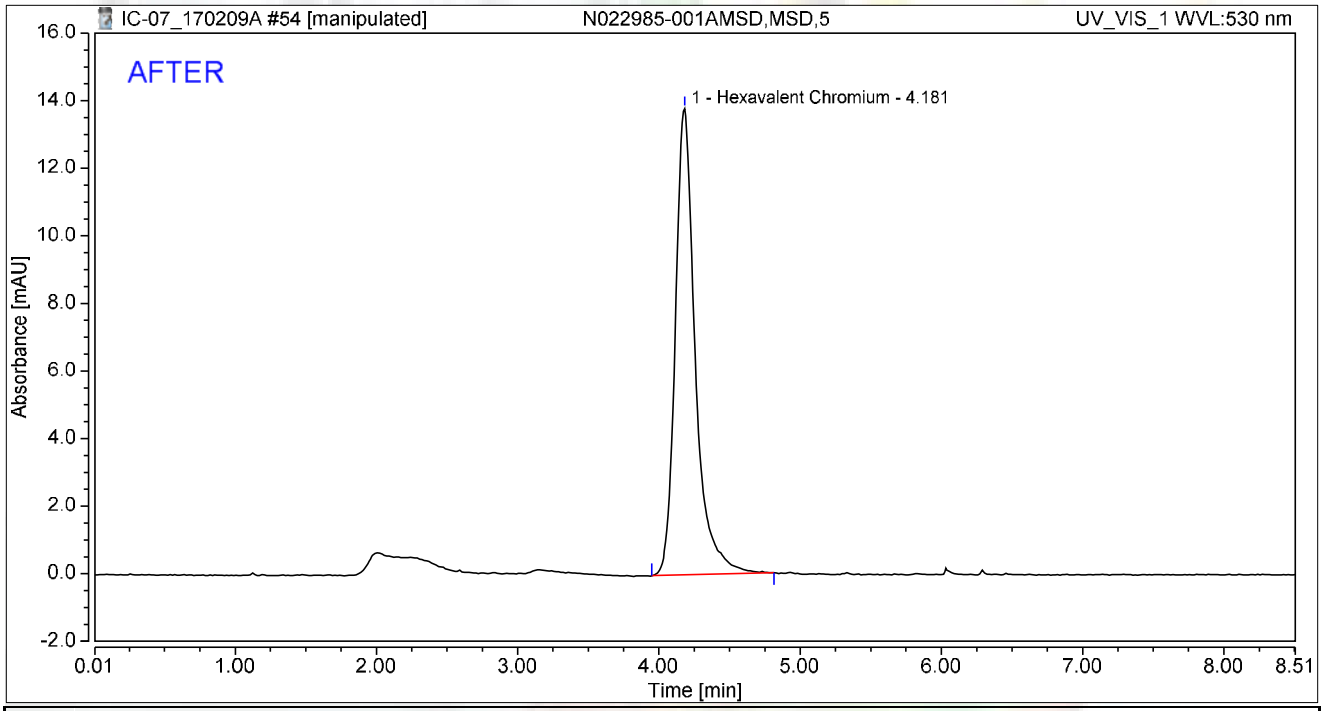
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.257	13.803	100.00	100.00	8.5097
Total:			**2.257**	**13.803**	**100.00**	**100.00**	

rba 2/14/2017

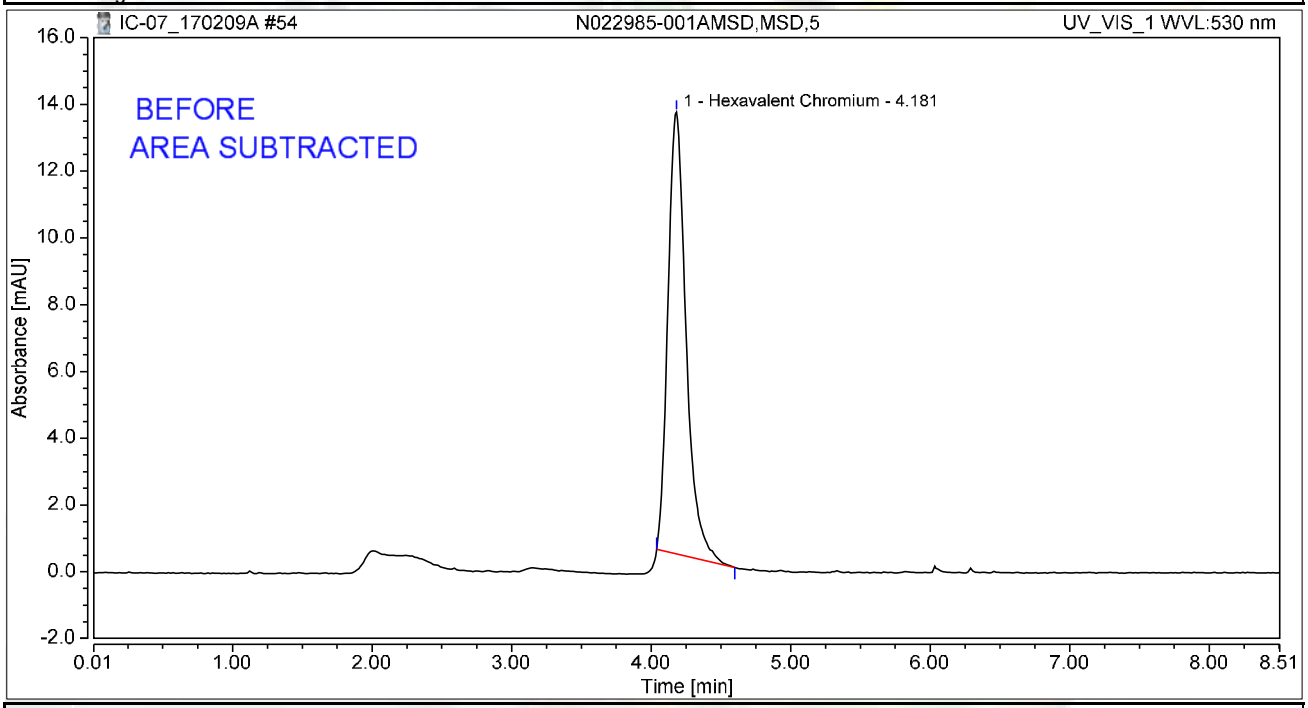
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.998	13.239	100.00	100.00	7.5344
Total:			**1.998**	**13.239**	**100.00**	**100.00**	

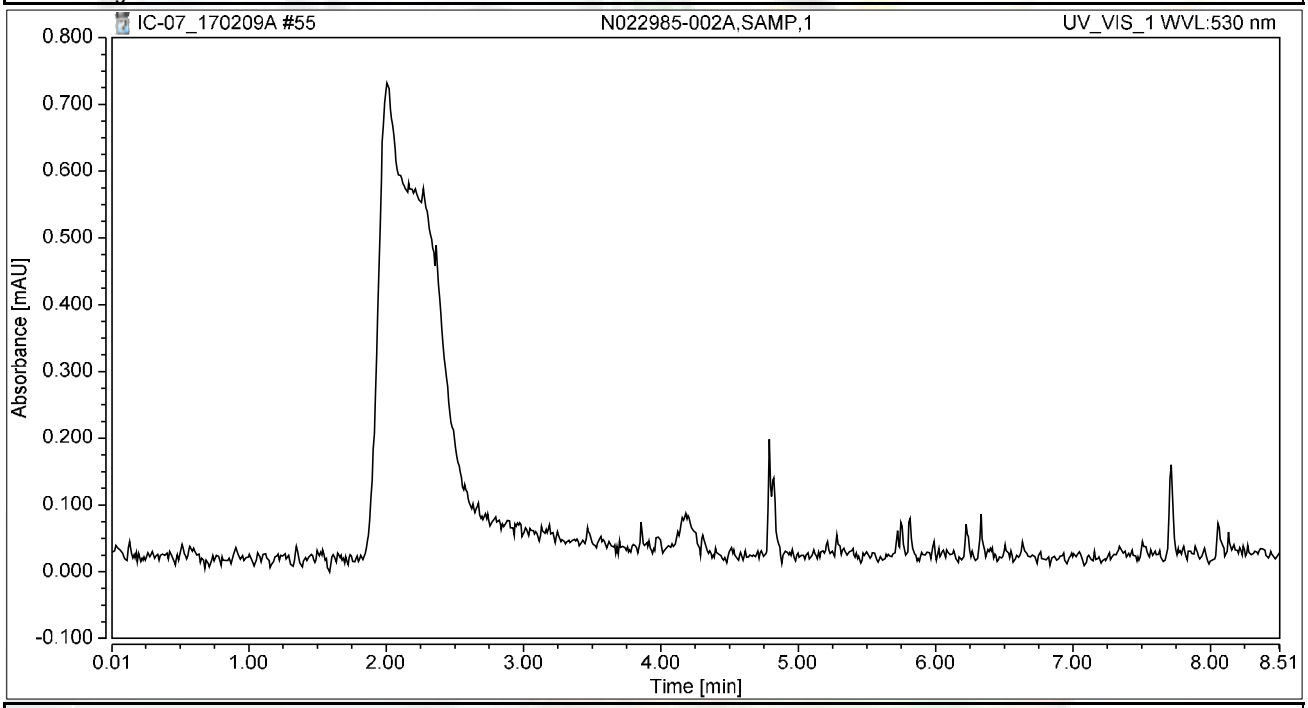
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

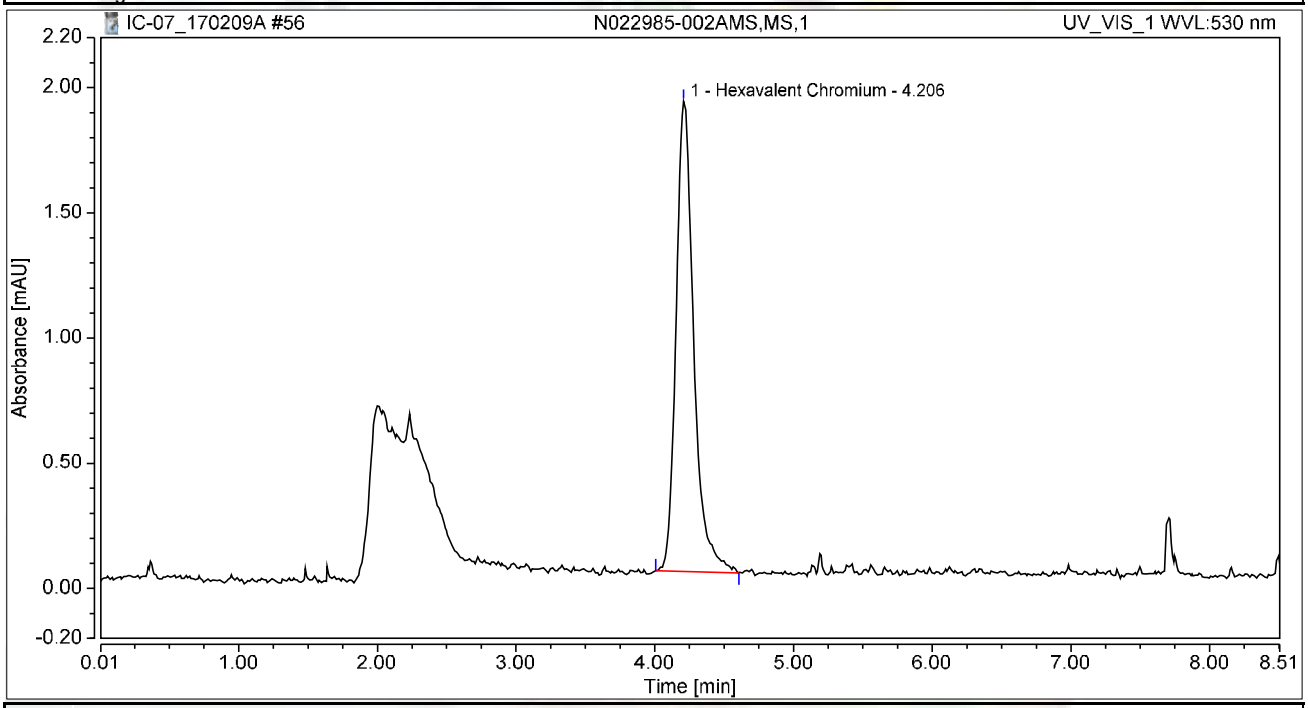
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

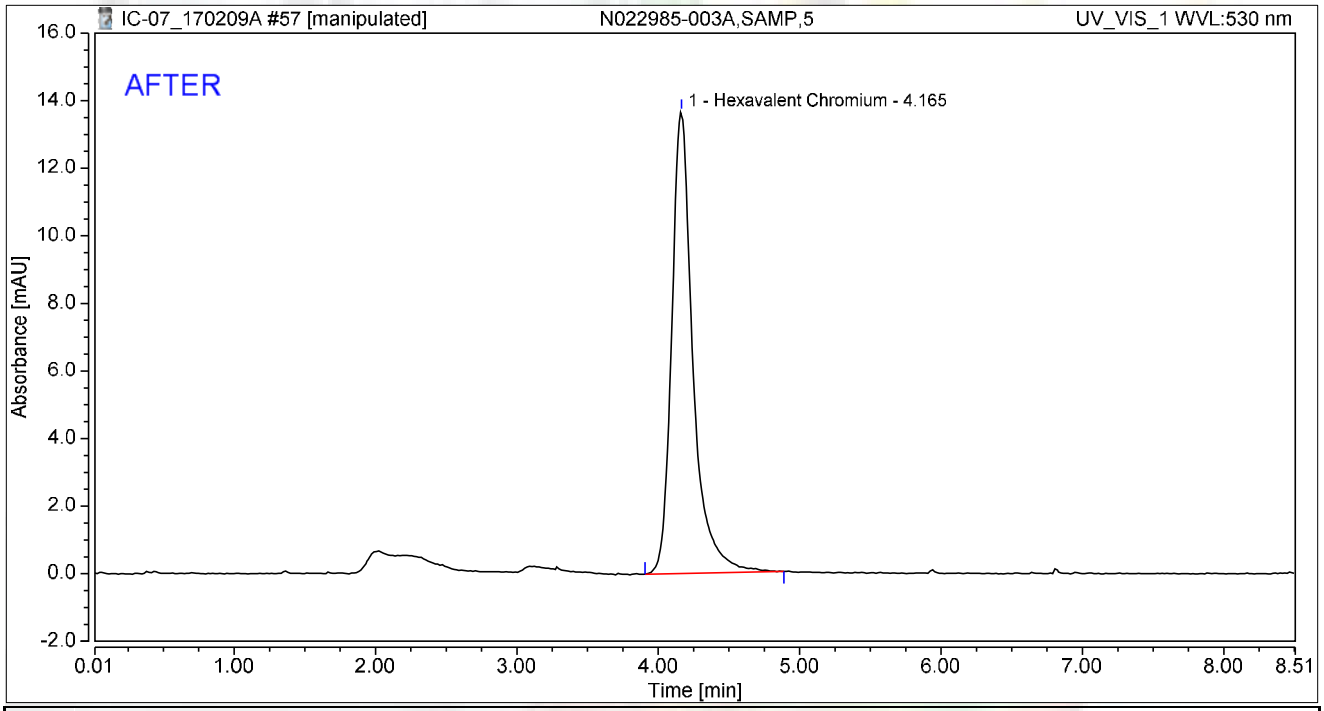
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.277	1.877	100.00	100.00	1.0425
Total:			**0.277**	**1.877**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.380	13.665	100.00	100.00	8.9722
Total:			**2.380**	**13.665**	**100.00**	**100.00**	

rba 2/14/2017

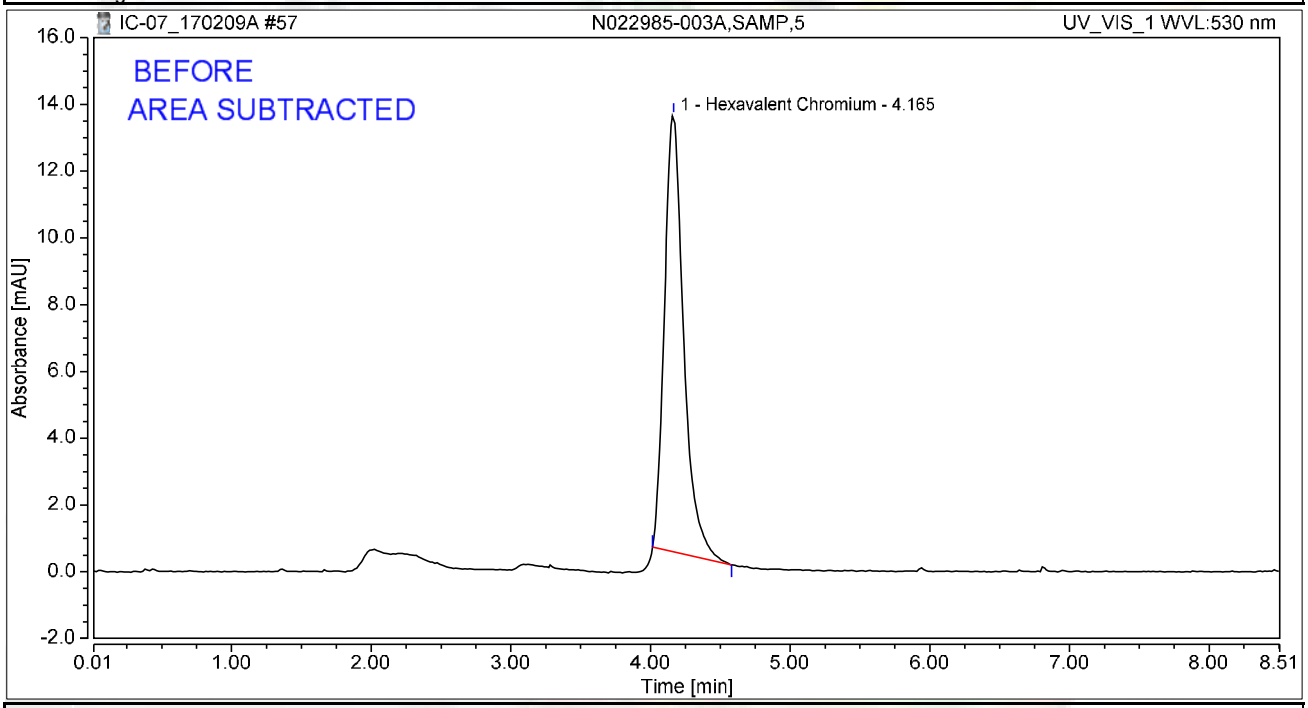
Reviewed
Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.089	13.081	100.00	100.00	7.8748
Total:			**2.089**	**13.081**	**100.00**	**100.00**	

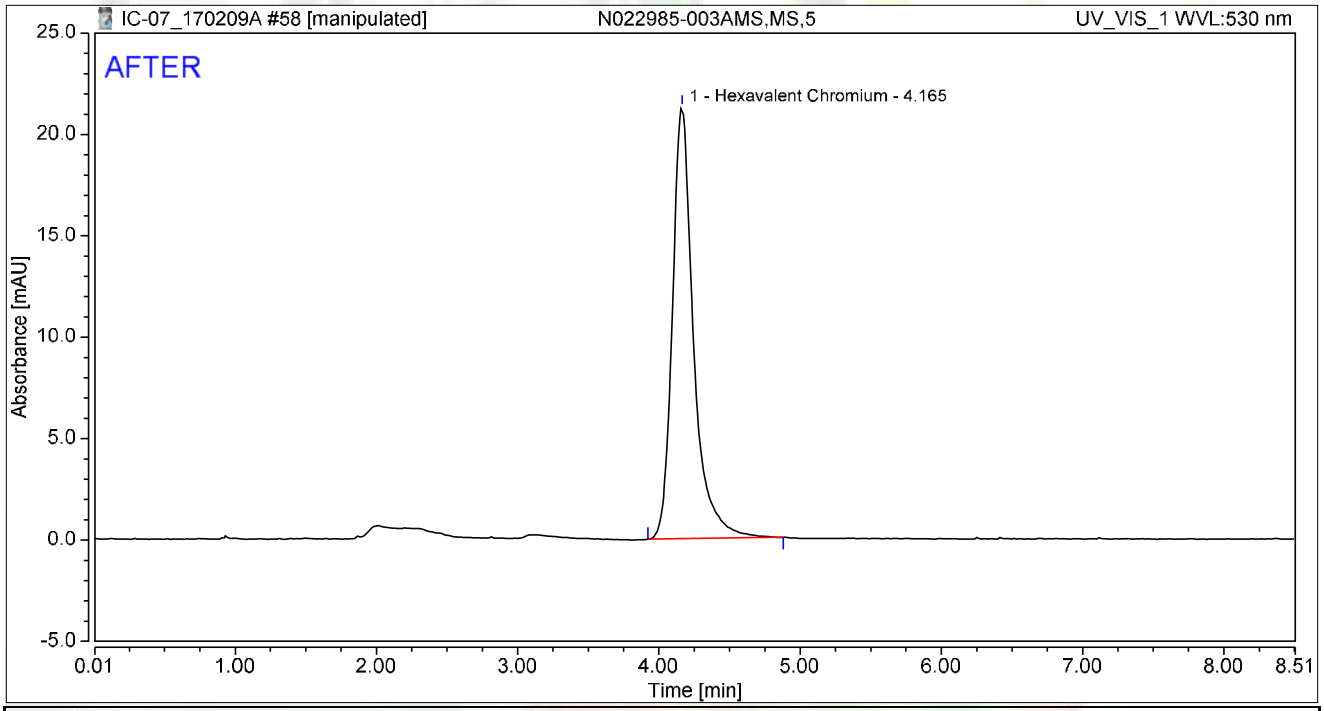
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.689	21.278	100.00	100.00	13.9061
Total:			**3.689**	**21.278**	**100.00**	**100.00**	

rba 2/14/2017

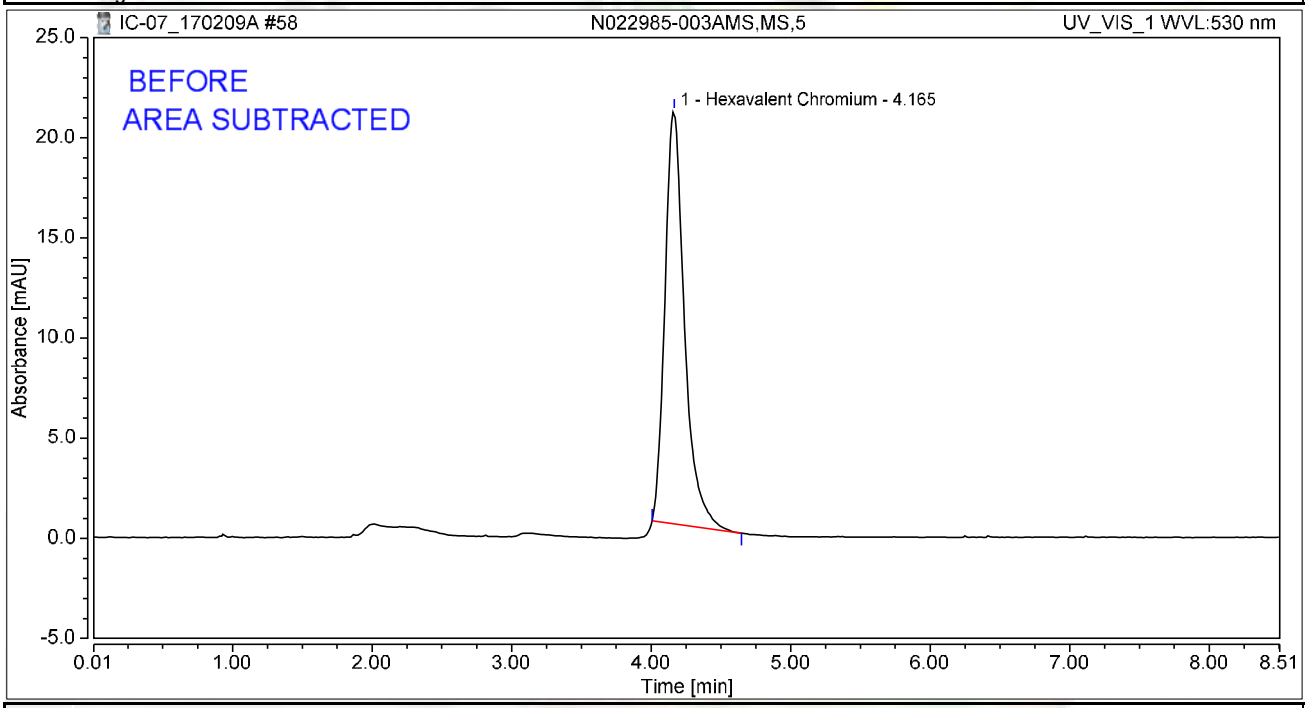
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.352	20.624	100.00	100.00	12.6375
Total:			**3.352**	**20.624**	**100.00**	**100.00**	

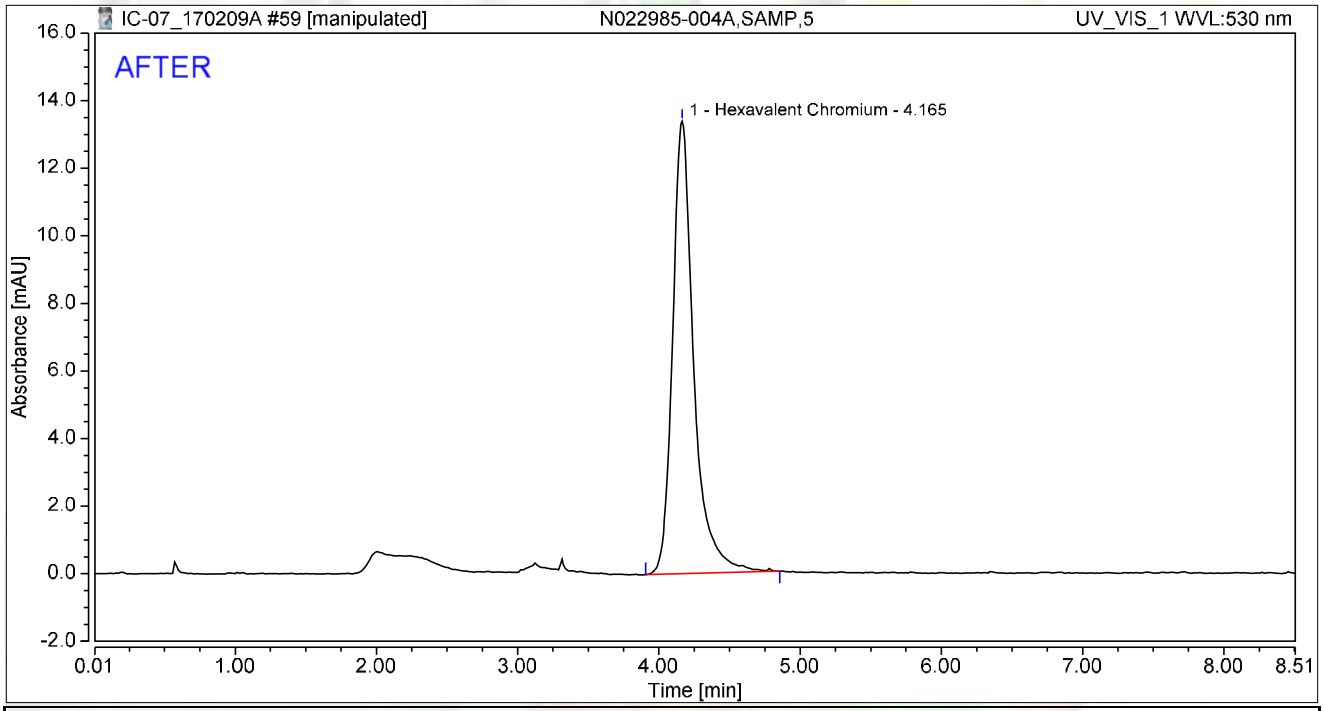
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.322	13.392	100.00	100.00	8.7544
Total:			**2.322**	**13.392**	**100.00**	**100.00**	

rba 2/14/2017

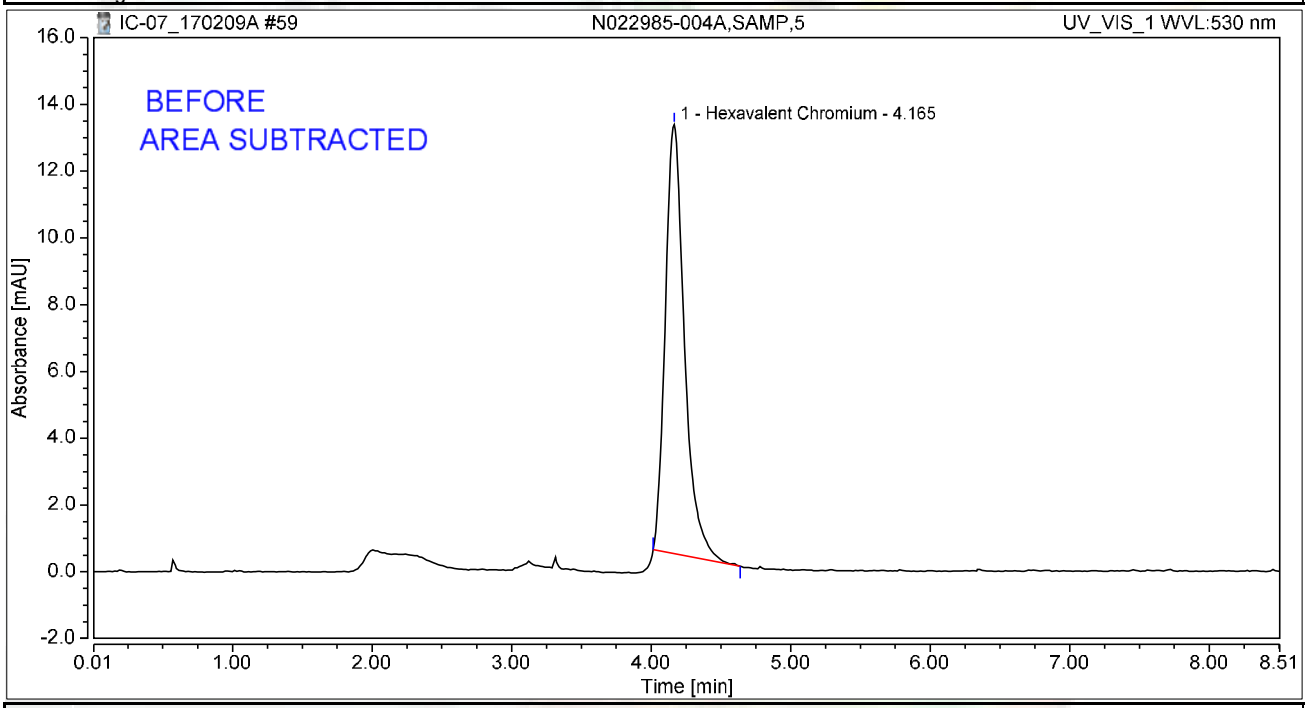
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.051	12.852	100.00	100.00	7.7325
Total:			**2.051**	**12.852**	**100.00**	**100.00**	

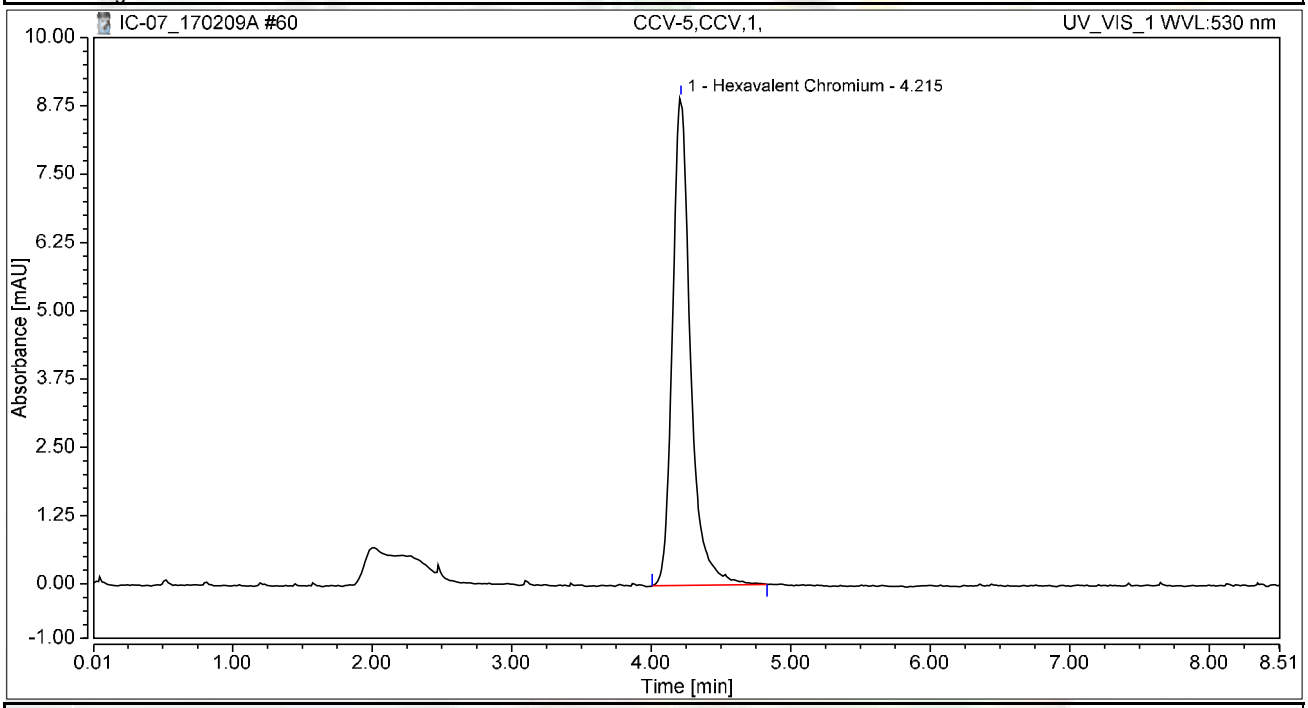
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

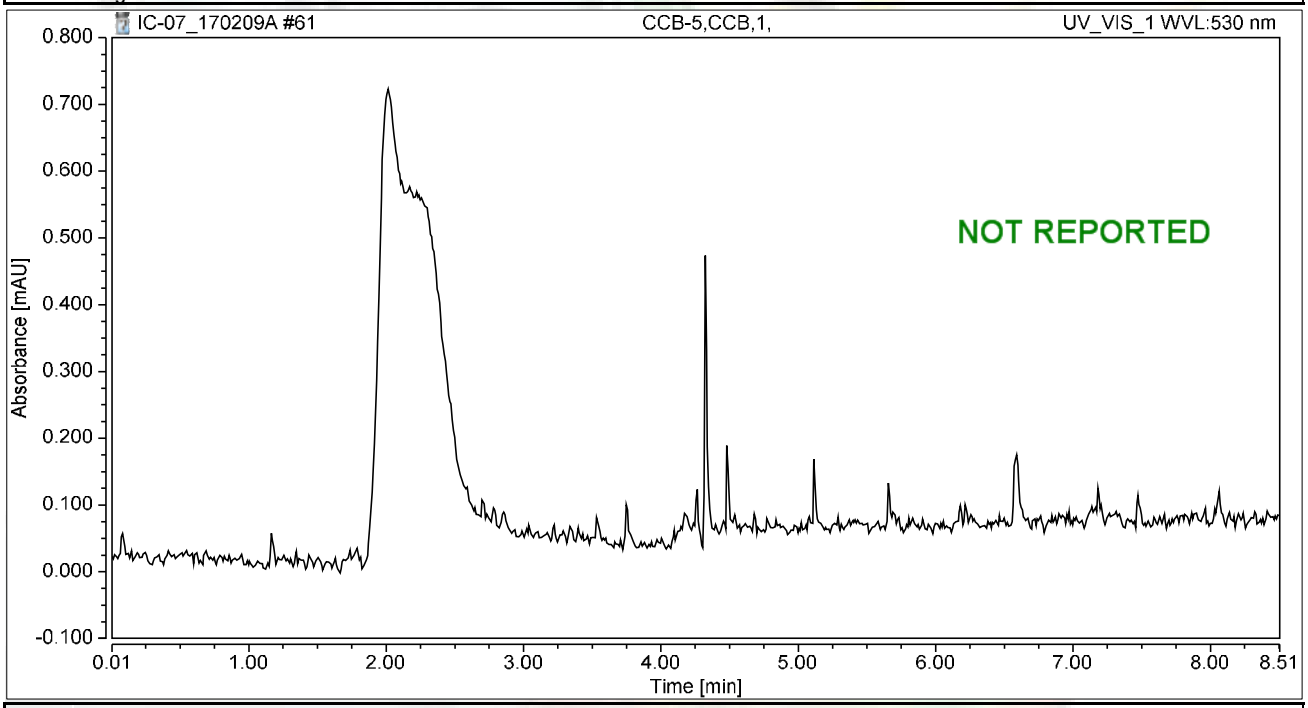
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.339	8.934	100.00	100.00	5.0477
Total:			**1.339**	**8.934**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

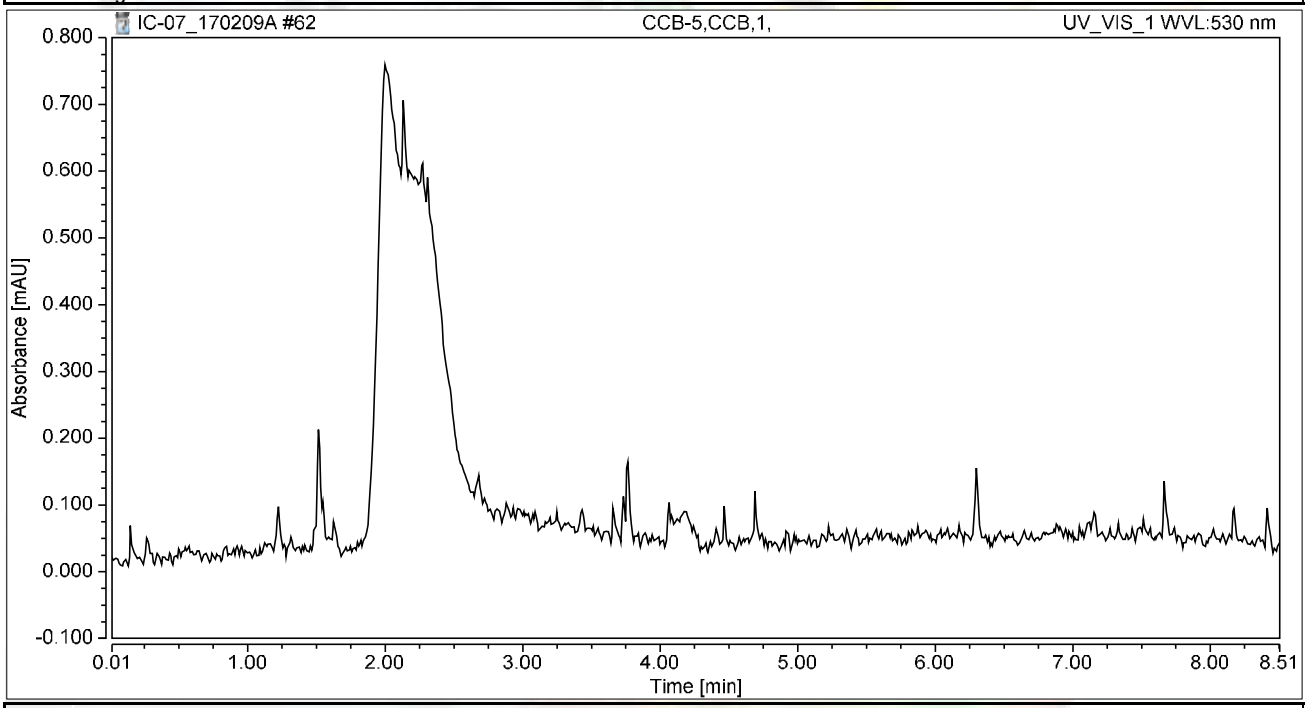
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

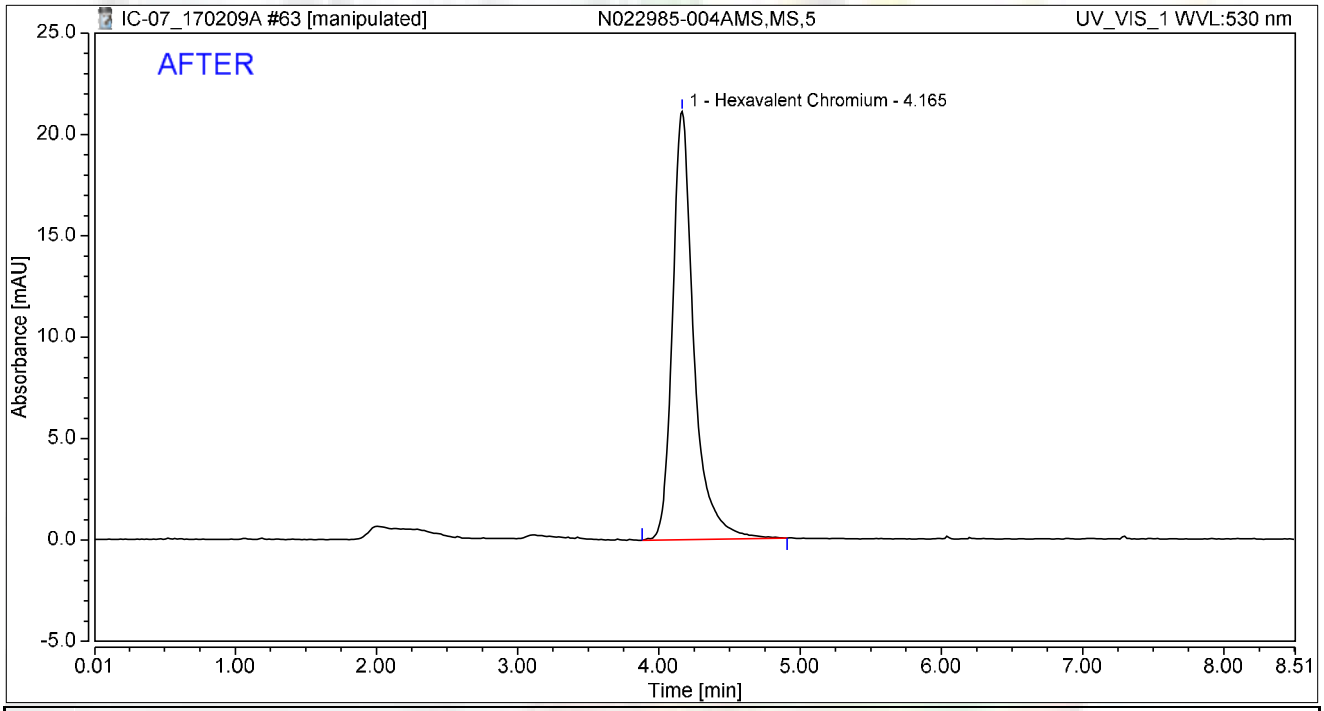
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.688	21.111	100.00	100.00	13.9030
Total:			**3.688**	**21.111**	**100.00**	**100.00**	

rba 2/14/2017

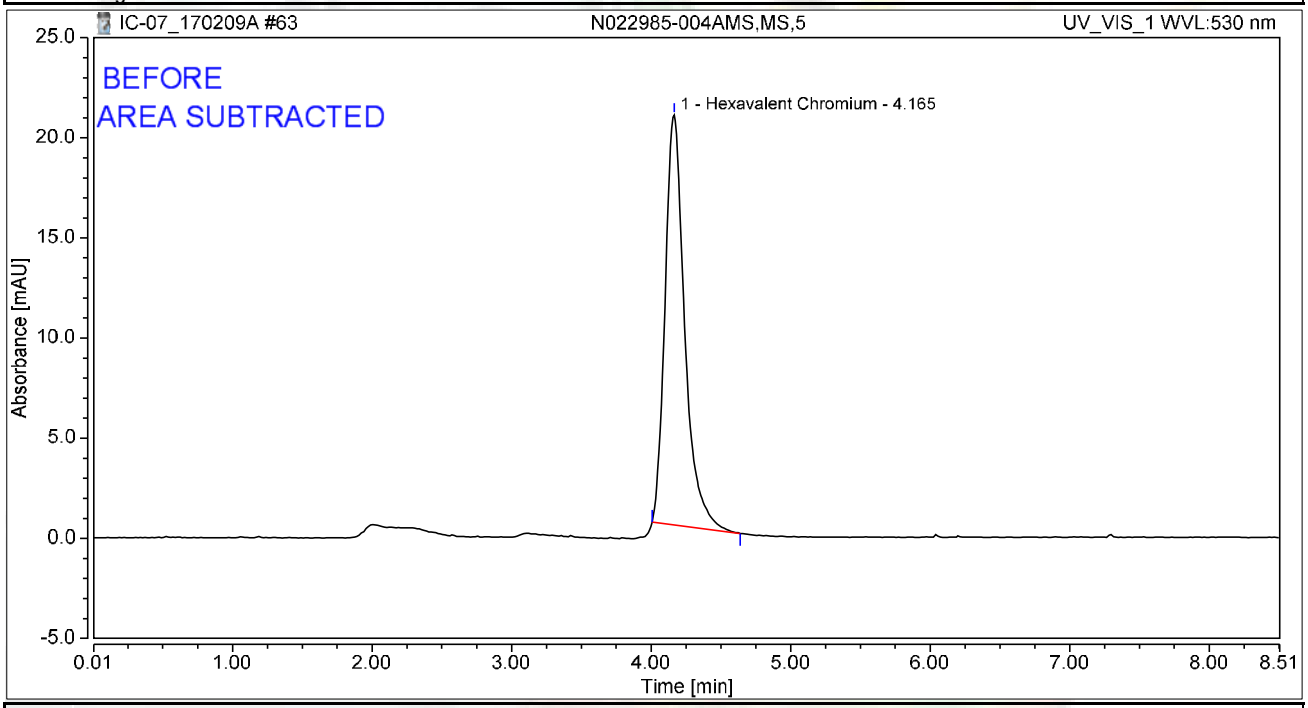
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.336	20.460	100.00	100.00	12.5758
Total:			**3.336**	**20.460**	**100.00**	**100.00**	

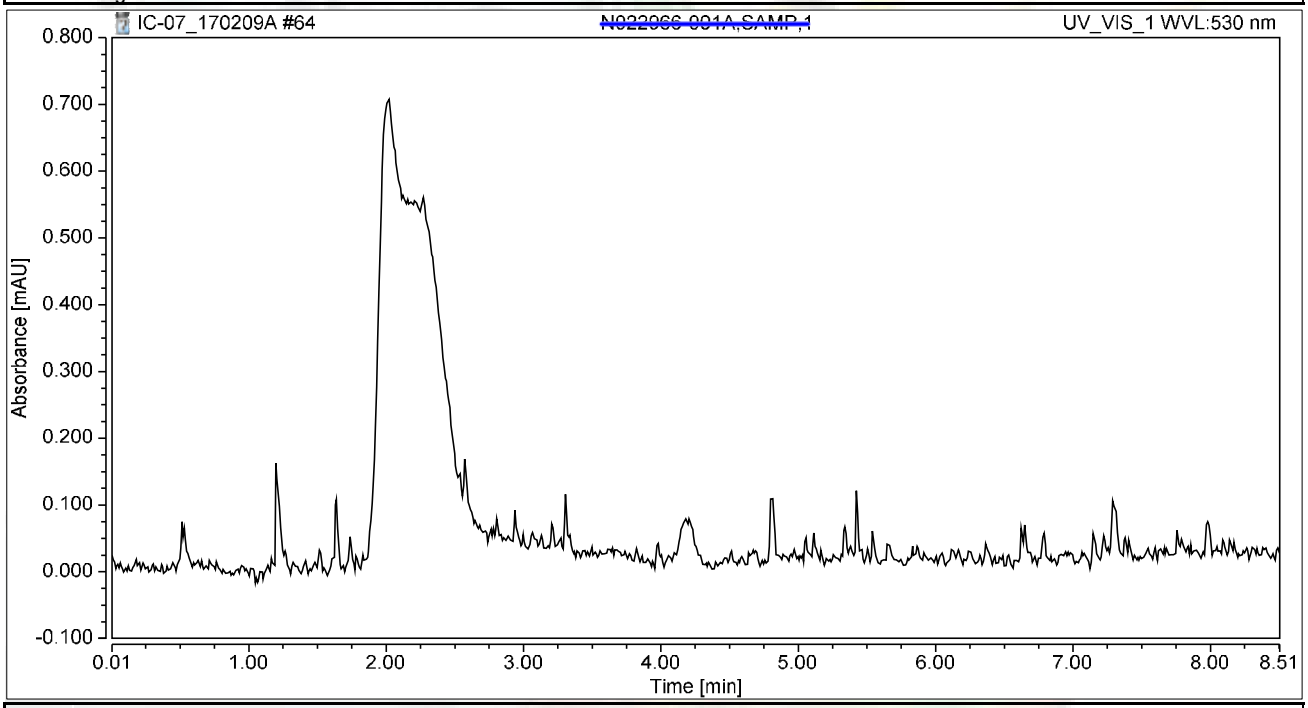
rba 2/14/2017

Chromatogram and Results

Injection Details N022966-013A,SAMP,1,

Injection Name:	~~N022966-001A,SAMP,~~1	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:20**	*Sample Weight:*	**1.0000**

Chromatogram N022966-013A,SAMP,1,



Integration Results

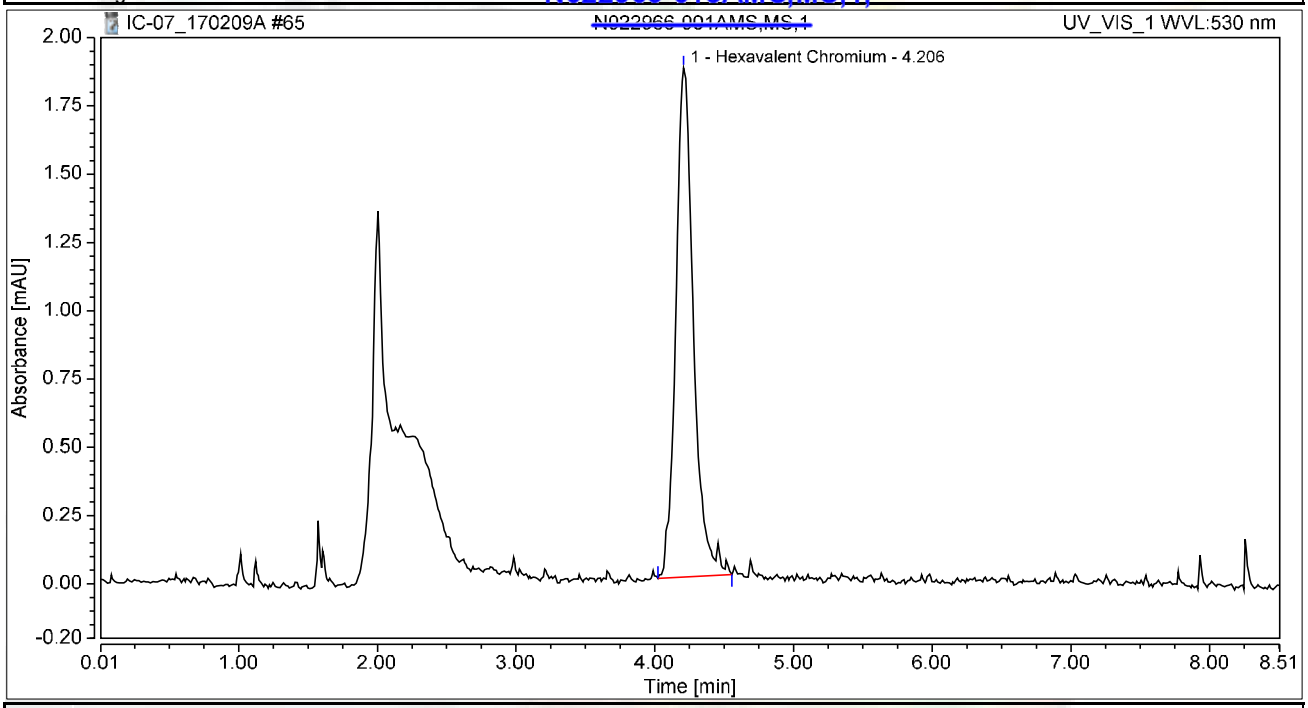
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details N022966-013AMS,MS,1

Injection Name:	~~N022966-001AMS,MS,1~~	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:29**	*Sample Weight:*	**1.0000**

Chromatogram N022966-013AMS,MS,1,



Integration Results

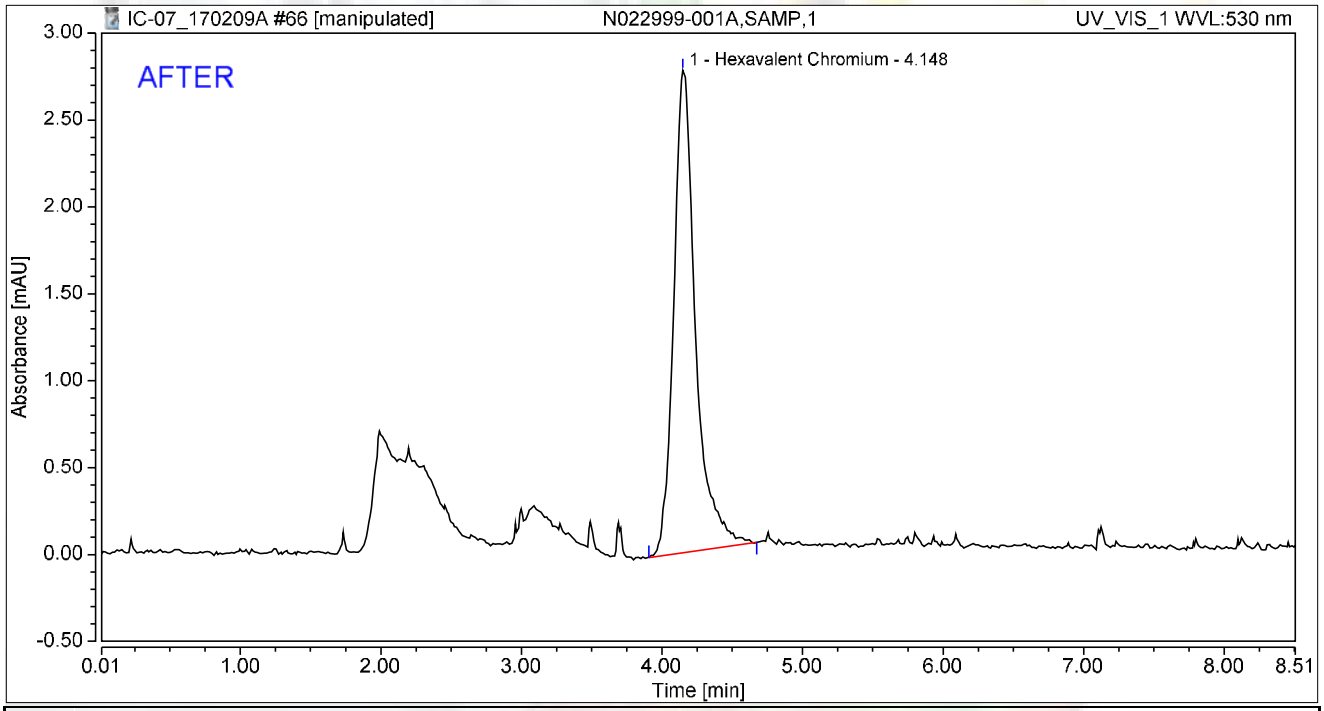
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.275	1.864	100.00	100.00	1.0351
Total:			**0.275**	**1.864**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.499	2.775	100.00	100.00	1.8827
Total:			**0.499**	**2.775**	**100.00**	**100.00**	

rba 2/14/2017

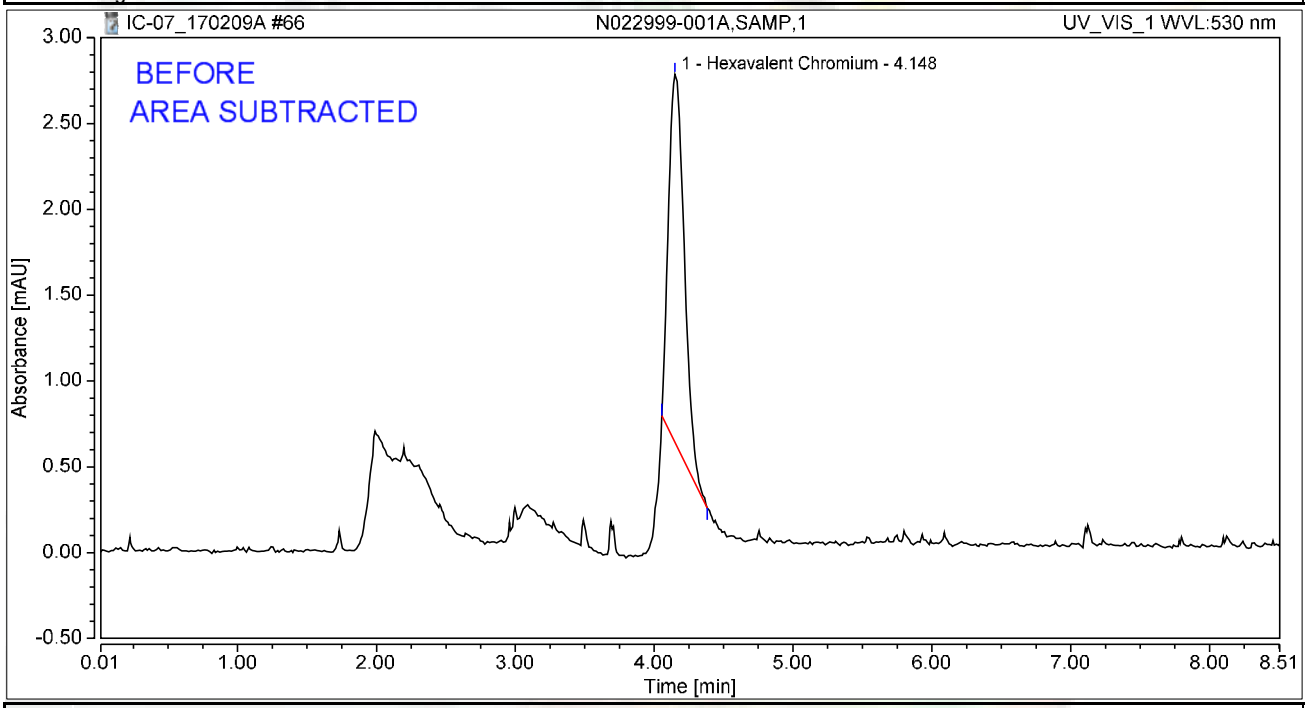
Reviewed
Dianey 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.284	2.137	100.00	100.00	1.0694
Total:			**0.284**	**2.137**	**100.00**	**100.00**	

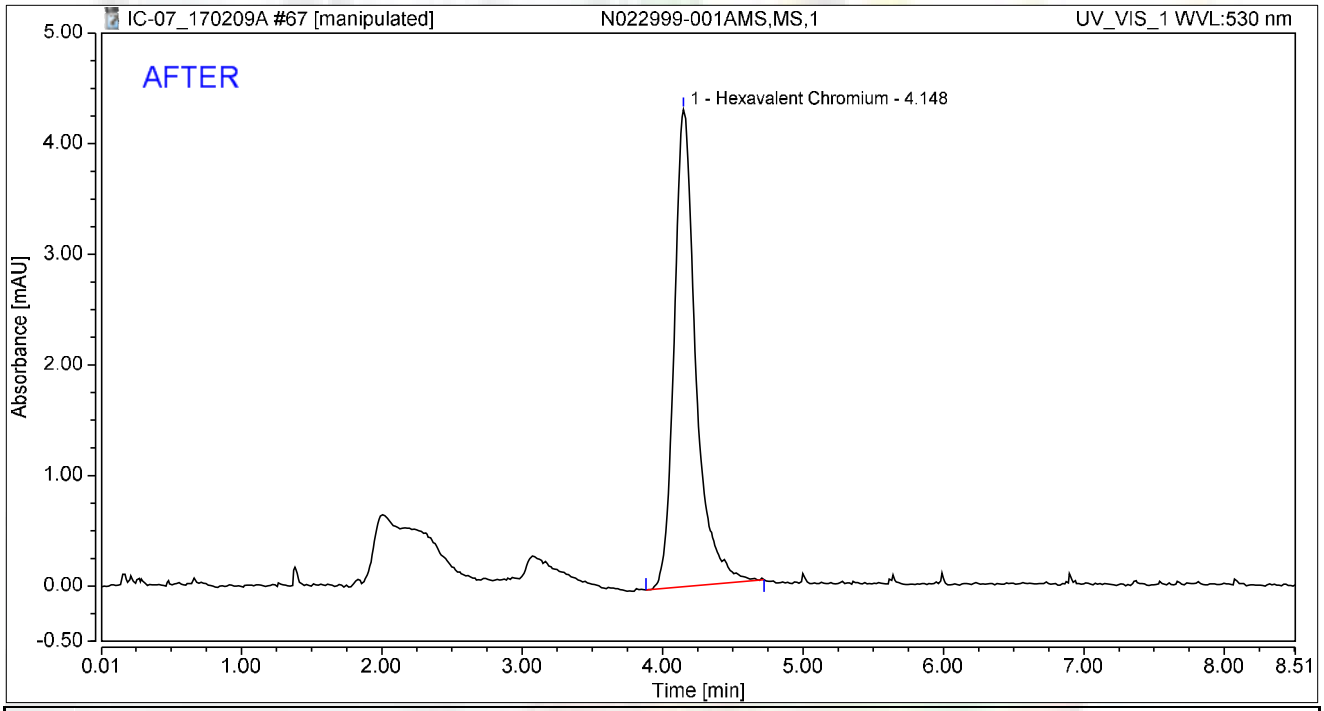
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.772	4.317	100.00	100.00	2.9093
Total:			**0.772**	**4.317**	**100.00**	**100.00**	

rba 2/14/2017

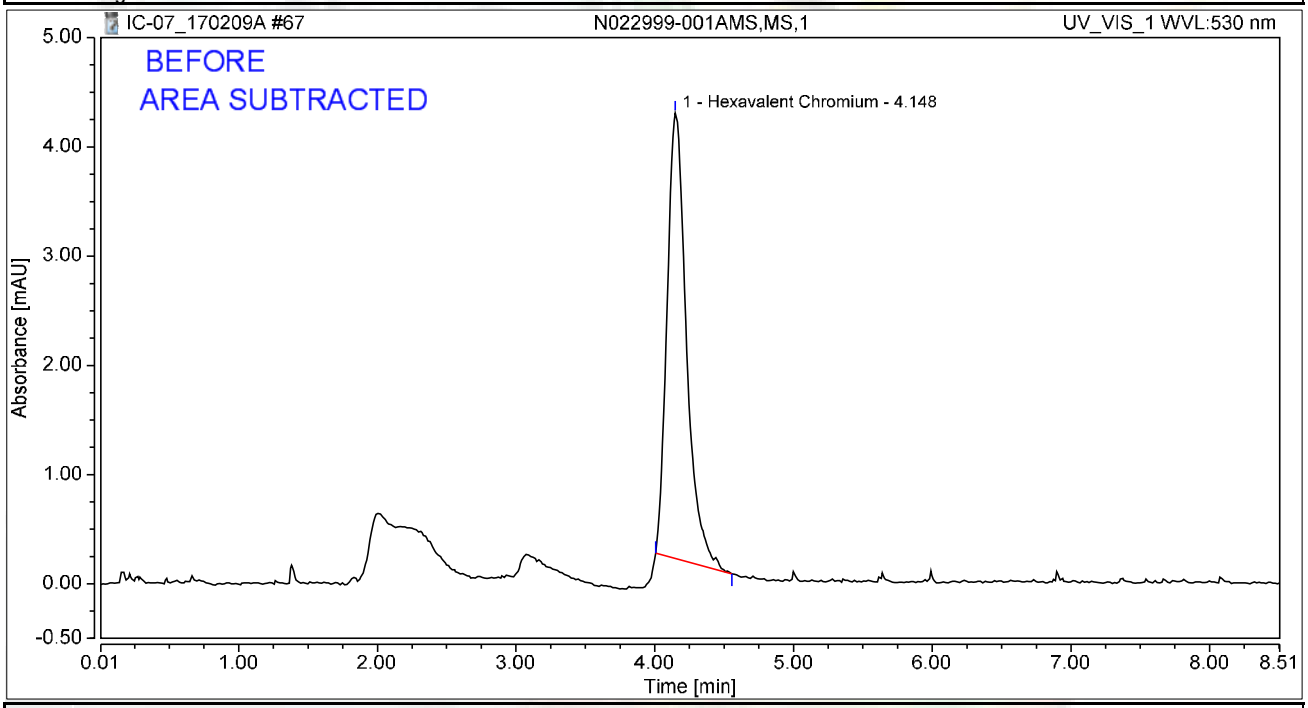
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.662	4.078	100.00	100.00	2.4971
Total:			**0.662**	**4.078**	**100.00**	**100.00**	

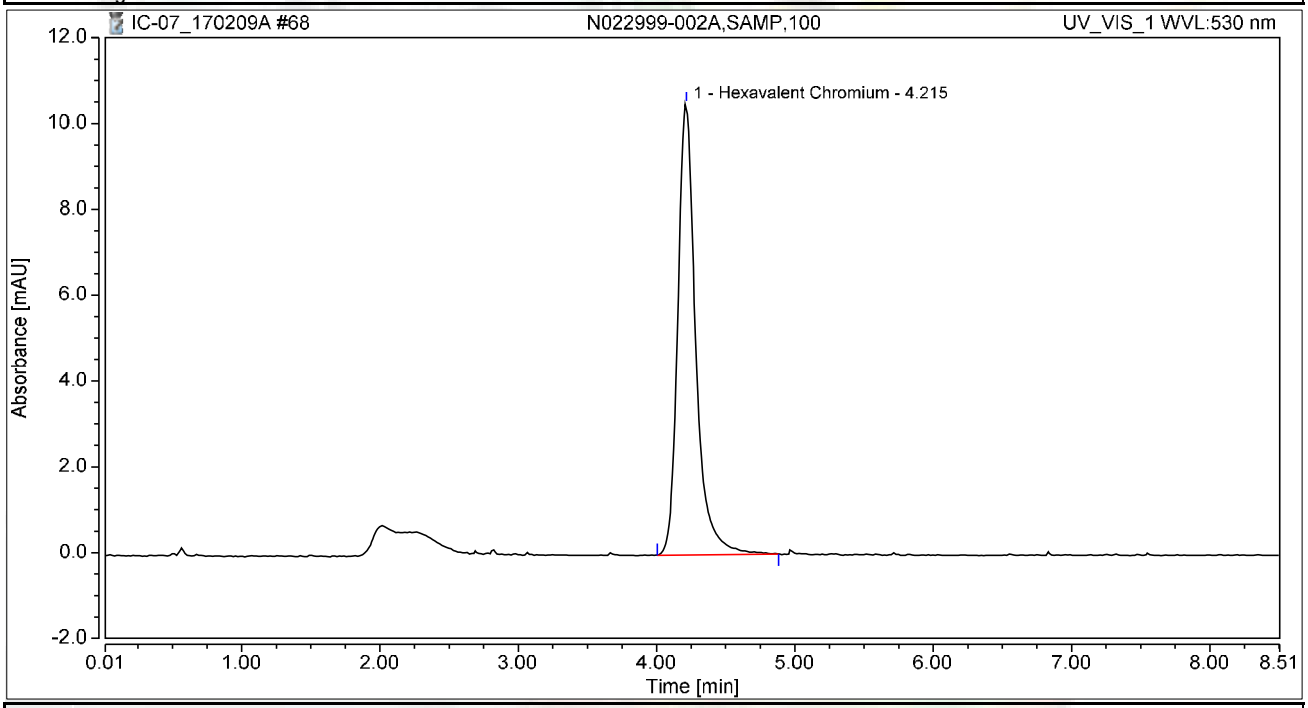
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-002A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

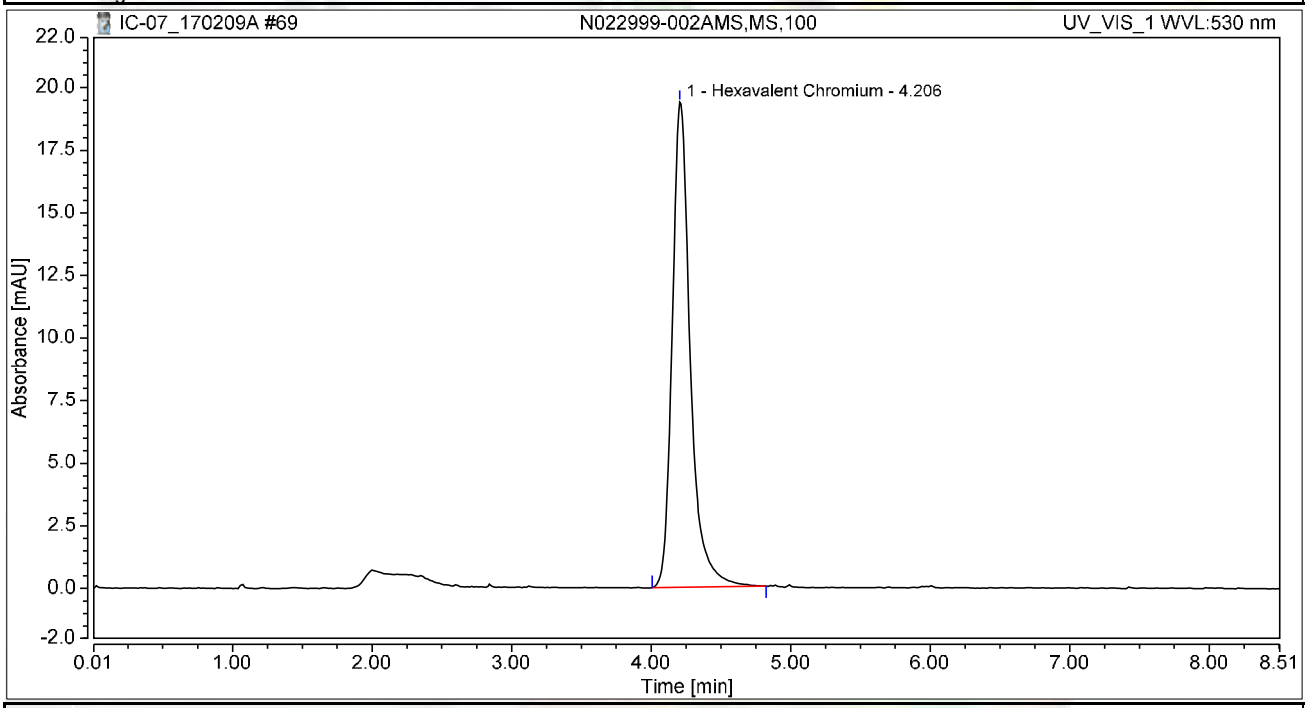
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.588	10.511	100.00	100.00	5.9869
Total:			**1.588**	**10.511**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

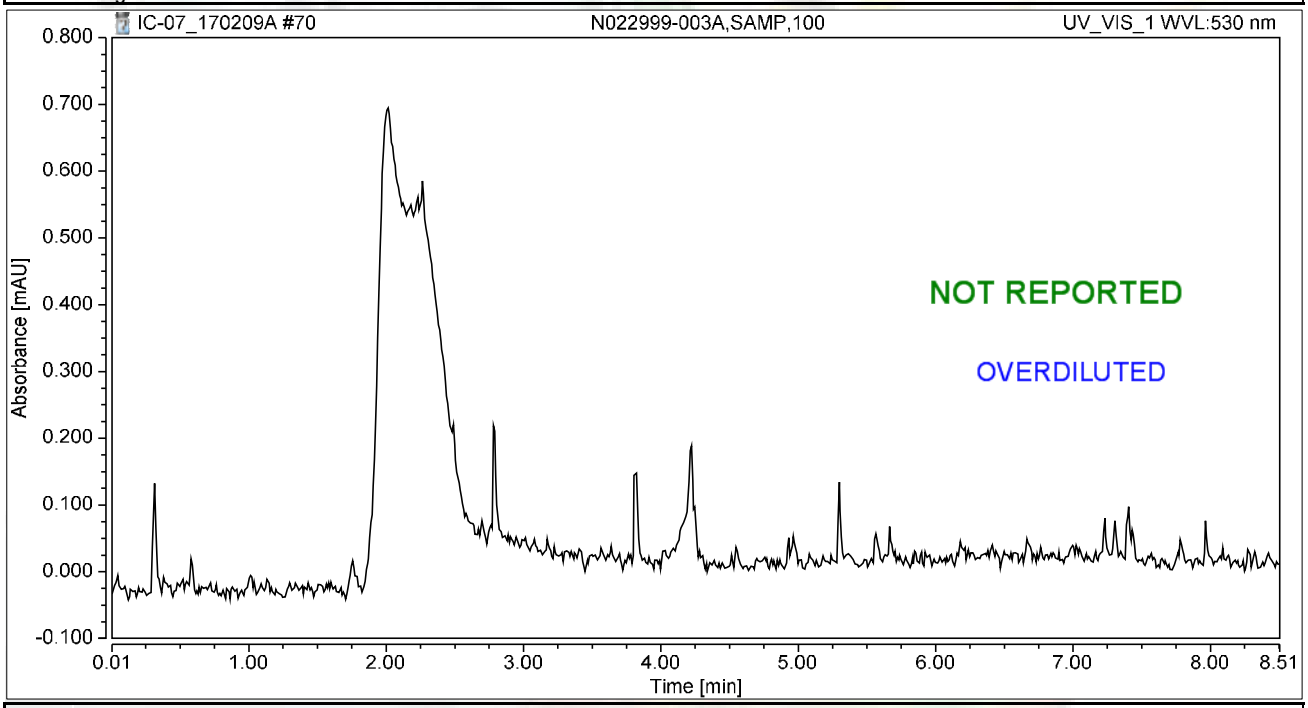
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.904	19.375	100.00	100.00	10.9471
Total:			**2.904**	**19.375**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

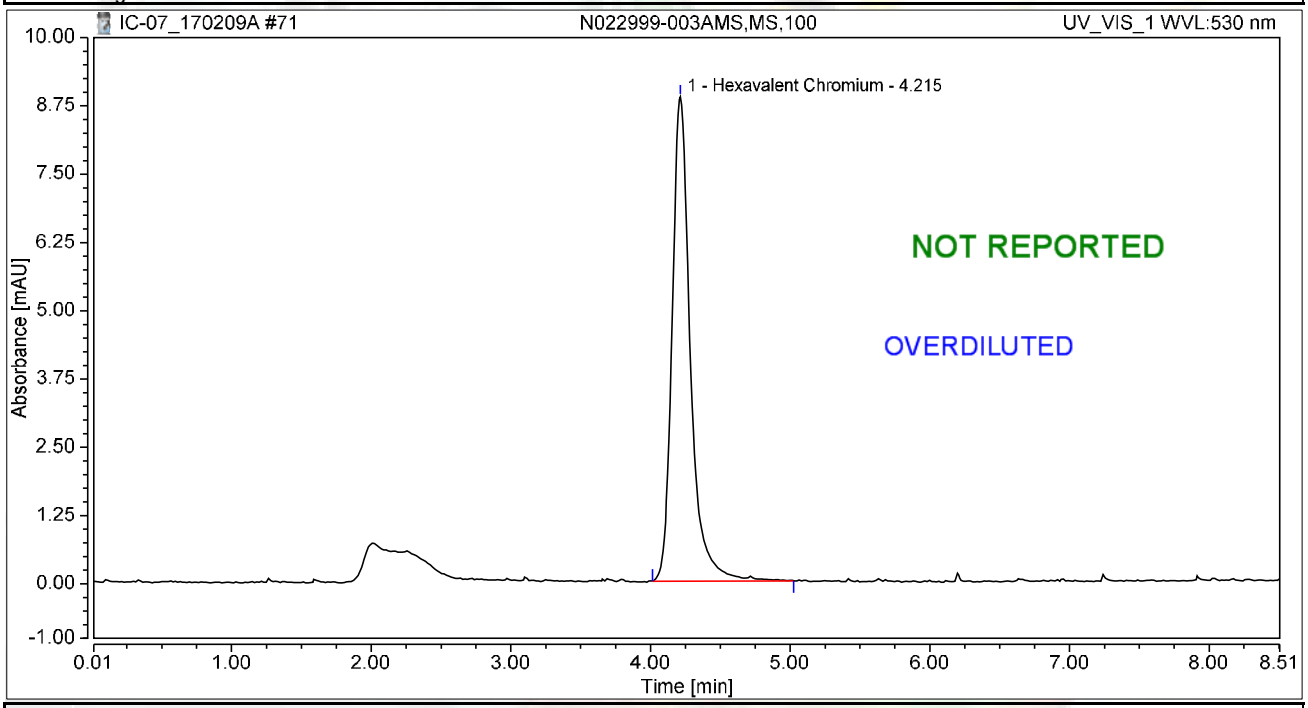
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

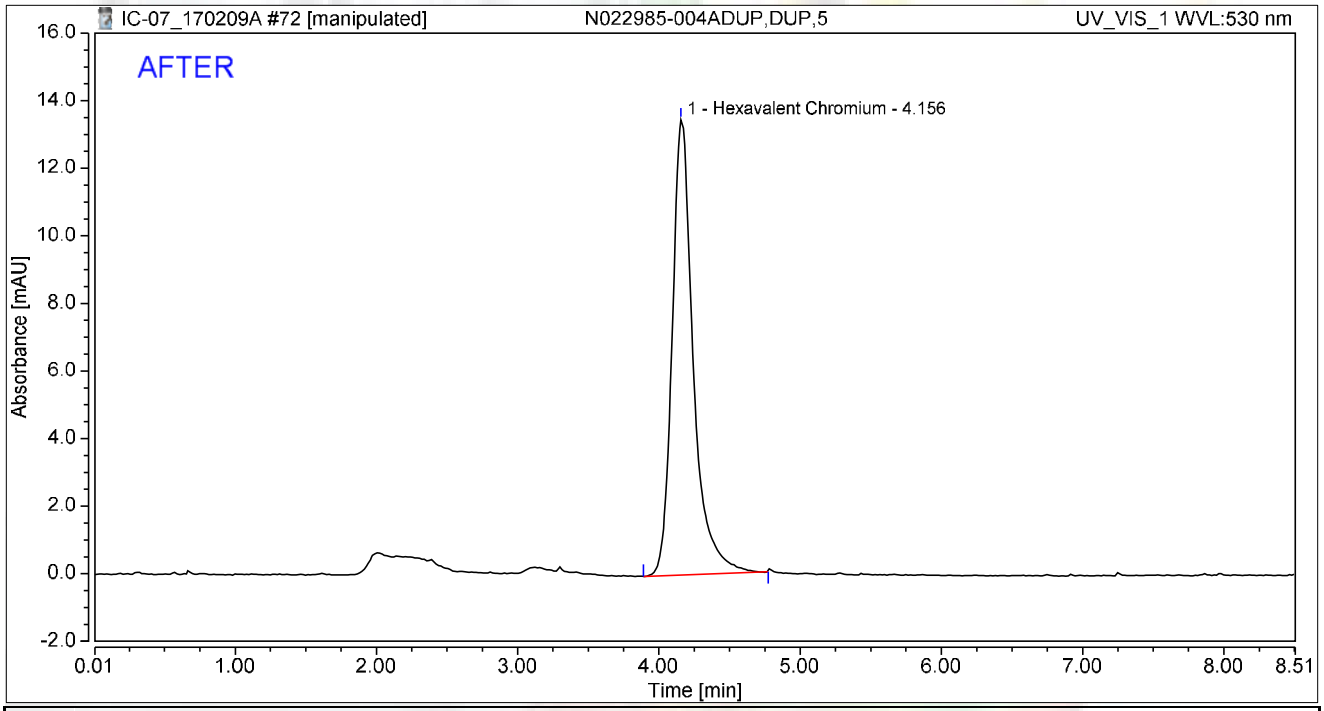
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.340	8.865	100.00	100.00	5.0526
Total:			**1.340**	**8.865**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004ADUP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.332	13.465	100.00	100.00	8.7919
Total:			**2.332**	**13.465**	**100.00**	**100.00**	

rba 2/14/2017

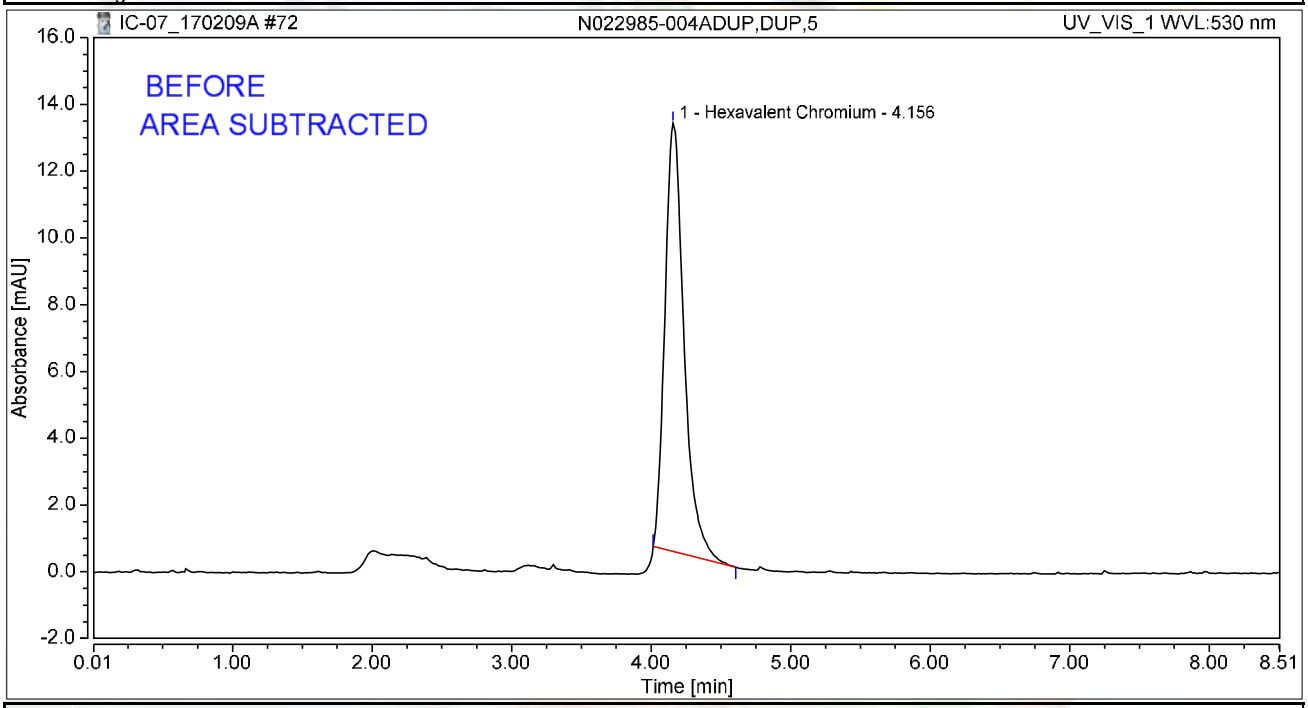
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004ADUP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.037	12.818	100.00	100.00	7.6785
Total:			**2.037**	**12.818**	**100.00**	**100.00**	

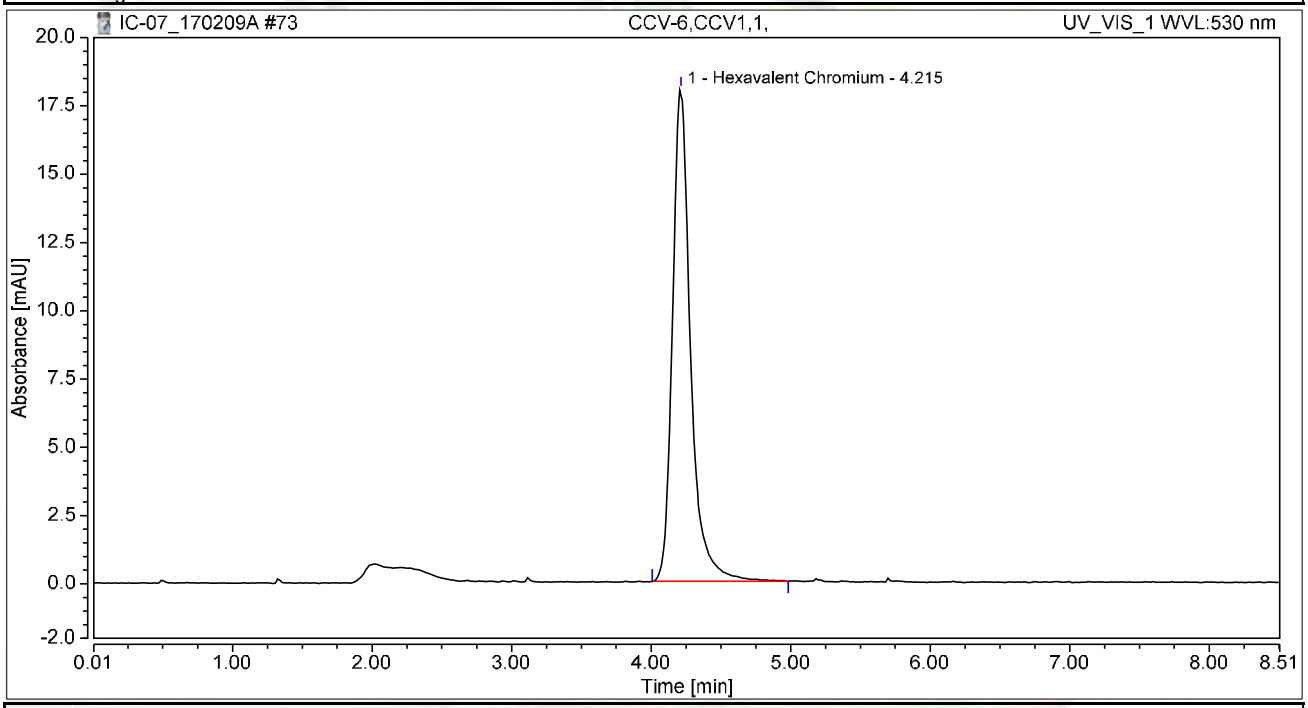
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

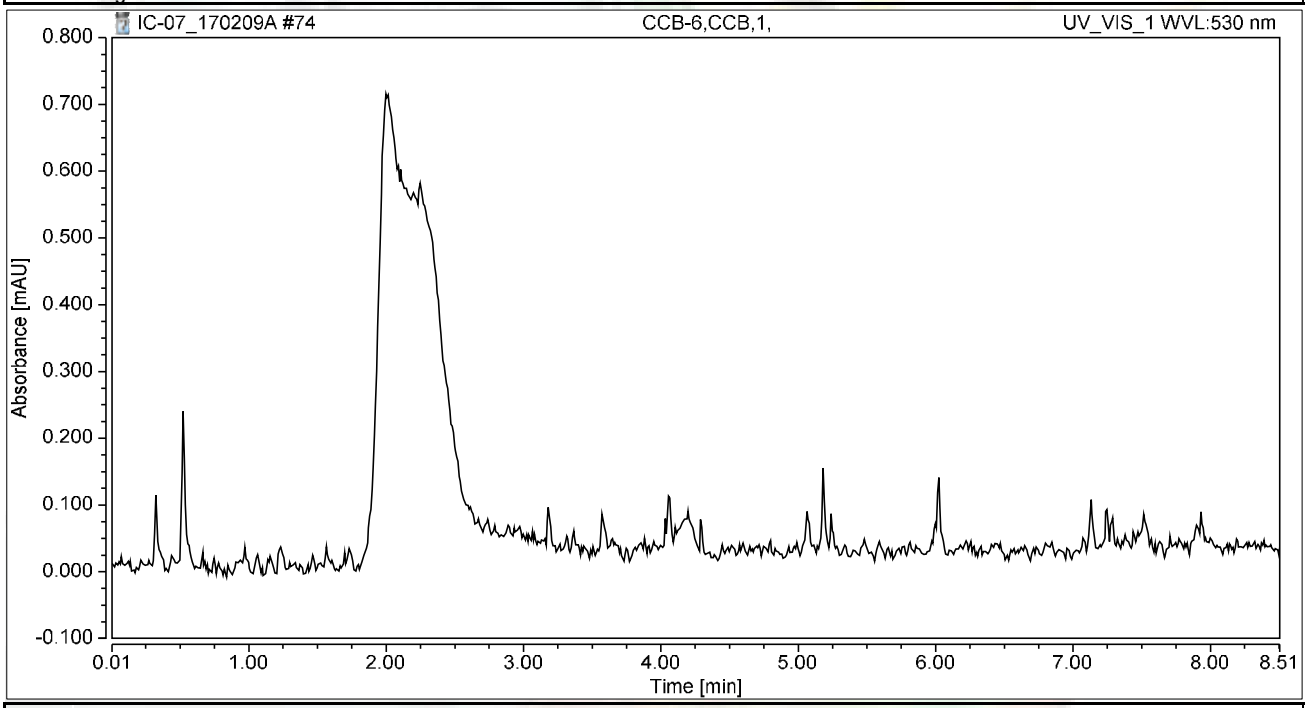
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.706	18.025	100.00	100.00	10.2008
Total:			**2.706**	**18.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

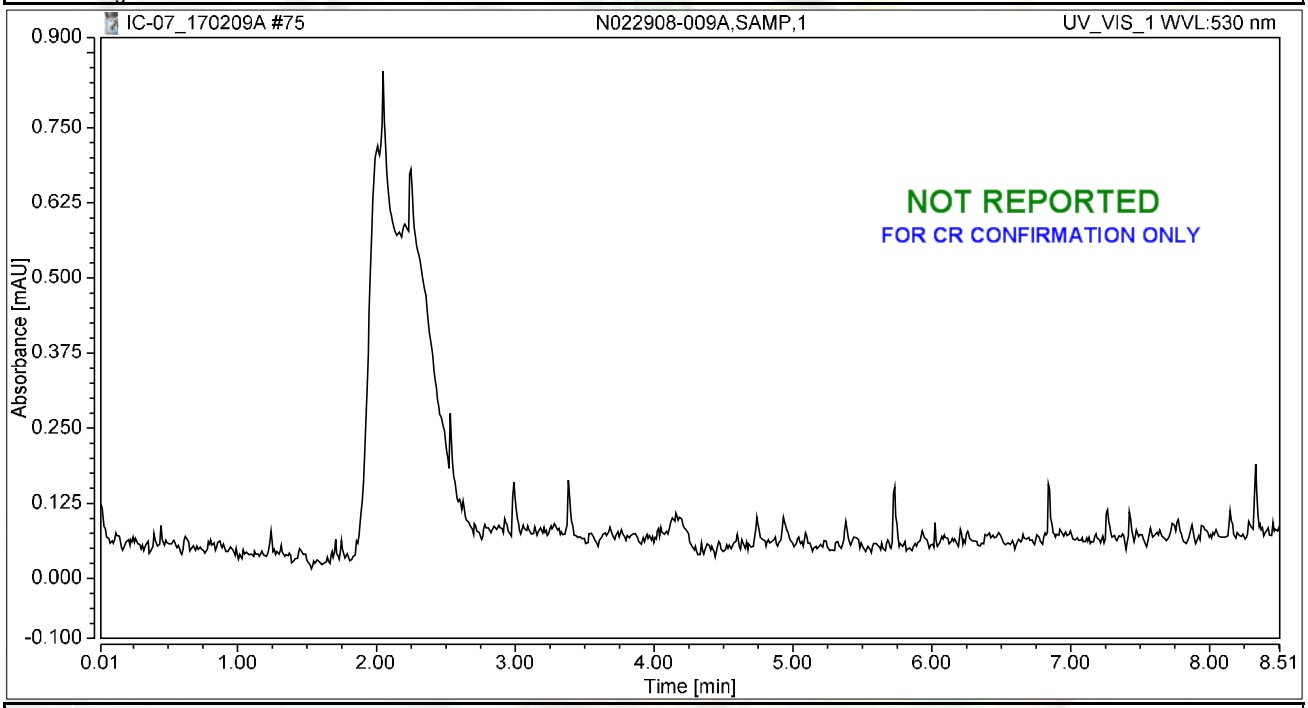
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022908-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

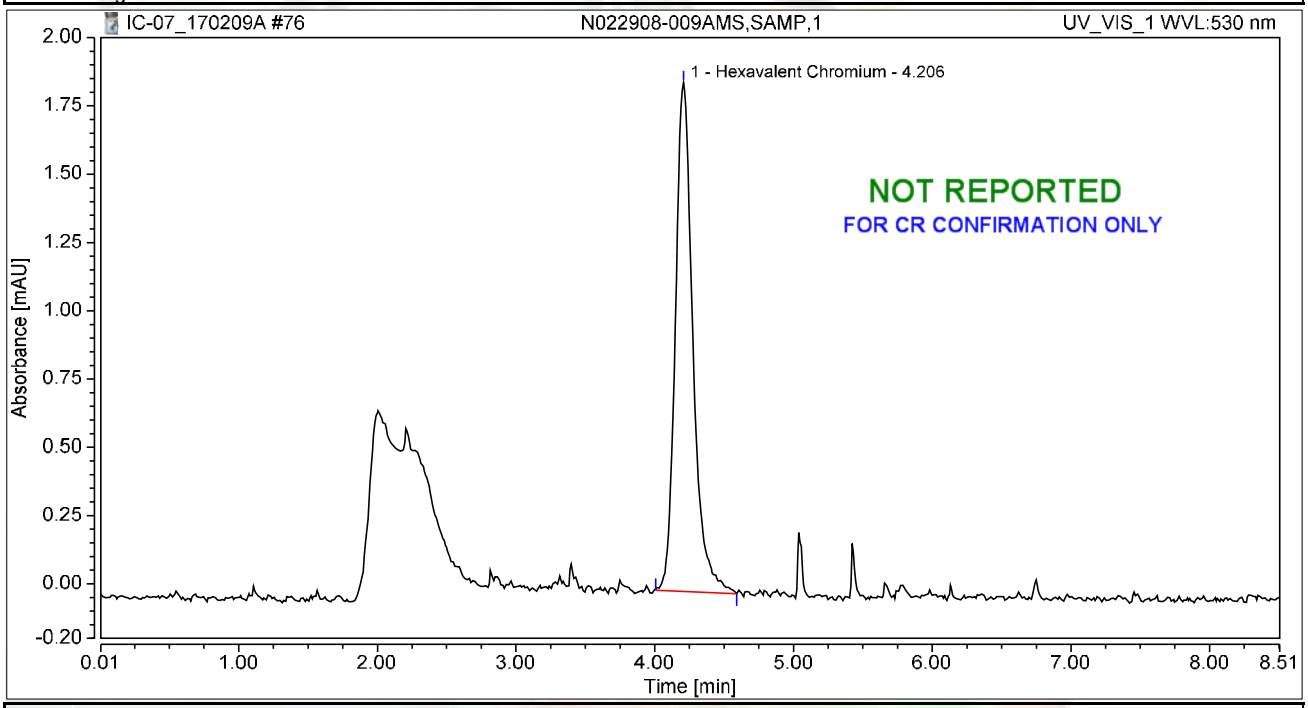
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022908-009AMS,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

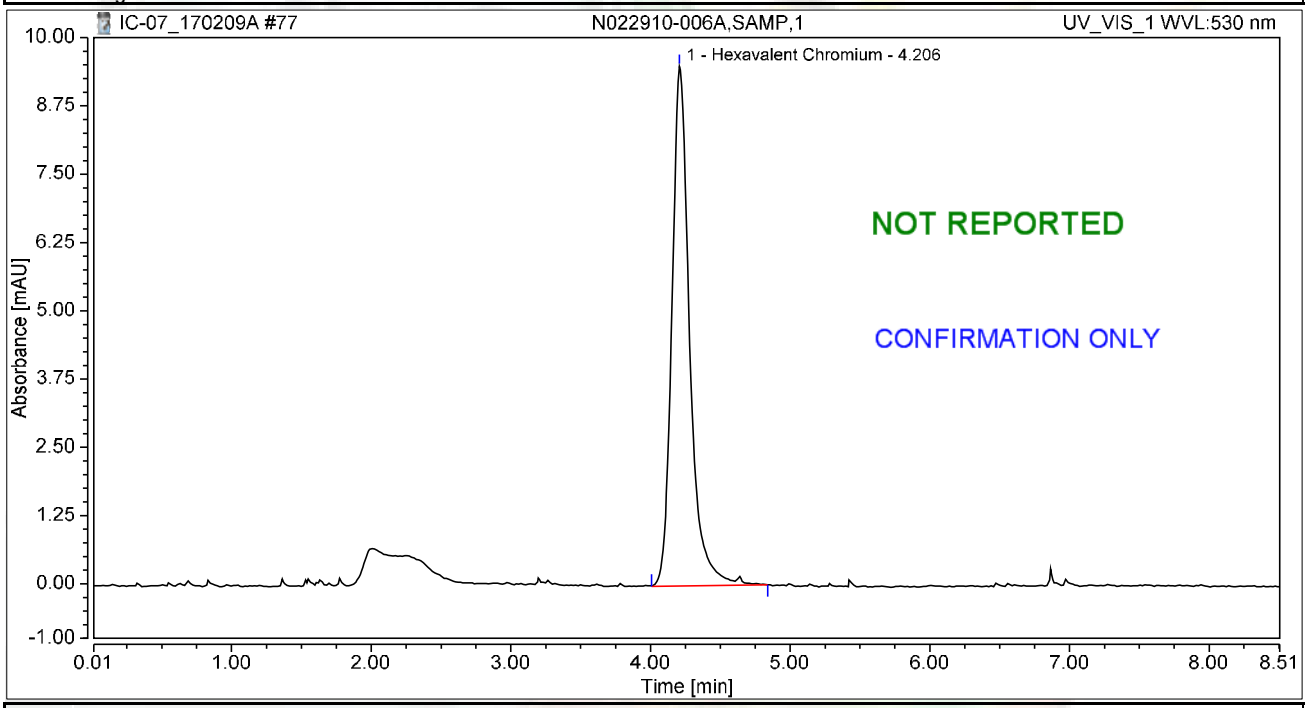
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.272	1.862	100.00	100.00	1.0272
Total:			**0.272**	**1.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022910-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

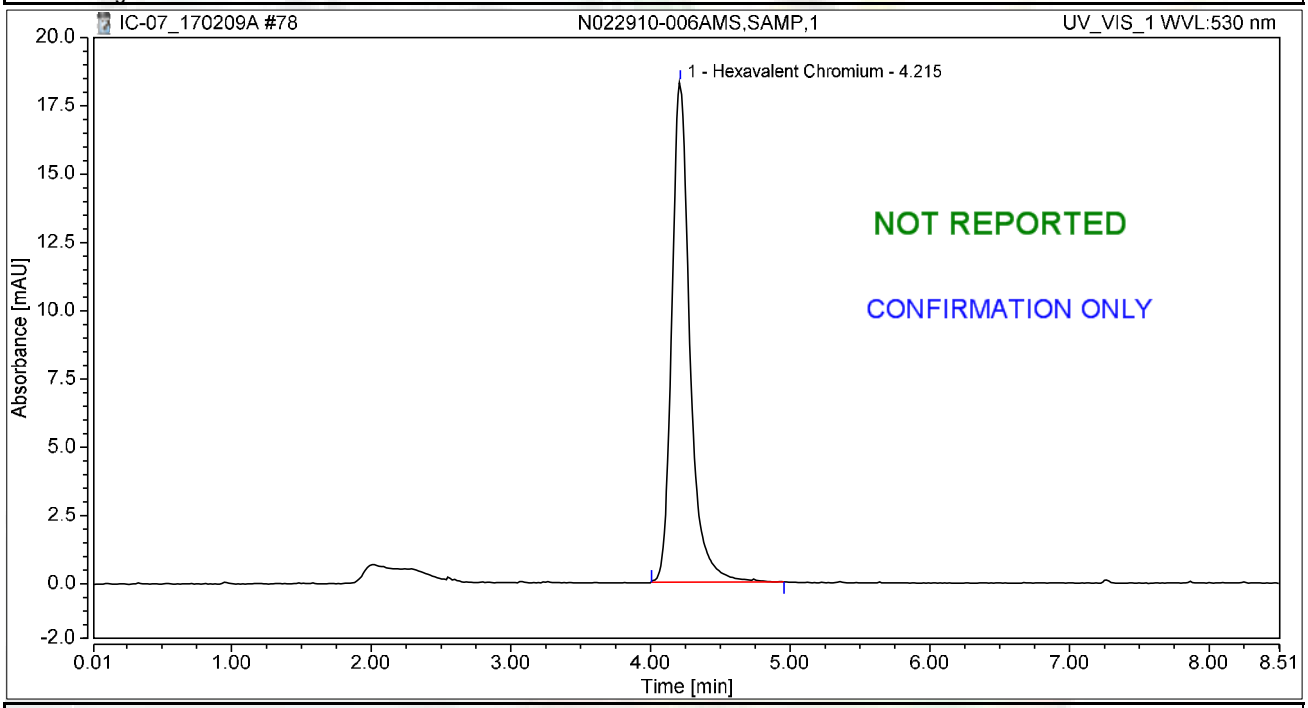
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.399	9.513	100.00	100.00	5.2750
Total:			**1.399**	**9.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022910-006AMS,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

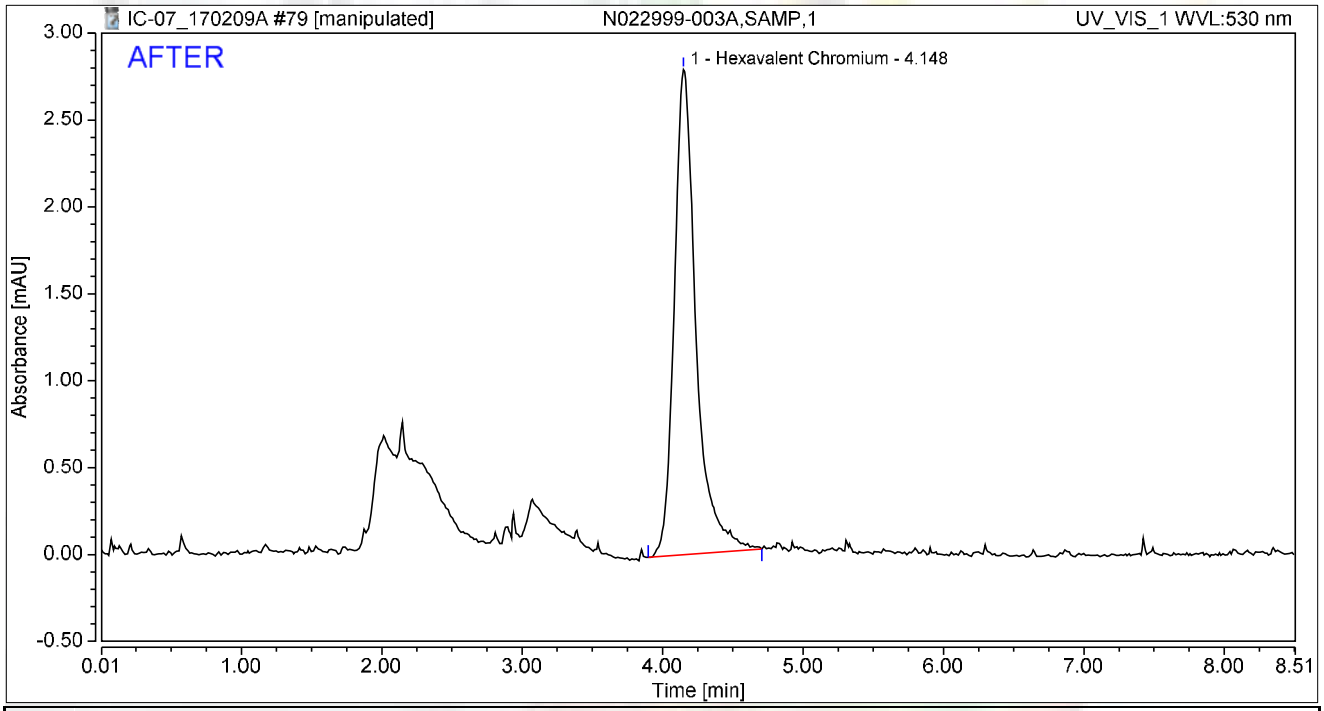
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.746	18.300	100.00	100.00	10.3515
Total:			**2.746**	**18.300**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.501	2.791	100.00	100.00	1.8886
Total:			**0.501**	**2.791**	**100.00**	**100.00**	

rba 2/14/2017

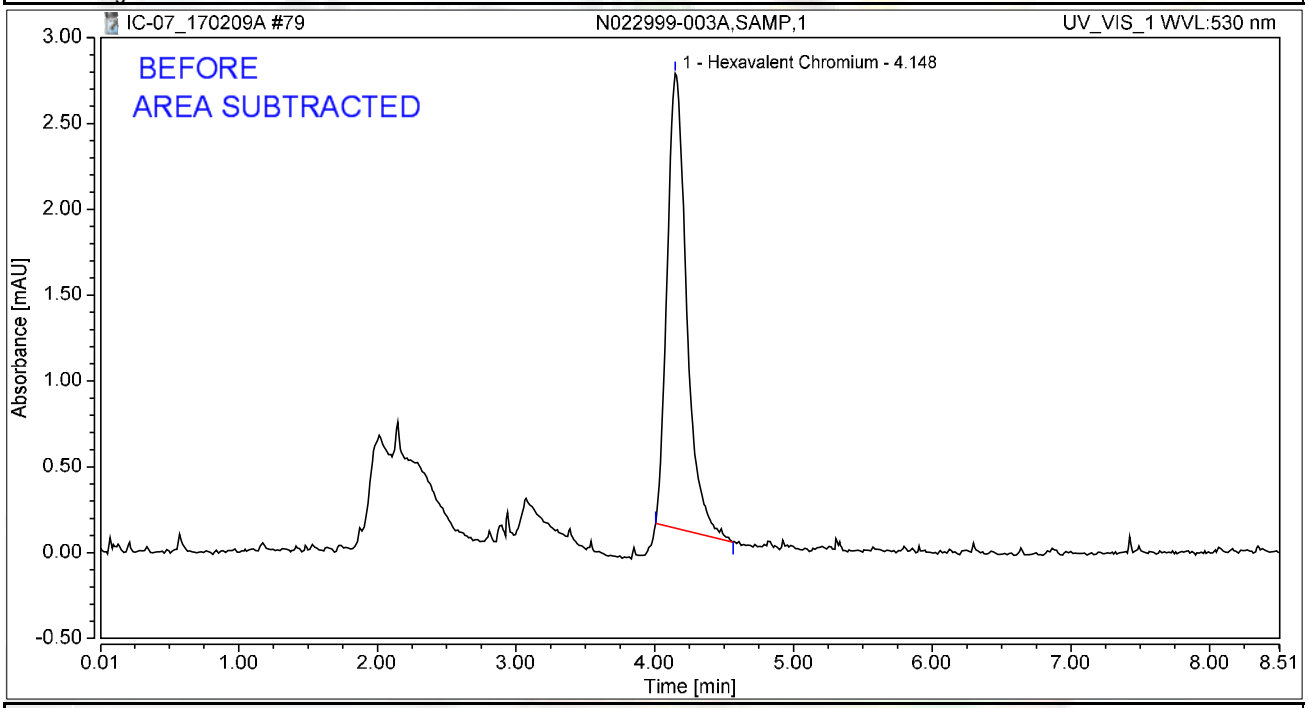
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.433	2.649	100.00	100.00	1.6339
Total:			**0.433**	**2.649**	**100.00**	**100.00**	

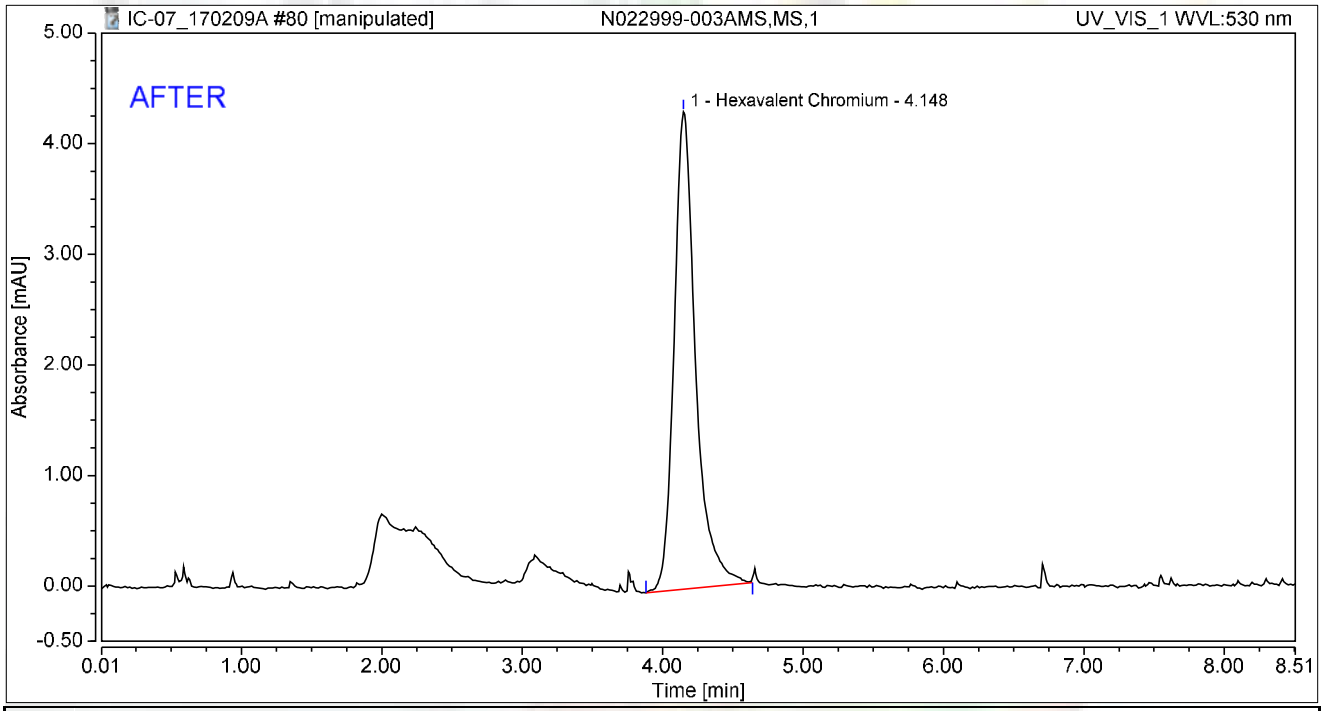
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.766	4.314	100.00	100.00	2.8879
Total:			**0.766**	**4.314**	**100.00**	**100.00**	

rba 2/14/2017

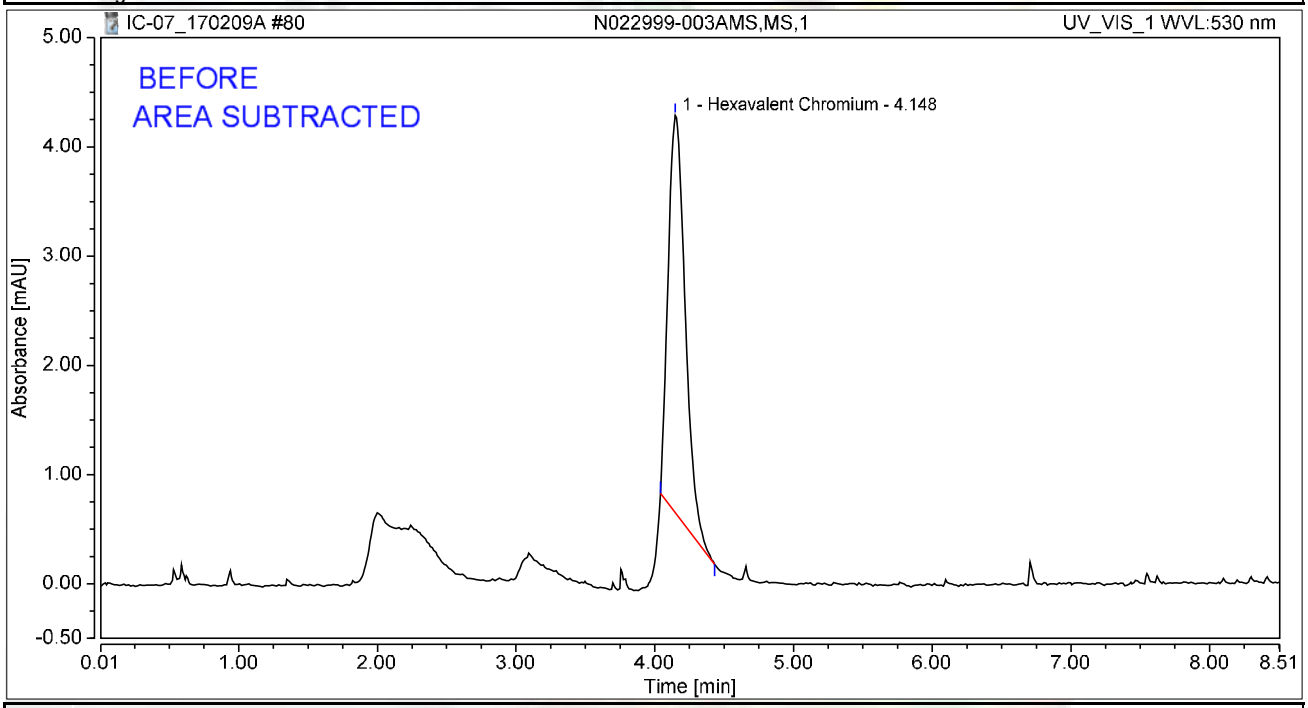
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.521	3.637	100.00	100.00	1.9649
Total:			**0.521**	**3.637**	**100.00**	**100.00**	

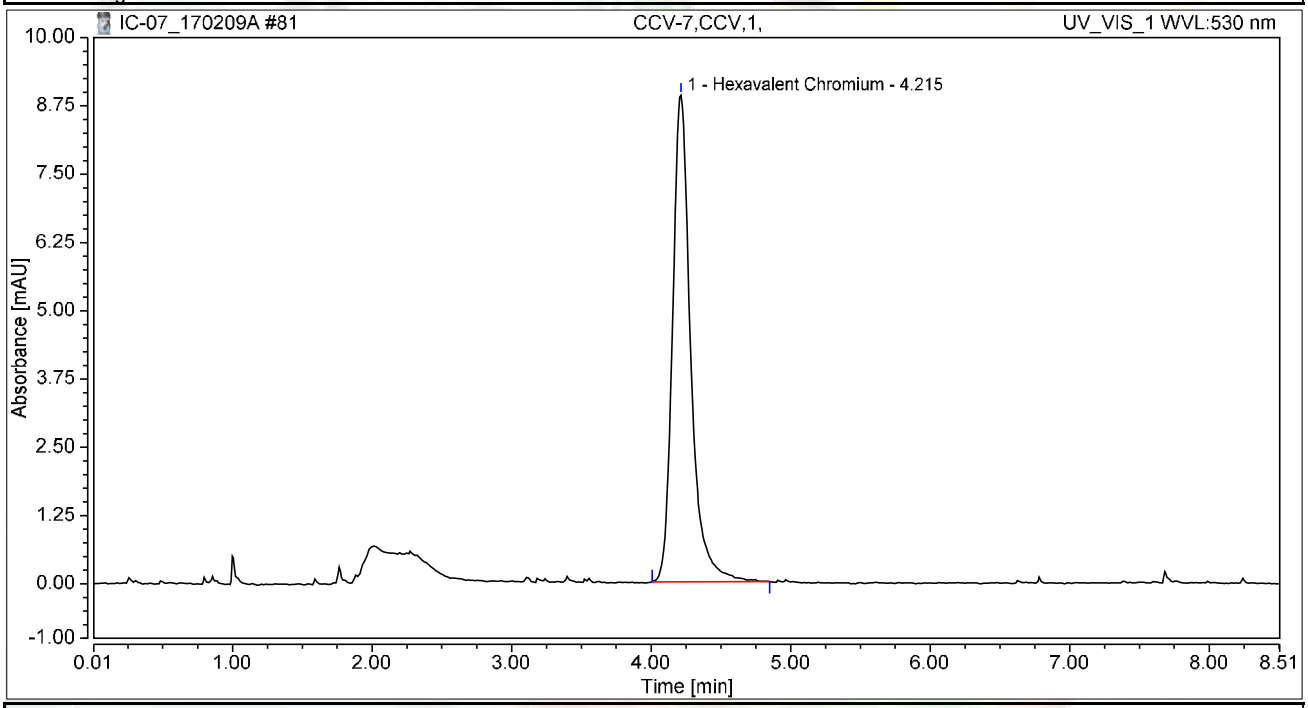
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

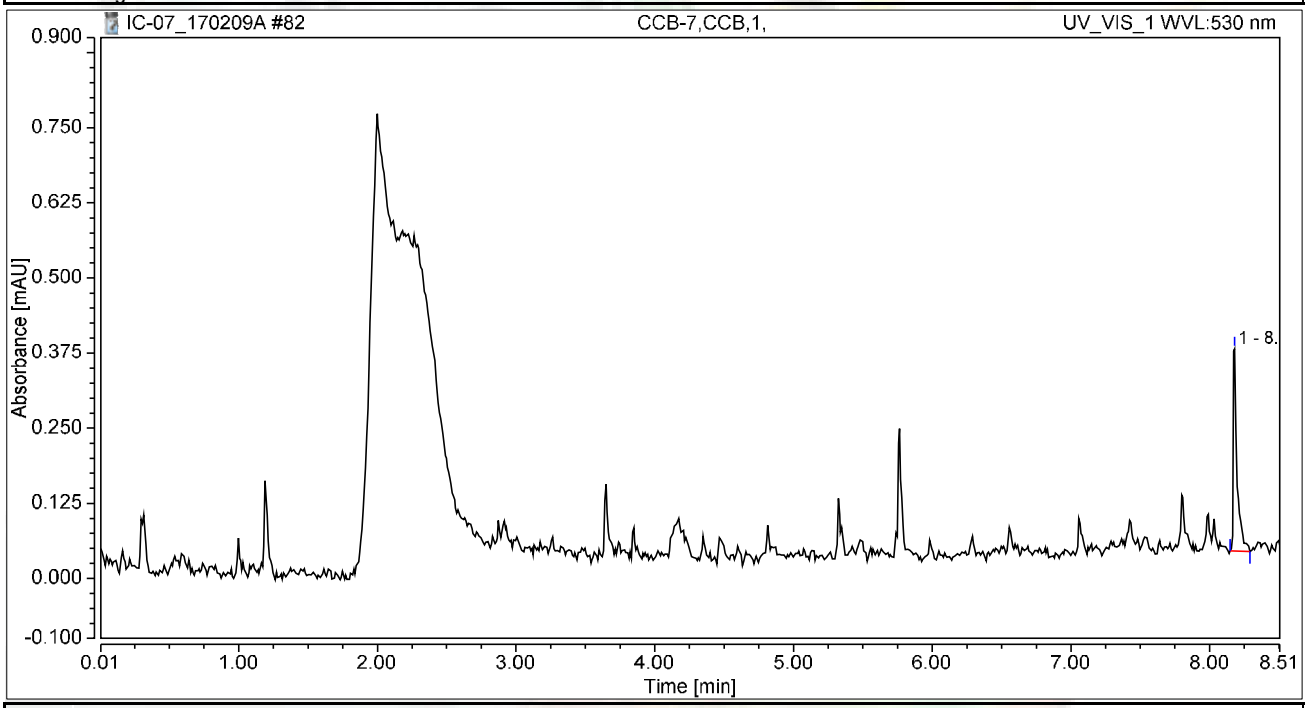
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.339	8.906	100.00	100.00	5.0477
Total:			**1.339**	**8.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

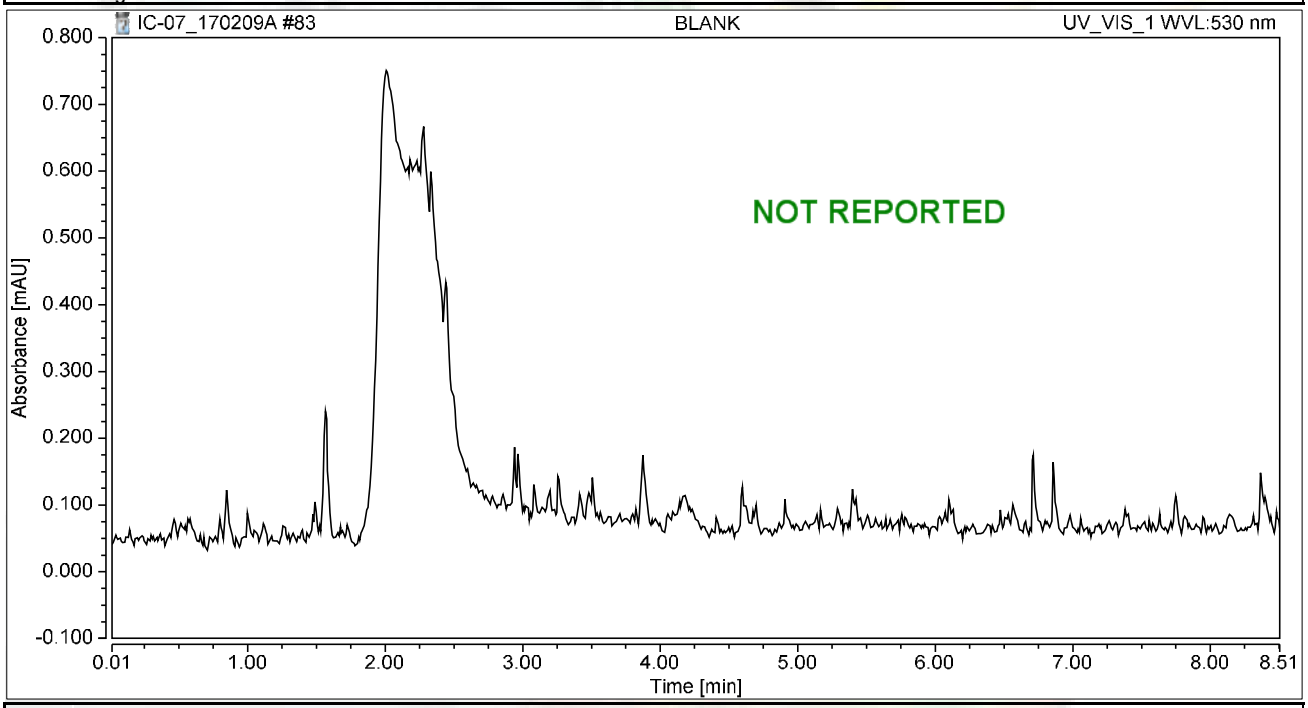
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.181	0.011	0.337	100.00	100.00	n.a.
Total:			**0.011**	**0.337**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

STANDARDS LOG

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
9/14/15	Hexadecane & Stearic Acid Std	1SSTI509 14D	4mg/mL	ACCU STANDARD	215041058	9/14/15		4/8/25	LSR
↓	↓	↓ E	↓	↓	↓	↓		↓	↓
9/28/15	EPA 1664 STANDARD (MS/MSD)	1SSTI509 28A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4130	9/28/15	10/19/15	8/31/18	LSR
11/4/15	Nitrite as N	1SSTI511 04A	1000 ppm	Absolute Stds	102615	11/4/15	11/10/15	10/26/17	2
12/7/15	Hexadecane & Stearic Acid Std	1SSTI512 07A	4 mg/mL	ACCU STANDARD	215041058	12/7/15	12/31/15	4/8/25	LSR
↓	↓	↓ B	↓	↓	↓	↓	1/8/16	↓	↓
↓	↓	↓ C	↓	↓	↓	↓	1/19/16	↓	↓
↓	↓	↓ D	↓	↓	↓	↓	2/5/16	↓	↓
↓	↓	↓ E	↓	↓	↓	↓	2/23/16	↓	↓
12/8/15	EPA 1664 STD (MS/MSD)	1SSTI512 08A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4129	12/8/15	12/31/15	8/31/18	LSR
01/05/16	1000 ppm Hexavalent Chromium	1SSTI601 05A	1000 ppm	HIGH-PURITY	1533405	01/05/16	01/07/16	06/30/17	[illegible]
2/11/16	Hexadecane & Stearic Acid Std	1SSTI602 11A	4 mg/mL	ACCU STANDARD	216011074	2/11/16	02/24/16	1/12/26	LSR
↓	↓	↓ B	↓	↓	↓	↓	3/14/16	↓	↓
↓	↓	↓ C	↓	↓	↓	↓	4/7/16	↓	↓
↓	↓	↓ D	↓	↓	↓	↓	5/23/16	↓	↓
↓	↓	↓ E	↓	↓	↓	↓	6/23/16	↓	↓
2/11/16	Fluoride, 1000 ppm	1SSTI602 11F	1000 ppm	Absolute Stds	012116	2/11/16	2/12/16	1/21/19	2
	Chloride, 1000 ppm	↓ G	↓	↓	010816	↓	↓	1/8/19	↓
	Nitrite, 1000 ppm	↓ H	↓	↓	010816	↓	↓	1/8/18	↓

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	VG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/14/16	1 ppm Cr^{6+} (1°)	IWST 161114C	ISST - 160817A	1000 ppm	100
	1 ppm Cr^{6+} (2°)	IWST 161114D	ISST - 160105A	1000 ppm	100
11/22/16	1000 ppm Talc	IWST 161122A	CINN - 140317A	–	1.0g

Logbook #2
Inorganics WK Std Log

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 ml	1ppm	H2O	-	-	5/14/17	4/19		RBA
	100ml	1ppm	H2O	-	-	5/14/17	6/30/17		RBA
	1000ml	1000ppm	H2O	-	-	11/22/17	5/9/17		LSR
5									
10									
15									
20									

ASSET Laboratories

* Working std expiration date must not exceed the manufacturer's expiration date.

CALIFORNIA
Santa Fe Springs, CA 90703
P: 562.219.7435 F: 562.219.7426

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

Logbook #2
Inorganics WK Std Log

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1511069G	99.9%	9/7/16			MG	
↓ J	↓	↓	↓	↓	↓	11-12-16	11-12-18	↓	
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	N25C014	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 10053 µS/cm	LSS	CC15087		9/9/16	10/18/16	7/8/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-06	-	9/12/16	10/3/16	10/3/19	LSR	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	3056C514	>98.0%	9/16/16			L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
↓ B	Ammonium Hydroxide	BDH	7216050	-	9/21/16	10/13/16	10/31/18	LSR	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15030	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR	
↓ 161012B	Sulfuric Acid	EMD	56194	-	↓	10/27/16	10/27/18	LSR	#8651

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161012C	Stannous Chloride	LSS	160624C	–	10/12/16			LSR	
CINV-161013A	CITRIC ACID	ALFA AESAR	X15A002	99.102%	10/18/16			LSR	LIMS 3652
CINV-161025A	Buffer pH 7	VWR	4609097	–	10/26/16	11/10/16	9/20/18	LSR	
B	Buffer pH 4		4608A00	–		11/15/16	7/2018		
C	Conductivity Std, 1.413 mS/cm		CC15045	–		11/21/16	6/15/17		
D	pH electrode storage Soln		A6189	–			7/2018		
E	electrode internal fill soln	Thermo Scientific	UW1	–					
CINV-161026A	Sodium Hydroxide, pellet	MACRON	7708-06	–	10/26/16	12/6/16	12/6/19 ~~12/12/18~~	LSR	NSA
B	Ammonium Hydroxide	VWR	7216050			12/12/16	6/2019		/NSA
C	Potassium Hydroxide	JT Baker	116209						
CINV-161026D	Sodium Hydrogen Sulfate	Sigma Aldrich	MKBR1820V	–	10/26/16			LSR	#8668
CINV-161028A	Ammonium Sulfate	LABCHEM	F258-19	–	10/28/16	12/9/16	12/9/19	LSR	/NSA
B				–		12/30/16	12/30/19		/NSA
C				–		1/13/17	1/13/20		NSA
D				–		1/25/17	1/25/20		NSA
CINV-161103A	HEXANES	EMD Chemicals	56139	–	11/3/16	11/18/16	11/18/18	LSR	8686
B				–		11/29/16	11/29/18		8687
C				–			12/19/16		8688
D				–			12/21/16		8689
CINV-161104A	Conductivity Std, 99890 µS/cm	LSS	CC15165	–	11/4/16	12/29/16	5/11/17	LSR	

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	–	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	–	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16	12/13/16	12/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161213B	Methyl Alcohol	Honeywell	4609D54	–	12/19/16	12/30/16	3/20/18	LSR	/RMA
CINV-161214A	Buffer, pH 10	VWR	CC15355	–		2/8/17	10/3/17	LSR	
B	Conductivity Std, 1413 µS/cm		C692002	–		2/2/17	12/2017	LSR	
C	Turbidity Std, 5.0 NTU	Amco Clear	16030808	99.9%	12/20/16			MG	
CINV-161220A	Methyl Alcohol	Tedia				2/8/17	2/8/19		
B									
C									
D									
E			–	–	–				
F	–	–	161128-A	–					
G	stannous chloride	LSS		–	–			–	
H			CC15085	–	12/16/16	1/16/17	7/8/17	MG	
CINV-161220I	conductivity Std 10,000	VWR	CC15261	–	12/19/16	1/25/17	9/2/17		
J	100,000		7216080	–	12/28/16	1/8/17	1/3/19	MG	/RMA
CINV-161228A	Ammonium Hydroxide	VWR		–		2/7/17	2/7/19		/RMA
161228B			140227	–					
161228C	1-5 Diphenylcarbohydrazide	J.T Baker							

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-~~161225~~D	Magnesium Chloride Hexahydrate	VWR	16C524	–	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F258-19	–	12/28/16	2/9/17	2/9/20		/ MBA
F									
G									
H									
I	Methanol	Omni solv	JU236	99.9%				–	
J	Sulfuric Acid								
~~CINV MG 1/23/17~~									
CINV170123A	Ammonium Persulfate	BDH	3056C519	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	tmp	5C0356/9	85%	1/25/17	1		MG	
B	Buffer, pH 4	VWR	4610A50	–			9/2018	KSR	
C	Buffer, pH 7		4611C60				10/2018	KSR	
D	Buffer, pH 7 (ICS)	Thermo Scientific	UQ1	–			10/2018	KSR	
E	Conductivity Std, 10,000 µS/cm	Ricca	2611936	–			10/2018	KSR	
F	Conductivity Std, 1413 µS/cm	Mettler Toledo	16G205006	–			7/20/18	KSR	

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr6+)	R160919D	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
10% H_2SO_4	R160920A	#8529	10 mL	100
~~1,5-Diphen~~ 1,5-Diphenylcarbazide sol'n	1 B	CINV-150106G / #8323	0.25g / 50 mL	50
Buffer (Cr6+)	R160920C	CINV-160624D / CINV-160609A	3.3g / 16.5 mL	100
0.02 N H_2SO_4	R160920D	R160831B	~~[illegible]~~ 200 mL	1000
Eluent (Cr6+)	R160920E	CINV-160624D / CINV-160609A	66g / 13 mL	2000
ASCORBIC ACID SOLUTION	R160921A	CINV-141126A / #8319	6g / 2mL	100
Post Column Rgt (Cr6+)	R160921B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Digestion solution	R160922A	CINV-160721A / #8396	90g / 60g	3000
20% $NaHSO_4$	R160922B	CINV-150311A	800g	4L
ASCORBIC ACID SOLUTION	R160923A	CINV 141126A / #8319	6g / 2mL	100
Buffer (Cr6+)	R160923B	CINV-160624D / CINV-160609A	66g / 130 mL	2000
5N HNO_3 Cr6+	R160924A	#8529	125mL	500
Post column Reagent Cr6+	R160925A	CINV 160408A / #8529 / CINV 160616A	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R160927A	CINV: 8548	1L	2L
ASCORBIC ACID SOLUTION	R160927B	CINV-141126A / #8323	6g / 2mL	100
Eluent (Cr6+)	R160928A	CINV-160624D / CINV-160609A	66g / 13 mL	2000
DIGESTION SOLUTION	R160930A	CINV-160721A / #8396	60g / 40g	2000
5N HNO_3	1 B	#8560	138 mL	500
6N NaOH	R160990C	#8396	24g	100

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	9/10 [illegible]	9/19/16	9/24/16	8/12/19; 8/31/18; 8/31/18		[illegible]
	10%	9/20/16	9/20/17	8/31/18		[illegible]
	–	[illegible]	9/20/16	3/12/18; 9/14/18		[illegible]
	[illegible]	9/20/16	10/20/16	9/11/19; 8/31/18		[illegible]
5	0.[illegible] N	9/20/16	3/20/16	8/31/18		[illegible]
	–	9/20/16	9/20/17	9/11/19; 8/31/18		[illegible]
	–	9/21/16	10/5/18	8/28/18; 9/1/18		[illegible]
	–	9/21/16	9/26/16	8/12/19; 8/31/18; 8/31/18		[illegible]
	–	9/22/16	10/22/16	8/4/19; 6/25/19		[illegible]
10	20%	9/22/16	~~7/14/17~~ 9/22/16 7 [illegible]	10/6/18		[illegible]
	–	9/23/16	10/7/16	8/28/18; 9/1/18		[illegible]
	–	9/23/16	10/23/16	9/11/19; 8/31/18		[illegible]
	5N	9/24/16	9/24/15	9/8/18		[illegible]
	–	9/25/16	9/30/16	8/12/19; 8/31/18; 8/31/18		[illegible]
15	1:1	9/27/16	9/27/17	7/25/18		[illegible]
	–	9/27/16	10/11/16	8/28/18; 9/14/18		[illegible]
	–	9/28/16	9/28/17	9/11/19; 8/31/18		[illegible]
	–	9/30/16	10/30/16	8/4/19; 6/25/19		[illegible]
	5N	[illegible]	9/30/17	9/28/18		[illegible]
20	6N	9/30/16	9/30/17	6/25/19		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr6+)	R161003A	CINV-160624D / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161003B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Buffer (Cr6+)	R161003C	CINV-160912A / CINV-160609A	39.6g / 78 mL	1200
Eluent (Cr6+)	R161005A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161005B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161006A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Eluent (Cr6+)	R161007A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161007B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
Eluent (Cr6+)	R161010A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161010B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
DIGESTION SOLUTION (Cr6+)	R161010C	CINV-160721A / #8396	60g / 40g	2000
MgCl2 SOLUTION	R161010D	CINV-160219C	40g	100
Eluent (Cr6+)	R161011A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Stock Eluent (Anions)	R161011B	CINV-160721A / CINV-150601A	95.39g / 23.524g	2000
Eluent (Cr6+)	R161012A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161012B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161012C	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Buffer (Cr6+)	R161013A	CINV-160912A / CINV-160912B / ~~CINV-160921B~~ CINV-160921B	66g / 130 mL	2000
STLC Fluid	R161013B	8455 / R160728A	160g / 250 mL	3500
TCLP 1 Fluid	R161013C	8264 / R160725A	11.4 mL / 128.6 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/3/16	10/3/17	9/11/19; 8/31/18		
	–	10/3/16	10/8/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/3/16	11/3/16	10/3/19; 8/31/18		pba
	–	10/5/16	10/5/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
5	–	10/5/16	10/10/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/6/16	10/6/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
	–	10/7/16	10/7/17	10/3/19; 8/31/18		pba
	–	10/7/16	10/12/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/10/16	10/10/17	10/3/19; 8/31/18		pba
10	–	10/10/16	10/15/16	8/12/19 pba ~~8/12/19~~; 8/31/18; 8/31/18		pba
	–	10/10/16	11/10/16	8/4/19; 6/25/19		pba
	–	1	10/10/17	3/10/19		2
	–	10/11/16	10/11/17	10/3/19; 8/31/18		1
	–	10/11/16	10/10/17	8/4/19; 6/9/18		pba
15	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/12/16	10/17/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/13/16	10/13/17	10/3/19; 10/3/18		pba
	–	10/10/16	10/10/17	6/21/19, 7/28/17	Late entry	pba
20	–	10/10/16	10/10/17	6/21/19, 7/25/17	Late entry	MG
						MG

* Check reagent expiration date versus stock/manufacturer's expiration date

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2694
"Providing Clients with Passion and Professionalism"

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr6+)	R161014A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161014B	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161017A	CINV-160912B / CINV-160921B	66g / 13 mL	2000 ~~8000~~ mL
4N NaOH	R161017B	8396	160g	1000
SRC Fluid	R161017C	8652 / R161017B	160g / 800mL	3500
1,5-Diphenylcarbazide solution	R161017D	CINV-150106G / #8328	0.25g / 50 mL	50mL
Post Column Rgt (Cr6+)	R161018A	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161019A	CINV-160912B / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161020A	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
2% CuSO4	R161019B	CINV-140211D	2g	100
R1 Buffer	C	R160814A / CINV150127A / CINV140224A, CINV160407A	2.5mL, 85g / 0.1g, 14mL	1000
Coloring Rgt	D	CINV150323A / CINV160407A / CINV150224C	0.7g / 4g / 7mL	100
Eluent (Cr6+)	R161021A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
2 ~~R16~~ DIGESTION SOLUTION	R161022A			
Eluent (Cr6+)	R161024A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161024B	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
~~1:1 HNO3~~	~~R161024C~~	~~CINV. 8648~~	~~1L~~	~~2L~~
1:1 HNO3	R161024C	CINV. 8648	1L	2L
ELUENT (Cr6+)	R161025A	CINV-160902B / CINV-160921B	66g / 13 mL	2000
POST-COLUMN RGT (Cr6+)	1 B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/14/16	10/14/17	10/13/19; 10/13/18		
	–	10/14/16	10/19/16	8/12/19; 8/31/18, 8/31/18		pba
	–	10/17/16	10/17/17	10/13/19; 10/13/18		pba
	–	10/17/16	10/17/17	6/25/19		pba
	–	10/17/16	10/17/17	10/17/17, 10/17/17		MG
5	–	10/17/16	10/17/17	10/17/17, 10/17/17		MG
	–	10/17/16	10/17/16	3/12/18; 10/10/17		2
	–	10/18/16	10/23/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/19/16	10/19/17	10/13/19; 10/13/18		pba
	–	10/20/16	10/25/16	8/12/19; 8/31/18; 8/31/18		pba
10	2%	10/19/16	10/19/16	5/20/17	LATE ENTRY	REB
	–	↓	↓	9/14/16, 5/22/18 ~~5/22/17, 7/28/18~~	↓	REB
	–			5/22/18, 4/6/19, 10/4/17		REB
	–	10/21/16	10/21/17	10/13/19; 10/13/18		pba
15						
	–	10/24/16	10/24/17	10/13/19; 10/13/18		pba
	–	10/24/16	10/29/16	8/12/19; 8/31/18; 8/31/18		pba
	1:1	10/24/16	10/24/17	10/24/18		pba
	–	10/25/16	10/25/17	10/13/19 - 10/13/18		2
20	–	↓	10/30/16	8/31/19; 8/31/18; 8/31/18		1

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R161026A	CINV-160912B/CINV-160921B	66g/13mL	2000
TCLP 1	R1626B	8264, R1607250	11.4mL, 128.6mL	2000
STLC	R1626C	8652, R161017B	160g, 250mL	3500
Post Column Rgt (Cr^{6+})	R161027A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
DIGESTION SOLUTION (Cr^{6+})	R161027B	CINV-160721A/#8396	120g/80g	4000
5N HNO_3	R161027C	#8527	138mL	500
1N NaOH	R161027D	8396	40g	1000
Eluent (Cr^{6+})	R161028A	CINV-160912C/CINV-160921B	66g/13mL	2000
TCLP Fluid 1	R161024D	R1607250/#8264	128.6mL, 11.4mL	2000
TCLP Fluid #1	R161030A	R161027D/#8264	128.6mL/11.4mL	2000
Eluent (Cr^{6+})	R161031A	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161031B	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Digestion Solution	R161101A	CINV-160219C	40g	100
Phosphate buffer solution	B	CINV-M0226A0/CINV-150503A	8.7g/16.8g	100
Eluent (Cr^{6+})	R161101C	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161101D	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Eluent (Cr^{6+})	R161103A	CINV-160912C/CINV-160921B	66g/13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R161103B	CINV-160721A/#8396	30g/20g	1000
5N HNO_3	C	#8562	138mL	500
Post Column Rgt (Cr^{6+})	R161104A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000

ASSET LABORATORIES
CALIFORNIA
17000 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
5451 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	10/26/16	10/26/19	10/13/19 ; 10/13/18		pbc
	-	10/26/16	10/26/17	6/21/19 , 7/25/17		MG
	-	10/26/16	10/26/17	10/17/17 , 10/17/17		1
	-	10/27/16	11/1/16	8/12/19 ; 10/27/18 8/31/18		pbc
5	-	10/27/16	~~10~~ 11/27/16	8/4/19 ; 6/25/19		2
	5N	1	10/27/17	10/25/17		1
	-	10/27/16	10/27/17	6/25/19		MG 2
	-	10/28/16	10/28/17	10/28/19 ; 10/31/18		pbc
	-	10/29/16	7/25/17	7/25/17 ; 5/31/18	pH = 4.93	MG
10	-	10/30/16	2 ~~7/25~~ 10/27/17	10/27/17 ; 5/31/18		2
	-	10/31/16	10/31/17	10/28/19 ; 10/31/18		RRA
	-	10/31/16	11/5/16	8/12/19 ; 10/27/18 ; 8/31/18		RRA
	-	11/1/16	11/1/17	3/10/19		2
	-	1	6/15/17	6/15/17 ; 8/7/18		1
15	-	11/1/16	11/1/17	10/28/19 ; 10/31/18		pbc
	-	11/1/16	11/6/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc
	-	11/3/16	11/3/17	10/28/19 ; 10/31/18		pbc
	-	11/3/16	12/3/16	8/4/19 ; 6/25/19		2
	5N	11/3/16	11/3/17	11/3/18		2
20	-	11/4/16	11/9/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
TCLP 1	R161107A	8264, R160725A	11.4mL, 128.6mL	1000
STLC	R161107B	8652, R161017B	160g, 250mL	3500
TCLP Fluid #1	R161104B	R161027D, #8264	257.2mL; 22.8mL	4000
Eluent (Cr^{6+})	R161107C	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161108A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
0.02N H_2SO_4	R161109A	R160831B	200mL	1000
Eluent (Cr^{6+})	R161109B	CINV-160912C / CINV-160921B	66g / 13mL	2000
Buffer (Cr^{6+})	R161110A	CINV-160912C / CINV-160921B	16.5g / 32.5mL	500
Post Column Rgt (Cr^{6+})	R161111A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
20% $NaHSO_4$	~~R161112A~~ R161111B	#8664	800g	4L
DIGESTION SOLUTION (Cr^{6+})	R161111C	CINV-160721A / #8396	60g / 40g	2000
Eluent (Cr^{6+})	R161115A	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161115B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
ELUENT (Cr^{6+})	R161116A	CINV-160912C / CINV-160921B	66g / 13mL	2000
POST-COLUMN RGT (Cr^{6+})	1 B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
~~DIGESTION SOLUTION (Cr^{6+})~~	~~R161117A~~ 7/11/18			
Eluent (Cr^{6+})	R161118A	CINV-160912D / CINV-160921B	66g / 13mL	2000
ASCORBIC ACID	R161119A	QNV-141126A / #8691	3g / 1mL	50mL
11N H_2SO_4	R161118B	#8651	31mL	100mL
~~Ammonium molybdate-sb-k tartrate~~	~~1 C~~			

7/11/18/16

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	11/07/16	11/07/17	6/21/19, 7/25/17		MG
–	11/07/16	11/07/17	10/17/17, 10/17/17		1
–	11/4/16	10/27/17	10/27/17; 8/31/18	pH = 4.91	2
–	11/7/16	11/7/17	10/28/19; 10/13/18		[illegible]
–	11/8/16	11/13/16	8/12/19; 10/27/18; 8/31/18		[illegible]
0.02 N	11/9/16	5/9/~~16~~ 17 LSR	8/31/17		LSR
–	11/9/16	11/9/17	10/28/19; 10/13/18		[illegible]
–	11/10/16	12/10/16	10/28/19; 10/13/18		[illegible]
–	11/11/16	11/16/16	8/12/19; 10/27/18; 8/31/18		[illegible]
20%	~~11/13~~ 11/11/16	11/11/17	11/11/19		HSG
–	11/11/16	12/11/16	8/4/19; 6/25/19		2
–	11/15/16	11/15/17	10/28/19; 10/13/18		NBA
–	11/15/16	11/20/16	8/12/19; 10/27/18; 8/31/18		NBA
–	11/16/16	11/16/17	10/28/19; 10/13/18		2
–	1	11/21/16	8/12/19; 10/27/18; 8/31/18		1
					11/17/16
–	11/18/16	11/18/17	11/18/19; 10/13/18		NBA
–	11/19/16	12/3/16	8/26/18; 11/15/18 ~~10/27/18~~		2
1 N	11/18/16	11/18/17	10/27/18		2
	1				1 11/19/16

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post column Rgt (Cr6+)	R161122A	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161128A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161128B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28 mL / 100mL	1000
Buffer (Cr6+)	R161128C	CINV-160912D / CINV-160921B	16.5g / 325 mL	500
IN NaOH	R161128D	8396	40g	1000
TCLP 1	R161128E	8269 / R160725A	11.4mL / 128.6mL	2000
STLC	R161128F	8652, R161017B	160g, 250mL	3500
Digestion Solution (Cr6+)	R161128G	CINV-160721A / #8396	70g / 20g	1000
MgCl2 Solution	R161129A	CINV-160219C	40 g	100
5N HNO3	R161129B	#8562	138 mL	500
Eluent (Cr6+)	R161130A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161130B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1600
Buffer (Cr6+)	R161130C	CINV-160912D / CINV-160921B	66g / 130 mL	2000
Digestion Solution (Cr6+)	R161130D	CINV-160721A / #8396	30g / 20g	1000
2% CuSO4	R161129C	CINV-140211D	2g	100
R1 Buffer	R161129D	R160814A / CINV150127A, CINV160224A, CINV160607A	2.5mL, 85g, 0.1g, 14 mL	1000
Coloring Rgt	R161129E	CINV150323A / CINV160405A / CINV150924C	0.2g / 4g / 7mL	100
Eluent (Cr6+)	R161205A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post column Rgt (Cr6+)	~~R161143~~ R161206A	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1600
Digestion Soln (Cr6+)	R161206B	CINV-160721A / #8396	120g / 80 g	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	11/22/16	11/27/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/28/16	11/28/17	11/18/19; 10/13/18		rba
	-	11/28/16	12/3/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/28/16	12/28/16	11/18/19; 10/13/18		rba
5	-	11/28/16	~~11/29/16~~ MG 11/29/17 ~~12/28/17~~	6/25/19		MG
	-	11/28/16	11/28/17	5/31/16; 7/25/17		!
	-	11/28/16	11/28/17	10/17/17; 10/17/17		!
	-	11/28/16	12/28/16	8/4/19; 6/25/19		
	-	11/29/16	11/29/17	3/10/19		rba
10	5N	11/29/16	11/29/17	11/3/18		rba
	-	11/30/16	11/30/17	11/18/19; 10/31/18		rba
	-	11/30/16	12/5/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/30/16	12/30/16	11/18/19; 10/31/18		rba
	-	11/30/16	12/30/16	8/4/19; 6/25/19		rba
15	2%	11/29/16	12/29/16	5/2017	LATE ENTRY	REB
	-	!	!	9/14/14; 5/22/18 5/20/17; 7/28/18	!	REB
				5/22/18; 4/6/19; 10/4/17		REB
		12/6/16	12/11/16	11/22/19; 10/27/18; 8/31/18		
	-	12/5/16	12/5/17	11/18/19; 10/13/18 ~~10/31/18~~		rba
20	-	12/6/16	1/6/17	8/4/19; 6/25/19		rba

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R161207A	CINV-160912D / CINV-160926B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161207B	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
20% NaHSO4	R161208A	#8668	800 g	4L
Eluent (Cr^{6+})	R161209A	CINV-160912D / ~~CINV-161028A~~ / ~~CINV-160926B~~ / CINV-160926B	6.6g / 13 mL	2000
Eluent (Cr^{6+})	R161212A	CINV-161028A / ~~CINV-160926B~~ / CINV-160926B / CINV-161026B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161212B	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
0.02 N H2SO4	R161212C	R160831B	200 mL	1000
Eluent (Cr^{6+})	R161213A	CINV-161028A / CINV-161026B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161213B	CINV-161012A / #8651 / CINV-160616A / ~~CINV-~~ #8650	0.5g / 28mL / 100mL	1000
1:1 HNO3	R161218C	CINV. 8668	1L	2L
1:1 H2SO4	R161214A	CINV. 8651	1L	2L
0.1 N H2SO4	R161216A	LIMS 8651	3mL	1000
0.02 N H2SO4	B	R161216A	200 mL	1000
Post Column Rgt (Cr^{6+})	R161216C	CINV-161012A / #8651 / CINV-or #8650	0.5g / 28 mL / 100mL	1000
5N HNO3	R161216D	#8664	138 mL	500
Digestion Soln	R161216E	CINV-160721A / CINV 161026A	60g / 40g	2000
MgCl2 Soln	R161216F	CINV-160219C	40 g	100
Phosphate Buffer	R161216G	CINV-140220AD / CINV-[illegible]	8.7g / 6.8g	100
Eluent (Cr^{6+})	R161216H	CINV-161028A / CINV-161026B	6.6g / 13 mL	2000
Eluent (Cr^{6+})	R161219A	CINV-161028A / CINV-161026B	6.6g / 13 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	12/7/16	12/7/17	11/22/19, 10/27/18, 8/31/18		
	–	12/7/16	12/12/16	11/18/19, ~~10/31/18~~ 10/13/18		
	20%	12/08/16	12/08/17	11/11/19		
	–	12/9/16	12/9/17	~~11/22/19~~ 11/18/19, 12/19/19, ~~10/31/18~~ 10/13/18		
5	–	12/12/16	12/12/17	~~11/18/19~~; 10/13/18, 12/19/19, 12/12/18		
	–	12/12/16	12/17/16	11/22/19, 10/27/18, 8/31/18		
	0.02 N	12/12/16	6/12/17	8/31/17		
	5N	12/13/16	12/13/17	12/9/19, 12/12/18		
	–	12/13/16	12/18/16	11/22/19, 10/27/18, 8/31/18, 12/13/18		
10	1:1	12/13/16	12/13/17	10/24/18		
	1:1	12/14/16	12/14/17	10/27/18		PG
	0.1 N	12/16/16	12/16/17	10/27/18		PG
	0.02 N		6/16/17	12/16/17		LSR
	–	12/16/16	12/21/16	11/22/19, 10/27/18, 12/13/18		LSR
15	5N	12/16/16	12/16/17	12/15/18		
	–	12/16/16	1/16/17	8/4/19, 12/6/19		
	–	12/16/16	12/16/17	3/10/19		
	–	12/16/16		6/15/17, 8/17/18		
	–	12/16/16	12/16/17	12/9/19, 12/12/18		
20	–	12/19/16	12/19/17	~~12/4/18~~ 12/9/19, 12/12/18		

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr6+)	R161219B	CINV-161012A / #8651 / #8650	0.5 / 28 mL / 100 mL	1000
2% $CuSO_4$	R161219C	CINV-140211D	2g	100
R1 Buffer	D	R161219D / CINV-160525A CINV-140224A, CINV-160607C	2.5 mL, 85 g 0.1g, 14 mL	1000
R2 Coloring Rgt.	E	CINV-150323A, CINV-160405A CINV-150924C	0.2g, 4g, 17 mL	100
10% Ammonium Persulfate, 5% H_3PO_4	F	CINV-140916A, CINV-150924C	100g, 50 mL	1000
Eluent (Cr6+)	R161220A	CINV-161028A / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R161221A	CINV-161012A / #8651 / #8650	0.5 / 28 mL / 100 mL	1000
Buffer (Cr6+)	R161221B	CINV-161028A / CINV-161026B	33g / 65 mL	1000
Digestion Soln	R161223A	CINV-160721A / CINV-161026A	90g / 60 g	3000
Eluent (Cr6+)	R161228A	CINV-161028A / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R161228B	CINV-161012A / #8782 / #8650	0.5 / 28 mL / 100 mL	1000
5N HNO3	R161229A	#8665	138 mL	500
Eluent (Cr6+)	R161230A	CINV-161028A / CINV-161028B / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R170103A	CINV-161012A / #8782 / #8650	0.5g / 28 mL / 100 mL	1000
R1 Buffer	R170102A	R161219D / CINV-160525A CINV-140224A / CINV-160607C	2.5 mL, 85 g 0.1g, 14 mL	1000
R2 Coloring Rgt.	1 B	CINV-150323A, CINV-160405A CINV-150924C	0.2g, 4g, 17 mL	100
1:1 H_2SO_4	R161229B		300 ml	600 ml
Buffer (Cr6+)	R170103B	CINV-161028B / CINV-161026B	99 g / 195 mL	3000
Eluent (Cr6+)	R170105A	CINV-161028B / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R170105B	CINV-161012A / #8782 / #8650	0.5 g / 28 mL / 100 mL	1000

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	12/19/16	12/24/16	11/22/19; 10/27/18; 12/13/18		[illegible]
2%	12/19/16	1/19/17	5/20/17		[illegible]
–		1/19/17	1/19/17, 9/15/19, 5/20/17, 2/28/18		
–		1/19/17	5/22/18, 04/06/19, 10/4/17		
10%, 5%		3/19/17	12/19/19 10/4/17		
–	~~12/19/16~~ 12/20/16	12/20/17	12/9/19; 12/12/18		[illegible]
–	12/21/16	12/26/16	11/22/19; 10/27/18; 12/13/18		[illegible]
–	12/21/16	1/21/17	12/19/19; 12/12/18		[illegible]
–	12/23/16	1/23/17	8/4/19; 12/6/19		[illegible]
–	12/28/16	12/28/17	12/9/19; 12/12/18		[illegible]
–	12/28/16	1/2/17	11/22/19; 12/28/18; 12/13/18		[illegible]
5N	12/29/16	12/29/17	12/27/18		[illegible]
–	12/30/16	12/30/17	12/9/19; 12/30/19; 12/12/18		[illegible]
–	1/3/17	1/8/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/2/16	1/19/17	1/19/17, 9/15/19, 5/20/17, 7/28/18		[illegible]
~~1:1~~ –	~~12/29/16~~	~~6/29/17~~ 3/2/17	5/22/18, 04/06/19, 10/4/17		
1:1	12-29-16	6/29/17			72
–	1/3/17	2/3/17	12/28/18; 12/13/18		[illegible]
–	1/5/17	1/5/18	12/28/18; 12/13/18		[illegible]
–	1/5/17	1/10/17	11/22/19; 12/28/18; 12/13/18		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

ASSET LABORATORIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

109 of 201

203

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
6N NaOH	~~R16~~ R170106A	CINV-161026A	24g	100
Eluent (Cr^{6+})	R170107A	CINV-161028B / CINV-161228A / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170109A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
Eluent (Cr^{6+})	R170110A	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170110B	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R170111A	CINV-8737	1L	2L
Eluent (Cr^{6+})	R170111B	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170112A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
DIGESTION SOLUTION	R170112B	CINV-160721A / 161026A	60g / 40g	2000
$MgCl_2$ Solution	↓ C	CINV-160219C	40g	100
Buffer (Cr^{6+})	R170112D	CINV-161028B / CINV-161026B	49.5g / 97.5mL	1500
Eluent (Cr^{6+})	R170113A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170113B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate 5% H_3PO_4	R170111C	CINV-160916A / ~~[illegible]~~ CINV-160817B	100g / 50mL	1000
20% H_3PO_4	↓ D	CINV ~~[illegible]~~ 160817B	100	500
Post Column Rgt (Cr^{6+})	R170114A	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate, 5% H_3PO_4	R170114B	CINV-160916A / CINV-160817B	100g, 50mL	1000
Eluent (Cr^{6+})	R170116A	CINV-161028C / CINV-161026B	66g / 13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R170116B	CINV-160721A / 161026A	30g / 20g	1000
10N NaOH	R170116C	CINV-161026A	4g	40ml

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3451 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	6N	1/6/17	1/6/18	12/6/19		[illegible]
	–	1/7/17	1/7/18	12/28/18; 12/13/18; 1/3/18 19		[illegible]
	–	1/9/17	1/10/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/10/17	1/10/18	12/28/18; 1/3/19		[illegible]
5	–	1/10/17	1/15/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	1:1	1/11/17	1/11/18	1/11/19		PG
	–	1/11/17	1/11/18	12/28/18; 1/3/19		[illegible]
	–	1/12/17	1/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/12/17	2/12/17	8/4/19; 12/6/19		Z
10	–	L	1/12/18	3/10/19		L
	–	1/12/17	2/12/17	12/28/18; 1/3/19		[illegible]
	–	1/13/17	1/13/18	1/13/20; 12/12/18		
	–	1/13/17	1/18/17	11/22/19; 12/28/18	12/13/18	[illegible]
	10%, 5%	1/11/17	4/11/17	12/19/19; 8/17/18	} LATE ENTRY MEB 01/13/1967	MEB
15	20%	L	1/11/18	8/17/18		L
	–	1/14/17	1/19/17	11/22/19; 12/28/18	12/13/18	[illegible]
	10%, 5%	1/14/17	4/14/17	12/19/19; 8/17/18		MEB
	–	1/13/17	1/13/18	1/13/20; 12/12/18		[illegible]
	–	1/16/17	2/16/17	8/4/19; 12/6/19		Z
20	10N	1-16-17	~~12-6-19~~ 7-16-17	12-6-19		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116P	#8666	138 mL	500
Eluent (Cr6+)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Cr6+)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Cr6+)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Cr6+)	R170123B	CINV-161028C / CINV-161026B	99g / 195 mL	3000
Post Column Rgt (Cr6+)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R170125A	CINV-161028D / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161022A	120g	500mL
10% Ammonium persulfate, 5% H_3PO_4	R170125B	CINV 170123A / CINV 168117B	100g, 50mL	1000
2% $CuSO_4$	R170125C	CINV-140211D	2g	100
R1 Rm FTBR	D	R170125C / CINV 160525A CINV-140221A / CINV 160607L	2.5mL, 0.1g, 85% 1mL	1000
R2 Coloring Rgt.	E	CINV 158923A / CINV 160465A CINV [illegible]	10mL, 2g / 4g / 17mL	100
DIGESTION SOLUTION (Cr6+)	R170126A	[illegible]	[illegible]	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	5N	1/16/17	1/16/18	1/10/19		2
	–	1/17/19	1/17/18	1/13/20; 12/12/18		[illegible]
	–	1/7/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
5	–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	6N	1/18/17	1/18/18	12/16/18		HSG
	20%	1/20/17	1/20/18	11/11/19		HSG
	–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
	–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10	–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
	–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
	–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
	–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	6N	1/25/17	1/25/18	12/6/19		HSG
	10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		KEB
	2%	1/25/17	2/25/17	5/20/17		KEB
	–	|	|	2/25/17 9/15/19 5/20/17, 7/28/18		|
	–	|	|	5/22/18, 4/6/19 8/17/18		|
20	–	1/26/17	2/26/17			2

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr^{6+})	R170127A	CINV-161028D / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170127B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Cr^{6+})	R170130A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Eluent (Cr^{6+})	R170131A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170131B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
5N HNO_3	R170131C	#8748	138 mL	500 mL
1:1 HNO_3	R170131D	8737	1L	2L
Post Column Rgt (Cr^{6+})	R170201A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170202A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
$MgCl_2$ solution	R170202B	CINV-160219C	40 g	100 mL
Phosphate buffer solution	↓ C	CINV-M0226AD / CINV-150803A	8.7g / 6.8 g	100 mL
Eluent (Cr^{6+})	R170206A	CINV-161028D / CINV-160607C	66g / 13 mL	2000
Post-Column Rgt (Cr^{6+})	↓ B	CINV-161012A / #8782 / #8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170207A	CINV-161028D / CINV-161228B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170207B	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
0.02 N H_2SO_4	R170208A	~~R161~~ R161216A	200 mL	1000
TCDP FWD1	R170207C	R160725A / #8453	~~64~~ 128.6 mL, 11.4 mL	2000
15% Ammonium persulfate 5% H_3PO_4	R170208B	CINV170123A / CINV160817B	100 g, 50 mL	1000
20% H_3PO_4	↓ C	CINV 160817B	100	500
Ascorbic Acid Solution	R170209A	CINV-M1126A	3g	50 mL

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
-1	1/27/17	1/27/18	1/25/20; 12/12/18		[illegible]
–	1/27/17	2/1/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/30/17	1/30/18	1/25/20; 12/12/18		[illegible]
–	1/31/17	1/31/18	11/25/20; 12/12/18		[illegible]
–	1/31/17	2/5/17	11/22/19; 12/28/18; 12/13/18		[illegible]
5N	1/31/17	1/31/18	1/24/19		2
1:1	1/31/17	1/31/18	1/11/19		HSG
–	2/1/17	2/6/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	2/2/17	2/2/18	11/25/20; 12/12/18		[illegible]
–	2/2/17	2/2/18	3/10/19		2
–	1	6/15/17	6/15/17; 8/7/18		1
–	2/6/17	2/6/18	1/25/20; 7/28/18		2
–	1	2/11/17	11/22/19; 12/28/18; 12/13/18		1
–	2/7/17	2/7/18	11/25/20; 2/7/19		[illegible]
–	2/7/17	2/12/12	11/22/19; 12/28/18; 12/13/18		[illegible]
0.02 N	2/8/17	8/8/17	12/16/17		BR
–	02/07/17	2/07/17	7/25/17, 12/29/18	LATE ENTRY, H: 4.89	[illegible]
10%, 5%	02/08/17	5/08/17	1/25/20, 8/17/18		[illegible]
20%	1	2/08/18	8/17/18		1
–	2/9/17	2/23/17	8/26/18		2

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R170209B	CINV-1610280 / CINV-161228E / CINV-161228B	66g / ~~78~~ 13mL	2000
Post Column Rgt (Cr^{6+})	R170209C	CINV-161012A / 8782/8650	0.5g / 28 mL 100 mL	1000
Digestion Soln (Cr^{6+})	R170211A	CINV-160721A / CINV-161026A	60g / 40g	2000
5N HNO_3	~~R161229A~~ R170211B	8749	27.6 mL	100
Post Column Rgt (Cr^{6+})	R170213A	CINV-161012A / 8782/8650	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	2/9/17	2/9/18	11/15/20; 2/9/20; 2/7/19		[illegible]
	-	2/9/17	2/14/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	-	2/11/17	3/11/17	8/14/19; 12/6/19		[illegible]
		2/8/17	2/11/18	2/2/19		[illegible]
5	-	2/13/17	2/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10						
15						
20						

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

1. Act | 2. InAct

INDEX

8650	METHANOL
8649	NITRIC ACID
8648	NITRIC ACID
8647	HYDROCHLORIC
8646	HYDROCHLORIC
8645	HYDROCHLORIC
8644	HYDROCHLORIC
8643	HYDROCHLORIC
8642	HYDROCHLORIC
8633	Glass Fiber Filter
8604	SODIUM HYDRC
8602	STANNOUS CHL
8573	HEXANES
8571	FERROUS SULF
8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID

3507 Records

Bottle #: 8650 Chemical: METHANOL ☑ Active

Received:	10/11/2016	Expires:	
Synonyms:		Status:	Opened
Formula:		CAS #:	67-56-1
Location:	Inorganics	Formula Wt:	32.04
8 Vendor:	Emd	Lot #:	56182
		Catalog #	MX0488-1
		Conc/Purity:	99.9
		Amount:	4
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

Received:10/11/16,1/1
Opened:12/13/16

1. Act | 2. InAct

INDEX

8782	sulfuric acid
8781	HEXANES
8780	HEXANES
8779	HEXANES
8778	HEXANES
8777	DICHLOROMETH
8776	DICHLOROMETH
8775	DICHLOROMETH
8774	DICHLOROMETH
8773	DICHLOROMETH
8772	DICHLOROMETH
8771	DICHLOROMETH
8770	DICHLOROMETH
8769	DICHLOROMETH
8768	DICHLOROMETH
8767	DICHLOROMETH
8766	DICHLOROMETH
8765	DICHLOROMETH
8764	DICHLOROMETH
8763	DICHLOROMETH
8762	DICHLOROMETH
8761	Glass Fiber Filter
8760	Glass Fiber Filter
8759	Glass Fiber Filter
8758	Glass Fiber Filter
8757	SODIUM CHLOR

3508 Records

Bottle #: 8782 Chemical: sulfuric acid ☑ Active

Received:	12/28/2016
Synonyms:	
Formula:	h2so4
Location:	Inorganics
8 Vendor:	GR ACS
Merck Index:	

Add to Reagents database

Expires:	
Status:	New
CAS #:	7664-93-9
Formula Wt:	98.08
Lot #:	56280
Catalog #	
Conc/Purity:	95.0-98.0%
Amount:	2.5
Units:	L
Notes:	

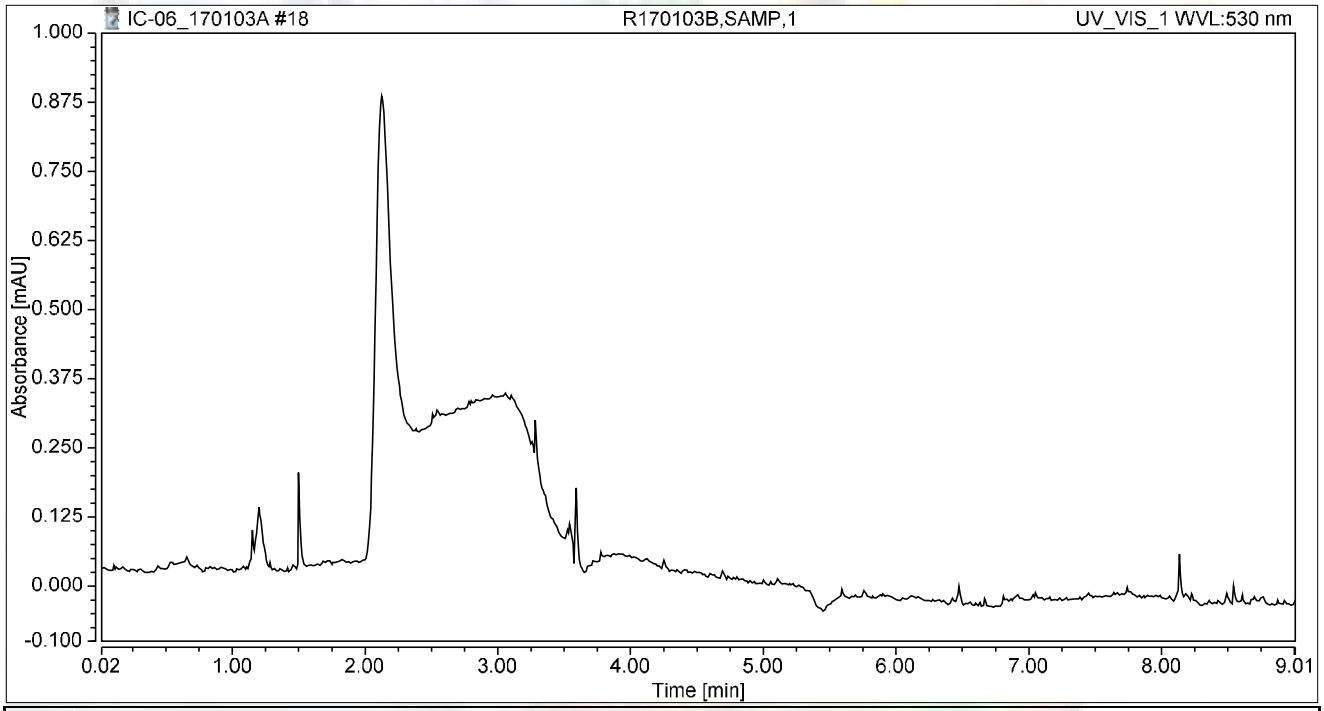
Received: 12/28/2016
Opened: 12/28/2016

Chromatogram and Results

Injection Details

Injection Name:	**R170103B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170103_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/17 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

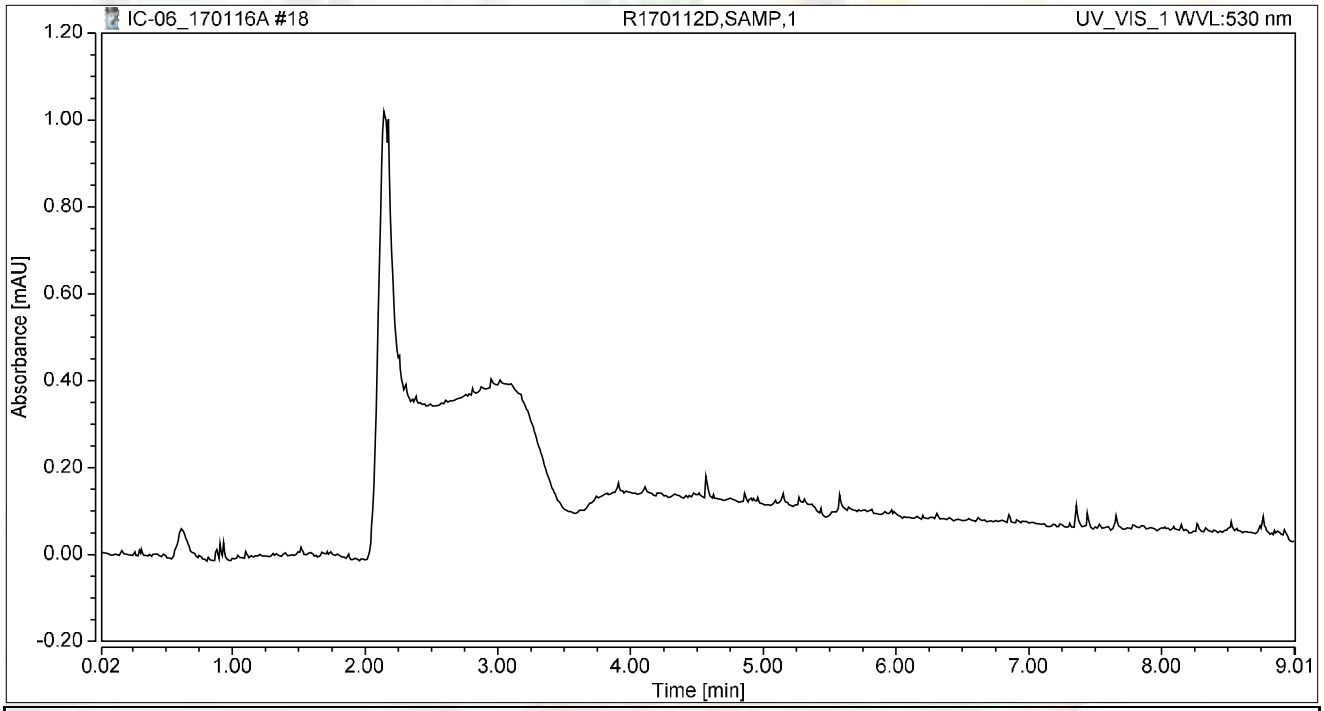
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170112D,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Jan/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

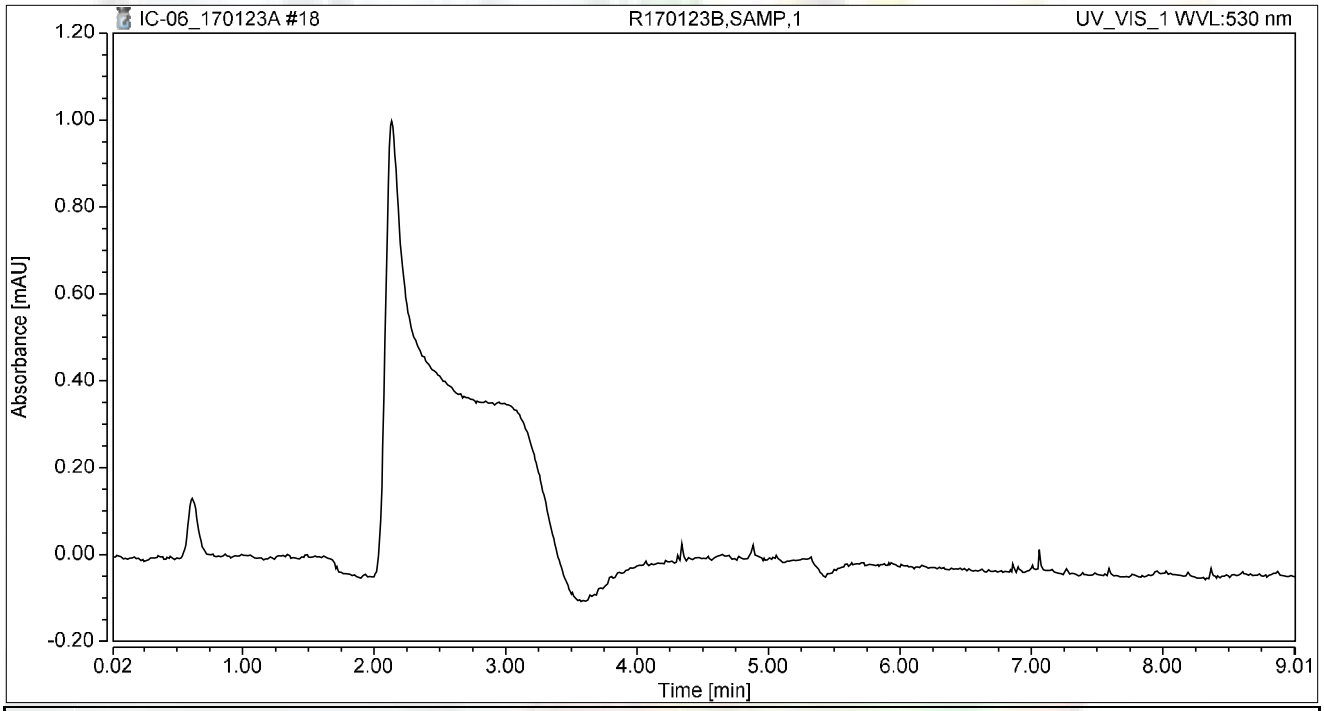
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170123B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Jan/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113466, R113631 **Analyst:** REB

ASSET #: N022985 **Date Analyzed:** 2/12/17, 2/19/17

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/20/17 Date:

2nd Level Reviewer 2/20/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022985-004C** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.1850*1

= 0.1850 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.18

RB 02/20/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

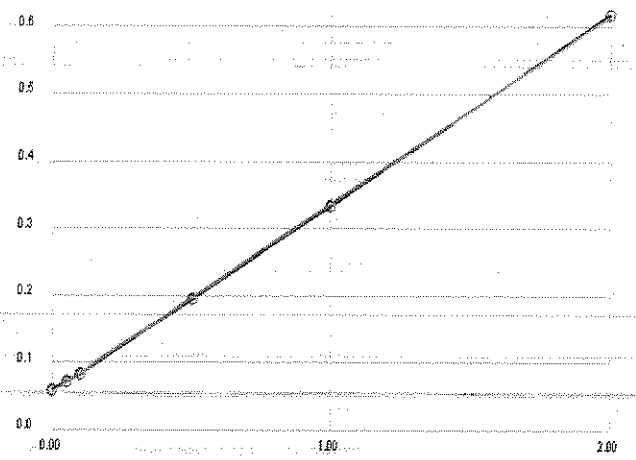
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2797x + 0.0564
Correlation	.999941



Calibrant	Energy	Set	Conc
1	0.0585	0.0000	0.0076
2	0.0716	0.0500	0.0544
3	0.0833	0.1000	0.0963
4	0.1958	0.5000	0.4984
5	0.3321	1.0000	0.9856
6	0.6180	2.0000	2.0077

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/20/17

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

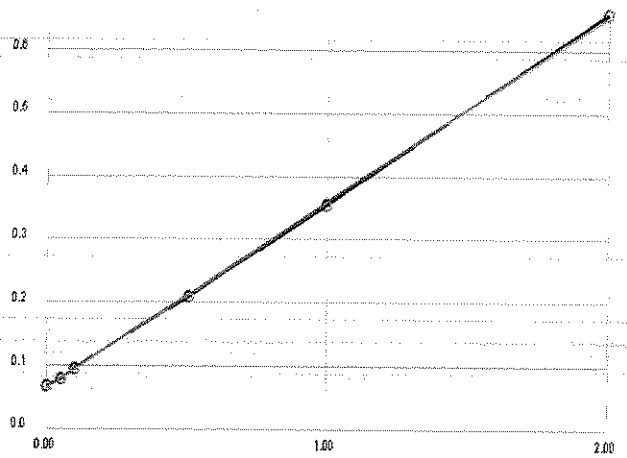
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.295x + 0.0646
Correlation	.999893



Calibrant	Energy	Set	Conc
1	0.0682	0.0000	0.0122
2	0.0797	0.0500	0.0511
3	0.0944	0.1000	0.1010
4	0.2102	0.5000	0.4934
5	0.3542	1.0000	0.9815
6	0.6579	2.0000	2.0108

Notes:

RB 02/20/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.516	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-12-2017 19:18
Time end: 02-12-2017 22:13

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	21:32:31	0.0101		0.0592
2	<BLANK>	21:33:31	0.0090		0.0589
3	<CAL1>	21:34:26	0.0076	[0]	0.0585
4	<CAL2>	21:35:21	0.0544	[0.05]	0.0716
5	<CAL3>	21:36:23	0.0963	[0.1]	0.0833
6	<CAL4>	21:37:17	0.4984	[0.5]	0.1958
7	<CAL5>	21:38:12	0.9856	[1]	0.3321
8	<CAL6>	21:39:14	2.0077	[2]	0.6180
9	,BLANK,BLANK,1,	21:40:08	0.0265		0.0638
10	,ICV,ICV,1,	21:41:09	0.5077		0.1984
11	,ICB,ICB,1,	21:42:05	0.0155		0.0607
12	,MB-H2O,MBLK,1,	21:43:00	0.0108		0.0594
13	,LCS-H2O,LCS,1,	21:44:00	0.5284		0.2042
14	,N022931-002D,SAMP,5,	21:44:56	0.6650		0.2424
15	,N022931-002DDUP,DUP,5,	21:45:51	0.6879		0.2488
16	,N022931-002DMS,MS,5,	21:46:53	1.1322		0.3731
17	,N022931-002DMSD,MSD,5,	21:47:47	1.1086		0.3665
18	,N022987-001D,SAMP,1,	21:48:43	0.7308		0.2608
19	,N022985-001C,SAMP,1,	21:49:44	0.1549		0.0997
20	,~~N022985-002C,SAMP,1,~~ N022985-003C	21:50:38	0.1928		0.1103
21	,BLANK,BLANK,1	21:51:34	0.0133		0.0601
22	,CCV-1,CCV,1,	21:52:35	0.4963		0.1952
23	,CCB-1,CCB,1,	21:53:31	0.0201		0.0620
24	,N022985-004C,SAMP,5, not reported	21:54:31	0.0455		0.0691
25	,N022998-001C,SAMP,1,	21:55:26	1.2391		0.4030
26	,N022998-002C,SAMP,1,	21:56:22	0.3472		0.1535

RJB 02/20/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022998-003C,SAMP,1,	21:57:22	0.0451		0.0690
28	,N022998-004C,SAMP,1,	21:58:05	0.8895		0.3052
29	,N022999-001D,SAMP,1,	21:58:55	0.0298		0.0647
30	,N022999-002D,SAMP,5,	21:59:37	0.6225		0.2305
31	,N022999-003D,SAMP,1,	22:00:26	0.0155		0.0607
32	,N023014-001C,SAMP,20,	22:01:08	1.5129		0.4796
33	,BLANK,BLANK,1	22:01:52	0.0190		0.0617
34	,CCV-2,CCV,1,	22:02:40	0.5159		0.2007
35	,CCB-2,CCB,1,	22:03:23	0.0008		0.0566
36	,N023014-002C,SAMP,10,	22:04:06	2.7726		0.8320
37	,N023014-003C,SAMP,2,	22:04:54	4.7066	[HL][OR]	1.3730
38	,N023014-004C,SAMP,10,	22:05:38	1.3092		0.4226
39	,N023014-005C,SAMP,1,	22:06:26	0.1585		0.1007
40	,N023014-006C,SAMP,5,	22:07:09	0.7729		0.2726
41	,N023014-007C,SAMP,1,	22:07:51	0.1309		0.0930
42	,N023014-008C,SAMP,1,	22:08:41	0.0105		0.0593
43	,BLANK,BLANK,1	22:09:24	-0.0103		0.0535
44	,CCV-3,CCV,1,	22:10:06	0.4727		0.1886
45	,CCV-3,CCV,1, not used	22:10:55	0.5066		0.1981
46	,CCB-3,CCB,1,	22:11:37	0.0051		0.0578

RB 02/20/17

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-19-2017 23:28
Time end: 02-20-2017 02:09

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	01:32:10	0.0149		0.0690
2	<BLANK>	01:33:10	0.0139		0.0687
3	<CAL1>	01:34:05	0.0122	[0]	0.0682
4	<CAL2>	01:35:07	0.0511	[0.05]	0.0797
5	<CAL3>	01:36:02	0.1010	[0.1]	0.0944
6	<CAL4>	01:36:56	0.4934	[0.5]	0.2102
7	<CAL5>	01:37:58	0.9815	[1]	0.3542
8	<CAL6>	01:38:53	2.0108	[2]	0.6579
9	,BLANK,BLANK,1,	01:39:47	0.0769		0.0873
10	,ICV,ICV,1,	01:40:49	0.4992		0.2119
11	,ICB,ICB,1,	01:41:44	0.0145		0.0689
12	,MB-H2O,MBLK,1,	01:42:40	0.0111		0.0679
13	,LCS-H2O,LCS,1,	01:43:40	0.4958		0.2109
14	,N022985-004C,SAMP,1,	01:44:36	0.1850		0.1192
15	,N022985-004CDUP,DUP,1,	01:45:31	0.1816		0.1182
16	,N022985-004CMS,MS,1,	01:46:33	0.6910		0.2685
17	,N022985-004CMSD,MSD,1,	01:47:27	0.6754		0.2639
18	,N023014-002C,SAMP,50,	01:48:23	0.6422		0.2541
19	,N023014-003C,SAMP,20,	01:49:24	0.4701		0.2033
20	,N023014-004C,SAMP,10,	01:50:18	1.2198		0.4245
21	,BLANK,BLANK,1	01:51:14	0.0257		0.0722
22	,CCV-1,CCV,1,	01:52:15	0.5124		0.2158
23	,CCB-1,CCB,1,	01:53:11	0.0081		0.0670
24	,N023028-001D,SAMP,10,	01:53:59	1.1242		0.3963
25	,N023028-002D,SAMP,10,	01:54:42	0.5755		0.2344
26	,N023028-003D,SAMP,10,	01:55:30	1.0693		0.3801

RB 02/20/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N023029-001C,SAMP,1,	01:56:14	1.0642		0.3786
28	,N023029-002C,SAMP,5,	01:56:56	0.9629		0.3487
29	,N023029-003C,SAMP,20,	01:57:45	0.8093		0.3034
30	,N023029-004C,SAMP,1,	01:58:29	1.8542		0.6117
31	,N023029-005C,SAMP,1,	01:59:11	1.5651		0.5264
32	,N023107-001D,SAMP,1,	02:00:00	0.4955		0.2108
33	,BLANK,BLANK,1	02:00:42	0.0128		0.0684
34	,CCV-2,CCV,1,	02:01:26	0.5277		0.2203
35	,CCB-2,CCB,1,	02:02:14	0.0033		0.0656
36	,N023107-002D,SAMP,1,	02:02:57	0.3474		0.1671
37	,N023107-003D,SAMP,1,	02:03:47	0.3185		0.1586
38	,N023107-004D,SAMP,5,	02:04:29	0.4890		0.2089
39	,BLANK,BLANK,1	02:05:12	0.0067		0.0666
40	,CCV-3,CCV,1,	02:06:00	0.5277		0.2203
41	,CCV-3,CCV,1, not used	02:06:43	0.5121		0.2157
42	,CCB-3,CCB,1,	02:07:25	0.0040		0.0658

RB 02/20/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/12/17
Time Analyzed: 07:18 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022931-001D		8.58						
2)	N022985-001C		7.91						
3)	N022985-003C		7.92						
4)	N022985-004C		7.49						
5)	N022987-001D		7.75						
6)	N022998-001C		7.38						
7)	N022998-002C		8.21						
8)	N022998-003C		6.17						
9)	N022998-004C		7.86						
10)	N022999-001D		7.86						
11)	N022999-002D		7.39						
12)	N022999-003D		7.99						
13)	N023014-001C		8.36						
14)	N023014-002C		6.95						
15)	N023014-003C		7.64						
16)	N023014-004C		6.22						
17)	N023014-005C		7.98						
18)	N023014-006C		7.76						
19)	N023014-007C		7.31						
20)	N023014-008C		7.62						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/20/17

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
2/11/16	Bromide, 1000 ppm	ISST160211J	1000 ppm	Absolute Standards	010816	2/11/16	2/12/16	1/8/19	L
	Nitrate as N, 1000 ppm	J			061215			6/12/18	
	Phosphate as P, 1000 ppm	K			111115			11/11/18	
	Sulfate, 1000 ppm	L			010516			1/05/19	
2/16/16	EPA 1664 STD (MS/MSD)	ISST160216A	4000 ppm	ULTRA SCIENTIFIC	CP-0013	2/16/16	3/18/16	2/28/19	LSR
4/26/16	EPA 1664 STD (MS/MSD)	ISST160426A	4000 ppm each	Ultra Scientific	CP-0013	4/26/16	4/27/16	2/28/19	L
4/28/16	Hexadecane & Stearic Acid	ISST160428A	4000 ppm each	Accustandard	216011074	4/28/16	6/30/16	1/14/16	L
		B					7/5/16		
		C					7/21/16		
		D					7/25/16		
		E					7/28/16		
6/6/16	1000 ppm KHP (TOC P)	ISST160606A	1000 ppm	CPI	168197	6/6/16	06/14/16	12/12/2017	LSR
6/9/16	1000 ppm Carbon as TOC	ISST160609A	1000 ppm	High purity	160613b	6/9/16	06/14/16	12/03/2017	LSR
7/29/16	Hexadecane & Stearic Acid	ISST160729A	4000 ppm	Accu Standard	215121209	7/29/16	8/15/16	12/17/25	LSR
		B					9/9/16		
		C					9/22/16		
		D					10/3/16		
		E					8/2/16		
	EPA 1664 STD (MS/MSD)	F		Ultra Scientific	CP-0014		8/21/16	2/28/19	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	MG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	
10/3/16	EPA 1664 STD, (MS/MSD)	ISST16100304	4000 ppm	ULTRA SCIENTIFIC	CP-4210	10/3/16	10/10/16	9/30/19	LSR
10/4/16	Hexadecane & Stearic Acid	ISST161004A	4000 ppm	ACCU STANDARD	215121209	10/4/16	10/14/16	12/17/25	LSR
		B					11/1/16		
		C					11/18/16		
		D					11/29/16		
		E							
12/6/16	EPA 1664 STD	ISST161206A	4000 ppm	ULTRA SCIENTIFIC	CP-4210	12/6/16	9/20/19	9/30/19	LSR
12/8/16	Hexadecane & Stearic Acid	ISST161208A	4000 ppm	ACCU STANDARD	215121209	12/8/16		12/17/25	LSR
		B							
		C							
		D							

CHEMICAL INVENTORY LOG

Inventory Code CINV	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
~~SX07~~ 140122A	Sodium Sulfate, anhydrous	EMD	WF03H	99.02	1/22/14			STF	#6912
CINV 140206A	Zinc Acetate 2N	Ricca	1401B21	–	2/5/14		01/16	PS	#6914
CINV 140206 B	2N Zinc Acetate	Ricca	1401B21	–	2/5/14		01/16	PS	
CINV-140211 A	Mercury II oxide	Alfa Aesar	F22I27	99.6%	2/11/14			MC	
B	Pyridine, ACS, 99.0% Liquid	Alfa Aesar	D05Z888	99.0%	2/11/14			MC	
C	Ethanol, Alcohol Reagent	Alfa Aesar	I17Y018	94-96%	2/11/14			MC	
D	Copper II sulfate pentahydrate	Alfa Aesar	C28Y031	98-102%	2/11/14	5/20/14	5/20/17	MC	
E	Ammonium Chloride	Alfa Aesar	D29Z044	99.5%	2/11/14	2/19/14	2/19/17	MC/MI	
CINV-140211F	Silver Nitrate	Spectrum	1040854	≥99.0%	2/11/14			2	
CINV-140213 A	1° Turbidity Std. 0.02 NTU	Oakton	C365301	–	2/13/14	2/13/14	2/13/15	MC	
B	20		C365600						
C	100		C365827						
D	800		C365735						
CINV-140127A	Phosphoric Acid	EMD	53224335	≥85.0%	1/27/14	1/28/14	1/28/16	2	
CINV-140217A	Silica Gel (80-200 Mesh)	J.T. Baker	0000053205	–	2/17/14		6/26/20	PLN	#6962
CINV-140218A	Iron (III) nitrate monohydrate	Alfa Aesar	K132039	98.0-101%	2/18/14			MI	
B	Phenol, ACS, 99+%, stab. Crystalline		A28Z020	99+%					
C	Acetic acid, glacial		J10Z048	99.7%		3/24/14	3/24/16		#6975
D	Sodium hypochlorite		L10Z021	14.5%					
E	Potassium sodium-L tartrate tetrahydrate		C28Z028	99.0-102%					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV - 140218 F	Methyl Red sodium SALT	Alfa Aesar	J31Z031	-	2/18/14			mi	
G	Ethylenediamine tetraacetic acid disodium magnesium salt hydrate		K10175810	-					
H	Glycerol, ACS, 99.5% Viscous liquid		mi 2/18/14 K19Z027	99.5 +%					
I	Potassium cyanide		K22Z010	96.0% min.					
J	Sodium hydrogen phosphate, anhydrous, 99% min., Granular		J16Z014	99.0% min					
K	N-(1-Naphthyl) ethylenediamine dihydrochloride, ACS, powder		K04Z031	-		5/20/14	5/20/17		
L	Calmagite, indicator		10169022	-					
CINV-140218 M	Sodium Nitroferricyanide, Dihydrate	JT Baker	0000052646	-	2/18/14			mi	
N	Chloramine-T, trihydrate	MacRon	00000 562032	-					
CINV-140221A	Sodium Salicylate, 99%	Alfa Aesar	J03Z041	99%	2/21/14			mo	
CINV-140224A	Ethylenediamine tetraacetic acid disodium SALT dihydrate, ACS, 99-101%	Alfa Aesar	A18Z040	99-101%	2/24/14	5/20/14	5/20/17	mi	
B	Calcium carbonate		H01Z033	99%					
CINV-140226A	Dichloromethane	OmniSolv	51090	99.96%	02/25/14			mi	Lims bt# 6916
B									6917
C									6918
D									6919
E									6920
F									6921
G									6922
H									6923

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150320A	Buffer, pH 2	BDH	1408B19	-	3/20/15		8/2016	LSR	
B	Buffer, pH 12	BDH	1409454	-	3/20/15		9/2015	LSR	
CINV-150323A	N-(1-Naphthyl) ethylenediamine	~~Alfa Aesar~~	~~N03A036~~	-	3/19/15	5/22/15	5/22/18	2	
	dihydrochloride								
CINV-150325A	TETRAbutylammonium hydroxide	Macron			3/25/15	3/26/15	3/26/17	PEB	
B	Heptafluorobutyric acid	Alfa Aesar	G07X060	99%	3/25/15	3/26/15	3/26/17	PEB	
CINV-150335C	1,5-diphenylcarbazide	J.T BAKER	000010030	-	3/25/15	3/25/15	3/25/18	PEB	
CINV-150401A	Sodium Chloride	J.T BAKER		99%	4/1/15	04/14/15	4/14/18	PEB	
CINV-150402A	Hexanes	EMD Chemicals	54308	98.5%	4/2/15	5/22/15	5/22/17	LSR	#7546
B						6/25/15	6/25/17	LSR	#7547
C						7/24/15	7/24/15	LSR	#7548
D						8/28/15	8/28/17	LSR	#7549
CINV-150416A	METHANOL	J.T BAKER	57548	99.8%	4/16/15	5/16/15	5/16/17	PEB	
B	1,5-diphenyl carbazide	J.T. BAKER	000010030	-	4/16/15	7/20/15	7/20/18	PEB	
CINV-150430A	Conductivity Std, 99996	VWR	CC13489	-	4/30/15	6/10/15	2/20/16	LSR	
CINV-150501A	Ferrous Sulfate	Aqua Solutions	501214	-	5/1/15			LSR	
CINV-150506A	Ammonium Persulfate	JTBaker	162447	≥98.0%	5/6/15		7/8/16	2	
B		BDH	3495C517	-		5/8/15	5/8/18		
CINV-150511A	Ammonium Sulfate	J.T BAKER	86693	99%	5/11/15	5/20/15	5/20/18	PEB	
B									

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	126292	299%	2/19/16	3/7/16	3/7/19	[illegible]	
F						3/24/16	3/24/19		
G						4/7/16	4/7/19		
H									
CIW-160309A	Buffer, pH 7	BDH	1512854	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	3624-19	..	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322 A	Buffer pH 4	~~BDH~~ VWR	1512A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 100005 µS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD		-	3/22/16			LSR	8388
D								LSR	8389
E								LSR	8390
F								LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123372		4/5/16	4/6/16	4/6/19	[illegible]	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16			[illegible]	
B									
C									
D									
E	Ammonium hydroxide	BDH	7215070	—		04/06/16	04/06/18	[illegible]	
F				-					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1811696	99.9%	9/7/16			MG	
J						11-12-16	11-12-18		
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	A025C041	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 10053 µS/cm	LSS	CC15087		9/9/16	10/18/16	7/5/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-66		9/12/16	10/3/16	10/3/19	LSR/	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	30560514	≥98.0%	9/16/16	9/19/16	10/19/19	L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
B	Ammonium Hydroxide	BDH	121605O	-	9/21/16	10/13/16	10/31/18	LSR/	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15036	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR/	
161012B	Sulfuric Acid	EMD	56194	-		10/27/16	10/27/18	LSR/	#8651

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160607A	Turbidity Std, 20 NTU	AMCO Clear	C688405	-	6/7/16	6/8/16	6/2017	LSR	
B	100 NTU		C584931	-				LSR	
CINV-100607 C	Ammonium Hydroxide	BDH	7215100	-	6/7/16	7/25/16	7/25/18	JAS	LIMS # 8459
CINV-100609A	Ammonium Hydroxide	BDH	7215100	-	6/9/16	8/31/16	8/31/18	JAS	LIMS # 8471
CINV-160609B	Buffer, pH 7	Labchem	F130-26	-	6/9/16	8/12/16	5/11/18	LSR	
C	Buffer, pH 10		F124-01	-		6/28/16	5/10/17	LSR	
CINV-160615A	Ammonium Hydroxide	Fisher Chem	155222	-	6/15/16	7/11/16	7/11/18	JAS	LIMS # 8481
CINV-160616A	Methanol	Omnisolv	C2153		6/16/16	8/31/16	8/31/18	JAS	LIMS # 8490
CINV-160623A	Conductivity Std, 99663 µS/cm	LSS	CC14664	-	6/23/16	8/2/16	2/19/17	LSR	
CINV-160624A	Ammonium Sulfate	Lab Chem	F091-13	≥99.0%	6/24/16	7/18/16	7/18/19	L	
B			P162-06	≥99.0%		8/2/16	8/2/19		
C				≥99.0%		8/18/16	8/18/19		
D				≥99.0%		9/11/16	9/11/19		
CINV-160629A	Turbidity Std, 0.02 NTU	Cole Parmer	C686343	-	6/29/16	7/6/16	8/2017	LSR	
B	20		C686233						
C	100		C686659	-					
D	800		C686659	-					
CINV-160715A	Conductivity Std, 10.07 mS/cm	VWR	CC14776	-	7/15/16	8/16/16	3/17/17	LSR	
B	Buffer pH 4	VWR	16060811			8/19/16	5/2018		
CINV-160718A	Buffer pH 7	BDH	4604970	-	7/18/16	8/19/16	4/2018	PEB	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160718B	Ammonium Persulfate	BDH	3056C514	≥ 98.0%	7/18/16	7/18/16	7/18/19	MEB	
CINV-160721A	SODIUM CARBONATE	LSS	160324A	-	7/21/16	8/4/16	8/4/19	LSR	
CINV-160727A	HEXANES	EMD	56139	98%	7/27/16	7/28/16	7/28/18	LSR	8544
B						7/28/16	7/28/18		8545
C						8/15/16	8/15/18		8546
D						9/9/16	9/9/18		8547
CINV 160817A	Ammonium Persulfate	BDH	3056C514	≥ 98%	8/17/16			MEB	
B	Phosphoric Acid	EMD	55161546	85%		8/17/18	8/17/18		
CINV-160902A	Conductivity Std. 1413 µs	VWR	CC14947	-	9/2/16	9/23/16	5/9/17	LSR	
B	9977 µs		CC14972	—		9/12/16	5/17/17		
C	99835 µs		CC15000	-		9/26/16	5/26/17		
D	Buffer, pH 10		1607A96	-		9/26/16	12/2017		
CINV-160907A	HEXANES	EMD	56139	98.5%	9/7/16	9/26/16	9/26/18	LSR	8598
B						10/14/16	10/14/18		8599
C						10/20/16	10/20/18		8600
D						11/1/16	11/1/18		8601
CINV-160907E	Methyl Alcohol	Tedia	1511069 6	99.9%	9/7/16			MG	
F									
G						10-18-16	10-18-18		
H	—	—	—	—	—				

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116B	#8661	138 mL	500
Eluent (Crut)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Crut)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Crut)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Crut)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Crut)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Crut)	R170123B	CINV-161028C / CINV-161026B	99 g / 195 mL	3000
Post Column Rgt (Crut)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Crut)	R170125A	CINV-161028D / CINV-161026B	66 g / 13mL	2000
Post Column Rgt (Crut)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161026A	120g	500mL
10% Ammonium persulfate, 5% H_2PO_4	R170125B	CINV170123A / CINV160817B	10g, 50mL	1000
2% $CuSO_4$	R170125C	CINV140211D	2g	100
R1 Buffer	D	CINV140721A / CINV160817C	2.5mL, 0.1g, 853, 14mL	1000
R2 Coloring Rgt.	E	CINV158929A / CINV160657A / CINV160817B	107.0g, 1g, 1.4g, 17mL	100
DIGESTION SOLUTION (Crut)	R170126A	CINV-160721A / CINV-161026A	120g / 80g	4000

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
SN	1/16/17	1/16/18	1/10/19		Z
–	1/17/19	1/17/18	1/13/20; 12/12/18		[illegible]
–	1/17/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
GN	1/18/17	1/18/18	12/16/18		HSG
20%	1/20/17	1/20/18	11/11/19		HSG
–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
GN	1/25/17	1/25/18	12/6/19		HSG
10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		KEB
2%	1/25/17	2/25/17	5/20/17		KEB
–	|	|	2/25/17, 9/15/19, 5/20/17, 7/28/18		|
–	|	|	5/22/18, 4/4/19, 8/17/18		–
–	1/26/17	2/26/17	8/4/19; 12/6/19		Z

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61215 **Instrument ID:** ICPMS-02
ASSET #: N022985 **Analyst:** CEI
Method: **Date Analyzed:** 2/16/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X				
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in N022985-003B failed > 15%. As for rerun.
%Rec of Se in LLICV failed, bias high. Se for rerun. ~~/ Se for re-digestion due Se on LCS failed.~~

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date:
2nd Level Reviewer 2/21/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61215 **Instrument ID:** ICPMS-02
ASSET #: N022985 **Analyst:** CEI
Method: **Date Analyzed:** 2/19/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For As in N022985-003B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date:
2nd Level Reviewer 2/21/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61298
ASSET #: N022985

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/19/2017

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Se run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 2/21/2017 Date: —

2nd Level Reviewer _____ 2/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022985-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 16.4615 * 1 * (25/25)

Chromium , ug/L = 16.4615

Reporting results in two significant figures,

Chromium , ug/L = 16

% RSD SUMMARY

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	7.61	15	PASS	0.14	18.91	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	1.97	15	PASS	0.55	3.26	15	PASS
Std3-5/50 ppb	ICAL	1	5.033	0.83	15	PASS	5.14	1.41	15	PASS
Std4-10/100 ppb	ICAL	1	10.34	1.5	15	PASS	10.47	2.35	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	0.89	15	PASS	20.54	2.64	15	PASS
Std6-40/400 ppb	ICAL	1	40.92	1.42	15	PASS	40.92	2.37	15	PASS
Std7-100/1000 ppb	ICAL	1	101.38	0.27	15	PASS	101.35	0.38	15	PASS
Std8-200/2000 ppb	ICAL	1	199.052	0.77	15	PASS	199.058	1.2	15	PASS
ICV	ICV	1	10.25	1.028	15	PASS	102.86	0.88	15	PASS
ICB	ICB	1	0.003	306.98	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.064	4.32	20	PASS	0.53	5.32	20	PASS
ICSA1	ICSA	1	0.17	13.33	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.14	1.89	15	PASS	16.86	1.69	15	PASS
LLICV	CCV1	1	1.0055	4.92	20	PASS	0.52	4.99	20	PASS
CCV1	CCV	1	20.21	0.19	15	PASS	20.46	0.65	15	PASS
CCB1	CCB	1	0.02	36.52	15	<PQL	<0.000	N/A	15	<PQL
MB-61215	MBLK	1	0.002	134.75	15	<PQL	<0.000	N/A	15	<PQL
LCS-61215	LCS	1	9.81	1.54	15	PASS	99.88	1.18	15	PASS
N022951-001B	SAMP	1	3.19	2.5	15	PASS	1.3	7.041	15	PASS
CCV2	CCV	1	20.26	1.54	15	PASS	20.67	1.4	15	PASS
CCB2	CCB	1	0.021	53.62	15	<PQL	0.0017	361.67	15	<PQL
LLCCV1	CCV2	1	1.02	4.081	20	PASS	0.53	3.024	20	PASS
ICSA2	ICSA	1	0.2	8.47	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.46	1.98	15	PASS	17.084	2.036	15	PASS
N022951-001B	SAMP	5	0.67	3.4	15	PASS	0.26	5.53	15	PASS
N022951-001B-PS	PS	1	12.2	0.68	15	PASS	94.64	0.71	15	PASS
N022951-001B-MS	MS	1	12.26	0.22	15	PASS	93.32	0.7	15	PASS
N022951-001B-MSD	MSD	1	12.18	1.57	15	PASS	93.49	0.8	15	PASS
N022951-002B	SAMP	1	4.42	0.71	15	PASS	3.29	2.55	15	PASS
N022951-003B	SAMP	1	3.75	0.7	15	PASS	3.063	1.23	15	PASS
N022951-005B	SAMP	1	4.63	0.71	15	PASS	0.94	4.33	15	PASS
N022951-006B	SAMP	1	7.43	2.98	15	PASS	6.92	1.5	15	PASS
N022951-007B	SAMP	1	3.96	2.97	15	PASS	3.23	1.81	15	PASS
N022951-008B	SAMP	1	4.88	0.46	15	PASS	0.96	2.092	15	PASS
CCV3	CCV	1	20.39	1.95	15	PASS	20.6	2.1	15	PASS
CCB3	CCB	1	0.015	49.39	15	<PQL	0.00039	2167.85	15	<PQL
N022952-001B	SAMP	1	356.21	1.97	15	PASS	<0.000	N/A	15	<PQL
N022952-003B	SAMP	1	171.35	0.43	15	PASS	17	0.49	15	PASS
N022952-004B	SAMP	1	102.26	1.23	15	PASS	6.37	1.35	15	PASS
N022952-005B	SAMP	1	165.43	1.029	15	PASS	3.47	3.38	15	PASS

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022952-007B	SAMP	1	14.35	2.17	15	PASS	0.51	2.024	15	PASS
N022952-008B	SAMP	1	13.71	0.81	15	PASS	0.3	3.051	15	PASS
N022952-009B	SAMP	1	12.96	1.59	15	PASS	0.24	24.24	15	<PQL
N022985-001B	SAMP	1	16.46	1.34	15	PASS	4.51	3.24	15	PASS
N022985-003B	SAMP	1	42.92	2.074	15	PASS	24.68	1.5	15	PASS
N022985-004B	SAMP	1	40.33	2.37	15	PASS	23.92	2.4	15	PASS
CCV4	CCV	1	20.24	0.75	15	PASS	20.12	0.87	15	PASS
CCB4	CCB	1	0.013	81.84	15	<PQL	0.004	207.54	15	<PQL
N022952-001B	SAMP	5	73.58	1.64	15	PASS	0.083	22.67	15	<PQL
N022952-003B	SAMP	5	35.41	1.85	15	PASS	3.55	3.67	15	PASS
N022985-001B	SAMP	5	3.42	3.12	15	PASS	0.95	3.68	15	PASS
N022985-001B	SAMP	25	0.72	5.51	15	PASS	0.21	2.86	15	PASS
N022985-003B	SAMP	5	8.89	0.85	15	PASS	5.31	0.93	15	PASS
N022985-003B	SAMP	25	1.87	1.59	15	PASS	1.12	1.85	15	PASS
N022985-004B	SAMP	5	8.94	1.18	15	PASS	5.31	2.85	15	PASS
N022985-004B	SAMP	25	1.7	1.78	15	PASS	1.036	2	15	PASS
CCV5	CCV	1	19.96	1.68	15	PASS	19.86	1.12	15	PASS
CCB5	CCB	1	0.011	56.2	15	<PQL	0.0054	250.82	15	<PQL
LLCCV2	CCV2	1	1.038	1.11	20	PASS	0.54	6.36	20	PASS
ICSA3	ICSA	1	0.18	3.95	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.3	1.39	15	PASS	16.67	2.43	15	PASS

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	27.51	15	NR!	0.047	30.57	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	5.0091	15	PASS	0.49	9.93	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1	15	PASS	4.91	5.38	15	PASS
Std4-10/100 ppb	ICAL	1	10.15	1.76	15	PASS	9.98	6.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.89	2.19	15	PASS	20.38	2.71	15	PASS
Std6-40/400 ppb	ICAL	1	40.15	0.39	15	PASS	40.49	0.9	15	PASS
Std7-100/1000 ppb	ICAL	1	100.067	0.42	15	PASS	100.59	0.7	15	PASS
Std8-200/2000 ppb	ICAL	1	199.94	0.6	15	PASS	199.57	0.87	15	PASS
ICV	ICV	1	10.34	0.76	15	PASS	9.84	5.29	15	PASS
ICB	ICB	1	0.0014	414.26	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.11	21.1	20	NR!	0.61	5.95	20	PASS
ICSA1	ICSA	1	0.000049	50206.053	15	<PQL	0.0039	873.27	15	<PQL
ICSAB1	ICSAB	1	20.1	0.84	15	PASS	18.59	3.12	15	PASS
LLICV	CCV1	1	0.099	42.039	20	<PQL	0.6	3.78	20	PASS
CCV1	CCV	1	20.11	1.057	15	PASS	20.32	2.88	15	PASS
CCB1	CCB	1	0.0054	0.79	15	PASS	<0.000	N/A	15	<PQL
MB-61215	MBLK	1	0.0018	749.53	15	<PQL	<0.000	0	15	PASS
LCS-61215	LCS	1	9.27	1.23	15	PASS	8.22	9.67	15	PASS
N022951-001B	SAMP	1	2.064	0.79	15	PASS	0.45	27.31	15	<PQL
CCV2	CCV	1	20.24	1.52	15	PASS	19.97	1.1	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0079	260.15	15	<PQL
LLCCV1	CCV2	1	0.11	15.97	20	PASS	0.48	4.65	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.011	333.84	15	<PQL
ICSAB2	ICSAB	1	20.45	2.82	15	PASS	18.42	2.24	15	PASS
N022951-001B	SAMP	5	0.43	5.67	15	PASS	0.12	40.78	15	<PQL
N022951-001B-PS	PS	1	11.7	0.54	15	PASS	9.14	4.51	15	PASS
N022951-001B-MS	MS	1	11.78	0.2	15	PASS	8.91	0.94	15	PASS
N022951-001B-MSD	MSD	1	11.68	0.79	15	PASS	9.26	5.85	15	PASS
N022951-002B	SAMP	1	4.12	1.38	15	PASS	0.15	20.77	15	<PQL
N022951-003B	SAMP	1	57.15	2.31	15	PASS	0.18	24.75	15	<PQL
N022951-005B	SAMP	1	8.9	3.11	15	PASS	0.26	19.89	15	<PQL
N022951-006B	SAMP	1	1.49	4.35	15	PASS	0.24	22.31	15	<PQL
N022951-007B	SAMP	1	50.69	3.98	15	PASS	0.2	25.41	15	<PQL
N022951-008B	SAMP	1	8.91	0.21	15	PASS	0.23	27.35	15	<PQL
CCV3	CCV	1	20.22	0.87	15	PASS	19.8	0.48	15	PASS
CCB3	CCB	1	0.01	107.76	15	<PQL	0.046	39.22	15	<PQL
N022952-001B	SAMP	1	0.81	5.0051	15	PASS	0.78	21.7	15	NR!
N022952-003B	SAMP	1	2.016	7.3	15	PASS	0.5	5.63	15	PASS
N022952-004B	SAMP	1	3.77	0.78	15	PASS	0.55	14.6	15	PASS
N022952-005B	SAMP	1	1.76	1.52	15	PASS	0.3	26.72	15	<PQL

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022952-007B	SAMP	1	2.64	1.3	15	PASS	0.13	10.77	15	PASS
N022952-008B	SAMP	1	2.55	1.12	15	PASS	0.12	19.24	15	<PQL
N022952-009B	SAMP	1	1.36	4.33	15	PASS	0.12	33.35	15	<PQL
N022985-001B	SAMP	1	5.29	4.73	15	PASS	0.073	91.69	15	<PQL
N022985-003B	SAMP	1	1.16	3.92	15	PASS	0.07	42.29	15	<PQL
N022985-004B	SAMP	1	1.23	4.35	15	PASS	0.11	11.52	15	PASS
CCV4	CCV	1	19.97	1.37	15	PASS	20.27	1.28	15	PASS
CCB4	CCB	1	0.0066	65.65	15	<PQL	0.0036	478.46	15	<PQL
N022952-001B	SAMP	5	0.18	17.03	15	NR!	0.17	25.25	15	<PQL
N022952-003B	SAMP	5	0.4	2.072	15	PASS	0.12	13.096	15	PASS
N022985-001B	SAMP	5	1.049	7.9	15	PASS	0.0098	129.57	15	<PQL
N022985-001B	SAMP	25	0.21	13.17	15	PASS	<0.000	N/A	15	<PQL
N022985-003B	SAMP	5	0.25	17.24	15	NR!	<0.000	N/A	15	<PQL
N022985-003B	SAMP	25	0.039	29.17	15	<PQL	0.013	225.16	15	<PQL
N022985-004B	SAMP	5	0.27	5.28	15	PASS	<0.000	N/A	15	<PQL
N022985-004B	SAMP	25	0.055	18.93	15	<PQL	0.006	235.26	15	<PQL
CCV5	CCV	1	19.99	1.57	15	PASS	20.3	1.5	15	PASS
CCB5	CCB	1	0.0076	76.23	15	<PQL	0.0016	547.19	15	<PQL
LLCCV2	CCV2	1	0.084	12.92	20	PASS	0.62	1.72	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.67	1.55	15	PASS	18.59	2.53	15	PASS

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	12.12	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.47	3.85	15	PASS
Std3-5/50 ppb	ICAL	1	4.8	2.16	15	PASS
Std4-10/100 ppb	ICAL	1	9.59	0.78	15	PASS
Std5-20/200 ppb	ICAL	1	19.32	1.32	15	PASS
Std6-40/400 ppb	ICAL	1	39.049	0.58	15	PASS
Std7-100/1000 ppb	ICAL	1	99.69	1.14	15	PASS
Std8-200/2000 ppb	ICAL	1	200.44	0.5	15	PASS
ICV	ICV	1	10.25	1.41	15	PASS
ICB	ICB	1	0.0042	112.03	15	<PQL
LLICV	CCV1	1	0.54	6.56	20	PASS
ICSA1	ICSA	1	0.086	17.5	15	<PQL
ICSAB1	ICSAB	1	22.44	1.4	15	PASS
LLICV	CCV1	1	0.52	3.59	20	PASS
CCV1	CCV	1	19.5	0.74	15	PASS
CCB1	CCB	1	0.0012	185.88	15	<PQL
MB-61215	MBLK	1	0.0048	49.19	15	<PQL
LCS-61215	LCS	1	9.94	0.39	15	PASS
N022951-001B	SAMP	1	3.76	2.36	15	PASS
CCV2	CCV	1	19.39	1.57	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.52	2.91	20	PASS
ICSA2	ICSA	1	0.034	18.46	15	<PQL
ICSAB2	ICSAB	1	22.59	1.035	15	PASS
N022951-001B	SAMP	5	0.81	1.69	15	PASS
N022951-001B-PS	PS	1	14.31	0.49	15	PASS
N022951-001B-MS	MS	1	14.22	1.38	15	PASS
N022951-001B-MSD	MSD	1	14.11	0.87	15	PASS
N022951-002B	SAMP	1	5.63	1.018	15	PASS
N022951-003B	SAMP	1	8.25	0.14	15	PASS
N022951-005B	SAMP	1	4.99	1.24	15	PASS
N022951-006B	SAMP	1	3.37	4.034	15	PASS
N022951-007B	SAMP	1	9.2	1.41	15	PASS
N022951-008B	SAMP	1	5.06	0.53	15	PASS
CCV3	CCV	1	19.22	0.42	15	PASS
CCB3	CCB	1	0.097	5.16	15	PASS
N022952-001B	SAMP	1	1.2	1.5	15	PASS
N022952-003B	SAMP	1	1.71	1.82	15	PASS
N022952-004B	SAMP	1	1.86	5.46	15	PASS
N022952-005B	SAMP	1	2.33	2.18	15	PASS

PERCENT RSD SUMMARY: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N022952-007B	SAMP	1	4.72	4.03	15	PASS
N022952-008B	SAMP	1	4.51	3.025	15	PASS
N022952-009B	SAMP	1	2.32	1.7	15	PASS
N022985-001B	SAMP	1	84.27	0.65	15	PASS
N022985-003B	SAMP	1	58.14	1.014	15	PASS
N022985-004B	SAMP	1	55.55	0.35	15	PASS
CCV4	CCV	1	19.79	1.56	15	PASS
CCB4	CCB	1	0.13	9.19	15	PASS
N022952-001B	SAMP	5	0.61	5.3	15	PASS
N022952-003B	SAMP	5	0.41	1.99	15	PASS
N022985-001B	SAMP	5	15.019	1.23	15	PASS
N022985-001B	SAMP	25	2.96	2.31	15	PASS
N022985-003B	SAMP	5	10.47	1.27	15	PASS
N022985-003B	SAMP	25	2.06	1.092	15	PASS
N022985-004B	SAMP	5	10.64	0.69	15	PASS
N022985-004B	SAMP	25	1.89	1.71	15	PASS
CCV5	CCV	1	19.26	0.82	15	PASS
CCB5	CCB	1	0.11	5.75	15	PASS
LLCCV2	CCV2	1	0.49	2.17	20	PASS
ICSA3	ICSA	1	0.048	22.78	15	<PQL
ICSAB3	ICSAB	1	22.66	1.015	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.8	15	PASS	0.11	29.1	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.77	15	PASS	0.45	33.3	15	<PQL
Std3-5/50 ppb	ICAL	1	5.076	3.25	15	PASS	4.82	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.066	0.73	15	PASS	10.023	3.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	1.47	15	PASS	19.99	0.48	15	PASS
Std6-40/400 ppb	ICAL	1	40.28	0.72	15	PASS	40.22	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	100.051	0.89	15	PASS	101.45	1.0022	15	PASS
Std8-200/2000 ppb	ICAL	1	199.93	0.59	15	PASS	199.24	0.51	15	PASS
ICV	ICV	1	10.11	0.95	15	PASS	9.77	2.24	15	PASS
ICB	ICB	1	0.02	31.72	15	<PQL	0.025	72.42	15	<PQL
LLICV	CCV1	1	0.12	13.87	20	PASS	0.5	11.16	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.035	103.21	15	<PQL
ICSAB1	ICSAB	1	19.91	2.18	15	PASS	17.31	1.83	15	PASS
LLICV	CCV1	1	0.12	7.0089	20	PASS	0.46	13.79	20	PASS
MB-61298	MBLK	1	0.0027	254.35	15	<PQL	0.0083	42.57	15	<PQL
LCS-61298	LCS	1	10.2	2.086	15	PASS	9.75	0.28	15	PASS
N023063-001B	SAMP	1	2.14	0.55	15	PASS	0.58	8.56	15	PASS
N023063-001B	SAMP	5	0.46	1.58	15	PASS	0.11	35.072	15	<PQL
N023063-001B-PS	PS	1	11.52	0.92	15	PASS	8.82	4.23	15	PASS
N023063-001B-MS	MS	1	11.48	1.63	15	PASS	8.76	3.89	15	PASS
N023063-001B-MSD	MSD	1	11.45	4.24	15	PASS	8.55	2.23	15	PASS
N022985-001B	SAMP	5	1.13	8.34	15	PASS	0.027	27.55	15	<PQL
N022985-003B	SAMP	5	0.26	18.74	15	NR!	0.018	120.83	15	<PQL
N022985-004B	SAMP	5	0.26	8.9	15	PASS	0.017	86.35	15	<PQL
CCV1	CCV	1	19.98	0.14	15	PASS	18.74	2.86	15	PASS
CCB1	CCB	1	0.017	86.51	15	<PQL	0.015	113.87	15	<PQL
CCV2	CCV	1	19.75	0.43	15	PASS	19.048	1.086	15	PASS
CCB2	CCB	1	0.003	168.15	15	<PQL	0.019	45.75	15	<PQL
N023063-001B	SAMP	25	0.11	20.25	15	NR!	0.02	52.5	15	<PQL
N023063-001B-PS	PS	5	2.7	2.12	15	PASS	2.098	7.55	15	PASS
N023063-001B-MS	MS	5	2.6	1.37	15	PASS	2.18	2.38	15	PASS
N023063-001B-MSD	MSD	5	2.6	1.98	15	PASS	2.056	3.99	15	PASS
CCV3	CCV	1	20.1	0.92	15	PASS	19.013	3.24	15	PASS
CCB3	CCB	1	0.014	43.41	15	<PQL	0.021	28.41	15	<PQL
N022985-003B	SAMP	5	0.25	5.68	15	PASS	0.031	78.67	15	<PQL
CCV4	CCV	1	19.58	0.81	15	PASS	19.36	0.76	15	PASS
CCB4	CCB	1	0.017	34.39	15	<PQL	0.019	83.45	15	<PQL
LLCCV1	CCV2	1	0.085	21.56	20	<PQL	0.5	16.024	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.018	73.29	15	<PQL
ICSAB2	ICSAB	1	19.56	1.083	15	PASS	17.53	0.18	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0216001.D	RINSE	RINSE	1	02/16/17 9:01 AM
A0216002.D	Cal Blank	IBLK	1	02/16/17 9:07 AM
A0216003.D	Std1-0.1/1 ppb	ICAL	1	02/16/17 9:12 AM
A0216004.D	Std2-0.5/5 ppb	ICAL	1	02/16/17 9:18 AM
A0216005.D	Std3-5/50 ppb	ICAL	1	02/16/17 9:23 AM
A0216006.D	Std4-10/100 ppb	ICAL	1	02/16/17 9:29 AM
A0216007.D	Std5-20/200 ppb	ICAL	1	02/16/17 9:34 AM
A0216008.D	Std6-40/400 ppb	ICAL	1	02/16/17 9:40 AM
A0216009.D	Std7-100/1000 ppb	ICAL	1	02/16/17 9:46 AM
A0216010.D	Std8-200/2000 ppb	ICAL	1	02/16/17 9:51 AM
A0216011.D	ICV	ICV	1	02/16/17 9:57 AM
A0216012.D	ICB	ICB	1	02/16/17 10:03 AM
A0216013.D	LLICV	CCV1	1	02/16/17 10:08 AM
A0216014.D	ICSA1	ICSA	1	02/16/17 10:13 AM
A0216015.D	ICSAB1	ICSAB	1	02/16/17 10:19 AM
A0216016.D	LLICV	CCV1	1	02/16/17 10:25 AM
A0216017.D	MB-61272	MBLK	1	02/16/17 10:30 AM
A0216018.D	LCS-61272	LCS	1	02/16/17 10:36 AM
A0216019.D	N023091-001D	SAMP	1	02/16/17 10:41 AM
A0216020.D	N023091-001D-DUP	DUP	1	02/16/17 10:47 AM
A0216021.D	N023115-001C	SAMP	1	02/16/17 10:52 AM
A0216022.D	N023115-001C	SAMP	5	02/16/17 10:58 AM
A0216023.D	N023115-001C	SAMP	25	02/16/17 11:04 AM
A0216024.D	N023115-001C-PS	PS	1	02/16/17 11:09 AM
A0216025.D	N023115-001C-PS	PS	5	02/16/17 11:15 AM
A0216026.D	N023115-001C-MS	MS	1	02/16/17 11:21 AM
A0216027.D	CCV1	CCV	1	02/16/17 11:27 AM
A0216028.D	CCB1	CCB	1	02/16/17 11:33 AM
A0216029.D	N023115-001C-MS	MS	5	02/16/17 11:38 AM
A0216030.D	N023115-001C-MSD	MSD	1	02/16/17 11:43 AM
A0216031.D	N023115-001C-MSD	MSD	5	02/16/17 11:49 AM
A0216032.D	N023115-001C	SAMP	125	02/16/17 11:55 AM
A0216033.D	N023115-001C-PS	PS	25	02/16/17 12:00 PM
A0216034.D	N023115-001C-MS	MS	25	02/16/17 12:06 PM
A0216035.D	N023115-001C-MSD	MSD	5	02/16/17 12:11 PM
A0216036.D	MB-61215	MBLK	1	02/16/17 12:17 PM
A0216037.D	LCS-61215	LCS	1	02/16/17 12:22 PM
A0216038.D	N022951-001B	SAMP	1	02/16/17 12:28 PM
A0216039.D	CCV2	CCV	1	02/16/17 12:33 PM
A0216040.D	CCB2	CCB	1	02/16/17 12:39 PM
A0216041.D	LLCCV1	CCV2	1	02/16/17 12:45 PM
A0216042.D	ICSA2	ICSA	1	02/16/17 12:50 PM

INJECTION LOG: 170216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0216043.D	ICSAB2	ICSAB	1	02/16/17 12:56 PM
A0216044.D	N022951-001B	SAMP	5	02/16/17 1:01 PM
A0216045.D	N022951-001B-PS	PS	1	02/16/17 1:07 PM
A0216046.D	N022951-001B-MS	MS	1	02/16/17 1:12 PM
A0216047.D	N022951-001B-MSD	MSD	1	02/16/17 1:18 PM
A0216048.D	N022951-002B	SAMP	1	02/16/17 1:24 PM
A0216049.D	N022951-003B	SAMP	1	02/16/17 1:30 PM
A0216050.D	N022951-005B	SAMP	1	02/16/17 1:35 PM
A0216051.D	N022951-006B	SAMP	1	02/16/17 1:41 PM
A0216052.D	N022951-007B	SAMP	1	02/16/17 1:47 PM
A0216053.D	N022951-008B	SAMP	1	02/16/17 1:52 PM
A0216054.D	CCV3	CCV	1	02/16/17 1:58 PM
A0216055.D	CCB3	CCB	1	02/16/17 2:03 PM
A0216056.D	N022952-001B	SAMP	1	02/16/17 2:09 PM
A0216057.D	N022952-003B	SAMP	1	02/16/17 2:14 PM
A0216058.D	N022952-004B	SAMP	1	02/16/17 2:20 PM
A0216059.D	N022952-005B	SAMP	1	02/16/17 2:26 PM
A0216060.D	N022952-007B	SAMP	1	02/16/17 2:31 PM
A0216061.D	N022952-008B	SAMP	1	02/16/17 2:37 PM
A0216062.D	N022952-009B	SAMP	1	02/16/17 2:42 PM
A0216063.D	N022985-001B	SAMP	1	02/16/17 2:48 PM
A0216064.D	N022985-003B	SAMP	1	02/16/17 2:54 PM
A0216065.D	N022985-004B	SAMP	1	02/16/17 2:59 PM
A0216066.D	CCV4	CCV	1	02/16/17 3:05 PM
A0216067.D	CCB4	CCB	1	02/16/17 3:10 PM
A0216068.D	N023091-001D	SAMP	5	02/16/17 3:16 PM
A0216069.D	N023091-001D-DUP	DUP	5	02/16/17 3:21 PM
A0216070.D	N022952-001B	SAMP	5	02/16/17 3:27 PM
A0216071.D	N022952-003B	SAMP	5	02/16/17 3:32 PM
A0216072.D	N022985-001B	SAMP	5	02/16/17 3:38 PM
A0216073.D	N022985-001B	SAMP	25	02/16/17 3:44 PM
A0216074.D	N022985-003B	SAMP	5	02/16/17 3:49 PM
A0216075.D	N022985-003B	SAMP	25	02/16/17 3:55 PM
A0216076.D	N022985-004B	SAMP	5	02/16/17 4:00 PM
A0216077.D	N022985-004B	SAMP	25	02/16/17 4:06 PM
A0216078.D	CCV5	CCV	1	02/16/17 4:11 PM
A0216079.D	CCB5	CCB	1	02/16/17 4:17 PM
A0216080.D	LLCCV2	CCV2	1	02/16/17 4:22 PM
A0216081.D	ICSA3	ICSA	1	02/16/17 4:28 PM
A0216082.D	ICSAB3	ICSAB	1	02/16/17 4:33 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N023085-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/9/2017 7:34:30 A**
Prep End Date: **2/9/2017 12:30:00**

Reviewed/ Date: 2/21/2017
Initials/ Date: 2/21/2017

Prep Batch **61215** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61215	Aqueous		25	☐	0	0	25	1.000		
MB-61215	Aqueous		25	☐	0	0	25	1.000		
N022951-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022951-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/9/2017 7:34:30 A**
Prep End Date: **2/9/2017 12:30:00**

Reviewed/ Date: 2/21/2017
Initials/ Date: 2/21/2017

Prep Batch **61215** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N022952-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N022952-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N022985-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022985-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022985-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/17/2017 11:29:20**
Prep End Date: **2/17/2017 5:15:00 P**

Reviewed/ Date: 2/21/2017

Initials/ Date: 2/21/2017

Prep Batch **61298** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61298	Aqueous		25	☐	0	0	25	1.000		
MB-61298	Aqueous		25	☐	0	0	25	1.000		
N022985-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022985-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022985-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023063-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023063-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023063-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Feb 2017 06:11:45 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	86902.00	0.00	
24 Mg	565677.00	0.00	
25 Mg	76209.20	0.00	
26 Mg	88243.00	0.00	
59 Co	880221.00	0.00	
115 In	1703270.00	0.00	
206 Pb	403065.00	0.00	
207 Pb	350539.00	0.00	
208 Pb	860429.00	0.00	

RSD (%)

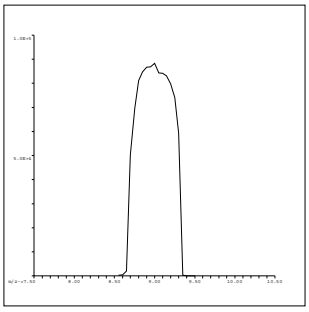
Element	Actual	Required	Flag
9 Be	1.79	5.00	
24 Mg	0.80	5.00	
25 Mg	0.70	5.00	
26 Mg	0.68	5.00	
59 Co	0.73	5.00	
115 In	0.62	5.00	
206 Pb	0.41	5.00	
207 Pb	0.65	5.00	
208 Pb	1.10	5.00	

Ion Ratio

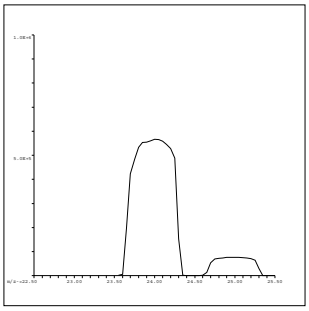
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

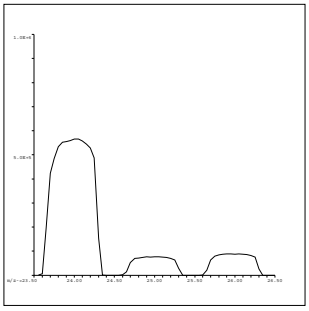
Element	Actual	Required	Flag



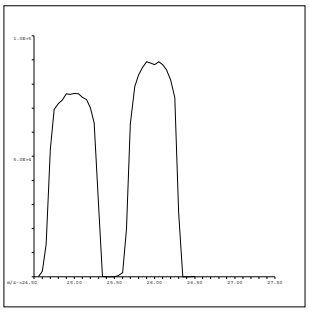
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



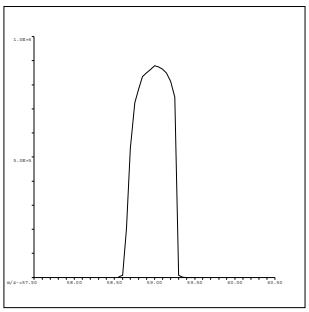
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



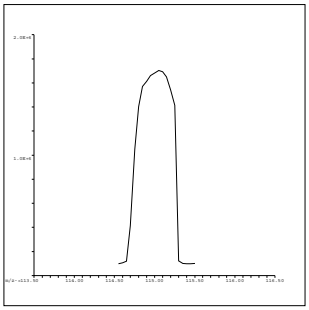
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



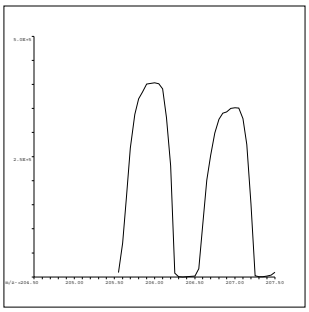
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



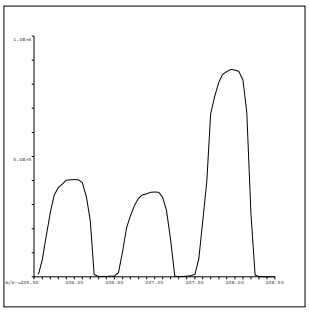
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



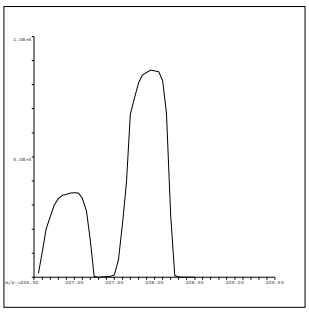
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Feb 2017 01:42:57 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	116854.00	0.00	
24 Mg	777417.00	0.00	
25 Mg	106076.00	0.00	
26 Mg	123494.00	0.00	
59 Co	1235140.00	0.00	
115 In	2298460.00	0.00	
206 Pb	592965.00	0.00	
207 Pb	518468.00	0.00	
208 Pb	1274740.00	0.00	

RSD (%)

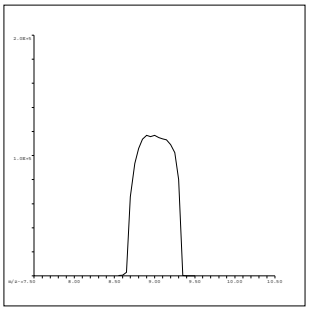
Element	Actual	Required	Flag
9 Be	1.12	5.00	
24 Mg	1.21	5.00	
25 Mg	1.16	5.00	
26 Mg	0.90	5.00	
59 Co	0.32	5.00	
115 In	0.29	5.00	
206 Pb	1.46	5.00	
207 Pb	0.91	5.00	
208 Pb	0.46	5.00	

Ion Ratio

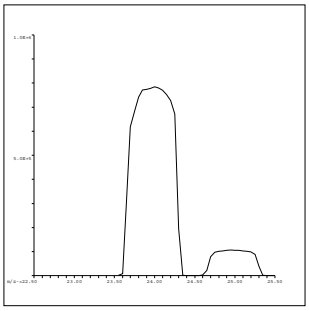
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

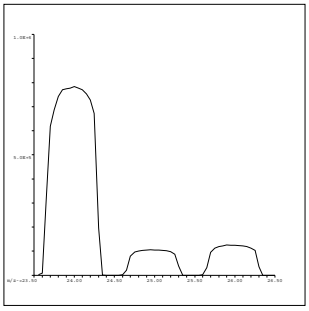
Element	Actual	Required	Flag



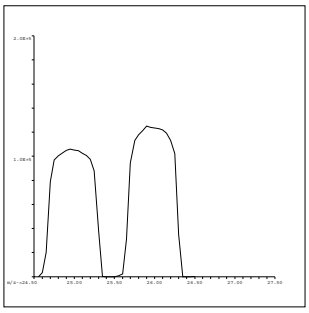
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



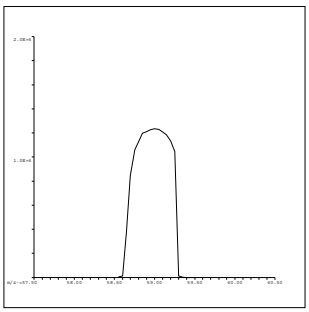
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



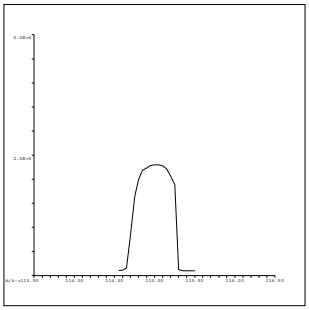
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



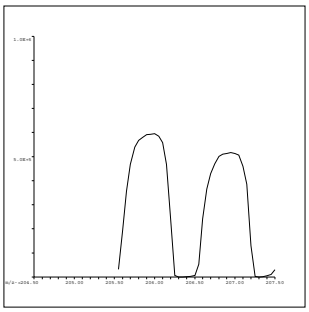
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



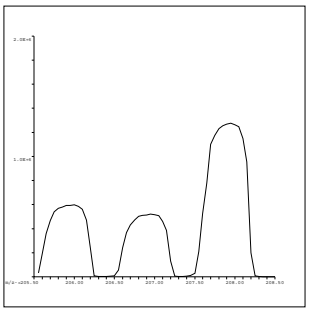
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



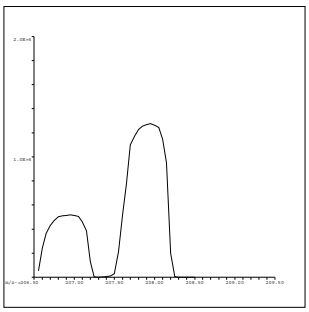
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170216A

Instrument ID: ICPMS-02

Analyte	Data File	A0216002.D	A0216003.D	A0216004.D	A0216005.D	A0216006.D	A0216007.D	A0216008.D	A0216009.D	A0216010.D	
	Acq. Date-Time	02/16/2017 09:07 AM	02/16/2017 09:12 AM	02/16/2017 09:18 AM	02/16/2017 09:23 AM	02/16/2017 09:29 AM	02/16/2017 09:34 AM	02/16/2017 09:40 AM	02/16/2017 09:46 AM	02/16/2017 09:51 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	76816.4		75317.5	75023.8	72951.3	71349.9	70894.7	71040.9	72055.2	
55 Mn [2]	CPS	110.9		1945.6	17213.1	33998.7	65154.9	128864.2	319786.8	636879.6	1.0000
52 Cr [2]	CPS	203.3		3384.9	31235.6	62192.1	120838.3	238602.6	592190	1179099.4	1.0000
72 Ge (ISTD) [1]	CPS	71993.7		72311.7	71511.5	70508.3	68729.6	68413.9	68429.5	69244.1	
78 Se [1]	CPS	5.6		178.9	1713.5	3432.7	6828.4	13498.4	33535.6	67315.3	1.0000
72 Ge (ISTD) [2]	CPS	59386.5	60311.1	59312.9	58624.1	58017.2	56815.4	56198.7	56530.9	56358.1	
75 As [2]	CPS	14.2	88.9	357.3	3482.6	6758.4	12950.1	25855.2	64796.4	129053.3	1.0000
103 Rh (ISTD) [2]	CPS	2057648.3		2056490.4	2042922.3	2033766.2	1983921.5	1964311	1933664.9	1935965.5	
95 Mo [2]	CPS	74.4		2216.9	21971.4	43671.7	85747	171503.2	430938.4	867366.2	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170219A

Instrument ID: ICPMS-02

Analyte	Data File	A0219002.D	A0219003.D	A0219004.D	A0219005.D	A0219006.D	A0219007.D	A0219008.D	A0219009.D	A0219010.D	
	Acq. Date-Time	02/19/2017 02:06 PM	02/19/2017 02:11 PM	02/19/2017 02:17 PM	02/19/2017 02:22 PM	02/19/2017 02:28 PM	02/19/2017 02:33 PM	02/19/2017 02:39 PM	02/19/2017 02:45 PM	02/19/2017 02:50 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	110414		110306.7	108093.9	106640.2	108806.3	104974.8	98972.1	96626.3	
78 Se [1]	CPS	1.1		250	2637	5404.5	10995.3	21344.7	50753.6	97318.6	1.0000
72 Ge (ISTD) [2]	CPS	89091.8	90988.6	90684.9	89530.8	87586.8	87134.5	84230.7	81263.6	79698.1	
75 As [2]	CPS	13.8	134.2	528.9	5294.7	10259.3	20124.1	39431.1	94483.8	185164.1	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.337	0.10	10.00	0	103	90	110				
Manganese	102.861	0.50	100.0	0	103	90	110				
Molybdenum	10.248	0.50	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	99.4	80	120				
Manganese	0.522	0.50	0.5000	0	104	80	120				
Molybdenum	0.516	0.50	0.5000	0	103	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.110	0.10	20.00	0	101	90	110				
Manganese	20.465	0.50	20.00	0	102	90	110				
Molybdenum	19.500	0.50	20.00	0	97.5	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.242	0.10	20.00	0	101	90	110				
Manganese	20.669	0.50	20.00	0	103	90	110				
Molybdenum	19.388	0.50	20.00	0	96.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.105	0.10	0.1000	0	105	70	130				
Manganese	0.526	0.50	0.5000	0	105	70	130				
Molybdenum	0.524	0.50	0.5000	0	105	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.220	0.10	20.00	0	101	90	110				
Manganese	20.604	0.50	20.00	0	103	90	110				
Molybdenum	19.224	0.50	20.00	0	96.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.968	0.10	20.00	0	99.8	90	110				
Manganese	20.121	0.50	20.00	0	101	90	110				
Molybdenum	19.789	0.50	20.00	0	98.9	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCV** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.989	0.10	20.00	0	99.9	90	110				
Manganese	19.865	0.50	20.00	0	99.3	90	110				
Molybdenum	19.263	0.50	20.00	0	96.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113570
Client ID:	ZZZZZZ	Batch ID:	R113570	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.084	0.10	0.1000	0	83.8	70	130				
Manganese	0.536	0.50	0.5000	0	107	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICV	SampType:	ICV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.108	0.10	10.00	0	101	90	110				
Selenium	9.772	0.50	10.00	0	97.7	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572412

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Selenium	0.502	0.50	0.5000	0	100	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.976	0.10	20.00	0	99.9	90	110				
Selenium	18.741	0.50	20.00	0	93.7	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572438

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.750	0.10	20.00	0	98.8	90	110				
Selenium	19.048	0.50	20.00	0	95.2	90	110				

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.100	0.10	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.013	0.50	20.00	0	95.1	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCV	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.580	0.10	20.00	0	97.9	90	110				
Selenium	19.361	0.50	20.00	0	96.8	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	85.4	70	130				
Selenium	0.497	0.50	0.5000	0	99.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.255	1.0	10.00	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.006	1.0	1.000	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.211	1.0	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.256	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.020	1.0	1.000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.386	1.0	20.00	0	102	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.244	1.0	20.00	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCV** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.962	1.0	20.00	0	99.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.038	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **CCB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.097	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113570
Client ID:	CCB	Batch ID:	R113570	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.125	0.50									

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113570
Client ID:	CCB	Batch ID:	R113570	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569464

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.109	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572427

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.020	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.021	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **CCB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113569
Client ID:	CCB	Batch ID:	R113569	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICSA** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.086	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICSAB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.103	0.10	20.00	0	101	80	120				
Manganese	16.864	0.50	20.00	0	84.3	80	120				
Molybdenum	22.444	0.50	20.00	0	112	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICSA** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ICSAB** Batch ID: **R113570** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.447	0.10	20.00	0	102	80	120				
Manganese	17.084	0.50	20.00	0	85.4	80	120				
Molybdenum	22.592	0.50	20.00	0	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113570
Client ID:	ICSA	Batch ID:	R113570	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.048	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113570
Client ID:	ICSAB	Batch ID:	R113570	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.674	0.10	20.00	0	98.4	80	120				
Manganese	16.671	0.50	20.00	0	83.4	80	120				
Molybdenum	22.665	0.50	20.00	0	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSA	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572413

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	0.035	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSAB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572414

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.913	0.10	20.00	0	99.6	80	120				
Selenium	17.309	0.50	20.00	0	86.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSA	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSAB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/19/2017	SeqNo:	2572466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.556	0.10	20.00	0	97.8	80	120				
Selenium	17.529	0.50	20.00	0	87.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICSA** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.168	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICSAB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.143	1.0	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICSA** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.198	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICSAB** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.458	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ICSA** Batch ID: **R113569** TestNo: **EPA 6020** Analysis Date: **2/16/2017** SeqNo: **2569394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.181	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113569
Client ID:	ICSAB	Batch ID:	R113569	TestNo:	EPA 6020			Analysis Date:	2/16/2017	SeqNo:	2569395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.297	1.0	20.00	0	96.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	76816.4	76816.4	100	PASS	70-125	59386.5	59386.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	76492.7	76816.4	99.58	PASS	70-125	60311.1	59386.5	101.56	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	75317.5	76816.4	98.049	PASS	70-125	59312.9	59386.5	99.88	PASS	70-125
Std3-5/50 ppb	ICAL	1	75023.8	76816.4	97.67	PASS	70-125	58624.1	59386.5	98.72	PASS	70-125
Std4-10/100 ppb	ICAL	1	72951.3	76816.4	94.97	PASS	70-125	58017.2	59386.5	97.69	PASS	70-125
Std5-20/200 ppb	ICAL	1	71349.9	76816.4	92.88	PASS	70-125	56815.4	59386.5	95.67	PASS	70-125
Std6-40/400 ppb	ICAL	1	70894.7	76816.4	92.29	PASS	70-125	56198.7	59386.5	94.63	PASS	70-125
Std7-100/1000 ppb	ICAL	1	71040.9	76816.4	92.48	PASS	70-125	56530.9	59386.5	95.19	PASS	70-125
Std8-200/2000 ppb	ICAL	1	72055.2	76816.4	93.8	PASS	70-125	56358.1	59386.5	94.9	PASS	70-125
ICV	ICV	1	66338.3	76816.4	86.36	PASS	70-125	52901.1	59386.5	89.079	PASS	70-125
ICB	ICB	1	66015	76816.4	85.94	PASS	70-125	50437.8	59386.5	84.93	PASS	70-125
LLICV	CCV1	1	67640.2	76816.4	88.054	PASS	70-125	54208.7	59386.5	91.28	PASS	70-125
ICSA1	ICSA	1	70951.6	76816.4	92.37	PASS	70-125	51623.7	59386.5	86.93	PASS	70-125
ICSAB1	ICSAB	1	75570.6	76816.4	98.38	PASS	70-125	53560	59386.5	90.19	PASS	70-125
LLICV	CCV1	1	67757.4	76816.4	88.21	PASS	70-125	53340.2	59386.5	89.82	PASS	70-125
CCV1	CCV	1	72218.2	76816.4	94.014	PASS	70-125	57798.8	59386.5	97.33	PASS	70-125
CCB1	CCB	1	61644.8	76816.4	80.25	PASS	70-125	48796.1	59386.5	82.17	PASS	70-125
MB-61215	MBLK	1	66046.2	76816.4	85.98	PASS	70-125	52990.3	59386.5	89.23	PASS	70-125
LCS-61215	LCS	1	65101.3	76816.4	84.75	PASS	70-125	51637	59386.5	86.95	PASS	70-125
N022951-001B	SAMP	1	64526.8	76816.4	84.001	PASS	70-125	49648.7	59386.5	83.6	PASS	70-125
CCV2	CCV	1	69831.3	76816.4	90.91	PASS	70-125	56389.6	59386.5	94.95	PASS	70-125
CCB2	CCB	1	60497.3	76816.4	78.76	PASS	70-125	48844	59386.5	82.25	PASS	70-125
LLCCV1	CCV2	1	65022.1	76816.4	84.65	PASS	70-125	52956.8	59386.5	89.17	PASS	70-125
ICSA2	ICSA	1	69591.6	76816.4	90.59	PASS	70-125	51547.8	59386.5	86.8	PASS	70-125
ICSAB2	ICSAB	1	81153.4	76816.4	105.65	PASS	70-125	57309	59386.5	96.5	PASS	70-125
N022951-001B	SAMP	5	76224.9	76816.4	99.23	PASS	70-125	59672	59386.5	100.48	PASS	70-125
N022951-001B-PS	PS	1	73646.5	76816.4	95.87	PASS	70-125	55866.6	59386.5	94.073	PASS	70-125
N022951-001B-MS	MS	1	73631.1	76816.4	95.85	PASS	70-125	54995.8	59386.5	92.61	PASS	70-125
N022951-001B-MSD	MSD	1	73588.3	76816.4	95.8	PASS	70-125	54922.4	59386.5	92.48	PASS	70-125
N022951-002B	SAMP	1	70364.8	76816.4	91.6	PASS	70-125	53477.3	59386.5	90.05	PASS	70-125
N022951-003B	SAMP	1	55737.5	76816.4	72.56	PASS	70-125	42808.3	59386.5	72.084	PASS	70-125
N022951-005B	SAMP	1	62389.9	76816.4	81.22	PASS	70-125	47905.6	59386.5	80.67	PASS	70-125
N022951-006B	SAMP	1	64123	76816.4	83.48	PASS	70-125	47438.8	59386.5	79.88	PASS	70-125
N022951-007B	SAMP	1	63964.8	76816.4	83.27	PASS	70-125	48251.2	59386.5	81.25	PASS	70-125
N022951-008B	SAMP	1	64531.5	76816.4	84.008	PASS	70-125	49512.6	59386.5	83.37	PASS	70-125
CCV3	CCV	1	68941.9	76816.4	89.75	PASS	70-125	55114	59386.5	92.81	PASS	70-125
CCB3	CCB	1	66725.8	76816.4	86.86	PASS	70-125	53499.7	59386.5	90.087	PASS	70-125
N022952-001B	SAMP	1	63003.2	76816.4	82.018	PASS	70-125	46663.2	59386.5	78.58	PASS	70-125
N022952-003B	SAMP	1	63576.6	76816.4	82.76	PASS	70-125	48018.2	59386.5	80.86	PASS	70-125
N022952-004B	SAMP	1	63170.6	76816.4	82.24	PASS	70-125	47524.6	59386.5	80.026	PASS	70-125
N022952-005B	SAMP	1	62091.9	76816.4	80.83	PASS	70-125	47021.9	59386.5	79.18	PASS	70-125

INTERNAL STANDARD: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022952-007B	SAMP	1	65297.8	76816.4	85.005	PASS	70-125	49975.2	59386.5	84.15	PASS	70-125
N022952-008B	SAMP	1	63198.4	76816.4	82.27	PASS	70-125	49236.4	59386.5	82.91	PASS	70-125
N022952-009B	SAMP	1	61990.7	76816.4	80.7	PASS	70-125	46975.2	59386.5	79.1	PASS	70-125
N022985-001B	SAMP	1	60036.9	76816.4	78.16	PASS	70-125	39288.3	59386.5	66.16	NR!	70-125
N022985-003B	SAMP	1	58707.8	76816.4	76.43	PASS	70-125	36380.3	59386.5	61.26	NR!	70-125
N022985-004B	SAMP	1	63422.7	76816.4	82.56	PASS	70-125	38758.2	59386.5	65.26	NR!	70-125
CCV4	CCV	1	90707.1	76816.4	118.08	PASS	70-125	69029.8	59386.5	116.24	PASS	70-125
CCB4	CCB	1	86865.8	76816.4	113.08	PASS	70-125	66278.5	59386.5	111.61	PASS	70-125
N022952-001B	SAMP	5	77667.2	76816.4	101.11	PASS	70-125	58757.4	59386.5	98.94	PASS	70-125
N022952-003B	SAMP	5	76271	76816.4	99.29	PASS	70-125	58223.4	59386.5	98.041	PASS	70-125
N022985-001B	SAMP	5	72564	76816.4	94.46	PASS	70-125	51931.5	59386.5	87.45	PASS	70-125
N022985-001B	SAMP	25	75908.8	76816.4	98.82	PASS	70-125	57930.2	59386.5	97.55	PASS	70-125
N022985-003B	SAMP	5	71956	76816.4	93.67	PASS	70-125	50215.9	59386.5	84.56	PASS	70-125
N022985-003B	SAMP	25	80339.6	76816.4	104.59	PASS	70-125	59003.1	59386.5	99.35	PASS	70-125
N022985-004B	SAMP	5	74341	76816.4	96.78	PASS	70-125	51293.8	59386.5	86.37	PASS	70-125
N022985-004B	SAMP	25	80695.7	76816.4	105.05	PASS	70-125	59410	59386.5	100.04	PASS	70-125
CCV5	CCV	1	85703.3	76816.4	111.57	PASS	70-125	65669.2	59386.5	110.58	PASS	70-125
CCB5	CCB	1	81598	76816.4	106.22	PASS	70-125	63999.3	59386.5	107.77	PASS	70-125
LLCCV2	CCV2	1	79391.6	76816.4	103.35	PASS	70-125	61889	59386.5	104.21	PASS	70-125
ICSA3	ICSA	1	77902.7	76816.4	101.41	PASS	70-125	55152.9	59386.5	92.87	PASS	70-125
ICSAB3	ICSAB	1	83036.1	76816.4	108.1	PASS	70-125	57593.5	59386.5	96.98	PASS	70-125

INTERNAL STANDARD: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	71993.7	71993.7	100	PASS	70-125	2057648.3	2057648.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	73004.7	71993.7	101.4	PASS	70-125	2087952.5	2057648.3	101.47	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	72311.7	71993.7	100.44	PASS	70-125	2056490.4	2057648.3	99.94	PASS	70-125
Std3-5/50 ppb	ICAL	1	71511.5	71993.7	99.33	PASS	70-125	2042922.3	2057648.3	99.28	PASS	70-125
Std4-10/100 ppb	ICAL	1	70508.3	71993.7	97.94	PASS	70-125	2033766.2	2057648.3	98.84	PASS	70-125
Std5-20/200 ppb	ICAL	1	68729.6	71993.7	95.47	PASS	70-125	1983921.5	2057648.3	96.42	PASS	70-125
Std6-40/400 ppb	ICAL	1	68413.9	71993.7	95.028	PASS	70-125	1964311	2057648.3	95.46	PASS	70-125
Std7-100/1000 ppb	ICAL	1	68429.5	71993.7	95.049	PASS	70-125	1933664.9	2057648.3	93.97	PASS	70-125
Std8-200/2000 ppb	ICAL	1	69244.1	71993.7	96.18	PASS	70-125	1935965.5	2057648.3	94.086	PASS	70-125
ICV	ICV	1	65467.5	71993.7	90.94	PASS	70-125	1879466.9	2057648.3	91.34	PASS	70-125
ICB	ICB	1	61191	71993.7	84.99	PASS	70-125	1777559	2057648.3	86.39	PASS	70-125
LLICV	CCV1	1	66106.6	71993.7	91.82	PASS	70-125	1906075.7	2057648.3	92.63	PASS	70-125
ICSA1	ICSA	1	58815.5	71993.7	81.7	PASS	70-125	1627635.3	2057648.3	79.1	PASS	70-125
ICSAB1	ICSAB	1	59378.6	71993.7	82.48	PASS	70-125	1690532.8	2057648.3	82.16	PASS	70-125
LLICV	CCV1	1	63599.9	71993.7	88.34	PASS	70-125	1864729.4	2057648.3	90.62	PASS	70-125
CCV1	CCV	1	73601.8	71993.7	102.23	PASS	70-125	1985695.1	2057648.3	96.5	PASS	70-125
CCB1	CCB	1	59641	71993.7	82.84	PASS	70-125	1749540.1	2057648.3	85.026	PASS	70-125
MB-61215	MBLK	1	67590.7	71993.7	93.88	PASS	70-125	1850115	2057648.3	89.91	PASS	70-125
LCS-61215	LCS	1	65616	71993.7	91.14	PASS	70-125	1783461.7	2057648.3	86.67	PASS	70-125
N022951-001B	SAMP	1	61610.5	71993.7	85.58	PASS	70-125	1574990.4	2057648.3	76.54	PASS	70-125
CCV2	CCV	1	71935.5	71993.7	99.92	PASS	70-125	1936510.5	2057648.3	94.11	PASS	70-125
CCB2	CCB	1	57823.3	71993.7	80.32	PASS	70-125	1745131.2	2057648.3	84.81	PASS	70-125
LLCCV1	CCV2	1	67228.1	71993.7	93.38	PASS	70-125	1824088.8	2057648.3	88.65	PASS	70-125
ICSA2	ICSA	1	59339.7	71993.7	82.42	PASS	70-125	1596830.4	2057648.3	77.6	PASS	70-125
ICSAB2	ICSAB	1	70307.3	71993.7	97.66	PASS	70-125	1763187	2057648.3	85.69	PASS	70-125
N022951-001B	SAMP	5	78785.7	71993.7	109.43	PASS	70-125	1951804.3	2057648.3	94.86	PASS	70-125
N022951-001B-PS	PS	1	69133.6	71993.7	96.027	PASS	70-125	1757954.5	2057648.3	85.44	PASS	70-125
N022951-001B-MS	MS	1	69597.7	71993.7	96.67	PASS	70-125	1761725.6	2057648.3	85.62	PASS	70-125
N022951-001B-MSD	MSD	1	69027.6	71993.7	95.88	PASS	70-125	1736018.6	2057648.3	84.37	PASS	70-125
N022951-002B	SAMP	1	69028.4	71993.7	95.88	PASS	70-125	1694323.1	2057648.3	82.34	PASS	70-125
N022951-003B	SAMP	1	51090.8	71993.7	70.97	PASS	70-125	1455970.8	2057648.3	70.76	PASS	70-125
N022951-005B	SAMP	1	60074.7	71993.7	83.44	PASS	70-125	1563432.8	2057648.3	75.98	PASS	70-125
N022951-006B	SAMP	1	57554.3	71993.7	79.94	PASS	70-125	1499206.7	2057648.3	72.86	PASS	70-125
N022951-007B	SAMP	1	61145.1	71993.7	84.93	PASS	70-125	1576714.9	2057648.3	76.63	PASS	70-125
N022951-008B	SAMP	1	63208.7	71993.7	87.8	PASS	70-125	1595055.5	2057648.3	77.52	PASS	70-125
CCV3	CCV	1	70269.2	71993.7	97.6	PASS	70-125	1905058.5	2057648.3	92.58	PASS	70-125
CCB3	CCB	1	66978	71993.7	93.033	PASS	70-125	1843833.6	2057648.3	89.61	PASS	70-125
N022952-001B	SAMP	1	57689.6	71993.7	80.13	PASS	70-125	1493431.2	2057648.3	72.58	PASS	70-125
N022952-003B	SAMP	1	58526.8	71993.7	81.29	PASS	70-125	1514876.4	2057648.3	73.62	PASS	70-125
N022952-004B	SAMP	1	59672	71993.7	82.89	PASS	70-125	1506857.4	2057648.3	73.23	PASS	70-125
N022952-005B	SAMP	1	58850.3	71993.7	81.74	PASS	70-125	1486484.2	2057648.3	72.24	PASS	70-125

INTERNAL STANDARD: 170216A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022952-007B	SAMP	1	63683.9	71993.7	88.46	PASS	70-125	1604866.6	2057648.3	78	PASS	70-125
N022952-008B	SAMP	1	62726.9	71993.7	87.13	PASS	70-125	1552432	2057648.3	75.45	PASS	70-125
N022952-009B	SAMP	1	60710.2	71993.7	84.33	PASS	70-125	1513472.9	2057648.3	73.55	PASS	70-125
N022985-001B	SAMP	1	45738.3	71993.7	63.53	NR!	70-125	1136112.1	2057648.3	55.21	NR!	70-125
N022985-003B	SAMP	1	39736.2	71993.7	55.19	NR!	70-125	1029766.6	2057648.3	50.046	NR!	70-125
N022985-004B	SAMP	1	42301.5	71993.7	58.76	NR!	70-125	1092840.6	2057648.3	53.11	NR!	70-125
CCV4	CCV	1	85687	71993.7	119.02	PASS	70-125	2291446.6	2057648.3	111.36	PASS	70-125
CCB4	CCB	1	82471.6	71993.7	114.55	PASS	70-125	2205062.4	2057648.3	107.16	PASS	70-125
N022952-001B	SAMP	5	73304	71993.7	101.82	PASS	70-125	1911336.6	2057648.3	92.89	PASS	70-125
N022952-003B	SAMP	5	71403.3	71993.7	99.18	PASS	70-125	1880721.9	2057648.3	91.4	PASS	70-125
N022985-001B	SAMP	5	62494.7	71993.7	86.81	PASS	70-125	1616712.6	2057648.3	78.57	PASS	70-125
N022985-001B	SAMP	25	71199.9	71993.7	98.9	PASS	70-125	1849624.9	2057648.3	89.89	PASS	70-125
N022985-003B	SAMP	5	59065.4	71993.7	82.042	PASS	70-125	1526344.3	2057648.3	74.18	PASS	70-125
N022985-003B	SAMP	25	72279.6	71993.7	100.4	PASS	70-125	1843070.4	2057648.3	89.57	PASS	70-125
N022985-004B	SAMP	5	60269.8	71993.7	83.72	PASS	70-125	1547931.1	2057648.3	75.23	PASS	70-125
N022985-004B	SAMP	25	73191.3	71993.7	101.66	PASS	70-125	1869734.3	2057648.3	90.87	PASS	70-125
CCV5	CCV	1	80582.4	71993.7	111.93	PASS	70-125	2196823	2057648.3	106.76	PASS	70-125
CCB5	CCB	1	78879.6	71993.7	109.56	PASS	70-125	2140860.6	2057648.3	104.04	PASS	70-125
LLCCV2	CCV2	1	76627.7	71993.7	106.44	PASS	70-125	2093373.9	2057648.3	101.74	PASS	70-125
ICSA3	ICSA	1	64855	71993.7	90.084	PASS	70-125	1719830	2057648.3	83.58	PASS	70-125
ICSAB3	ICSAB	1	68784.4	71993.7	95.54	PASS	70-125	1776247.4	2057648.3	86.32	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	89091.8	89091.8	100	PASS	70-125	110414	110414	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	90988.6	89091.8	102.13	PASS	70-125	110623.5	110414	100.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	90684.9	89091.8	101.79	PASS	70-125	110306.7	110414	99.9	PASS	70-125
Std3-5/50 ppb	ICAL	1	89530.8	89091.8	100.49	PASS	70-125	108093.9	110414	97.9	PASS	70-125
Std4-10/100 ppb	ICAL	1	87586.8	89091.8	98.31	PASS	70-125	106640.2	110414	96.58	PASS	70-125
Std5-20/200 ppb	ICAL	1	87134.5	89091.8	97.8	PASS	70-125	108806.3	110414	98.54	PASS	70-125
Std6-40/400 ppb	ICAL	1	84230.7	89091.8	94.54	PASS	70-125	104974.8	110414	95.074	PASS	70-125
Std7-100/1000 ppb	ICAL	1	81263.6	89091.8	91.21	PASS	70-125	98972.1	110414	89.64	PASS	70-125
Std8-200/2000 ppb	ICAL	1	79698.1	89091.8	89.46	PASS	70-125	96626.3	110414	87.51	PASS	70-125
ICV	ICV	1	91023.2	89091.8	102.17	PASS	70-125	109770.5	110414	99.42	PASS	70-125
ICB	ICB	1	80003	89091.8	89.8	PASS	70-125	97530	110414	88.33	PASS	70-125
LLICV	CCV1	1	89054.8	89091.8	99.96	PASS	70-125	108245.1	110414	98.036	PASS	70-125
ICSA1	ICSA	1	87052.1	89091.8	97.71	PASS	70-125	101109.7	110414	91.57	PASS	70-125
ICSAB1	ICSAB	1	89454	89091.8	100.41	PASS	70-125	99923.9	110414	90.5	PASS	70-125
LLICV	CCV1	1	103291.4	89091.8	115.94	PASS	70-125	130055.7	110414	117.79	PASS	70-125
MB-61298	MBLK	1	85615.4	89091.8	96.098	PASS	70-125	106396.9	110414	96.36	PASS	70-125
LCS-61298	LCS	1	92235.6	89091.8	103.53	PASS	70-125	114446.1	110414	103.65	PASS	70-125
N023063-001B	SAMP	1	74267.1	89091.8	83.36	PASS	70-125	93645.9	110414	84.81	PASS	70-125
N023063-001B	SAMP	5	76086.8	89091.8	85.4	PASS	70-125	96524.6	110414	87.42	PASS	70-125
N023063-001B-PS	PS	1	80840.6	89091.8	90.74	PASS	70-125	100536.1	110414	91.054	PASS	70-125
N023063-001B-MS	MS	1	79748.2	89091.8	89.51	PASS	70-125	99965.8	110414	90.54	PASS	70-125
N023063-001B-MSD	MSD	1	80552.2	89091.8	90.41	PASS	70-125	102058.2	110414	92.43	PASS	70-125
N022985-001B	SAMP	5	73970.4	89091.8	83.027	PASS	70-125	90403.2	110414	81.88	PASS	70-125
N022985-003B	SAMP	5	74694.6	89091.8	83.84	PASS	70-125	89574.3	110414	81.13	PASS	70-125
N022985-004B	SAMP	5	78544.7	89091.8	88.16	PASS	70-125	91495	110414	82.87	PASS	70-125
CCV1	CCV	1	98656.9	89091.8	110.74	PASS	70-125	124959	110414	113.17	PASS	70-125
CCB1	CCB	1	95257.5	89091.8	106.92	PASS	70-125	120040.3	110414	108.72	PASS	70-125
CCV2	CCV	1	93631.3	89091.8	105.1	PASS	70-125	120769.6	110414	109.38	PASS	70-125
CCB2	CCB	1	91488.1	89091.8	102.69	PASS	70-125	116954.4	110414	105.92	PASS	70-125
N023063-001B	SAMP	25	102536.2	89091.8	115.09	PASS	70-125	130956.3	110414	118.6	PASS	70-125
N023063-001B-PS	PS	5	98291.7	89091.8	110.33	PASS	70-125	126425	110414	114.5	PASS	70-125
N023063-001B-MS	MS	5	93176.5	89091.8	104.58	PASS	70-125	118415.5	110414	107.25	PASS	70-125
N023063-001B-MSD	MSD	5	90901.4	89091.8	102.03	PASS	70-125	115052.6	110414	104.2	PASS	70-125
CCV3	CCV	1	92681.3	89091.8	104.03	PASS	70-125	118039.8	110414	106.91	PASS	70-125
CCB3	CCB	1	90707.1	89091.8	101.81	PASS	70-125	116273.6	110414	105.31	PASS	70-125
N022985-003B	SAMP	5	73766	89091.8	82.8	PASS	70-125	87457.8	110414	79.21	PASS	70-125
CCV4	CCV	1	85941.5	89091.8	96.46	PASS	70-125	104345.7	110414	94.5	PASS	70-125
CCB4	CCB	1	83349.4	89091.8	93.55	PASS	70-125	103875.2	110414	94.078	PASS	70-125
LLCCV1	CCV2	1	92848.6	89091.8	104.22	PASS	70-125	115487.4	110414	104.59	PASS	70-125
ICSA2	ICSA	1	85119.4	89091.8	95.54	PASS	70-125	100654.5	110414	91.16	PASS	70-125
ICSAB2	ICSAB	1	92239	89091.8	103.53	PASS	70-125	110007.7	110414	99.63	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022985
Test Method: EPA 6020
Analysis Date: 2/16/2017

Matrix: Groundwater
Batch No.: 61215

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn & Mo. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022951-001B DT 5X	Arsenic	ug/L	2.128789	NA	2.064153	3.13%	10
N022951-001B DT 5X	Chromium	ug/L	3.354836	NA	3.188922	5.20%	10
N022951-001B DT 5X	Manganese	ug/L	1.310399	NA	1.295712	1.13%	10
N022951-001B DT 5X	Molybdenum	ug/L	4.048702	NA	3.764177	7.56%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022985
Test Method: EPA 6020
Analysis Date: 2/19/2017

Matrix: Groundwater
Batch No.: 61298

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023063-001B DT 5X	Selenium	ug/L	0.559095	NA	0.579757	3.56%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *20-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022951-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113570**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.701	0.10	10.00	2.064	96.4	80	120				
Manganese	94.645	0.50	100.0	1.296	93.3	80	120				
Molybdenum	14.306	0.50	10.00	3.764	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023063-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61298** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2572420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.818	0.50	10.00	0.5798	82.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022985
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N022951-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113569**
Client ID: **ZZZZZZ** Batch ID: **61215** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/16/2017** SeqNo: **2569358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.201	1.0	10.00	3.189	90.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

RAW DATA

INJECTION LOG: 170216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0216001.D	RINSE	RINSE	1	02/16/17 9:01 AM
A0216002.D	Cal Blank	IBLK	1	02/16/17 9:07 AM
A0216003.D	Std1-0.1/1 ppb	ICAL	1	02/16/17 9:12 AM
A0216004.D	Std2-0.5/5 ppb	ICAL	1	02/16/17 9:18 AM
A0216005.D	Std3-5/50 ppb	ICAL	1	02/16/17 9:23 AM
A0216006.D	Std4-10/100 ppb	ICAL	1	02/16/17 9:29 AM
A0216007.D	Std5-20/200 ppb	ICAL	1	02/16/17 9:34 AM
A0216008.D	Std6-40/400 ppb	ICAL	1	02/16/17 9:40 AM
A0216009.D	Std7-100/1000 ppb	ICAL	1	02/16/17 9:46 AM
A0216010.D	Std8-200/2000 ppb	ICAL	1	02/16/17 9:51 AM
A0216011.D	ICV	ICV	1	02/16/17 9:57 AM
A0216012.D	ICB	ICB	1	02/16/17 10:03 AM
A0216013.D	LLICV	CCV1	1	02/16/17 10:08 AM
A0216014.D	ICSA1	ICSA	1	02/16/17 10:13 AM
A0216015.D	ICSAB1	ICSAB	1	02/16/17 10:19 AM
A0216016.D	LLICV	CCV1	1	02/16/17 10:25 AM
A0216017.D	MB-61272	MBLK	1	02/16/17 10:30 AM
A0216018.D	LCS-61272	LCS	1	02/16/17 10:36 AM
A0216019.D	N023091-001D	SAMP	1	02/16/17 10:41 AM
A0216020.D	N023091-001D-DUP	DUP	1	02/16/17 10:47 AM
A0216021.D	N023115-001C	SAMP	1	02/16/17 10:52 AM
A0216022.D	N023115-001C	SAMP	5	02/16/17 10:58 AM
A0216023.D	N023115-001C	SAMP	25	02/16/17 11:04 AM
A0216024.D	N023115-001C-PS	PS	1	02/16/17 11:09 AM
A0216025.D	N023115-001C-PS	PS	5	02/16/17 11:15 AM
A0216026.D	N023115-001C-MS	MS	1	02/16/17 11:21 AM
A0216027.D	CCV1	CCV	1	02/16/17 11:27 AM
A0216028.D	CCB1	CCB	1	02/16/17 11:33 AM
A0216029.D	N023115-001C-MS	MS	5	02/16/17 11:38 AM
A0216030.D	N023115-001C-MSD	MSD	1	02/16/17 11:43 AM
A0216031.D	N023115-001C-MSD	MSD	5	02/16/17 11:49 AM
A0216032.D	N023115-001C	SAMP	125	02/16/17 11:55 AM
A0216033.D	N023115-001C-PS	PS	25	02/16/17 12:00 PM
A0216034.D	N023115-001C-MS	MS	25	02/16/17 12:06 PM
A0216035.D	N023115-001C-MSD	MSD	~~5~~ 25	02/16/17 12:11 PM
A0216036.D	MB-61215	MBLK	1	02/16/17 12:17 PM
A0216037.D	LCS-61215	LCS	1	02/16/17 12:22 PM
A0216038.D	N022951-001B	SAMP	1	02/16/17 12:28 PM
A0216039.D	CCV2	CCV	1	02/16/17 12:33 PM
A0216040.D	CCB2	CCB	1	02/16/17 12:39 PM
A0216041.D	LLCCV1	CCV2	1	02/16/17 12:45 PM
A0216042.D	ICSA2	ICSA	1	02/16/17 12:50 PM

Nancy 2/17/2017

INJECTION LOG: 170216A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0216043.D	ICSAB2	ICSAB	1	02/16/17 12:56 PM
A0216044.D	N022951-001B	SAMP	5	02/16/17 1:01 PM
A0216045.D	N022951-001B-PS	PS	1	02/16/17 1:07 PM
A0216046.D	N022951-001B-MS	MS	1	02/16/17 1:12 PM
A0216047.D	N022951-001B-MSD	MSD	1	02/16/17 1:18 PM
A0216048.D	N022951-002B	SAMP	1	02/16/17 1:24 PM
A0216049.D	N022951-003B	SAMP	1	02/16/17 1:30 PM
A0216050.D	N022951-005B	SAMP	1	02/16/17 1:35 PM
A0216051.D	N022951-006B	SAMP	1	02/16/17 1:41 PM
A0216052.D	N022951-007B	SAMP	1	02/16/17 1:47 PM
A0216053.D	N022951-008B	SAMP	1	02/16/17 1:52 PM
A0216054.D	CCV3	CCV	1	02/16/17 1:58 PM
A0216055.D	CCB3	CCB	1	02/16/17 2:03 PM
A0216056.D	N022952-001B	SAMP	1	02/16/17 2:09 PM
A0216057.D	N022952-003B	SAMP	1	02/16/17 2:14 PM
A0216058.D	N022952-004B	SAMP	1	02/16/17 2:20 PM
A0216059.D	N022952-005B	SAMP	1	02/16/17 2:26 PM
A0216060.D	N022952-007B	SAMP	1	02/16/17 2:31 PM
A0216061.D	N022952-008B	SAMP	1	02/16/17 2:37 PM
A0216062.D	N022952-009B	SAMP	1	02/16/17 2:42 PM
A0216063.D	N022985-001B	SAMP	1	02/16/17 2:48 PM
A0216064.D	N022985-003B	SAMP	1	02/16/17 2:54 PM
A0216065.D	N022985-004B	SAMP	1	02/16/17 2:59 PM
A0216066.D	CCV4	CCV	1	02/16/17 3:05 PM
A0216067.D	CCB4	CCB	1	02/16/17 3:10 PM
A0216068.D	N023091-001D	SAMP	5	02/16/17 3:16 PM
A0216069.D	N023091-001D-DUP	DUP	5	02/16/17 3:21 PM
A0216070.D	N022952-001B	SAMP	5	02/16/17 3:27 PM
A0216071.D	N022952-003B	SAMP	5	02/16/17 3:32 PM
A0216072.D	N022985-001B	SAMP	5	02/16/17 3:38 PM
A0216073.D	N022985-001B	SAMP	25	02/16/17 3:44 PM
A0216074.D	N022985-003B	SAMP	5	02/16/17 3:49 PM
A0216075.D	N022985-003B	SAMP	25	02/16/17 3:55 PM
A0216076.D	N022985-004B	SAMP	5	02/16/17 4:00 PM
A0216077.D	N022985-004B	SAMP	25	02/16/17 4:06 PM
A0216078.D	CCV5	CCV	1	02/16/17 4:11 PM
A0216079.D	CCB5	CCB	1	02/16/17 4:17 PM
A0216080.D	LLCCV2	CCV2	1	02/16/17 4:22 PM
A0216081.D	ICSA3	ICSA	1	02/16/17 4:28 PM
A0216082.D	ICSAB3	ICSAB	1	02/16/17 4:33 PM

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0216001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0216002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0216003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0216004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0216005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0216006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0216007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0216008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0216009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0216010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0216011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0216012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0216013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0216014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0216015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0216016	LLICV,CCV1,1	2MWST- 170107G	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0216017	MB-61272,MBLK,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0216018	LCS-61272,LCS,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0216019	N023091-001D,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0216020	N023091-001D-DUP,DUP,1		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0216021	N023115-001C,SAMP,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0216022	N023115-001C,SAMP,5		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0216023	N023115-001C,SAMP,25		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0216024	N023115-001C-PS,PS,1		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0216025	N023115-001C-PS,PS,5		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0216026	N023115-001C-MS,MS,1		1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0216027	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0216028	CCB1,CCB,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0216029	N023115-001C-MS,MS,5		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0216030	N023115-001C-MSD,MSD,1		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0216031	N023115-001C-MSD,MSD,5		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2409	A0216032	N023115-001C,SAMP,125		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2410	A0216033	N023115-001C-PS,PS,25		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2411	A0216034	N023115-001C-MS,MS,25		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2412	A0216035	~~N023115-001C-MSD,MSD,~~5	N023115-001C MSD,MSD,25	1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0216036	MB-61215,MBLK,1		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0216037	LCS-61215,LCS,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0216038	N022951-001B,SAMP,1		1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0216039	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0216040	CCB2,CCB,1		1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0216041	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0216042	ICSA2,ICSA,1	2MWST- 170107H	1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0216043	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0216044	N022951-001B,SAMP,5		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0216045	N022951-001B-PS,PS,1		1.000				
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2207	A0216046	N022951-001B-MS,MS,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2208	A0216047	N022951-001B-MSD,MSD,1		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2209	A0216048	N022951-002B,SAMP,1		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2210	A0216049	N022951-003B,SAMP,1		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2211	A0216050	N022951-005B,SAMP,1		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2212	A0216051	N022951-006B,SAMP,1		1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2301	A0216052	N022951-007B,SAMP,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2302	A0216053	N022951-008B,SAMP,1		1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0216054	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0216055	CCB3,CCB,1		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2303	A0216056	N022952-001B,SAMP,1		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2304	A0216057	N022952-003B,SAMP,1		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2305	A0216058	N022952-004B,SAMP,1		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2306	A0216059	N022952-005B,SAMP,1		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2307	A0216060	N022952-007B,SAMP,1		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2308	A0216061	N022952-008B,SAMP,1		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2309	A0216062	N022952-009B,SAMP,1		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2310	A0216063	N022985-001B,SAMP,1		1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2311	A0216064	N022985-003B,SAMP,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2312	A0216065	N022985-004B,SAMP,1		1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0216066	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0216067	CCB4,CCB,1		1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	A0216068	N023091-001D,SAMP,5		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2502	A0216069	N023091-001D-DUP,DUP,5		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2401	A0216070	N022952-001B,SAMP,5		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2402	A0216071	N022952-003B,SAMP,5		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2403	A0216072	N022985-001B,SAMP,5		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2404	A0216073	N022985-001B,SAMP,25		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2405	A0216074	N022985-003B,SAMP,5		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2406	A0216075	N022985-003B,SAMP,25		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2407	A0216076	N022985-004B,SAMP,5		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2408	A0216077	N022985-004B,SAMP,25		1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0216078	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0216079	CCB5,CCB,1		1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0216080	LLCCV2,CCV2,1	2MWST- 170107G	1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0216081	ICSA3,ICSA,1	2MWST- 170107H	1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0216082	ICSAB3,ICSAB,1	2MWST- 170107I	1.000				

Quantitation Report

File Name	A0216002.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:07
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	15.56	1.490E-05	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	36,581.18	4.763E-01	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	148.90	1.936E-03	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	387.79	5.053E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	9,499.77	1.237E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	10,633.87	3.976E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	416.69	5.423E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	203.29	2.644E-03	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	110.88	1.444E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	2,199.35	2.865E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	36.62	4.778E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	14.37	2.420E-04	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	405.36	6.828E-03	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	190.87	3.214E-03	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	14.22	2.393E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	5.55	7.686E-05	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	74.45	3.616E-05	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	1,992.66	3.903E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	9.77	1.755E-06	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	806.72	1.451E-04	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	391.03	4.779E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,297.89	2.703E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	920.09	1.916E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	---	404.85	8.433E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,044,043.81	1.48	100.0	Analog	0.30	3
2	Sc	45	76,816.35	1.60	100.0	Pulse	0.30	3
3	Sc	45	2,674,677.63	0.56	100.0	Analog	0.30	3
1	Ge	72	71,993.73	1.19	100.0	Pulse	0.30	3

2	Ge	72	59,386.45	0.45	100.0	Pulse	0.30	3
2	Rh	103	2,057,648.25	1.24	100.0	Analog	0.30	3
3	Rh	103	5,106,551.90	0.35	100.0	Analog	0.30	3
3	In	115	5,561,343.51	0.51	100.0	Analog	0.30	3
3	Tb	159	8,178,648.56	0.54	100.0	Analog	0.30	3
3	Bi	209	4,801,250.93	0.26	100.0	Analog	0.30	3

Quantitation Report

FOR AS ONLY

File Name	A0216003.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:12
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.093	ppb	3.98	585.59	5.588E-04	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	31,979.50	4.180E-01	Pulse	0.30	3
Mg	26	45	2	0.825	ppb	5.53	214.45	2.804E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	191.10	2.506E-03	Pulse	0.30	3
K	39	45	2	0.624	ppb	135.47	9,656.52	1.263E-01	Pulse	0.30	3
Ca	44	45	3	4.175	ppb	1.79	16,072.85	6.015E-03	Pulse	0.30	3
V	51	45	2	0.112	ppb	11.24	942.29	1.233E-02	Pulse	0.30	3
Cr	52	45	2	0.100	ppb	7.61	831.12	1.087E-02	Pulse	0.30	3
Mn	55	45	2	0.138	ppb	18.91	576.28	7.551E-03	Pulse	0.30	3
Fe	56	45	2	0.659	ppb	1.22	5,813.96	7.602E-02	Pulse	0.30	3
Co	59	45	2	0.098	ppb	4.01	1,247.83	1.632E-02	Pulse	0.30	3
Ni	60	72	2	0.108	ppb	13.71	367.72	6.099E-03	Pulse	0.30	3
Cu	63	72	2	0.148	ppb	7.05	1,745.55	2.895E-02	Pulse	0.30	3
Zn	66	72	2	0.468	ppb	1.89	763.12	1.265E-02	Pulse	0.30	3
As	75	72	2	0.108	ppb	27.51	88.89	1.474E-03	Pulse	0.75	3
Se	78	72	1	0.047	ppb	30.57	22.22	3.044E-04	Pulse	0.30	3
Mo	95	103	2	0.091	ppb	12.12	501.14	2.400E-04	Pulse	0.30	3
Ag	107	103	3	0.046	ppb	4.09	4,131.11	8.020E-04	Pulse	0.30	3
Cd	111	115	3	0.101	ppb	7.14	1,038.60	1.851E-04	Pulse	0.30	3
Sb	121	115	3	0.098	ppb	2.52	4,071.81	7.255E-04	Pulse	0.30	3
Ba	137	159	3	0.150	ppb	1.94	2,564.77	3.090E-04	Pulse	0.30	3
Tl	205	209	3	0.079	ppb	2.06	8,342.68	1.728E-03	Pulse	0.30	3
Pb	208	209	3	0.110	ppb	0.37	14,117.67	2.924E-03	Pulse	0.30	3
U	238	209	3	0.096	ppb	4.49	12,529.67	2.595E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,048,224.63	0.73	100.4	Analog	0.30	3
2	Sc	45	76,492.65	2.28	99.6	Pulse	0.30	3
3	Sc	45	2,671,971.49	0.19	99.9	Analog	0.30	3
1	Ge	72	73,004.72	0.19	101.4	Pulse	0.30	3

2	Ge	72	60,311.07	1.28	101.6	Pulse	0.30	3
2	Rh	103	2,087,952.49	0.13	101.5	Analog	0.30	3
3	Rh	103	5,150,396.41	0.50	100.9	Analog	0.30	3
3	In	115	5,611,930.89	0.53	100.9	Analog	0.30	3
3	Tb	159	8,299,924.32	0.38	101.5	Analog	0.30	3
3	Bi	209	4,828,131.42	0.20	100.6	Analog	0.30	3

Quantitation Report

File Name	A0216004.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:18
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.488	ppb	0.90	2,904.82	2.866E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	33,753.44	4.482E-01	Pulse	0.30	3
Mg	26	45	2	5.070	ppb	1.60	547.81	7.273E-03	Pulse	0.30	3
Al	27	45	2	1.289	ppb	25.49	579.98	7.703E-03	Pulse	0.30	3
K	39	45	2	3.985	ppb	30.14	10,550.43	1.401E-01	Pulse	0.30	3
Ca	44	45	3	8.396	ppb	5.21	20,889.40	8.077E-03	Pulse	0.30	3
V	51	45	2	0.495	ppb	5.74	2,705.89	3.593E-02	Pulse	0.30	3
Cr	52	45	2	0.515	ppb	1.97	3,384.88	4.495E-02	Pulse	0.30	3
Mn	55	45	2	0.549	ppb	3.26	1,945.60	2.583E-02	Pulse	0.30	3
Fe	56	45	2	1.307	ppb	3.66	9,224.82	1.225E-01	Pulse	0.30	3
Co	59	45	2	0.525	ppb	1.38	6,431.48	8.539E-02	Pulse	0.30	3
Ni	60	72	2	0.551	ppb	6.23	1,787.84	3.015E-02	Pulse	0.30	3
Cu	63	72	2	0.598	ppb	5.11	5,709.82	9.629E-02	Pulse	0.30	3
Zn	66	72	2	0.657	ppb	4.30	976.45	1.646E-02	Pulse	0.30	3
As	75	72	2	0.505	ppb	5.01	357.34	6.023E-03	Pulse	0.75	3
Se	78	72	1	0.492	ppb	9.93	178.90	2.473E-03	Pulse	0.30	3
Mo	95	103	2	0.466	ppb	3.85	2,216.92	1.078E-03	Pulse	0.30	3
Ag	107	103	3	0.413	ppb	3.74	20,407.92	4.059E-03	Pulse	0.30	3
Cd	111	115	3	0.502	ppb	1.90	5,019.25	9.170E-04	Pulse	0.30	3
Sb	121	115	3	0.498	ppb	3.44	16,913.04	3.090E-03	Pulse	0.30	3
Ba	137	159	3	0.554	ppb	1.46	8,274.90	1.014E-03	Pulse	0.30	3
Tl	205	209	3	0.430	ppb	0.15	39,102.43	8.162E-03	Pulse	0.30	3
Pb	208	209	3	0.507	ppb	0.52	61,207.64	1.278E-02	Pulse	0.30	3
U	238	209	3	0.482	ppb	0.52	60,842.83	1.270E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,013,736.57	1.80	97.1	Analog	0.30	3
2	Sc	45	75,317.53	0.68	98.0	Pulse	0.30	3
3	Sc	45	2,586,200.85	1.12	96.7	Analog	0.30	3
1	Ge	72	72,311.66	0.91	100.4	Pulse	0.30	3

2	Ge	72	59,312.89	1.16	99.9	Pulse	0.30	3
2	Rh	103	2,056,490.44	1.88	99.9	Analog	0.30	3
3	Rh	103	5,027,092.28	0.79	98.4	Analog	0.30	3
3	In	115	5,473,242.76	0.75	98.4	Analog	0.30	3
3	Tb	159	8,163,818.70	0.67	99.8	Analog	0.30	3
3	Bi	209	4,790,651.84	0.78	99.8	Analog	0.30	3

Quantitation Report

File Name	A0216005.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:23
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	4.806	ppb	2.00	28,811.75	2.808E-02	Pulse	0.30	3
Na	23	45	2	45.259	ppb	2.82	74,587.80	9.944E-01	Pulse	0.30	3
Mg	26	45	2	53.374	ppb	0.80	4,359.66	5.812E-02	Pulse	0.30	3
Al	27	45	2	5.442	ppb	12.53	1,219.67	1.624E-02	Pulse	0.30	3
K	39	45	2	50.246	ppb	3.81	24,762.47	3.302E-01	Pulse	0.30	3
Ca	44	45	3	61.751	ppb	0.66	88,014.40	3.414E-02	Pulse	0.30	3
V	51	45	2	5.045	ppb	3.84	23,701.03	3.161E-01	Pulse	0.30	3
Cr	52	45	2	5.033	ppb	0.83	31,235.59	4.164E-01	Pulse	0.30	3
Mn	55	45	2	5.136	ppb	1.41	17,213.11	2.295E-01	Pulse	0.30	3
Fe	56	45	2	6.100	ppb	1.69	35,009.01	4.667E-01	Pulse	0.30	3
Co	59	45	2	5.076	ppb	1.96	61,612.28	8.215E-01	Pulse	0.30	3
Ni	60	72	2	5.177	ppb	4.59	16,471.49	2.811E-01	Pulse	0.30	3
Cu	63	72	2	5.319	ppb	1.98	47,004.84	8.020E-01	Pulse	0.30	3
Zn	66	72	2	5.709	ppb	1.26	6,937.39	1.183E-01	Pulse	0.30	3
As	75	72	2	5.167	ppb	1.00	3,482.64	5.941E-02	Pulse	0.75	3
Se	78	72	1	4.906	ppb	5.38	1,713.50	2.397E-02	Pulse	0.30	3
Mo	95	103	2	4.796	ppb	2.16	21,971.37	1.075E-02	Pulse	0.30	3
Ag	107	103	3	4.936	ppb	1.31	221,948.31	4.424E-02	Pulse	0.30	3
Cd	111	115	3	5.062	ppb	1.83	50,802.97	9.226E-03	Pulse	0.30	3
Sb	121	115	3	4.942	ppb	0.32	161,564.07	2.934E-02	Pulse	0.30	3
Ba	137	159	3	5.119	ppb	0.88	73,273.25	8.969E-03	Pulse	0.30	3
Tl	205	209	3	4.907	ppb	0.22	434,035.45	9.034E-02	Pulse	0.30	3
Pb	208	209	3	5.044	ppb	0.09	603,034.13	1.255E-01	Pulse	0.30	3
U	238	209	3	4.892	ppb	0.26	615,779.88	1.282E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,026,013.34	0.93	98.3	Analog	0.30	3
2	Sc	45	75,023.75	2.25	97.7	Pulse	0.30	3
3	Sc	45	2,577,873.57	0.26	96.4	Analog	0.30	3
1	Ge	72	71,511.51	1.88	99.3	Pulse	0.30	3

2	Ge	72	58,624.06	1.71	98.7	Pulse	0.30	3
2	Rh	103	2,042,922.35	0.42	99.3	Analog	0.30	3
3	Rh	103	5,017,229.30	0.39	98.3	Analog	0.30	3
3	In	115	5,506,464.54	0.09	99.0	Analog	0.30	3
3	Tb	159	8,169,788.21	0.25	99.9	Analog	0.30	3
3	Bi	209	4,804,314.93	0.48	100.1	Analog	0.30	3

Quantitation Report

File Name	A0216006.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:29
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.699	ppb	0.83	56,574.20	5.666E-02	Pulse	0.30	3
Na	23	45	2	96.575	ppb	4.36	115,341.17	1.582E+00	Pulse	0.30	3
Mg	26	45	2	105.315	ppb	4.89	8,222.37	1.128E-01	Pulse	0.30	3
Al	27	45	2	10.194	ppb	6.63	1,896.05	2.601E-02	Pulse	0.30	3
K	39	45	2	102.355	ppb	3.47	39,687.00	5.443E-01	Pulse	0.30	3
Ca	44	45	3	104.701	ppb	0.63	139,975.49	5.512E-02	Pulse	0.30	3
V	51	45	2	10.132	ppb	0.80	45,907.93	6.294E-01	Pulse	0.30	3
Cr	52	45	2	10.341	ppb	1.50	62,192.13	8.527E-01	Pulse	0.30	3
Mn	55	45	2	10.468	ppb	2.35	33,998.66	4.662E-01	Pulse	0.30	3
Fe	56	45	2	10.971	ppb	2.52	59,552.05	8.166E-01	Pulse	0.30	3
Co	59	45	2	10.414	ppb	2.26	122,864.37	1.685E+00	Pulse	0.30	3
Ni	60	72	2	10.260	ppb	1.35	32,306.87	5.569E-01	Pulse	0.30	3
Cu	63	72	2	10.411	ppb	0.12	90,701.26	1.563E+00	Pulse	0.30	3
Zn	66	72	2	10.463	ppb	2.49	12,427.90	2.142E-01	Pulse	0.30	3
As	75	72	2	10.151	ppb	1.76	6,758.37	1.165E-01	Pulse	0.75	3
Se	78	72	1	9.982	ppb	6.43	3,432.73	4.870E-02	Pulse	0.30	3
Mo	95	103	2	9.592	ppb	0.78	43,671.71	2.147E-02	Pulse	0.30	3
Ag	107	103	3	10.035	ppb	0.73	442,708.33	8.953E-02	Pulse	0.30	3
Cd	111	115	3	10.128	ppb	0.08	100,427.84	1.846E-02	Pulse	0.30	3
Sb	121	115	3	9.844	ppb	0.45	317,220.58	5.830E-02	Pulse	0.30	3
Ba	137	159	3	10.065	ppb	1.80	142,773.32	1.759E-02	Pulse	0.30	3
Tl	205	209	3	9.901	ppb	0.36	869,411.92	1.820E-01	Pulse	0.30	3
Pb	208	209	3	10.051	ppb	0.93	1,193,705.04	2.499E-01	Pulse	0.30	3
U	238	209	3	9.784	ppb	0.79	1,224,009.46	2.563E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	998,536.22	0.28	95.6	Analog	0.30	3
2	Sc	45	72,951.31	2.45	95.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,539,311.68	0.31	94.9	Analog	0.30	3
1	Ge	72	70,508.30	0.74	97.9	Pulse	0.30	3
2	Ge	72	58,017.16	0.27	97.7	Pulse	0.30	3
2	Rh	103	2,033,766.20	0.57	98.8	Analog	0.30	3
3	Rh	103	4,944,926.14	0.93	96.8	Analog	0.30	3
3	In	115	5,441,205.73	0.41	97.8	Analog	0.30	3
3	Tb	159	8,117,643.42	0.93	99.3	Analog	0.30	3
3	Bi	209	4,776,317.15	1.04	99.5	Analog	0.30	3

Quantitation Report

File Name	A0216007.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:34
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.442	ppb	0.46	110,404.74	1.136E-01	Pulse	0.30	3
Na	23	45	2	223.254	ppb	3.06	216,246.44	3.032E+00	Pulse	0.30	3
Mg	26	45	2	215.549	ppb	1.85	16,321.78	2.288E-01	Pulse	0.30	3
Al	27	45	2	19.217	ppb	3.58	3,177.71	4.456E-02	Pulse	0.30	3
K	39	45	2	206.135	ppb	1.71	69,239.43	9.706E-01	Pulse	0.30	3
Ca	44	45	3	215.620	ppb	1.31	270,300.22	1.093E-01	Pulse	0.30	3
V	51	45	2	20.343	ppb	1.15	89,754.63	1.258E+00	Pulse	0.30	3
Cr	52	45	2	20.574	ppb	0.89	120,838.27	1.694E+00	Pulse	0.30	3
Mn	55	45	2	20.543	ppb	2.64	65,154.91	9.135E-01	Pulse	0.30	3
Fe	56	45	2	20.989	ppb	1.72	109,578.90	1.536E+00	Pulse	0.30	3
Co	59	45	2	20.487	ppb	2.34	236,366.95	3.314E+00	Pulse	0.30	3
Ni	60	72	2	20.357	ppb	1.85	62,747.44	1.105E+00	Pulse	0.30	3
Cu	63	72	2	20.528	ppb	2.96	174,685.76	3.076E+00	Pulse	0.30	3
Zn	66	72	2	20.401	ppb	3.96	23,543.18	4.146E-01	Pulse	0.30	3
As	75	72	2	19.888	ppb	2.19	12,950.13	2.280E-01	Pulse	0.75	3
Se	78	72	1	20.384	ppb	2.71	6,828.39	9.937E-02	Pulse	0.30	3
Mo	95	103	2	19.323	ppb	1.32	85,746.96	4.322E-02	Pulse	0.30	3
Ag	107	103	3	19.897	ppb	0.59	859,126.97	1.771E-01	Pulse	0.30	3
Cd	111	115	3	20.164	ppb	0.39	196,455.45	3.675E-02	Pulse	0.30	3
Sb	121	115	3	19.604	ppb	0.48	619,942.36	1.160E-01	Pulse	0.30	3
Ba	137	159	3	19.807	ppb	0.32	275,944.47	3.457E-02	Pulse	0.30	3
Tl	205	209	3	20.000	ppb	1.32	1,738,409.09	3.674E-01	Analog	0.30	3
Pb	208	209	3	19.820	ppb	0.85	2,331,144.19	4.927E-01	Pulse	0.30	3
U	238	209	3	19.892	ppb	0.84	2,465,068.83	5.210E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	972,221.85	0.49	93.1	Analog	0.30	3
2	Sc	45	71,349.91	2.20	92.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,472,827.01	0.39	92.5	Analog	0.30	3
1	Ge	72	68,729.60	0.94	95.5	Pulse	0.30	3
2	Ge	72	56,815.40	2.16	95.7	Pulse	0.30	3
2	Rh	103	1,983,921.53	0.64	96.4	Analog	0.30	3
3	Rh	103	4,850,225.83	0.58	95.0	Analog	0.30	3
3	In	115	5,346,259.43	0.35	96.1	Analog	0.30	3
3	Tb	159	7,982,698.35	0.32	97.6	Analog	0.30	3
3	Bi	209	4,731,971.49	1.04	98.6	Analog	0.30	3

Quantitation Report

File Name	A0216008.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:40
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	38.809	ppb	1.15	215,141.85	2.267E-01	Pulse	0.30	3
Na	23	45	2	406.561	ppb	1.86	363,639.60	5.130E+00	Pulse	0.30	3
Mg	26	45	2	404.897	ppb	1.23	30,346.96	4.281E-01	Pulse	0.30	3
Al	27	45	2	41.354	ppb	2.15	6,384.02	9.006E-02	Pulse	0.30	3
K	39	45	2	407.167	ppb	1.46	127,348.17	1.797E+00	Pulse	0.30	3
Ca	44	45	3	405.685	ppb	0.41	495,883.00	2.022E-01	Pulse	0.30	3
V	51	45	2	40.139	ppb	1.78	175,588.39	2.477E+00	Pulse	0.30	3
Cr	52	45	2	40.918	ppb	1.42	238,602.64	3.366E+00	Pulse	0.30	3
Mn	55	45	2	40.918	ppb	2.37	128,864.24	1.818E+00	Pulse	0.30	3
Fe	56	45	2	41.933	ppb	1.45	215,512.04	3.040E+00	Pulse	0.30	3
Co	59	45	2	40.734	ppb	1.48	467,006.43	6.588E+00	Pulse	0.30	3
Ni	60	72	2	40.954	ppb	0.96	124,877.29	2.222E+00	Pulse	0.30	3
Cu	63	72	2	41.006	ppb	0.97	344,899.67	6.137E+00	Pulse	0.30	3
Zn	66	72	2	40.459	ppb	1.54	46,027.05	8.191E-01	Pulse	0.30	3
As	75	72	2	40.152	ppb	0.39	25,855.21	4.601E-01	Pulse	0.75	3
Se	78	72	1	40.491	ppb	0.90	13,498.36	1.973E-01	Pulse	0.30	3
Mo	95	103	2	39.049	ppb	0.58	171,503.17	8.731E-02	Pulse	0.30	3
Ag	107	103	3	40.050	ppb	0.77	1,707,174.69	3.562E-01	Analog	0.30	3
Cd	111	115	3	39.931	ppb	0.47	384,989.52	7.277E-02	Pulse	0.30	3
Sb	121	115	3	39.629	ppb	0.24	1,239,445.71	2.343E-01	Pulse	0.30	3
Ba	137	159	3	39.872	ppb	0.41	547,713.96	6.954E-02	Pulse	0.30	3
Tl	205	209	3	39.797	ppb	0.70	3,402,032.03	7.308E-01	Analog	0.30	3
Pb	208	209	3	40.069	ppb	0.76	4,635,421.66	9.958E-01	Analog	0.30	3
U	238	209	3	39.596	ppb	0.64	4,827,001.98	1.037E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	949,248.28	1.15	90.9	Analog	0.30	3
2	Sc	45	70,894.68	1.74	92.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,452,939.64	0.28	91.7	Analog	0.30	3
1	Ge	72	68,413.95	0.81	95.0	Pulse	0.30	3
2	Ge	72	56,198.70	0.79	94.6	Pulse	0.30	3
2	Rh	103	1,964,311.00	0.87	95.5	Analog	0.30	3
3	Rh	103	4,793,253.71	0.31	93.9	Analog	0.30	3
3	In	115	5,290,745.76	0.26	95.1	Analog	0.30	3
3	Tb	159	7,876,680.09	0.58	96.3	Analog	0.30	3
3	Bi	209	4,655,222.43	0.79	97.0	Analog	0.30	3

Quantitation Report

File Name	A0216009.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:46
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	98.214	ppb	1.61	531,485.06	5.736E-01	Pulse	0.30	3
Na	23	45	2	1011.138	ppb	0.58	856,089.90	1.205E+01	Pulse	0.30	3
Mg	26	45	2	1018.243	ppb	1.82	76,272.58	1.074E+00	Pulse	0.30	3
Al	27	45	2	98.769	ppb	2.93	14,783.87	2.081E-01	Pulse	0.30	3
K	39	45	2	1012.116	ppb	0.54	304,186.24	4.282E+00	Pulse	0.30	3
Ca	44	45	3	1009.541	ppb	0.82	1,209,764.34	4.972E-01	Analog	0.30	3
V	51	45	2	100.916	ppb	0.60	441,876.63	6.220E+00	Pulse	0.30	3
Cr	52	45	2	101.379	ppb	0.27	592,189.95	8.336E+00	Pulse	0.30	3
Mn	55	45	2	101.355	ppb	0.38	319,786.79	4.502E+00	Pulse	0.30	3
Fe	56	45	2	101.034	ppb	1.13	517,522.99	7.285E+00	Pulse	0.30	3
Co	59	45	2	101.115	ppb	0.79	1,161,747.52	1.635E+01	Pulse	0.30	3
Ni	60	72	2	100.620	ppb	1.19	308,586.67	5.459E+00	Pulse	0.30	3
Cu	63	72	2	99.921	ppb	1.20	844,778.95	1.495E+01	Pulse	0.30	3
Zn	66	72	2	100.786	ppb	1.21	115,059.48	2.036E+00	Pulse	0.30	3
As	75	72	2	100.067	ppb	0.42	64,796.43	1.146E+00	Pulse	0.75	3
Se	78	72	1	100.595	ppb	0.70	33,535.59	4.901E-01	Pulse	0.30	3
Mo	95	103	2	99.695	ppb	1.14	430,938.44	2.229E-01	Pulse	0.30	3
Ag	107	103	3	100.001	ppb	0.31	4,213,952.53	8.887E-01	Analog	0.30	3
Cd	111	115	3	99.444	ppb	0.41	952,381.72	1.812E-01	Pulse	0.30	3
Sb	121	115	3	100.246	ppb	0.57	3,113,210.79	5.924E-01	Analog	0.30	3
Ba	137	159	3	100.873	ppb	0.69	1,383,734.46	1.758E-01	Analog	0.30	3
Tl	205	209	3	99.079	ppb	0.79	8,432,581.68	1.819E+00	Analog	0.30	3
Pb	208	209	3	99.943	ppb	0.74	11,512,689.47	2.483E+00	Analog	0.30	3
U	238	209	3	98.922	ppb	0.98	12,008,556.21	2.590E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	926,753.63	1.68	88.8	Analog	0.30	3
2	Sc	45	71,040.86	0.76	92.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,433,411.23	0.54	91.0	Analog	0.30	3
1	Ge	72	68,429.48	0.59	95.0	Pulse	0.30	3
2	Ge	72	56,530.88	1.52	95.2	Pulse	0.30	3
2	Rh	103	1,933,664.92	0.85	94.0	Analog	0.30	3
3	Rh	103	4,741,615.94	0.24	92.9	Analog	0.30	3
3	In	115	5,255,478.97	0.16	94.5	Analog	0.30	3
3	Tb	159	7,868,827.52	0.14	96.2	Analog	0.30	3
3	Bi	209	4,635,918.23	1.02	96.6	Analog	0.30	3

Quantitation Report

File Name	A0216010.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:51
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	201.207	ppb	0.98	1,061,590.19	1.175E+00	Analog	0.30	3
Na	23	45	2	1991.083	ppb	0.89	1,676,530.60	2.327E+01	Analog	0.30	3
Mg	26	45	2	1987.994	ppb	0.93	150,905.03	2.094E+00	Pulse	0.30	3
Al	27	45	2	200.402	ppb	2.16	30,045.86	4.170E-01	Pulse	0.30	3
K	39	45	2	1991.771	ppb	0.57	598,527.01	8.307E+00	Pulse	0.30	3
Ca	44	45	3	1992.002	ppb	0.77	2,371,053.11	9.771E-01	Analog	0.30	3
V	51	45	2	199.472	ppb	0.97	885,438.41	1.229E+01	Pulse	0.30	3
Cr	52	45	2	199.052	ppb	0.77	1,179,099.40	1.636E+01	Pulse	0.30	3
Mn	55	45	2	199.058	ppb	1.20	636,879.56	8.839E+00	Pulse	0.30	3
Fe	56	45	2	198.922	ppb	0.86	1,031,470.72	1.432E+01	Pulse	0.30	3
Co	59	45	2	199.224	ppb	0.25	2,321,646.10	3.222E+01	Analog	0.30	3
Ni	60	72	2	199.446	ppb	0.50	609,828.76	1.082E+01	Pulse	0.30	3
Cu	63	72	2	199.757	ppb	0.27	1,683,527.61	2.987E+01	Analog	0.30	3
Zn	66	72	2	199.434	ppb	0.48	226,820.43	4.025E+00	Pulse	0.30	3
As	75	72	2	199.936	ppb	0.60	129,053.30	2.290E+00	Pulse	0.75	3
Se	78	72	1	199.569	ppb	0.87	67,315.32	9.722E-01	Pulse	0.30	3
Mo	95	103	2	200.436	ppb	0.50	867,366.15	4.480E-01	Pulse	0.30	3
Ag	107	103	3	187.560	ppb	6.67	7,851,163.51	1.667E+00	Analog	0.30	3
Cd	111	115	3	200.268	ppb	1.59	1,928,983.68	3.649E-01	Analog	0.30	3
Sb	121	115	3	198.704	ppb	0.77	6,205,846.29	1.174E+00	Analog	0.30	3
Ba	137	159	3	199.602	ppb	0.38	2,733,197.68	3.479E-01	Analog	0.30	3
Tl	205	209	3	200.508	ppb	0.81	16,821,502.67	3.681E+00	Analog	0.30	3
Pb	208	209	3	200.029	ppb	0.74	22,713,370.15	4.970E+00	Analog	0.30	3
U	238	209	3	200.644	ppb	0.44	24,010,354.37	5.254E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	903,463.43	1.36	86.5	Analog	0.30	3
2	Sc	45	72,055.16	1.08	93.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,426,674.81	0.50	90.7	Analog	0.30	3
1	Ge	72	69,244.11	0.59	96.2	Pulse	0.30	3
2	Ge	72	56,358.09	0.98	94.9	Pulse	0.30	3
2	Rh	103	1,935,965.49	0.75	94.1	Analog	0.30	3
3	Rh	103	4,711,512.53	0.20	92.3	Analog	0.30	3
3	In	115	5,286,073.19	0.83	95.1	Analog	0.30	3
3	Tb	159	7,855,925.58	0.21	96.1	Analog	0.30	3
3	Bi	209	4,569,915.84	0.36	95.2	Analog	0.30	3

Quantitation Report

File Name	A0216011.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 09:57
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.980	ppb	0.61	49,547.02	5.830E-02	Pulse	0.30	3
Na	23	45	2	258.346	ppb	1.29	227,764.62	3.434E+00	Pulse	0.30	3
Mg	26	45	2	105.261	ppb	3.90	7,476.41	1.127E-01	Pulse	0.30	3
Al	27	45	2	204.423	ppb	1.92	28,209.26	4.253E-01	Pulse	0.30	3
K	39	45	2	101.988	ppb	1.40	36,001.90	5.427E-01	Pulse	0.30	3
Ca	44	45	3	108.010	ppb	1.18	129,516.60	5.674E-02	Pulse	0.30	3
V	51	45	2	10.201	ppb	2.32	42,025.38	6.336E-01	Pulse	0.30	3
Cr	52	45	2	10.255	ppb	1.03	56,091.52	8.456E-01	Pulse	0.30	3
Mn	55	45	2	102.861	ppb	0.88	303,042.06	4.568E+00	Pulse	0.30	3
Fe	56	45	2	104.456	ppb	0.96	499,571.51	7.531E+00	Pulse	0.30	3
Co	59	45	2	10.031	ppb	1.73	107,635.79	1.623E+00	Pulse	0.30	3
Ni	60	72	2	10.400	ppb	1.79	29,863.29	5.645E-01	Pulse	0.30	3
Cu	63	72	2	10.490	ppb	1.42	83,326.71	1.575E+00	Pulse	0.30	3
Zn	66	72	2	105.776	ppb	0.50	113,005.70	2.136E+00	Pulse	0.30	3
As	75	72	2	10.337	ppb	0.76	6,275.51	1.186E-01	Pulse	0.75	3
Se	78	72	1	9.841	ppb	5.29	3,141.55	4.801E-02	Pulse	0.30	3
Mo	95	103	2	10.248	ppb	1.41	43,118.99	2.294E-02	Pulse	0.30	3
Ag	107	103	3	10.492	ppb	0.62	428,598.02	9.359E-02	Pulse	0.30	3
Cd	111	115	3	10.285	ppb	0.45	94,947.29	1.874E-02	Pulse	0.30	3
Sb	121	115	3	10.891	ppb	0.57	326,648.00	6.448E-02	Pulse	0.30	3
Ba	137	159	3	102.502	ppb	0.99	1,362,826.49	1.787E-01	Analog	0.30	3
Tl	205	209	3	9.729	ppb	0.26	799,086.10	1.789E-01	Pulse	0.30	3
Pb	208	209	3	10.134	ppb	0.57	1,125,690.81	2.520E-01	Pulse	0.30	3
U	238	209	3	10.127	ppb	0.62	1,185,006.20	2.653E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	849,960.97	1.34	81.4	Mix	0.30	3
2	Sc	45	66,338.30	1.07	86.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,282,777.26	0.98	85.3	Analog	0.30	3
1	Ge	72	65,467.52	1.98	90.9	Pulse	0.30	3
2	Ge	72	52,901.12	0.04	89.1	Pulse	0.30	3
2	Rh	103	1,879,466.88	0.72	91.3	Analog	0.30	3
3	Rh	103	4,579,626.98	0.79	89.7	Analog	0.30	3
3	In	115	5,065,508.46	0.25	91.1	Analog	0.30	3
3	Tb	159	7,626,697.11	0.17	93.3	Analog	0.30	3
3	Bi	209	4,467,468.23	0.98	93.0	Analog	0.30	3

Quantitation Report

File Name	A0216012.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:03
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	1.11	1.282E-06	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	24,027.93	3.640E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	26.67	4.044E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	107.78	1.632E-03	Pulse	0.30	3
K	39	45	2	0.247	ppb	417.16	8,234.60	1.247E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	5,077.66	2.269E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	290.01	4.393E-03	Pulse	0.30	3
Cr	52	45	2	0.003	ppb	306.98	191.10	2.894E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	80.03	1.212E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,738.60	2.634E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	4.42	6.687E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	8.86	1.757E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	283.54	5.621E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	108.73	2.157E-03	Pulse	0.30	3
As	75	72	2	0.001	ppb	414.26	12.89	2.558E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	2.22	3.634E-05	Pulse	0.30	3
Mo	95	103	2	0.004	ppb	112.03	81.11	4.560E-05	Pulse	0.30	3
Ag	107	103	3	0.003	ppb	25.03	1,852.63	4.189E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	5.95	1.227E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	518.92	1.065E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	197.77	2.721E-05	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	10.80	1,692.40	3.919E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	434.92	1.008E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	66.52	1.540E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	859,297.05	1.20	82.3	Mix	0.30	3
2	Sc	45	66,014.96	0.27	85.9	Pulse	0.30	3
3	Sc	45	2,238,252.21	0.19	83.7	Analog	0.30	3
1	Ge	72	61,191.02	0.30	85.0	Pulse	0.30	3

2	Ge	72	50,437.77	0.85	84.9	Pulse	0.30	3
2	Rh	103	1,777,559.04	0.53	86.4	Analog	0.30	3
3	Rh	103	4,423,025.53	0.20	86.6	Analog	0.30	3
3	In	115	4,872,086.84	0.75	87.6	Analog	0.30	3
3	Tb	159	7,264,031.77	0.45	88.8	Analog	0.30	3
3	Bi	209	4,317,835.53	0.35	89.9	Analog	0.30	3

Quantitation Report

File Name	A0216013.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:08
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

reported Ag
~~not reported~~

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.493	ppb	1.50	2,542.52	2.892E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	20,232.20	2.994E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	121.12	1.783E-03	Pulse	0.30	3
Al	27	45	2	9.597	ppb	2.76	1,675.71	2.478E-02	Pulse	0.30	3
K	39	45	2	0.174	ppb	575.59	8,412.48	1.244E-01	Pulse	0.30	3
Ca	44	45	3	3.003	ppb	6.96	12,645.27	5.443E-03	Pulse	0.30	3
V	51	45	2	1.025	ppb	1.30	4,636.41	6.854E-02	Pulse	0.30	3
Cr	52	45	2	1.064	ppb	4.32	6,088.01	9.007E-02	Pulse	0.30	3
Mn	55	45	2	0.525	ppb	5.32	1,674.37	2.476E-02	Pulse	0.30	3
Fe	56	45	2	10.508	ppb	2.91	52,961.01	7.834E-01	Pulse	0.30	3
Co	59	45	2	0.511	ppb	1.66	5,621.16	8.312E-02	Pulse	0.30	3
Ni	60	72	2	1.019	ppb	8.23	3,010.34	5.550E-02	Pulse	0.30	3
Cu	63	72	2	1.093	ppb	0.19	9,226.43	1.702E-01	Pulse	0.30	3
Zn	66	72	2	10.635	ppb	2.77	11,797.79	2.177E-01	Pulse	0.30	3
As	75	72	2	0.109	ppb	21.10	80.89	1.493E-03	Pulse	0.75	3
Se	78	72	1	0.613	ppb	5.95	202.23	3.060E-03	Pulse	0.30	3
Mo	95	103	2	0.542	ppb	6.56	2,378.06	1.248E-03	Pulse	0.30	3
Ag J	107	103	3	0.506	ppb	1.11	22,630.22	4.881E-03	Pulse	0.30	3
Cd	111	115	3	0.512	ppb	2.89	4,761.10	9.355E-04	Pulse	0.30	3
Sb	121	115	3	0.663	ppb	0.92	20,681.02	4.063E-03	Pulse	0.30	3
Ba	137	159	3	1.074	ppb	0.82	14,540.16	1.920E-03	Pulse	0.30	3
Tl	205	209	3	0.469	ppb	1.41	39,896.90	8.883E-03	Pulse	0.30	3
Pb	208	209	3	1.018	ppb	0.67	114,485.20	2.549E-02	Pulse	0.30	3
U	238	209	3	0.513	ppb	0.49	60,738.98	1.352E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	879,059.22	1.17	84.2	Analog	0.30	3
2	Sc	45	67,640.19	2.84	88.1	Pulse	0.30	3
3	Sc	45	2,323,279.18	0.09	86.9	Analog	0.30	3
1	Ge	72	66,106.63	1.03	91.8	Pulse	0.30	3

2	Ge	72	54,208.72	0.96	91.3	Pulse	0.30	3
2	Rh	103	1,906,075.73	0.60	92.6	Analog	0.30	3
3	Rh	103	4,636,083.85	0.52	90.8	Analog	0.30	3
3	In	115	5,089,765.54	0.36	91.5	Analog	0.30	3
3	Tb	159	7,572,247.94	0.30	92.6	Analog	0.30	3
3	Bi	209	4,491,395.77	0.47	93.5	Analog	0.30	3

Quantitation Report

File Name	A0216014.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:13
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	48.53	28.89	3.098E-05	Pulse	0.30	3
Na	23	45	2	96054.875	ppb	1.60	78,021,457.73	1.100E+03	Analog	0.30	3
Mg	26	45	2	96250.223	ppb	1.56	7,185,727.88	1.013E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	58.96	8.222E-04	Pulse	0.30	3
K	39	45	2	98494.158	ppb	1.39	28,710,847.90	4.048E+02	Analog	0.30	3
Ca	44	45	3	94617.066	ppb	0.95	121,699,460.41	4.623E+01	Analog	0.30	3
V	51	45	2	0.005	ppb	157.57	406.69	5.743E-03	Pulse	0.30	3
Cr	52	45	2	0.168	ppb	13.33	1,162.73	1.643E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-6,732.61	-9.498E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,542.40	-6.414E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1.19	-1.420E-05	Pulse	0.30	3
Ni	60	72	2	0.359	ppb	14.72	1,020.58	1.974E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,840.67	-3.567E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-791.32	-1.535E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	50206.05	12.22	2.399E-04	Pulse	0.75	3
Se	78	72	1	0.004	ppb	873.27	5.56	9.587E-05	Pulse	0.30	3
Mo	95	103	2	0.086	ppb	17.50	371.13	2.276E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-22,161.13	-5.138E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,781.25	-4.108E-03	Pulse	0.30	3
Sb	121	115	3	0.088	ppb	8.53	3,198.61	6.643E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-74,605.09	-1.038E-02	Pulse	0.30	3
Tl	205	209	3	0.040	ppb	2.87	3,484.99	1.002E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-111,189.43	-3.198E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-7,095.30	-2.041E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	934,366.37	1.14	89.5	Analog	0.30	3
2	Sc	45	70,951.65	3.46	92.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,633,016.49	2.42	98.4	Analog	0.30	3
1	Ge	72	58,815.52	1.26	81.7	Pulse	0.30	3
2	Ge	72	51,623.67	2.24	86.9	Pulse	0.30	3
2	Rh	103	1,627,635.27	1.84	79.1	Analog	0.30	3
3	Rh	103	4,313,322.89	0.45	84.5	Analog	0.30	3
3	In	115	4,814,988.05	0.78	86.6	Analog	0.30	3
3	Tb	159	7,189,849.82	0.57	87.9	Analog	0.30	3
3	Bi	209	3,476,394.22	0.74	72.4	Analog	0.30	3

Quantitation Report

File Name	A0216015.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:19
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.212	ppb	0.83	114,045.77	1.122E-01	Pulse	0.30	3
Na	23	45	2	97883.988	ppb	1.41	84,688,692.63	1.121E+03	Analog	0.30	3
Mg	26	45	2	98080.193	ppb	1.19	7,799,888.70	1.032E+02	Analog	0.30	3
Al	27	45	2	18.653	ppb	1.47	3,280.52	4.340E-02	Pulse	0.30	3
K	39	45	2	96269.615	ppb	0.75	29,895,005.94	3.956E+02	Analog	0.30	3
Ca	44	45	3	94606.592	ppb	0.86	134,645,157.99	4.622E+01	Analog	0.30	3
V	51	45	2	20.651	ppb	1.74	96,480.79	1.277E+00	Pulse	0.30	3
Cr	52	45	2	20.143	ppb	1.89	125,283.95	1.658E+00	Pulse	0.30	3
Mn	55	45	2	16.864	ppb	1.69	56,675.99	7.502E-01	Pulse	0.30	3
Fe	56	45	2	17.763	ppb	1.62	98,589.21	1.304E+00	Pulse	0.30	3
Co	59	45	2	18.934	ppb	0.92	231,406.89	3.063E+00	Pulse	0.30	3
Ni	60	72	2	20.725	ppb	1.52	60,231.70	1.125E+00	Pulse	0.30	3
Cu	63	72	2	18.722	ppb	0.24	150,274.40	2.806E+00	Pulse	0.30	3
Zn	66	72	2	16.719	ppb	1.28	18,229.43	3.403E-01	Pulse	0.30	3
As	75	72	2	20.103	ppb	0.84	12,345.00	2.305E-01	Pulse	0.75	3
Se	78	72	1	18.590	ppb	3.12	5,378.90	9.063E-02	Pulse	0.30	3
Mo	95	103	2	22.444	ppb	1.40	84,868.54	5.020E-02	Pulse	0.30	3
Ag	107	103	3	18.348	ppb	0.24	742,524.35	1.634E-01	Pulse	0.30	3
Cd	111	115	3	16.748	ppb	0.37	154,236.49	3.052E-02	Pulse	0.30	3
Sb	121	115	3	19.980	ppb	0.50	597,213.43	1.182E-01	Pulse	0.30	3
Ba	137	159	3	17.610	ppb	1.30	226,877.21	3.074E-02	Pulse	0.30	3
Tl	205	209	3	22.173	ppb	1.29	1,429,966.32	4.073E-01	Analog	0.30	3
Pb	208	209	3	20.100	ppb	0.47	1,754,105.52	4.996E-01	Pulse	0.30	3
U	238	209	3	22.677	ppb	0.10	2,085,224.79	5.939E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,016,321.99	0.22	97.3	Analog	0.30	3
2	Sc	45	75,570.56	3.01	98.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,913,109.47	0.69	108.9	Analog	0.30	3
1	Ge	72	59,378.57	2.46	82.5	Pulse	0.30	3
2	Ge	72	53,560.00	2.10	90.2	Pulse	0.30	3
2	Rh	103	1,690,532.79	1.06	82.2	Analog	0.30	3
3	Rh	103	4,544,653.44	0.74	89.0	Analog	0.30	3
3	In	115	5,053,292.57	0.53	90.9	Analog	0.30	3
3	Tb	159	7,381,296.77	0.85	90.3	Analog	0.30	3
3	Bi	209	3,511,076.86	0.75	73.1	Analog	0.30	3

Quantitation Report

File Name	A0216016.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:25
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.467	ppb	5.24	2,464.74	2.742E-03	Pulse	0.30	3
Na	23	45	2	16.445	ppb	26.26	44,998.57	6.646E-01	Pulse	0.30	3
Mg	26	45	2	1.589	ppb	7.41	244.46	3.608E-03	Pulse	0.30	3
Al	27	45	2	10.756	ppb	12.22	1,839.05	2.716E-02	Pulse	0.30	3
K	39	45	2	3.397	ppb	20.11	9,328.58	1.377E-01	Pulse	0.30	3
Ca	44	45	3	4.100	ppb	1.11	14,124.29	5.979E-03	Pulse	0.30	3
V	51	45	2	1.032	ppb	1.77	4,675.31	6.899E-02	Pulse	0.30	3
Cr	52	45	2	1.006	ppb	4.92	5,777.86	8.530E-02	Pulse	0.30	3
Mn	55	45	2	0.522	ppb	4.99	1,667.48	2.461E-02	Pulse	0.30	3
Fe	56	45	2	10.711	ppb	0.79	54,063.59	7.980E-01	Pulse	0.30	3
Co	59	45	2	0.510	ppb	2.17	5,621.13	8.297E-02	Pulse	0.30	3
Ni	60	72	2	1.040	ppb	2.65	3,021.43	5.666E-02	Pulse	0.30	3
Cu	63	72	2	1.114	ppb	2.37	9,241.33	1.733E-01	Pulse	0.30	3
Zn	66	72	2	10.725	ppb	2.20	11,704.29	2.195E-01	Pulse	0.30	3
As	75	72	2	0.099	ppb	42.04	73.78	1.378E-03	Pulse	0.75	3
Se	78	72	1	0.601	ppb	3.78	191.12	3.006E-03	Pulse	0.30	3
Mo	95	103	2	0.516	ppb	3.59	2,218.03	1.189E-03	Pulse	0.30	3
Ag	107	103	3	0.807	ppb	1.69	34,813.42	7.559E-03	Pulse	0.30	3
Cd	111	115	3	0.516	ppb	2.09	4,737.19	9.412E-04	Pulse	0.30	3
Sb	121	115	3	0.528	ppb	0.74	16,439.17	3.266E-03	Pulse	0.30	3
Ba	137	159	3	1.081	ppb	2.46	14,433.82	1.932E-03	Pulse	0.30	3
Tl	205	209	3	0.426	ppb	0.96	35,505.61	8.096E-03	Pulse	0.30	3
Pb	208	209	3	1.022	ppb	1.11	112,210.12	2.559E-02	Pulse	0.30	3
U	238	209	3	0.512	ppb	1.57	59,213.29	1.350E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	898,742.23	0.53	86.1	Analog	0.30	3
2	Sc	45	67,757.36	1.36	88.2	Pulse	0.30	3
3	Sc	45	2,362,398.90	0.34	88.3	Analog	0.30	3
1	Ge	72	63,599.94	1.16	88.3	Pulse	0.30	3

2	Ge	72	53,340.22	2.01	89.8	Pulse	0.30	3
2	Rh	103	1,864,729.38	0.24	90.6	Analog	0.30	3
3	Rh	103	4,605,342.50	0.20	90.2	Analog	0.30	3
3	In	115	5,032,987.50	0.05	90.5	Analog	0.30	3
3	Tb	159	7,472,902.04	0.76	91.4	Analog	0.30	3
3	Bi	209	4,385,432.61	0.80	91.3	Analog	0.30	3

Quantitation Report

File Name	A0216017.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:30
Sample Name	MB-61272,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	1.180E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	29,742.94	3.839E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	45.56	5.890E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	260.01	3.358E-03	Pulse	0.30	3
K	39	45	2	4.205	ppb	36.98	10,922.95	1.410E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	7,465.31	2.824E-03	Pulse	0.30	3
V	51	45	2	0.003	ppb	238.79	436.69	5.631E-03	Pulse	0.30	3
Cr	52	45	2	0.007	ppb	49.98	252.21	3.256E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	72.22	9.328E-04	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,358.59	1.752E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	8.85	1.142E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	6.62	1.083E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	325.47	5.334E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	133.12	2.183E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	180.08	16.44	2.694E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	5.56	7.294E-05	Pulse	0.30	3
Mo	95	103	2	0.026	ppb	35.61	194.46	9.374E-05	Pulse	0.30	3
Ag	107	103	3	0.140	ppb	11.31	8,287.69	1.635E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	6.10	1.115E-06	Pulse	0.30	3
Sb	121	115	3	0.049	ppb	6.91	2,378.07	4.354E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	83.49	1.047E-05	Pulse	0.30	3
Tl	205	209	3	0.011	ppb	5.35	2,211.37	4.783E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	717.60	1.551E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	136.88	2.960E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,035,080.78	0.34	99.1	Analog	0.30	3
2	Sc	45	77,497.94	1.49	100.9	Pulse	0.30	3
3	Sc	45	2,643,265.21	0.32	98.8	Analog	0.30	3
1	Ge	72	76,496.33	0.93	106.3	Pulse	0.30	3

2	Ge	72	61,013.84	0.44	102.7	Pulse	0.30	3
2	Rh	103	2,073,240.44	0.90	100.8	Analog	0.30	3
3	Rh	103	5,068,976.59	0.27	99.3	Analog	0.30	3
3	In	115	5,460,495.16	0.49	98.2	Analog	0.30	3
3	Tb	159	7,972,028.84	0.24	97.5	Analog	0.30	3
3	Bi	209	4,623,810.76	0.56	96.3	Analog	0.30	3

Quantitation Report

File Name	A0216018.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:36
Sample Name	LCS-61272,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.967	ppb	1.39	44,124.36	5.822E-02	Pulse	0.30	3
Na	23	45	2	269.963	ppb	1.30	200,241.78	3.567E+00	Pulse	0.30	3
Mg	26	45	2	104.800	ppb	0.27	6,302.57	1.122E-01	Pulse	0.30	3
Al	27	45	2	212.339	ppb	0.89	24,791.73	4.416E-01	Pulse	0.30	3
K	39	45	2	103.670	ppb	3.13	30,857.11	5.497E-01	Pulse	0.30	3
Ca	44	45	3	108.682	ppb	1.36	117,439.02	5.707E-02	Pulse	0.30	3
V	51	45	2	10.350	ppb	0.35	36,090.33	6.428E-01	Pulse	0.30	3
Cr	52	45	2	10.356	ppb	1.99	47,938.65	8.539E-01	Pulse	0.30	3
Mn	55	45	2	104.461	ppb	0.82	260,479.98	4.639E+00	Pulse	0.30	3
Fe	56	45	2	105.657	ppb	0.51	427,679.66	7.617E+00	Pulse	0.30	3
Co	59	45	2	10.237	ppb	0.52	92,984.31	1.656E+00	Pulse	0.30	3
Ni	60	72	2	10.264	ppb	1.27	25,434.85	5.571E-01	Pulse	0.30	3
Cu	63	72	2	10.534	ppb	1.66	72,214.57	1.582E+00	Pulse	0.30	3
Zn	66	72	2	105.044	ppb	1.18	96,855.18	2.121E+00	Pulse	0.30	3
As	75	72	2	10.366	ppb	1.44	5,431.20	1.190E-01	Pulse	0.75	3
Se	78	72	1	10.307	ppb	2.35	2,739.24	5.028E-02	Pulse	0.30	3
Mo	95	103	2	9.359	ppb	1.03	34,383.39	2.095E-02	Pulse	0.30	3
Ag	107	103	3	10.028	ppb	0.47	371,182.20	8.947E-02	Pulse	0.30	3
Cd	111	115	3	10.154	ppb	0.29	84,912.39	1.851E-02	Pulse	0.30	3
Sb	121	115	3	10.126	ppb	0.57	275,150.50	5.997E-02	Pulse	0.30	3
Ba	137	159	3	101.072	ppb	1.33	1,219,125.18	1.762E-01	Pulse	0.30	3
Tl	205	209	3	9.482	ppb	0.42	720,302.44	1.743E-01	Pulse	0.30	3
Pb	208	209	3	9.997	ppb	0.58	1,026,986.18	2.486E-01	Pulse	0.30	3
U	238	209	3	10.068	ppb	0.75	1,089,544.98	2.637E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	757,831.08	0.11	72.6	Pulse	0.30	3
2	Sc	45	56,148.79	1.35	73.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,057,935.66	0.69	76.9	Analog	0.30	3
1	Ge	72	54,477.62	0.83	75.7	Pulse	0.30	3
2	Ge	72	45,657.01	0.25	76.9	Pulse	0.30	3
2	Rh	103	1,640,703.26	1.42	79.7	Analog	0.30	3
3	Rh	103	4,148,718.00	0.83	81.2	Analog	0.30	3
3	In	115	4,588,510.10	0.50	82.5	Analog	0.30	3
3	Tb	159	6,919,760.87	1.08	84.6	Analog	0.30	3
3	Bi	209	4,131,586.50	0.61	86.1	Analog	0.30	3

Quantitation Report

File Name	A0216019.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:41
Sample Name	N023091-001D,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.021	ppb	13.72	117.78	1.404E-04	Pulse	0.30	3
Na	23	45	2	159690.126	ppb	0.89	130,944,876.94	1.828E+03	Analog	0.30	3
Mg	26	45	2	8600.788	ppb	0.92	648,459.07	9.055E+00	Pulse	0.30	3
Al	27	45	2	476.366	ppb	4.77	70,504.65	9.843E-01	Pulse	0.30	3
K	39	45	2	12771.895	ppb	0.60	3,766,562.41	5.260E+01	Analog	0.30	3
Ca	44	45	3	30809.029	ppb	0.36	39,018,103.03	1.505E+01	Analog	0.30	3
V	51	45	2	10.285	ppb	1.36	45,745.44	6.388E-01	Pulse	0.30	3
Cr	52	45	2	3.007	ppb	1.46	17,890.17	2.498E-01	Pulse	0.30	3
Mn	55	45	2	41.854	ppb	0.15	133,179.76	1.860E+00	Pulse	0.30	3
Fe	56	45	2	991.089	ppb	1.58	5,099,919.09	7.121E+01	Analog	0.30	3
Co	59	45	2	0.547	ppb	3.09	6,371.85	8.897E-02	Pulse	0.30	3
Ni	60	72	2	2.552	ppb	1.75	7,352.45	1.387E-01	Pulse	0.30	3
Cu	63	72	2	3.407	ppb	2.18	27,356.29	5.162E-01	Pulse	0.30	3
Zn	66	72	2	316.699	ppb	1.00	338,679.89	6.389E+00	Pulse	0.30	3
As	75	72	2	6.999	ppb	2.33	4,263.58	8.040E-02	Pulse	0.75	3
Se	78	72	1	11.868	ppb	1.23	3,718.37	5.789E-02	Pulse	0.30	3
Mo	95	103	2	403.773	ppb	1.92	1,508,757.34	9.025E-01	Analog	0.30	3
Ag	107	103	3	0.142	ppb	2.36	6,973.88	1.652E-03	Pulse	0.30	3
Cd	111	115	3	0.585	ppb	3.23	5,166.19	1.068E-03	Pulse	0.30	3
Sb	121	115	3	3.512	ppb	0.48	101,077.62	2.089E-02	Pulse	0.30	3
Ba	137	159	3	32.662	ppb	0.59	419,320.14	5.697E-02	Pulse	0.30	3
Tl	205	209	3	0.074	ppb	5.34	6,012.59	1.620E-03	Pulse	0.30	3
Pb	208	209	3	1.747	ppb	0.64	161,829.63	4.360E-02	Pulse	0.30	3
U	238	209	3	7.586	ppb	0.15	737,606.31	1.987E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	839,194.44	0.76	80.4	Mix	0.30	3
2	Sc	45	71,611.46	0.76	93.2	Pulse	0.30	3
3	Sc	45	2,591,803.29	1.07	96.9	Analog	0.30	3
1	Ge	72	64,242.46	1.18	89.2	Pulse	0.30	3
2	Ge	72	53,013.67	2.11	89.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,671,587.54	1.73	81.2	Analog	0.30	3
3	Rh	103	4,222,408.62	0.31	82.7	Analog	0.30	3
3	In	115	4,837,661.25	0.75	87.0	Analog	0.30	3
3	Tb	159	7,360,271.07	0.53	90.0	Analog	0.30	3
3	Bi	209	3,711,722.72	0.52	77.3	Analog	0.30	3

Quantitation Report

File Name	A0216020.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:47
Sample Name	N023091-001D-DUP,DUP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.013	ppb	20.90	82.23	9.297E-05	Pulse	0.30	3
Na	23	45	2	152286.930	ppb	1.05	129,048,812.52	1.744E+03	Analog	0.30	3
Mg	26	45	2	8199.135	ppb	0.95	638,844.43	8.632E+00	Pulse	0.30	3
Al	27	45	2	495.835	ppb	2.04	75,827.17	1.024E+00	Pulse	0.30	3
K	39	45	2	12107.932	ppb	0.28	3,691,045.95	4.987E+01	Analog	0.30	3
Ca	44	45	3	29313.670	ppb	0.97	37,972,563.05	1.432E+01	Analog	0.30	3
V	51	45	2	9.816	ppb	0.74	45,141.33	6.099E-01	Pulse	0.30	3
Cr	52	45	2	2.876	ppb	2.78	17,685.86	2.390E-01	Pulse	0.30	3
Mn	55	45	2	39.578	ppb	1.33	130,148.13	1.759E+00	Pulse	0.30	3
Fe	56	45	2	962.627	ppb	1.12	5,118,892.91	6.917E+01	Analog	0.30	3
Co	59	45	2	0.508	ppb	0.93	6,115.80	8.263E-02	Pulse	0.30	3
Ni	60	72	2	2.624	ppb	5.91	7,594.97	1.426E-01	Pulse	0.30	3
Cu	63	72	2	3.327	ppb	1.74	26,863.24	5.042E-01	Pulse	0.30	3
Zn	66	72	2	301.385	ppb	0.93	323,998.79	6.081E+00	Pulse	0.30	3
As	75	72	2	6.550	ppb	1.18	4,010.20	7.525E-02	Pulse	0.75	3
Se	78	72	1	11.375	ppb	2.48	3,658.35	5.549E-02	Pulse	0.30	3
OLR Mo	95	103	2	387.800	ppb	0.55	1,465,628.33	8.668E-01	Analog	0.30	3
Ag	107	103	3	<0.000	ppb	---	148.61	3.471E-05	Pulse	0.30	3
Cd	111	115	3	0.563	ppb	1.59	5,045.27	1.027E-03	Pulse	0.30	3
Sb	121	115	3	3.295	ppb	1.13	96,359.59	1.961E-02	Pulse	0.30	3
Ba	137	159	3	31.069	ppb	0.17	401,193.00	5.420E-02	Pulse	0.30	3
Tl	205	209	3	0.055	ppb	4.73	4,794.30	1.280E-03	Pulse	0.30	3
Pb	208	209	3	1.678	ppb	0.51	156,864.15	4.188E-02	Pulse	0.30	3
U	238	209	3	7.199	ppb	0.80	706,504.74	1.886E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	885,140.44	0.87	84.8	Analog	0.30	3
2	Sc	45	74,017.98	2.15	96.4	Pulse	0.30	3
3	Sc	45	2,651,120.46	1.16	99.1	Analog	0.30	3
1	Ge	72	65,940.26	0.65	91.6	Pulse	0.30	3
2	Ge	72	53,289.26	1.57	89.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,691,000.57	1.98	82.2	Analog	0.30	3
3	Rh	103	4,279,871.71	0.66	83.8	Analog	0.30	3
3	In	115	4,913,488.34	0.99	88.4	Analog	0.30	3
3	Tb	159	7,402,680.10	0.19	90.5	Analog	0.30	3
3	Bi	209	3,746,056.72	0.79	78.0	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0216021.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:52
Sample Name	N023115-001C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.000	ppb	240.84	14.44	1.581E-05	Pulse	0.30	3
	Na	23	45	2	5724.063	ppb	0.73	4,993,122.32	6.600E+01	Analog	0.30	3
	Mg	26	45	2	6624.606	ppb	1.26	527,614.71	6.975E+00	Pulse	0.30	3
	Al	27	45	2	54.894	ppb	1.00	8,919.04	1.179E-01	Pulse	0.30	3
	K	39	45	2	13089.212	ppb	0.88	4,077,494.73	5.390E+01	Analog	0.30	3
	Ca	44	45	3	46779.114	ppb	0.28	60,124,935.22	2.286E+01	Analog	0.30	3
	V	51	45	2	0.411	ppb	8.24	2,322.49	3.072E-02	Pulse	0.30	3
	Cr	52	45	2	0.351	ppb	4.81	2,385.26	3.154E-02	Pulse	0.30	3
	Mn	55	45	2	517.791	ppb	1.80	1,739,088.64	2.299E+01	Analog	0.30	3
	Fe	56	45	2	2960.788	ppb	0.34	16,090,227.42	2.127E+02	Analog	0.30	3
	Co	59	45	2	1.268	ppb	3.21	15,545.89	2.055E-01	Pulse	0.30	3
	Ni	60	72	2	5.007	ppb	0.67	15,502.13	2.719E-01	Pulse	0.30	3
	Cu	63	72	2	5.987	ppb	1.60	51,415.93	9.019E-01	Pulse	0.30	3
OLR	Zn	66	72	2	2077.819	ppb	1.06	2,388,911.50	4.190E+01	Analog	0.30	3
	As	75	72	2	0.211	ppb	9.00	151.31	2.653E-03	Pulse	0.75	3
	Se	78	72	1	0.088	ppb	34.37	35.56	5.052E-04	Pulse	0.30	3
	Mo	95	103	2	1.148	ppb	7.08	4,860.94	2.601E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-2,360.11	-5.072E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-133.45	-2.554E-05	Pulse	0.30	3
	Sb	121	115	3	0.074	ppb	4.19	3,044.87	5.809E-04	Pulse	0.30	3
	Ba	137	159	3	36.579	ppb	0.35	494,698.60	6.380E-02	Pulse	0.30	3
	Tl	205	209	3	0.039	ppb	6.80	4,065.18	9.867E-04	Pulse	0.30	3
	Pb	208	209	3	3.759	ppb	0.29	385,676.13	9.359E-02	Pulse	0.30	3
	U	238	209	3	0.011	ppb	9.12	1,574.51	3.822E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	913,949.27	0.62	87.5	Analog	0.30	3
2	Sc	45	75,656.88	1.76	98.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,630,583.45	0.75	98.4	Analog	0.30	3
1	Ge	72	70,439.18	0.95	97.8	Pulse	0.30	3
2	Ge	72	57,019.30	1.99	96.0	Pulse	0.30	3
2	Rh	103	1,869,602.82	1.23	90.9	Analog	0.30	3
3	Rh	103	4,653,187.61	0.27	91.1	Analog	0.30	3
3	In	115	5,240,614.90	0.70	94.2	Analog	0.30	3
3	Tb	159	7,754,199.12	0.36	94.8	Analog	0.30	3
3	Bi	209	4,120,761.22	0.89	85.8	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE

For Be only

File Name	A0216022.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 10:58
Sample Name	N023115-001C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	1.280E-05	Pulse	0.30	3
Na	23	45	2	1239.422	ppb	1.81	1,095,098.13	1.466E+01	Analog	0.30	3
Mg	26	45	2	1382.326	ppb	2.36	108,791.19	1.457E+00	Pulse	0.30	3
Al	27	45	2	11.382	ppb	0.97	2,124.95	2.845E-02	Pulse	0.30	3
K	39	45	2	2740.110	ppb	1.42	849,950.02	1.138E+01	Pulse	0.30	3
Ca	44	45	3	9688.685	ppb	0.76	12,171,248.43	4.737E+00	Analog	0.30	3
V	51	45	2	0.074	ppb	12.62	743.38	9.958E-03	Pulse	0.30	3
Cr	52	45	2	0.083	ppb	5.54	706.48	9.463E-03	Pulse	0.30	3
Mn	55	45	2	106.475	ppb	1.87	353,133.95	4.729E+00	Pulse	0.30	3
Fe	56	45	2	621.491	ppb	1.47	3,335,638.73	4.467E+01	Analog	0.30	3
Co	59	45	2	0.263	ppb	1.34	3,217.48	4.307E-02	Pulse	0.30	3
Ni	60	72	2	1.042	ppb	3.24	3,333.19	5.675E-02	Pulse	0.30	3
Cu	63	72	2	1.297	ppb	1.42	11,790.50	2.008E-01	Pulse	0.30	3
OLR Zn	66	72	2	462.391	ppb	1.10	547,771.30	9.327E+00	Pulse	0.30	3
As	75	72	2	0.046	ppb	17.13	45.01	7.669E-04	Pulse	0.75	3
Se	78	72	1	0.015	ppb	95.60	11.11	1.495E-04	Pulse	0.30	3
Mo	95	103	2	0.243	ppb	3.19	1,145.65	5.789E-04	Pulse	0.30	3
Ag	107	103	3	0.266	ppb	9.23	13,335.14	2.750E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	4.39	8.591E-07	Pulse	0.30	3
Sb	121	115	3	0.020	ppb	31.13	1,411.24	2.622E-04	Pulse	0.30	3
Ba	137	159	3	7.365	ppb	1.02	101,465.24	1.288E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,173.43	2.606E-04	Pulse	0.30	3
Pb	208	209	3	0.735	ppb	0.15	83,154.95	1.847E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	373.49	8.299E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	954,196.85	0.35	91.4	Analog	0.30	3
2	Sc	45	74,691.35	1.74	97.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,569,377.34	0.65	96.1	Analog	0.30	3
1	Ge	72	74,478.01	0.67	103.5	Pulse	0.30	3
2	Ge	72	58,732.82	1.06	98.9	Pulse	0.30	3
2	Rh	103	1,978,820.86	0.63	96.2	Analog	0.30	3
3	Rh	103	4,851,079.58	0.75	95.0	Analog	0.30	3
3	In	115	5,378,808.49	1.02	96.7	Analog	0.30	3
3	Tb	159	7,875,790.99	0.87	96.3	Analog	0.30	3
3	Bi	209	4,503,171.42	0.70	93.8	Analog	0.30	3

Quantitation Report

File Name	A0216023.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:04
Sample Name	N023115-001C,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

DILUTION TEST

SAMPLE REFERENCE

For Zn only.

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	7.096E-06	Pulse	0.30	3
Na	23	45	2	241.388	ppb	1.60	233,134.16	3.240E+00	Pulse	0.30	3
Mg	26	45	2	280.661	ppb	1.22	21,401.02	2.974E-01	Pulse	0.30	3
Al	27	45	2	2.822	ppb	5.82	781.26	1.085E-02	Pulse	0.30	3
K	39	45	2	548.437	ppb	1.86	171,054.87	2.377E+00	Pulse	0.30	3
Ca	44	45	3	1978.068	ppb	0.78	2,386,955.24	9.703E-01	Analog	0.30	3
V	51	45	2	0.000	ppb	5858.80	391.13	5.438E-03	Pulse	0.30	3
Cr	52	45	2	0.023	ppb	34.71	325.99	4.525E-03	Pulse	0.30	3
Mn	55	45	2	21.538	ppb	0.83	68,926.31	9.577E-01	Pulse	0.30	3
Fe	56	45	2	126.253	ppb	1.47	654,634.91	9.097E+00	Pulse	0.30	3
Co	59	45	2	0.058	ppb	4.22	707.11	9.826E-03	Pulse	0.30	3
Ni	60	72	2	0.215	ppb	2.17	692.97	1.190E-02	Pulse	0.30	3
Cu	63	72	2	0.255	ppb	5.56	2,618.94	4.496E-02	Pulse	0.30	3
Zn	66	72	2	93.532	ppb	1.61	110,021.97	1.889E+00	Pulse	0.30	3
As	75	72	2	0.012	ppb	64.77	22.16	3.798E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	4.44	6.115E-05	Pulse	0.30	3
Mo	95	103	2	0.113	ppb	7.56	568.92	2.894E-04	Pulse	0.30	3
Ag	107	103	3	0.070	ppb	15.41	4,844.79	1.008E-03	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	11229.12	9.40	1.807E-06	Pulse	0.30	3
Sb	121	115	3	0.006	ppb	71.95	941.18	1.790E-04	Pulse	0.30	3
Ba	137	159	3	1.477	ppb	0.36	20,370.74	2.622E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	841.17	1.846E-04	Pulse	0.30	3
Pb	208	209	3	0.151	ppb	2.27	17,942.39	3.939E-03	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	102.96	2.259E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	940,918.26	1.18	90.1	Analog	0.30	3
2	Sc	45	71,972.61	1.07	93.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,460,046.58	0.30	92.0	Analog	0.30	3
1	Ge	72	72,462.49	0.38	100.7	Pulse	0.30	3
2	Ge	72	58,243.42	1.28	98.1	Pulse	0.30	3
2	Rh	103	1,965,509.33	0.25	95.5	Analog	0.30	3
3	Rh	103	4,806,018.64	0.75	94.1	Analog	0.30	3
3	In	115	5,253,123.85	0.71	94.5	Analog	0.30	3
3	Tb	159	7,770,379.47	0.40	95.0	Analog	0.30	3
3	Bi	209	4,555,463.72	0.36	94.9	Analog	0.30	3

Quantitation Report

File Name	A0216024.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:09
Sample Name	N023115-001C-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	8.935	ppb	1.67	38,080.08	5.220E-02	Pulse	0.30	3
	Na	23	45	2	5422.812	ppb	0.56	3,592,703.94	6.255E+01	Analog	0.30	3
	Mg	26	45	2	6093.468	ppb	1.51	368,428.70	6.416E+00	Pulse	0.30	3
	Al	27	45	2	244.052	ppb	0.94	29,110.36	5.068E-01	Pulse	0.30	3
	K	39	45	2	11758.342	ppb	0.47	2,781,757.53	4.843E+01	Analog	0.30	3
	Ca	44	45	3	42566.883	ppb	0.29	45,345,325.43	2.080E+01	Analog	0.30	3
	V	51	45	2	9.784	ppb	1.84	34,916.70	6.079E-01	Pulse	0.30	3
	Cr	52	45	2	9.384	ppb	1.72	44,460.98	7.740E-01	Pulse	0.30	3
	Mn	55	45	2	570.240	ppb	0.43	1,454,338.69	2.532E+01	Analog	0.30	3
	Fe	56	45	2	2803.077	ppb	0.96	11,563,803.84	2.014E+02	Analog	0.30	3
	Co	59	45	2	9.967	ppb	0.36	92,612.70	1.612E+00	Pulse	0.30	3
	Ni	60	72	2	14.134	ppb	2.61	33,824.49	7.671E-01	Pulse	0.30	3
	Cu	63	72	2	14.489	ppb	0.48	95,809.02	2.173E+00	Pulse	0.30	3
OLR	Zn	66	72	2	1993.431	ppb	0.56	1,772,548.33	4.020E+01	Analog	0.30	3
	As	75	72	2	9.439	ppb	2.21	4,777.45	1.083E-01	Pulse	0.75	3
	Se	78	72	1	8.596	ppb	8.07	2,226.92	4.195E-02	Pulse	0.30	3
	Mo	95	103	2	9.804	ppb	0.38	33,720.89	2.195E-02	Pulse	0.30	3
	Ag	107	103	3	9.416	ppb	3.48	341,992.64	8.403E-02	Pulse	0.30	3
	Cd	111	115	3	8.935	ppb	0.23	75,352.17	1.628E-02	Pulse	0.30	3
	Sb	121	115	3	9.243	ppb	0.71	253,363.58	5.475E-02	Pulse	0.30	3
	Ba	137	159	3	127.607	ppb	0.55	1,571,765.79	2.224E-01	Analog	0.30	3
	Tl	205	209	3	9.518	ppb	0.61	677,674.96	1.750E-01	Pulse	0.30	3
	Pb	208	209	3	13.102	ppb	0.74	1,261,390.56	3.257E-01	Pulse	0.30	3
	U	238	209	3	10.144	ppb	0.65	1,028,983.68	2.657E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	729,510.09	0.70	69.9	Pulse	0.30	3
2	Sc	45	57,437.44	2.22	74.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,180,188.96	0.77	81.5	Analog	0.30	3
1	Ge	72	53,125.36	2.23	73.8	Pulse	0.30	3
2	Ge	72	44,091.53	1.35	74.2	Pulse	0.30	3
2	Rh	103	1,536,497.08	2.40	74.7	Analog	0.30	3
3	Rh	103	4,068,698.55	1.55	79.7	Analog	0.30	3
3	In	115	4,627,540.84	0.69	83.2	Analog	0.30	3
3	Tb	159	7,065,717.05	1.29	86.4	Analog	0.30	3
3	Bi	209	3,872,662.41	1.18	80.7	Analog	0.30	3

Quantitation Report

File Name	A0216025.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:15
Sample Name	N023115-001C-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	1.861	ppb	4.30	9,805.45	1.089E-02	Pulse	0.30	3
	Na	23	45	2	1165.847	ppb	0.65	987,677.00	1.382E+01	Pulse	0.30	3
	Mg	26	45	2	1309.475	ppb	0.14	98,630.04	1.380E+00	Pulse	0.30	3
	Al	27	45	2	49.435	ppb	2.67	7,623.33	1.067E-01	Pulse	0.30	3
	K	39	45	2	2588.963	ppb	0.04	768,915.14	1.076E+01	Pulse	0.30	3
	Ca	44	45	3	9264.623	ppb	0.24	10,994,587.33	4.530E+00	Analog	0.30	3
	V	51	45	2	2.052	ppb	0.70	9,417.51	1.318E-01	Pulse	0.30	3
	Cr	52	45	2	2.054	ppb	2.41	12,253.43	1.715E-01	Pulse	0.30	3
	Mn	55	45	2	120.437	ppb	0.19	382,211.85	5.349E+00	Pulse	0.30	3
	Fe	56	45	2	614.144	ppb	1.18	3,154,153.53	4.414E+01	Analog	0.30	3
	Co	59	45	2	2.159	ppb	1.31	24,982.96	3.496E-01	Pulse	0.30	3
	Ni	60	72	2	2.874	ppb	1.35	8,914.15	1.562E-01	Pulse	0.30	3
	Cu	63	72	2	3.116	ppb	0.80	26,980.06	4.727E-01	Pulse	0.30	3
OLR	Zn	66	72	2	448.910	ppb	0.12	516,886.23	9.055E+00	Pulse	0.30	3
	As	75	72	2	2.032	ppb	9.00	1,342.00	2.351E-02	Pulse	0.75	3
	Se	78	72	1	2.063	ppb	4.73	718.94	1.013E-02	Pulse	0.30	3
	Mo	95	103	2	2.082	ppb	0.57	8,949.52	4.689E-03	Pulse	0.30	3
	Ag	107	103	3	2.444	ppb	2.60	102,890.61	2.210E-02	Pulse	0.30	3
	Cd	111	115	3	1.953	ppb	3.16	18,632.17	3.561E-03	Pulse	0.30	3
	Sb	121	115	3	1.991	ppb	0.60	62,296.08	1.191E-02	Pulse	0.30	3
	Ba	137	159	3	26.951	ppb	0.61	361,506.89	4.702E-02	Pulse	0.30	3
	Tl	205	209	3	1.660	ppb	1.01	136,002.68	3.074E-02	Pulse	0.30	3
	Pb	208	209	3	2.658	ppb	0.29	293,038.57	6.623E-02	Pulse	0.30	3
	U	238	209	3	1.989	ppb	0.46	230,793.13	5.216E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	901,149.17	1.61	86.3	Analog	0.30	3
2	Sc	45	71,458.20	0.43	93.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,427,116.93	0.28	90.7	Analog	0.30	3
1	Ge	72	71,003.71	0.82	98.6	Pulse	0.30	3
2	Ge	72	57,080.56	0.42	96.1	Pulse	0.30	3
2	Rh	103	1,908,597.64	0.37	92.8	Analog	0.30	3
3	Rh	103	4,656,528.75	0.62	91.2	Analog	0.30	3
3	In	115	5,231,783.16	0.58	94.1	Analog	0.30	3
3	Tb	159	7,688,804.33	0.56	94.0	Analog	0.30	3
3	Bi	209	4,424,762.68	0.44	92.2	Analog	0.30	3

Quantitation Report

File Name	A0216026.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:21
Sample Name	N023115-001C-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.390	ppb	1.60	45,216.17	5.485E-02	Pulse	0.30	3
	Na	23	45	2	5586.439	ppb	0.79	4,585,846.01	6.443E+01	Analog	0.30	3
	Mg	26	45	2	6314.114	ppb	1.10	473,201.45	6.648E+00	Pulse	0.30	3
	Al	27	45	2	253.105	ppb	2.06	37,393.16	5.254E-01	Pulse	0.30	3
	K	39	45	2	12534.189	ppb	0.83	3,674,459.35	5.162E+01	Analog	0.30	3
	Ca	44	45	3	44444.663	ppb	0.54	53,807,680.86	2.172E+01	Analog	0.30	3
	V	51	45	2	10.238	ppb	0.71	45,265.17	6.359E-01	Pulse	0.30	3
	Cr	52	45	2	9.681	ppb	0.86	56,833.17	7.984E-01	Pulse	0.30	3
	Mn	55	45	2	593.661	ppb	1.65	1,876,266.22	2.636E+01	Analog	0.30	3
	Fe	56	45	2	2877.905	ppb	1.29	14,714,866.83	2.067E+02	Analog	0.30	3
	Co	59	45	2	10.290	ppb	0.54	118,490.48	1.665E+00	Pulse	0.30	3
	Ni	60	72	2	14.054	ppb	1.52	42,353.43	7.627E-01	Pulse	0.30	3
	Cu	63	72	2	14.994	ppb	0.92	124,865.69	2.249E+00	Pulse	0.30	3
OLR	Zn	66	72	2	2046.647	ppb	0.67	2,292,036.10	4.127E+01	Analog	0.30	3
	As	75	72	2	10.049	ppb	1.95	6,403.50	1.153E-01	Pulse	0.75	3
	Se	78	72	1	9.528	ppb	4.91	3,232.68	4.649E-02	Pulse	0.30	3
	Mo	95	103	2	10.656	ppb	1.30	43,466.69	2.385E-02	Pulse	0.30	3
	Ag	107	103	3	7.407	ppb	3.71	298,280.58	6.619E-02	Pulse	0.30	3
	Cd	111	115	3	9.439	ppb	0.47	87,925.38	1.720E-02	Pulse	0.30	3
	Sb	121	115	3	9.766	ppb	0.37	295,647.38	5.784E-02	Pulse	0.30	3
	Ba	137	159	3	136.057	ppb	0.54	1,803,637.76	2.372E-01	Analog	0.30	3
	Tl	205	209	3	10.009	ppb	0.43	754,452.15	1.840E-01	Pulse	0.30	3
	Pb	208	209	3	13.872	ppb	0.46	1,413,921.70	3.449E-01	Pulse	0.30	3
	U	238	209	3	10.492	ppb	0.67	1,126,811.25	2.748E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	824,351.54	0.56	79.0	Pulse	0.30	3
2	Sc	45	71,183.77	0.83	92.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,477,810.93	0.65	92.6	Analog	0.30	3
1	Ge	72	69,523.09	1.27	96.6	Pulse	0.30	3
2	Ge	72	55,536.60	1.61	93.5	Pulse	0.30	3
2	Rh	103	1,822,332.72	1.05	88.6	Analog	0.30	3
3	Rh	103	4,505,974.07	0.57	88.2	Analog	0.30	3
3	In	115	5,111,176.84	0.24	91.9	Analog	0.30	3
3	Tb	159	7,604,887.18	0.19	93.0	Analog	0.30	3
3	Bi	209	4,100,118.93	0.66	85.4	Analog	0.30	3

Quantitation Report

File Name	A0216027.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:27
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.552	ppb	1.76	104,872.67	1.142E-01	Pulse	0.30	3
Na	23	45	2	220.497	ppb	1.37	216,671.95	3.000E+00	Pulse	0.30	3
Mg	26	45	2	208.048	ppb	1.42	15,953.65	2.209E-01	Pulse	0.30	3
Al	27	45	2	21.274	ppb	4.70	3,523.39	4.879E-02	Pulse	0.30	3
K	39	45	2	209.961	ppb	1.38	71,228.73	9.863E-01	Pulse	0.30	3
Ca	44	45	3	216.009	ppb	0.34	265,459.81	1.095E-01	Pulse	0.30	3
V	51	45	2	20.315	ppb	1.30	90,732.21	1.256E+00	Pulse	0.30	3
Cr	52	45	2	20.211	ppb	0.19	120,171.32	1.664E+00	Pulse	0.30	3
Mn	55	45	2	20.465	ppb	0.65	65,721.53	9.101E-01	Pulse	0.30	3
Fe	56	45	2	21.078	ppb	0.93	111,402.14	1.543E+00	Pulse	0.30	3
Co	59	45	2	20.258	ppb	0.70	236,633.23	3.277E+00	Pulse	0.30	3
Ni	60	72	2	19.980	ppb	1.86	62,667.32	1.084E+00	Pulse	0.30	3
Cu	63	72	2	20.136	ppb	0.83	174,383.19	3.017E+00	Pulse	0.30	3
Zn	66	72	2	20.541	ppb	0.50	24,127.37	4.174E-01	Pulse	0.30	3
As	75	72	2	20.110	ppb	1.06	13,324.22	2.305E-01	Pulse	0.75	3
Se	78	72	1	20.322	ppb	2.88	7,291.96	9.906E-02	Pulse	0.30	3
Mo	95	103	2	19.500	ppb	0.74	86,615.36	4.362E-02	Pulse	0.30	3
Ag	107	103	3	20.145	ppb	0.88	860,701.90	1.793E-01	Pulse	0.30	3
Cd	111	115	3	19.950	ppb	0.91	192,740.46	3.636E-02	Pulse	0.30	3
Sb	121	115	3	19.627	ppb	0.87	615,494.58	1.161E-01	Pulse	0.30	3
Ba	137	159	3	20.092	ppb	1.00	275,166.80	3.506E-02	Pulse	0.30	3
Tl	205	209	3	20.136	ppb	0.53	1,710,940.76	3.699E-01	Analog	0.30	3
Pb	208	209	3	19.799	ppb	0.37	2,276,231.07	4.921E-01	Pulse	0.30	3
U	238	209	3	20.016	ppb	0.52	2,424,601.77	5.242E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	918,415.27	1.12	88.0	Analog	0.30	3
2	Sc	45	72,218.21	0.62	94.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,424,300.90	0.54	90.6	Analog	0.30	3
1	Ge	72	73,601.83	0.48	102.2	Pulse	0.30	3
2	Ge	72	57,798.78	0.99	97.3	Pulse	0.30	3
2	Rh	103	1,985,695.11	0.32	96.5	Analog	0.30	3
3	Rh	103	4,799,305.14	0.76	94.0	Analog	0.30	3
3	In	115	5,301,703.61	0.74	95.3	Analog	0.30	3
3	Tb	159	7,847,857.10	0.85	96.0	Analog	0.30	3
3	Bi	209	4,625,205.00	0.40	96.3	Analog	0.30	3

Quantitation Report

File Name	A0216028.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:33
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	319.23	16.67	1.982E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	27,876.69	4.523E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	111.12	1.800E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	266.67	4.324E-03	Pulse	0.30	3
K	39	45	2	2.423	ppb	72.01	8,236.83	1.337E-01	Pulse	0.30	3
Ca	44	45	3	0.497	ppb	52.52	9,333.09	4.219E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	286.68	4.656E-03	Pulse	0.30	3
Cr	52	45	2	0.020	ppb	36.52	266.64	4.326E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	79.83	1.293E-03	Pulse	0.30	3
Fe	56	45	2	0.062	ppb	38.28	2,038.21	3.308E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	42.19	51.07	8.300E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	11.06	2.267E-04	Pulse	0.30	3
Cu	63	72	2	0.014	ppb	35.68	437.85	8.973E-03	Pulse	0.30	3
Zn	66	72	2	0.018	ppb	214.31	174.26	3.572E-03	Pulse	0.30	3
As	75	72	2	0.005	ppb	0.79	14.67	3.006E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	3.33	5.573E-05	Pulse	0.30	3
Mo	95	103	2	0.001	ppb	185.88	67.78	3.874E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,677.21	3.832E-04	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	48.24	16.36	3.379E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	574.48	1.187E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	328.14	4.533E-05	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	27.25	1,399.01	3.248E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	57.19	875.04	2.032E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	75.24	435.49	1.011E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	837,502.28	1.05	80.2	Mix	0.30	3
2	Sc	45	61,644.78	1.45	80.2	Pulse	0.30	3
3	Sc	45	2,212,670.66	1.21	82.7	Analog	0.30	3
1	Ge	72	59,640.97	1.80	82.8	Pulse	0.30	3

2	Ge	72	48,796.07	0.16	82.2	Pulse	0.30	3
2	Rh	103	1,749,540.11	0.79	85.0	Analog	0.30	3
3	Rh	103	4,377,062.61	0.18	85.7	Analog	0.30	3
3	In	115	4,837,672.59	0.38	87.0	Analog	0.30	3
3	Tb	159	7,239,400.59	0.68	88.5	Analog	0.30	3
3	Bi	209	4,306,159.69	0.55	89.7	Analog	0.30	3

Quantitation Report

File Name	A0216029.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:38
Sample Name	N023115-001C-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	1.982	ppb	1.44	9,579.74	1.159E-02	Pulse	0.30	3
	Na	23	45	2	1162.546	ppb	0.95	947,863.68	1.378E+01	Pulse	0.30	3
	Mg	26	45	2	1314.491	ppb	1.80	95,267.59	1.386E+00	Pulse	0.30	3
	Al	27	45	2	51.017	ppb	4.25	7,557.00	1.099E-01	Pulse	0.30	3
	K	39	45	2	2617.389	ppb	0.76	747,978.88	1.088E+01	Pulse	0.30	3
	Ca	44	45	3	9346.278	ppb	0.21	10,609,656.51	4.570E+00	Analog	0.30	3
	V	51	45	2	2.094	ppb	1.80	9,239.61	1.344E-01	Pulse	0.30	3
	Cr	52	45	2	2.025	ppb	1.93	11,627.71	1.691E-01	Pulse	0.30	3
	Mn	55	45	2	121.223	ppb	1.19	370,206.10	5.384E+00	Pulse	0.30	3
	Fe	56	45	2	603.145	ppb	1.12	2,980,845.98	4.335E+01	Analog	0.30	3
	Co	59	45	2	2.135	ppb	2.27	23,770.22	3.457E-01	Pulse	0.30	3
	Ni	60	72	2	2.938	ppb	1.40	8,831.55	1.597E-01	Pulse	0.30	3
	Cu	63	72	2	3.100	ppb	1.36	26,007.76	4.703E-01	Pulse	0.30	3
OLR	Zn	66	72	2	454.433	ppb	1.51	506,961.28	9.167E+00	Pulse	0.30	3
	As	75	72	2	1.984	ppb	5.31	1,269.12	2.296E-02	Pulse	0.75	3
	Se	78	72	1	1.728	ppb	3.68	583.37	8.493E-03	Pulse	0.30	3
	Mo	95	103	2	2.023	ppb	1.22	8,370.29	4.558E-03	Pulse	0.30	3
	Ag	107	103	3	1.856	ppb	1.93	76,311.28	1.687E-02	Pulse	0.30	3
	Cd	111	115	3	1.964	ppb	2.98	18,086.87	3.580E-03	Pulse	0.30	3
	Sb	121	115	3	2.027	ppb	0.48	61,232.16	1.212E-02	Pulse	0.30	3
	Ba	137	159	3	27.146	ppb	0.50	355,734.26	4.736E-02	Pulse	0.30	3
	Tl	205	209	3	1.663	ppb	1.12	133,218.41	3.081E-02	Pulse	0.30	3
	Pb	208	209	3	2.713	ppb	0.73	292,336.41	6.760E-02	Pulse	0.30	3
	U	238	209	3	2.000	ppb	0.78	226,804.34	5.245E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	826,701.27	0.51	79.2	Mix	0.30	3
2	Sc	45	68,771.58	1.62	89.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,321,676.09	0.51	86.8	Analog	0.30	3
1	Ge	72	68,701.99	0.88	95.4	Pulse	0.30	3
2	Ge	72	55,313.26	1.70	93.1	Pulse	0.30	3
2	Rh	103	1,836,360.76	0.99	89.2	Analog	0.30	3
3	Rh	103	4,522,210.21	0.10	88.6	Analog	0.30	3
3	In	115	5,052,355.83	0.05	90.8	Analog	0.30	3
3	Tb	159	7,511,726.21	0.22	91.8	Analog	0.30	3
3	Bi	209	4,324,514.59	0.75	90.1	Analog	0.30	3

Quantitation Report

File Name	A0216030.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:43
Sample Name	N023115-001C-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.452	ppb	0.73	43,140.63	5.522E-02	Pulse	0.30	3
	Na	23	45	2	5501.305	ppb	0.92	4,333,684.28	6.345E+01	Analog	0.30	3
	Mg	26	45	2	6281.736	ppb	0.91	451,718.08	6.614E+00	Pulse	0.30	3
	Al	27	45	2	252.143	ppb	2.01	35,742.72	5.234E-01	Pulse	0.30	3
	K	39	45	2	12560.415	ppb	0.84	3,532,963.59	5.173E+01	Analog	0.30	3
	Ca	44	45	3	44835.102	ppb	0.49	51,626,394.79	2.191E+01	Analog	0.30	3
	V	51	45	2	10.328	ppb	1.94	43,806.72	6.414E-01	Pulse	0.30	3
	Cr	52	45	2	9.678	ppb	0.52	54,518.64	7.981E-01	Pulse	0.30	3
	Mn	55	45	2	599.781	ppb	1.06	1,818,870.81	2.663E+01	Analog	0.30	3
	Fe	56	45	2	2880.853	ppb	0.61	14,134,358.98	2.069E+02	Analog	0.30	3
	Co	59	45	2	10.267	ppb	0.61	113,457.84	1.661E+00	Pulse	0.30	3
	Ni	60	72	2	13.887	ppb	0.35	40,698.65	7.537E-01	Pulse	0.30	3
	Cu	63	72	2	14.794	ppb	0.58	119,799.65	2.219E+00	Pulse	0.30	3
OLR	Zn	66	72	2	2055.382	ppb	0.64	2,238,195.87	4.145E+01	Analog	0.30	3
	As	75	72	2	9.748	ppb	3.69	6,041.19	1.119E-01	Pulse	0.75	3
	Se	78	72	1	9.283	ppb	2.93	3,039.31	4.529E-02	Pulse	0.30	3
	Mo	95	103	2	10.501	ppb	1.03	41,364.37	2.351E-02	Pulse	0.30	3
	Ag	107	103	3	7.312	ppb	3.13	285,116.22	6.535E-02	Pulse	0.30	3
	Cd	111	115	3	9.522	ppb	1.35	85,801.85	1.735E-02	Pulse	0.30	3
	Sb	121	115	3	9.854	ppb	0.54	288,562.17	5.836E-02	Pulse	0.30	3
	Ba	137	159	3	136.201	ppb	0.76	1,757,588.11	2.374E-01	Analog	0.30	3
	Tl	205	209	3	10.059	ppb	0.22	738,816.51	1.849E-01	Pulse	0.30	3
	Pb	208	209	3	13.950	ppb	0.30	1,385,605.92	3.468E-01	Pulse	0.30	3
	U	238	209	3	10.603	ppb	0.49	1,109,678.52	2.777E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	781,296.70	0.38	74.8	Pulse	0.30	3
2	Sc	45	68,305.09	1.58	88.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,356,716.06	0.90	88.1	Analog	0.30	3
1	Ge	72	67,089.67	1.54	93.2	Pulse	0.30	3
2	Ge	72	54,000.04	1.00	90.9	Pulse	0.30	3
2	Rh	103	1,759,859.47	0.70	85.5	Analog	0.30	3
3	Rh	103	4,362,928.65	0.34	85.4	Analog	0.30	3
3	In	115	4,944,328.82	0.26	88.9	Analog	0.30	3
3	Tb	159	7,402,756.35	0.53	90.5	Analog	0.30	3
3	Bi	209	3,995,436.78	0.28	83.2	Analog	0.30	3

Quantitation Report

File Name	A0216031.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:49
Sample Name	N023115-001C-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	2.006	ppb	1.26	9,727.59	1.173E-02	Pulse	0.30	3
	Na	23	45	2	1177.765	ppb	1.72	960,862.86	1.396E+01	Pulse	0.30	3
	Mg	26	45	2	1338.223	ppb	1.49	97,098.97	1.411E+00	Pulse	0.30	3
	Al	27	45	2	51.200	ppb	3.99	7,591.28	1.103E-01	Pulse	0.30	3
	K	39	45	2	2652.555	ppb	2.19	758,682.35	1.102E+01	Pulse	0.30	3
	Ca	44	45	3	9443.453	ppb	1.26	10,696,076.23	4.617E+00	Analog	0.30	3
	V	51	45	2	2.049	ppb	4.11	9,056.21	1.316E-01	Pulse	0.30	3
	Cr	52	45	2	2.079	ppb	2.83	11,943.34	1.735E-01	Pulse	0.30	3
	Mn	55	45	2	122.751	ppb	1.35	375,280.62	5.451E+00	Pulse	0.30	3
	Fe	56	45	2	608.506	ppb	1.82	3,010,657.58	4.373E+01	Analog	0.30	3
	Co	59	45	2	2.160	ppb	0.62	24,084.90	3.498E-01	Pulse	0.30	3
	Ni	60	72	2	2.934	ppb	3.68	8,855.55	1.594E-01	Pulse	0.30	3
OLR	Cu	63	72	2	3.140	ppb	3.02	26,455.96	4.763E-01	Pulse	0.30	3
	Zn	66	72	2	459.092	ppb	0.51	514,377.73	9.261E+00	Pulse	0.30	3
	As	75	72	2	2.106	ppb	1.91	1,353.12	2.436E-02	Pulse	0.75	3
	Se	78	72	1	2.031	ppb	6.85	691.16	9.972E-03	Pulse	0.30	3
	Mo	95	103	2	2.101	ppb	1.47	8,742.73	4.732E-03	Pulse	0.30	3
	Ag	107	103	3	2.487	ppb	3.59	102,073.37	2.248E-02	Pulse	0.30	3
	Cd	111	115	3	1.965	ppb	0.62	18,153.69	3.582E-03	Pulse	0.30	3
	Sb	121	115	3	2.060	ppb	1.01	62,399.93	1.231E-02	Pulse	0.30	3
	Ba	137	159	3	27.160	ppb	0.59	358,286.88	4.738E-02	Pulse	0.30	3
	Tl	205	209	3	1.706	ppb	0.84	136,930.22	3.160E-02	Pulse	0.30	3
	Pb	208	209	3	2.748	ppb	0.93	296,761.35	6.848E-02	Pulse	0.30	3
	U	238	209	3	2.025	ppb	0.91	230,168.21	5.311E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	829,152.74	0.62	79.4	Pulse	0.30	3
2	Sc	45	68,852.94	2.08	89.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,316,632.66	0.52	86.6	Analog	0.30	3
1	Ge	72	69,352.23	1.45	96.3	Pulse	0.30	3
2	Ge	72	55,544.21	0.05	93.5	Pulse	0.30	3
2	Rh	103	1,847,546.97	0.37	89.8	Analog	0.30	3
3	Rh	103	4,540,708.99	0.77	88.9	Analog	0.30	3
3	In	115	5,067,332.58	0.64	91.1	Analog	0.30	3
3	Tb	159	7,561,828.36	0.66	92.5	Analog	0.30	3
3	Bi	209	4,333,762.19	0.69	90.3	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0216032.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 11:55
Sample Name	N023115-001C,SAMP,125
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	1.063E-05	Pulse	0.30	3
Na	23	45	2	35.839	ppb	8.47	60,908.01	8.866E-01	Pulse	0.30	3
Mg	26	45	2	53.892	ppb	5.26	4,032.89	5.866E-02	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	278.50	4.049E-03	Pulse	0.30	3
K	39	45	2	111.524	ppb	2.13	39,992.14	5.819E-01	Pulse	0.30	3
Ca	44	45	3	403.686	ppb	0.06	455,970.29	2.012E-01	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	301.13	4.385E-03	Pulse	0.30	3
Cr	52	45	2	0.012	ppb	44.99	247.43	3.599E-03	Pulse	0.30	3
Mn	55	45	2	4.390	ppb	1.88	13,494.83	1.964E-01	Pulse	0.30	3
Fe	56	45	2	25.812	ppb	2.43	129,362.87	1.883E+00	Pulse	0.30	3
Co	59	45	2	0.008	ppb	7.40	118.32	1.723E-03	Pulse	0.30	3
Ni	60	72	2	0.036	ppb	20.04	119.97	2.185E-03	Pulse	0.30	3
Cu	63	72	2	0.053	ppb	1.57	812.33	1.478E-02	Pulse	0.30	3
Zn	66	72	2	19.172	ppb	1.95	21,424.60	3.898E-01	Pulse	0.30	3
As	75	72	2	0.000	ppb	3042.57	13.32	2.436E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	4.45	6.434E-05	Pulse	0.30	3
Mo	95	103	2	0.026	ppb	15.93	177.79	9.463E-05	Pulse	0.30	3
Ag	107	103	3	0.309	ppb	9.27	14,219.86	3.135E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	2.80	5.601E-07	Pulse	0.30	3
Sb	121	115	3	0.011	ppb	43.89	1,047.86	2.088E-04	Pulse	0.30	3
Ba	137	159	3	0.310	ppb	2.93	4,339.54	5.872E-04	Pulse	0.30	3
Tl	205	209	3	0.033	ppb	2.20	3,871.79	8.826E-04	Pulse	0.30	3
Pb	208	209	3	0.037	ppb	2.82	4,862.07	1.108E-03	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	96.78	2.204E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	838,676.67	0.48	80.3	Pulse	0.30	3
2	Sc	45	68,741.38	2.30	89.5	Pulse	0.30	3
3	Sc	45	2,266,439.95	0.38	84.7	Analog	0.30	3
1	Ge	72	68,914.80	0.53	95.7	Pulse	0.30	3
2	Ge	72	54,960.01	1.46	92.5	Pulse	0.30	3
2	Rh	103	1,879,314.21	0.55	91.3	Analog	0.30	3
3	Rh	103	4,535,390.98	0.46	88.8	Analog	0.30	3
3	In	115	5,016,147.72	0.47	90.2	Analog	0.30	3
3	Tb	159	7,389,932.81	0.34	90.4	Analog	0.30	3
3	Bi	209	4,387,058.83	0.62	91.4	Analog	0.30	3

Quantitation Report

File Name	A0216033.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:00
Sample Name	N023115-001C-PS,PS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.401	ppb	1.10	1,952.42	2.360E-03	Pulse	0.30	3
Na	23	45	2	226.049	ppb	1.53	203,741.37	3.064E+00	Pulse	0.30	3
Mg	26	45	2	268.825	ppb	1.16	18,945.73	2.849E-01	Pulse	0.30	3
Al	27	45	2	9.072	ppb	5.61	1,576.04	2.370E-02	Pulse	0.30	3
K	39	45	2	523.808	ppb	0.57	151,344.45	2.276E+00	Pulse	0.30	3
Ca	44	45	3	1873.656	ppb	0.95	2,064,301.20	9.193E-01	Analog	0.30	3
V	51	45	2	0.395	ppb	11.60	1,977.99	2.976E-02	Pulse	0.30	3
Cr	52	45	2	0.425	ppb	8.38	2,496.48	3.754E-02	Pulse	0.30	3
Mn	55	45	2	24.786	ppb	1.71	73,276.18	1.102E+00	Pulse	0.30	3
Fe	56	45	2	125.394	ppb	0.66	600,820.77	9.035E+00	Pulse	0.30	3
Co	59	45	2	0.425	ppb	2.12	4,601.56	6.918E-02	Pulse	0.30	3
Ni	60	72	2	0.569	ppb	11.18	1,667.11	3.109E-02	Pulse	0.30	3
Cu	63	72	2	0.617	ppb	2.38	5,321.81	9.914E-02	Pulse	0.30	3
Zn	66	72	2	93.510	ppb	1.86	101,394.49	1.889E+00	Pulse	0.30	3
As	75	72	2	0.420	ppb	4.19	271.50	5.055E-03	Pulse	0.75	3
Se	78	72	1	0.418	ppb	2.38	141.12	2.111E-03	Pulse	0.30	3
Mo	95	103	2	0.417	ppb	8.46	1,783.52	9.691E-04	Pulse	0.30	3
Ag	107	103	3	0.343	ppb	1.30	15,397.93	3.437E-03	Pulse	0.30	3
Cd	111	115	3	0.406	ppb	3.21	3,700.26	7.423E-04	Pulse	0.30	3
Sb	121	115	3	0.400	ppb	0.59	12,509.89	2.510E-03	Pulse	0.30	3
Ba	137	159	3	5.387	ppb	0.73	69,662.06	9.435E-03	Pulse	0.30	3
Tl	205	209	3	0.330	ppb	1.64	27,741.26	6.320E-03	Pulse	0.30	3
Pb	208	209	3	0.538	ppb	0.25	59,505.40	1.356E-02	Pulse	0.30	3
U	238	209	3	0.392	ppb	1.23	45,418.20	1.035E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	827,415.20	0.17	79.3	Pulse	0.30	3
2	Sc	45	66,503.38	1.15	86.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,245,466.46	0.68	84.0	Analog	0.30	3
1	Ge	72	66,858.52	1.41	92.9	Pulse	0.30	3
2	Ge	72	53,694.82	2.13	90.4	Pulse	0.30	3
2	Rh	103	1,840,556.26	0.50	89.4	Analog	0.30	3
3	Rh	103	4,480,577.09	0.44	87.7	Analog	0.30	3
3	In	115	4,984,991.60	0.19	89.6	Analog	0.30	3
3	Tb	159	7,382,873.16	0.80	90.3	Analog	0.30	3
3	Bi	209	4,389,149.76	0.68	91.4	Analog	0.30	3

Quantitation Report

File Name	A0216034.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:06
Sample Name	N023115-001C-MS,MS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.412	ppb	1.11	1,989.09	2.421E-03	Pulse	0.30	3
Na	23	45	2	229.538	ppb	1.45	205,689.74	3.104E+00	Pulse	0.30	3
Mg	26	45	2	273.399	ppb	3.65	19,199.45	2.897E-01	Pulse	0.30	3
Al	27	45	2	9.119	ppb	8.89	1,578.23	2.380E-02	Pulse	0.30	3
K	39	45	2	535.132	ppb	1.11	153,894.75	2.322E+00	Pulse	0.30	3
Ca	44	45	3	1922.887	ppb	0.63	2,107,010.91	9.433E-01	Analog	0.30	3
V	51	45	2	0.404	ppb	5.31	2,006.87	3.029E-02	Pulse	0.30	3
Cr	52	45	2	0.412	ppb	7.06	2,420.88	3.651E-02	Pulse	0.30	3
Mn	55	45	2	24.970	ppb	0.53	73,566.84	1.110E+00	Pulse	0.30	3
Fe	56	45	2	124.754	ppb	0.59	595,705.05	8.989E+00	Pulse	0.30	3
Co	59	45	2	0.454	ppb	4.25	4,900.49	7.397E-02	Pulse	0.30	3
Ni	60	72	2	0.590	ppb	1.23	1,723.65	3.227E-02	Pulse	0.30	3
Cu	63	72	2	0.676	ppb	1.53	5,762.18	1.079E-01	Pulse	0.30	3
Zn	66	72	2	95.991	ppb	1.09	103,547.25	1.939E+00	Pulse	0.30	3
As	75	72	2	0.416	ppb	3.32	267.06	5.000E-03	Pulse	0.75	3
Se	78	72	1	0.390	ppb	13.04	132.23	1.974E-03	Pulse	0.30	3
Mo	95	103	2	0.400	ppb	2.72	1,703.49	9.310E-04	Pulse	0.30	3
Ag	107	103	3	0.393	ppb	2.65	17,335.02	3.881E-03	Pulse	0.30	3
Cd	111	115	3	0.401	ppb	1.66	3,626.61	7.333E-04	Pulse	0.30	3
Sb	121	115	3	0.408	ppb	1.77	12,628.87	2.554E-03	Pulse	0.30	3
Ba	137	159	3	5.432	ppb	0.78	70,394.55	9.515E-03	Pulse	0.30	3
Tl	205	209	3	0.339	ppb	1.51	28,510.43	6.493E-03	Pulse	0.30	3
Pb	208	209	3	0.548	ppb	0.42	60,636.36	1.381E-02	Pulse	0.30	3
U	238	209	3	0.403	ppb	0.94	46,658.52	1.063E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	821,763.30	0.18	78.7	Pulse	0.30	3
2	Sc	45	66,274.60	1.41	86.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,233,585.16	0.22	83.5	Analog	0.30	3
1	Ge	72	66,950.05	0.70	93.0	Pulse	0.30	3
2	Ge	72	53,409.48	0.79	89.9	Pulse	0.30	3
2	Rh	103	1,829,720.93	0.67	88.9	Analog	0.30	3
3	Rh	103	4,467,035.04	0.42	87.5	Analog	0.30	3
3	In	115	4,945,176.26	0.20	88.9	Analog	0.30	3
3	Tb	159	7,398,416.76	0.09	90.5	Analog	0.30	3
3	Bi	209	4,391,020.46	0.15	91.5	Analog	0.30	3

Quantitation Report

File Name	A0216035.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:11
Sample Name	N023115-001C-MSD,MSD,~~5~~ 25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.388	ppb	1.01	1,869.08	2.280E-03	Pulse	0.30	3
Na	23	45	2	232.502	ppb	1.38	206,336.88	3.138E+00	Pulse	0.30	3
Mg	26	45	2	276.955	ppb	1.35	19,296.20	2.934E-01	Pulse	0.30	3
Al	27	45	2	9.768	ppb	2.19	1,652.68	2.513E-02	Pulse	0.30	3
K	39	45	2	543.285	ppb	1.03	154,917.45	2.356E+00	Pulse	0.30	3
Ca	44	45	3	1954.039	ppb	1.31	2,126,629.67	9.586E-01	Analog	0.30	3
V	51	45	2	0.424	ppb	7.86	2,074.67	3.155E-02	Pulse	0.30	3
Cr	52	45	2	0.431	ppb	3.87	2,500.90	3.804E-02	Pulse	0.30	3
Mn	55	45	2	25.363	ppb	1.55	74,140.16	1.128E+00	Pulse	0.30	3
Fe	56	45	2	126.871	ppb	1.55	601,058.50	9.141E+00	Pulse	0.30	3
Co	59	45	2	0.456	ppb	3.15	4,880.50	7.420E-02	Pulse	0.30	3
Ni	60	72	2	0.584	ppb	2.23	1,690.33	3.191E-02	Pulse	0.30	3
Cu	63	72	2	0.662	ppb	4.15	5,603.39	1.058E-01	Pulse	0.30	3
Zn	66	72	2	97.075	ppb	0.56	103,863.50	1.961E+00	Pulse	0.30	3
As	75	72	2	0.392	ppb	6.92	250.62	4.731E-03	Pulse	0.75	3
Se	78	72	1	0.417	ppb	37.29	140.01	2.107E-03	Pulse	0.30	3
Mo	95	103	2	0.392	ppb	4.43	1,673.50	9.124E-04	Pulse	0.30	3
Ag	107	103	3	0.406	ppb	1.24	17,773.15	4.001E-03	Pulse	0.30	3
Cd	111	115	3	0.424	ppb	2.63	3,825.90	7.753E-04	Pulse	0.30	3
Sb	121	115	3	0.400	ppb	2.23	12,386.48	2.510E-03	Pulse	0.30	3
Ba	137	159	3	5.524	ppb	0.71	71,218.56	9.675E-03	Pulse	0.30	3
Tl	205	209	3	0.347	ppb	1.82	28,910.16	6.642E-03	Pulse	0.30	3
Pb	208	209	3	0.575	ppb	0.99	63,059.38	1.449E-02	Pulse	0.30	3
U	238	209	3	0.403	ppb	1.32	46,319.38	1.064E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	819,649.34	0.20	78.5	Pulse	0.30	3
2	Sc	45	65,767.23	1.88	85.6	Pulse	0.30	3

for 2/17/2017

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,218,771.93	1.15	83.0	Analog	0.30	3
1	Ge	72	66,538.42	0.74	92.4	Pulse	0.30	3
2	Ge	72	52,972.38	0.13	89.2	Pulse	0.30	3
2	Rh	103	1,834,488.05	0.79	89.2	Analog	0.30	3
3	Rh	103	4,442,609.24	0.61	87.0	Analog	0.30	3
3	In	115	4,935,319.96	0.41	88.7	Analog	0.30	3
3	Tb	159	7,360,868.85	0.33	90.0	Analog	0.30	3
3	Bi	209	4,352,386.32	0.33	90.7	Analog	0.30	3

Quantitation Report

File Name	A0216036.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:17
Sample Name	MB-61215,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	8.064E-06	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	22,970.92	3.479E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	32.23	4.864E-04	Pulse	0.30	3
Al	27	45	2	1.845	ppb	12.65	584.48	8.845E-03	Pulse	0.30	3
K	39	45	2	4.317	ppb	43.16	9,337.42	1.415E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	6,769.43	3.048E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	308.91	4.671E-03	Pulse	0.30	3
Cr	52	45	2	0.002	ppb	134.75	185.54	2.812E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	73.34	1.107E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,702.90	2.578E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	2.19	3.271E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	7.74	1.464E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	221.29	4.175E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	168.73	3.183E-03	Pulse	0.30	3
As	75	72	2	0.002	ppb	749.53	13.78	2.594E-04	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Mo	95	103	2	0.005	ppb	49.19	86.67	4.683E-05	Pulse	0.30	3
Ag	107	103	3	0.099	ppb	9.77	5,654.49	1.267E-03	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	528.67	9.57	1.950E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	410.02	8.363E-05	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	105.42	1.444E-05	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	7.53	1,746.85	4.026E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	650.18	1.498E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	27.55	6.352E-06	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	824,862.54	0.46	79.0	Pulse	0.30	3
2	Sc	45	66,046.15	1.77	86.0	Pulse	0.30	3
3	Sc	45	2,221,064.13	0.54	83.0	Analog	0.30	3
1	Ge	72	67,590.65	0.98	93.9	Pulse	0.30	3

2	Ge	72	52,990.28	1.55	89.2	Pulse	0.30	3
2	Rh	103	1,850,114.99	0.82	89.9	Analog	0.30	3
3	Rh	103	4,463,443.20	0.34	87.4	Analog	0.30	3
3	In	115	4,902,839.96	0.24	88.2	Analog	0.30	3
3	Tb	159	7,298,944.47	0.65	89.2	Analog	0.30	3
3	Bi	209	4,338,943.58	0.39	90.4	Analog	0.30	3

Quantitation Report

File Name	A0216037.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:22
Sample Name	LCS-61215,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.323	ppb	1.63	41,705.11	5.446E-02	Pulse	0.30	3
Na	23	45	2	249.172	ppb	1.57	216,677.02	3.329E+00	Pulse	0.30	3
Mg	26	45	2	98.682	ppb	1.65	6,887.26	1.058E-01	Pulse	0.30	3
Al	27	45	2	202.087	ppb	3.19	27,370.14	4.205E-01	Pulse	0.30	3
K	39	45	2	101.286	ppb	1.74	35,142.36	5.399E-01	Pulse	0.30	3
Ca	44	45	3	110.367	ppb	2.24	124,803.61	5.789E-02	Pulse	0.30	3
V	51	45	2	9.802	ppb	1.75	39,649.47	6.090E-01	Pulse	0.30	3
Cr	52	45	2	9.806	ppb	1.54	52,642.88	8.087E-01	Pulse	0.30	3
Mn	55	45	2	99.879	ppb	1.18	288,763.01	4.436E+00	Pulse	0.30	3
Fe	56	45	2	101.972	ppb	2.64	478,569.78	7.353E+00	Pulse	0.30	3
Co	59	45	2	9.424	ppb	1.39	99,244.79	1.525E+00	Pulse	0.30	3
Ni	60	72	2	9.820	ppb	0.94	27,523.65	5.330E-01	Pulse	0.30	3
Cu	63	72	2	9.684	ppb	1.39	75,107.90	1.455E+00	Pulse	0.30	3
Zn	66	72	2	89.377	ppb	1.81	93,219.90	1.805E+00	Pulse	0.30	3
As	75	72	2	9.271	ppb	1.23	5,495.22	1.064E-01	Pulse	0.75	3
Se	78	72	1	8.218	ppb	9.67	2,631.43	4.011E-02	Pulse	0.30	3
Mo	95	103	2	9.942	ppb	0.39	39,693.42	2.226E-02	Pulse	0.30	3
Ag	107	103	3	7.397	ppb	5.01	287,484.92	6.610E-02	Pulse	0.30	3
Cd	111	115	3	9.349	ppb	1.23	83,367.97	1.704E-02	Pulse	0.30	3
Sb	121	115	3	9.541	ppb	0.50	276,517.53	5.651E-02	Pulse	0.30	3
Ba	137	159	3	99.894	ppb	0.18	1,266,902.98	1.741E-01	Pulse	0.30	3
Tl	205	209	3	9.750	ppb	0.56	760,151.85	1.792E-01	Pulse	0.30	3
Pb	208	209	3	9.973	ppb	0.60	1,051,707.02	2.480E-01	Pulse	0.30	3
U	238	209	3	10.691	ppb	0.27	1,187,587.20	2.800E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	765,778.11	0.46	73.3	Pulse	0.30	3
2	Sc	45	65,101.29	1.13	84.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,156,289.43	1.66	80.6	Analog	0.30	3
1	Ge	72	65,615.95	1.14	91.1	Pulse	0.30	3
2	Ge	72	51,636.96	0.82	87.0	Pulse	0.30	3
2	Rh	103	1,783,461.73	0.92	86.7	Analog	0.30	3
3	Rh	103	4,348,883.06	0.74	85.2	Analog	0.30	3
3	In	115	4,893,160.28	0.58	88.0	Analog	0.30	3
3	Tb	159	7,275,085.03	0.55	89.0	Analog	0.30	3
3	Bi	209	4,240,950.08	0.49	88.3	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0216038.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:28
Sample Name	N022951-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	9.342E-06	Pulse	0.30	3
Na	23	45	2	71691.207	ppb	1.32	52,979,166.99	8.211E+02	Analog	0.30	3
Mg	26	45	2	9881.637	ppb	1.57	671,191.43	1.040E+01	Pulse	0.30	3
Al	27	45	2	0.018	ppb	1778.90	328.64	5.091E-03	Pulse	0.30	3
K	39	45	2	1708.068	ppb	1.21	460,741.84	7.141E+00	Pulse	0.30	3
Ca	44	45	3	51783.805	ppb	1.07	59,691,630.22	2.530E+01	Analog	0.30	3
V	51	45	2	9.054	ppb	1.84	36,321.83	5.630E-01	Pulse	0.30	3
Cr	52	45	2	3.189	ppb	2.50	17,082.88	2.648E-01	Pulse	0.30	3
Mn	55	45	2	1.296	ppb	7.04	3,805.18	5.897E-02	Pulse	0.30	3
Fe	56	45	2	1.955	ppb	12.20	10,895.33	1.691E-01	Pulse	0.30	3
Co	59	45	2	0.041	ppb	35.66	455.07	7.081E-03	Pulse	0.30	3
Ni	60	72	2	0.973	ppb	3.96	2,632.58	5.302E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	191.24	3.849E-03	Pulse	0.30	3
Zn	66	72	2	0.332	ppb	13.96	492.37	9.913E-03	Pulse	0.30	3
As	75	72	2	2.064	ppb	0.79	1,185.61	2.388E-02	Pulse	0.75	3
Se	78	72	1	0.452	ppb	27.31	140.01	2.276E-03	Pulse	0.30	3
Mo	95	103	2	3.764	ppb	2.36	13,306.03	8.449E-03	Pulse	0.30	3
Ag	107	103	3	0.313	ppb	2.18	12,342.68	3.168E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,412.85	-2.746E-03	Pulse	0.30	3
Sb	121	115	3	0.069	ppb	2.60	2,493.64	5.515E-04	Pulse	0.30	3
Ba	137	159	3	116.737	ppb	0.36	1,410,395.74	2.035E-01	Analog	0.30	3
Tl	205	209	3	0.049	ppb	8.40	4,293.03	1.175E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,054.39	-6.854E-03	Pulse	0.30	3
U	238	209	3	25.224	ppb	0.59	2,414,603.88	6.606E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	715,596.11	0.58	68.5	Pulse	0.30	3
2	Sc	45	64,526.85	1.87	84.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,359,505.08	1.73	88.2	Analog	0.30	3
1	Ge	72	61,610.53	2.36	85.6	Pulse	0.30	3
2	Ge	72	49,648.68	1.13	83.6	Pulse	0.30	3
2	Rh	103	1,574,990.45	0.69	76.5	Analog	0.30	3
3	Rh	103	3,896,182.37	0.42	76.3	Analog	0.30	3
3	In	115	4,520,713.72	1.00	81.3	Analog	0.30	3
3	Tb	159	6,930,594.69	0.94	84.7	Analog	0.30	3
3	Bi	209	3,655,384.49	0.65	76.1	Analog	0.30	3

Quantitation Report

File Name	A0216039.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:33
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.598	ppb	0.70	101,474.89	1.145E-01	Pulse	0.30	3
Na	23	45	2	227.119	ppb	2.72	214,742.11	3.076E+00	Pulse	0.30	3
Mg	26	45	2	209.344	ppb	3.36	15,516.58	2.223E-01	Pulse	0.30	3
Al	27	45	2	22.818	ppb	1.43	3,629.00	5.196E-02	Pulse	0.30	3
K	39	45	2	211.743	ppb	0.83	69,382.10	9.937E-01	Pulse	0.30	3
Ca	44	45	3	219.121	ppb	0.67	255,543.08	1.110E-01	Pulse	0.30	3
V	51	45	2	20.275	ppb	1.78	87,546.20	1.254E+00	Pulse	0.30	3
Cr	52	45	2	20.256	ppb	1.54	116,434.37	1.668E+00	Pulse	0.30	3
Mn	55	45	2	20.669	ppb	1.40	64,175.46	9.192E-01	Pulse	0.30	3
Fe	56	45	2	21.015	ppb	2.21	107,368.99	1.538E+00	Pulse	0.30	3
Co	59	45	2	20.192	ppb	2.04	228,004.87	3.266E+00	Pulse	0.30	3
Ni	60	72	2	19.771	ppb	0.72	60,500.62	1.073E+00	Pulse	0.30	3
Cu	63	72	2	19.829	ppb	0.31	167,552.05	2.971E+00	Pulse	0.30	3
Zn	66	72	2	20.414	ppb	1.19	23,392.86	4.149E-01	Pulse	0.30	3
As	75	72	2	20.242	ppb	1.52	13,084.92	2.321E-01	Pulse	0.75	3
Se	78	72	1	19.974	ppb	1.10	7,004.03	9.737E-02	Pulse	0.30	3
Mo	95	103	2	19.388	ppb	1.57	83,977.53	4.337E-02	Pulse	0.30	3
Ag	107	103	3	19.940	ppb	0.84	824,961.32	1.775E-01	Pulse	0.30	3
Cd	111	115	3	19.967	ppb	0.93	187,364.37	3.639E-02	Pulse	0.30	3
Sb	121	115	3	19.701	ppb	0.68	600,068.69	1.165E-01	Pulse	0.30	3
Ba	137	159	3	19.999	ppb	0.24	265,629.82	3.490E-02	Pulse	0.30	3
Tl	205	209	3	20.247	ppb	1.70	1,687,756.00	3.719E-01	Analog	0.30	3
Pb	208	209	3	19.810	ppb	0.70	2,234,616.38	4.924E-01	Pulse	0.30	3
U	238	209	3	20.009	ppb	0.92	2,378,046.11	5.240E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	886,476.41	0.12	84.9	Analog	0.30	3
2	Sc	45	69,831.34	2.21	90.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,301,813.90	0.44	86.1	Analog	0.30	3
1	Ge	72	71,935.52	0.59	99.9	Pulse	0.30	3
2	Ge	72	56,389.59	0.62	95.0	Pulse	0.30	3
2	Rh	103	1,936,510.49	1.08	94.1	Analog	0.30	3
3	Rh	103	4,647,313.75	0.47	91.0	Analog	0.30	3
3	In	115	5,149,420.07	0.98	92.6	Analog	0.30	3
3	Tb	159	7,610,568.64	0.24	93.1	Analog	0.30	3
3	Bi	209	4,538,313.44	1.21	94.5	Analog	0.30	3

Quantitation Report

File Name	A0216040.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:39
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	42.22	28.89	3.481E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	25,611.43	4.234E-01	Pulse	0.30	3
Mg	26	45	2	0.276	ppb	95.42	134.45	2.226E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	281.12	4.663E-03	Pulse	0.30	3
K	39	45	2	2.900	ppb	39.69	8,204.60	1.356E-01	Pulse	0.30	3
Ca	44	45	3	0.048	ppb	538.18	8,771.62	3.999E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	258.90	4.283E-03	Pulse	0.30	3
Cr	52	45	2	0.021	ppb	53.62	264.42	4.382E-03	Pulse	0.30	3
Mn	55	45	2	0.002	ppb	361.67	91.98	1.518E-03	Pulse	0.30	3
Fe	56	45	2	0.028	ppb	57.55	1,856.11	3.069E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	41330.79	28.85	4.784E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	11.06	2.259E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	326.80	6.685E-03	Pulse	0.30	3
Zn	66	72	2	0.006	ppb	618.51	163.16	3.340E-03	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	10.67	2.188E-04	Pulse	0.75	3
Se	78	72	1	0.008	ppb	260.15	6.66	1.152E-04	Pulse	0.30	3
Mo	95	103	2	<0.000	ppb	---	60.00	3.441E-05	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,461.83	3.352E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	240.57	11.21	2.325E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	517.81	1.078E-04	Pulse	0.30	3
Ba	137	159	3	0.001	ppb	435.16	361.13	5.002E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	59.37	1,284.55	2.986E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	102.81	860.80	2.001E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	79.42	414.43	9.637E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	830,240.55	0.48	79.5	Pulse	0.30	3
2	Sc	45	60,497.25	2.18	78.8	Pulse	0.30	3
3	Sc	45	2,193,479.31	0.37	82.0	Analog	0.30	3
1	Ge	72	57,823.35	0.12	80.3	Pulse	0.30	3

2	Ge	72	48,843.99	0.95	82.2	Pulse	0.30	3
2	Rh	103	1,745,131.15	0.95	84.8	Analog	0.30	3
3	Rh	103	4,361,147.57	0.28	85.4	Analog	0.30	3
3	In	115	4,802,043.59	1.06	86.3	Analog	0.30	3
3	Tb	159	7,223,923.64	0.59	88.3	Analog	0.30	3
3	Bi	209	4,301,298.44	0.37	89.6	Analog	0.30	3

Quantitation Report

File Name	A0216041.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:45
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.536	ppb	4.56	2,586.98	3.145E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	20,141.56	3.098E-01	Pulse	0.30	3
Mg	26	45	2	0.063	ppb	597.81	130.01	2.003E-03	Pulse	0.30	3
Al	27	45	2	9.472	ppb	3.46	1,594.58	2.452E-02	Pulse	0.30	3
K	39	45	2	3.814	ppb	15.51	9,062.88	1.394E-01	Pulse	0.30	3
Ca	44	45	3	3.880	ppb	6.41	12,806.57	5.871E-03	Pulse	0.30	3
V	51	45	2	1.016	ppb	3.05	4,423.00	6.801E-02	Pulse	0.30	3
Cr	52	45	2	1.020	ppb	4.08	5,626.71	8.653E-02	Pulse	0.30	3
Mn	55	45	2	0.526	ppb	3.02	1,611.01	2.478E-02	Pulse	0.30	3
Fe	56	45	2	10.675	ppb	1.09	51,720.41	7.954E-01	Pulse	0.30	3
Co	59	45	2	0.507	ppb	2.42	5,366.61	8.255E-02	Pulse	0.30	3
Ni	60	72	2	1.061	ppb	6.19	3,059.24	5.780E-02	Pulse	0.30	3
Cu	63	72	2	1.069	ppb	6.15	8,818.43	1.666E-01	Pulse	0.30	3
Zn	66	72	2	10.569	ppb	2.94	11,456.43	2.163E-01	Pulse	0.30	3
As	75	72	2	0.105	ppb	15.97	76.44	1.445E-03	Pulse	0.75	3
Se	78	72	1	0.476	ppb	4.65	161.12	2.396E-03	Pulse	0.30	3
Mo	95	103	2	0.524	ppb	2.91	2,201.37	1.207E-03	Pulse	0.30	3
Ag	107	103	3	0.481	ppb	1.91	20,716.66	4.659E-03	Pulse	0.30	3
Cd	111	115	3	0.527	ppb	0.99	4,685.54	9.625E-04	Pulse	0.30	3
Sb	121	115	3	0.556	ppb	1.68	16,693.91	3.429E-03	Pulse	0.30	3
Ba	137	159	3	1.074	ppb	1.01	13,993.17	1.919E-03	Pulse	0.30	3
Tl	205	209	3	0.420	ppb	2.03	34,610.28	7.973E-03	Pulse	0.30	3
Pb	208	209	3	1.020	ppb	1.09	110,827.25	2.553E-02	Pulse	0.30	3
U	238	209	3	0.510	ppb	1.02	58,311.47	1.343E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	822,608.92	0.21	78.8	Pulse	0.30	3
2	Sc	45	65,022.12	1.25	84.6	Pulse	0.30	3
3	Sc	45	2,181,196.10	0.91	81.5	Analog	0.30	3
1	Ge	72	67,228.12	1.25	93.4	Pulse	0.30	3

2	Ge	72	52,956.83	1.47	89.2	Pulse	0.30	3
2	Rh	103	1,824,088.81	0.50	88.6	Analog	0.30	3
3	Rh	103	4,447,222.78	0.77	87.1	Analog	0.30	3
3	In	115	4,867,952.65	0.21	87.5	Analog	0.30	3
3	Tb	159	7,293,199.82	0.38	89.2	Analog	0.30	3
3	Bi	209	4,340,798.37	0.69	90.4	Analog	0.30	3

Quantitation Report

File Name	A0216042.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:50
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	250.70	22.22	2.418E-05	Pulse	0.30	3
Na	23	45	2	96055.823	ppb	1.98	76,509,298.86	1.100E+03	Analog	0.30	3
Mg	26	45	2	96310.421	ppb	1.96	7,050,850.45	1.014E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	35.74	5.178E-04	Pulse	0.30	3
K	39	45	2	100341.948	ppb	1.43	28,686,453.18	4.124E+02	Analog	0.30	3
Ca	44	45	3	94635.007	ppb	0.55	119,524,532.66	4.623E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	337.80	4.850E-03	Pulse	0.30	3
Cr	52	45	2	0.198	ppb	8.47	1,311.85	1.889E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-6,400.90	-9.198E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,371.19	-6.317E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-8.44	-1.319E-04	Pulse	0.30	3
Ni	60	72	2	0.355	ppb	2.73	1,005.41	1.950E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,653.80	-3.210E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-768.24	-1.490E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-2.48	-4.793E-05	Pulse	0.75	3
Se	78	72	1	0.011	ppb	333.84	7.78	1.312E-04	Pulse	0.30	3
Mo	95	103	2	0.034	ppb	18.46	177.79	1.114E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-21,640.24	-5.087E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,263.35	-4.040E-03	Pulse	0.30	3
Sb	121	115	3	0.012	ppb	29.16	1,033.41	2.166E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-73,208.87	-1.027E-02	Pulse	0.30	3
Tl	205	209	3	0.015	ppb	1.57	1,885.77	5.492E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-109,087.48	-3.177E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-7,012.48	-2.042E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	914,871.32	1.88	87.6	Analog	0.30	3
2	Sc	45	69,591.57	4.41	90.6	Pulse	0.30	3
3	Sc	45	2,585,261.11	1.68	96.7	Analog	0.30	3
1	Ge	72	59,339.67	1.23	82.4	Pulse	0.30	3
2	Ge	72	51,547.76	2.11	86.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,596,830.41	1.65	77.6	Analog	0.30	3
3	Rh	103	4,253,824.31	0.92	83.3	Analog	0.30	3
3	In	115	4,767,961.17	1.20	85.7	Analog	0.30	3
3	Tb	159	7,126,884.89	1.15	87.1	Analog	0.30	3
3	Bi	209	3,433,727.31	0.84	71.5	Analog	0.30	3

Quantitation Report

File Name	A0216043.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 12:56
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.096	ppb	0.96	108,422.65	1.115E-01	Pulse	0.30	3
Na	23	45	2	93934.797	ppb	1.62	87,270,108.70	1.076E+03	Analog	0.30	3
Mg	26	45	2	95017.876	ppb	1.58	8,113,559.18	1.000E+02	Analog	0.30	3
Al	27	45	2	18.398	ppb	8.26	3,480.44	4.287E-02	Pulse	0.30	3
K	39	45	2	98463.213	ppb	0.96	32,833,180.90	4.047E+02	Analog	0.30	3
Ca	44	45	3	94664.098	ppb	0.59	130,208,684.73	4.625E+01	Analog	0.30	3
V	51	45	2	20.344	ppb	2.07	102,071.34	1.258E+00	Pulse	0.30	3
Cr	52	45	2	19.458	ppb	1.98	129,959.85	1.602E+00	Pulse	0.30	3
Mn	55	45	2	17.084	ppb	2.04	61,651.57	7.600E-01	Pulse	0.30	3
Fe	56	45	2	17.466	ppb	3.13	104,063.12	1.283E+00	Pulse	0.30	3
Co	59	45	2	18.270	ppb	2.08	239,721.86	2.955E+00	Pulse	0.30	3
Ni	60	72	2	20.045	ppb	1.91	62,316.64	1.088E+00	Pulse	0.30	3
Cu	63	72	2	18.271	ppb	1.22	156,899.09	2.738E+00	Pulse	0.30	3
Zn	66	72	2	16.692	ppb	1.12	19,471.85	3.398E-01	Pulse	0.30	3
As	75	72	2	20.447	ppb	2.82	13,428.48	2.344E-01	Pulse	0.75	3
Se	78	72	1	18.424	ppb	2.24	6,314.81	8.982E-02	Pulse	0.30	3
Mo	95	103	2	22.592	ppb	1.03	89,101.29	5.053E-02	Pulse	0.30	3
Ag	107	103	3	18.370	ppb	0.35	734,567.27	1.636E-01	Pulse	0.30	3
Cd	111	115	3	16.715	ppb	0.27	153,188.20	3.046E-02	Pulse	0.30	3
Sb	121	115	3	19.917	ppb	0.35	592,475.72	1.178E-01	Pulse	0.30	3
Ba	137	159	3	17.895	ppb	0.44	228,614.49	3.124E-02	Pulse	0.30	3
Tl	205	209	3	21.961	ppb	0.77	1,411,409.34	4.034E-01	Analog	0.30	3
Pb	208	209	3	20.124	ppb	0.48	1,750,084.60	5.002E-01	Pulse	0.30	3
U	238	209	3	22.546	ppb	0.75	2,065,816.11	5.905E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	972,162.03	1.85	93.1	Analog	0.30	3
2	Sc	45	81,153.40	3.45	105.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,815,360.45	0.48	105.3	Analog	0.30	3
1	Ge	72	70,307.25	0.45	97.7	Pulse	0.30	3
2	Ge	72	57,309.05	2.98	96.5	Pulse	0.30	3
2	Rh	103	1,763,186.97	1.33	85.7	Analog	0.30	3
3	Rh	103	4,490,762.05	0.77	87.9	Analog	0.30	3
3	In	115	5,028,927.85	0.61	90.4	Analog	0.30	3
3	Tb	159	7,319,083.15	0.48	89.5	Analog	0.30	3
3	Bi	209	3,498,722.31	0.65	72.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0216044.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:01
Sample Name	N022951-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	3.736E-06	Pulse	0.30	3
Na	23	45	2	15325.771	ppb	1.63	13,406,238.97	1.759E+02	Analog	0.30	3
Mg	26	45	2	2111.932	ppb	2.06	169,548.99	2.225E+00	Pulse	0.30	3
Al	27	45	2	0.755	ppb	58.61	504.24	6.606E-03	Pulse	0.30	3
K	39	45	2	359.643	ppb	1.90	122,034.85	1.601E+00	Pulse	0.30	3
Ca	44	45	3	11260.773	ppb	0.66	14,074,792.99	5.505E+00	Analog	0.30	3
V	51	45	2	1.852	ppb	3.48	9,101.79	1.195E-01	Pulse	0.30	3
Cr	52	45	2	0.671	ppb	3.40	4,406.05	5.780E-02	Pulse	0.30	3
Mn	55	45	2	0.262	ppb	5.53	997.55	1.308E-02	Pulse	0.30	3
Fe	56	45	2	0.403	ppb	1.55	4,389.56	5.758E-02	Pulse	0.30	3
Co	59	45	2	0.006	ppb	35.33	108.55	1.428E-03	Pulse	0.30	3
Ni	60	72	2	0.210	ppb	2.42	695.54	1.166E-02	Pulse	0.30	3
Cu	63	72	2	0.024	ppb	46.26	616.94	1.034E-02	Pulse	0.30	3
Zn	66	72	2	0.118	ppb	31.37	334.21	5.598E-03	Pulse	0.30	3
As	75	72	2	0.426	ppb	5.67	305.27	5.115E-03	Pulse	0.75	3
Se	78	72	1	0.120	ppb	40.78	52.23	6.624E-04	Pulse	0.30	3
Mo	95	103	2	0.810	ppb	1.69	3,602.80	1.846E-03	Pulse	0.30	3
Ag	107	103	3	0.418	ppb	12.53	19,172.45	4.100E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,958.55	-5.647E-04	Pulse	0.30	3
Sb	121	115	3	0.117	ppb	5.62	4,371.93	8.346E-04	Pulse	0.30	3
Ba	137	159	3	23.194	ppb	0.60	311,349.39	4.047E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	20.55	1,315.67	3.079E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,027.00	-1.176E-03	Pulse	0.30	3
U	238	209	3	4.566	ppb	0.85	511,408.35	1.197E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	892,997.16	0.55	85.5	Analog	0.30	3
2	Sc	45	76,224.94	1.85	99.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,556,774.80	0.66	95.6	Analog	0.30	3
1	Ge	72	78,785.68	0.69	109.4	Pulse	0.30	3
2	Ge	72	59,671.98	0.74	100.5	Pulse	0.30	3
2	Rh	103	1,951,804.33	0.44	94.9	Analog	0.30	3
3	Rh	103	4,677,408.05	0.45	91.6	Analog	0.30	3
3	In	115	5,238,985.87	0.42	94.2	Analog	0.30	3
3	Tb	159	7,693,366.90	0.46	94.1	Analog	0.30	3
3	Bi	209	4,274,182.82	1.04	89.0	Analog	0.30	3

Quantitation Report

File Name	A0216045.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:07
Sample Name	N022951-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.780	ppb	1.10	46,044.95	5.713E-02	Pulse	0.30	3
Na	23	45	2	67583.338	ppb	0.94	57,005,185.82	7.741E+02	Analog	0.30	3
Mg	26	45	2	9427.102	ppb	0.80	730,848.98	9.925E+00	Pulse	0.30	3
Al	27	45	2	190.756	ppb	1.43	29,246.79	3.972E-01	Pulse	0.30	3
K	39	45	2	1699.546	ppb	0.38	523,325.82	7.106E+00	Pulse	0.30	3
Ca	44	45	3	48382.488	ppb	0.26	63,317,403.50	2.364E+01	Analog	0.30	3
V	51	45	2	18.057	ppb	0.81	82,283.91	1.117E+00	Pulse	0.30	3
Cr	52	45	2	12.201	ppb	0.68	74,050.05	1.006E+00	Pulse	0.30	3
Mn	55	45	2	94.645	ppb	0.71	309,574.75	4.204E+00	Pulse	0.30	3
Fe	56	45	2	94.519	ppb	0.42	502,049.69	6.817E+00	Pulse	0.30	3
Co	59	45	2	8.673	ppb	1.04	103,324.65	1.403E+00	Pulse	0.30	3
Ni	60	72	2	10.077	ppb	0.75	30,559.48	5.470E-01	Pulse	0.30	3
Cu	63	72	2	8.849	ppb	1.45	74,276.73	1.330E+00	Pulse	0.30	3
Zn	66	72	2	86.056	ppb	2.06	97,102.25	1.739E+00	Pulse	0.30	3
As	75	72	2	11.701	ppb	0.54	7,499.21	1.342E-01	Pulse	0.75	3
Se	78	72	1	9.141	ppb	4.51	3,083.76	4.460E-02	Pulse	0.30	3
Mo	95	103	2	14.306	ppb	0.49	56,271.65	3.201E-02	Pulse	0.30	3
Ag	107	103	3	7.769	ppb	3.91	300,367.30	6.940E-02	Pulse	0.30	3
Cd	111	115	3	7.912	ppb	0.89	71,645.63	1.442E-02	Pulse	0.30	3
Sb	121	115	3	9.887	ppb	0.66	290,963.95	5.856E-02	Pulse	0.30	3
Ba	137	159	3	208.346	ppb	0.22	2,725,451.17	3.632E-01	Analog	0.30	3
Tl	205	209	3	9.732	ppb	0.18	701,756.24	1.789E-01	Pulse	0.30	3
Pb	208	209	3	9.893	ppb	0.85	964,868.54	2.460E-01	Pulse	0.30	3
U	238	209	3	34.930	ppb	0.61	3,587,788.21	9.148E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	805,920.19	0.54	77.2	Pulse	0.30	3
2	Sc	45	73,646.55	1.81	95.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,678,471.47	0.76	100.1	Analog	0.30	3
1	Ge	72	69,133.55	1.05	96.0	Pulse	0.30	3
2	Ge	72	55,866.62	1.66	94.1	Pulse	0.30	3
2	Rh	103	1,757,954.47	0.83	85.4	Analog	0.30	3
3	Rh	103	4,327,513.06	0.64	84.7	Analog	0.30	3
3	In	115	4,969,007.49	0.54	89.3	Analog	0.30	3
3	Tb	159	7,504,976.83	0.27	91.8	Analog	0.30	3
3	Bi	209	3,922,244.11	0.74	81.7	Analog	0.30	3

Quantitation Report

File Name	A0216046.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:12
Sample Name	N022951-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.380	ppb	1.43	45,584.98	5.480E-02	Pulse	0.30	3
Na	23	45	2	68235.764	ppb	0.38	57,547,227.47	7.816E+02	Analog	0.30	3
Mg	26	45	2	9451.174	ppb	0.23	732,626.86	9.950E+00	Pulse	0.30	3
Al	27	45	2	195.000	ppb	2.09	29,884.72	4.059E-01	Pulse	0.30	3
K	39	45	2	1694.164	ppb	0.36	521,621.86	7.084E+00	Pulse	0.30	3
Ca	44	45	3	48528.155	ppb	0.58	63,548,858.50	2.371E+01	Analog	0.30	3
V	51	45	2	18.025	ppb	0.28	82,129.93	1.115E+00	Pulse	0.30	3
Cr	52	45	2	12.265	ppb	0.22	74,426.66	1.011E+00	Pulse	0.30	3
Mn	55	45	2	93.322	ppb	0.70	305,184.39	4.145E+00	Pulse	0.30	3
Fe	56	45	2	95.806	ppb	0.59	508,773.61	6.910E+00	Pulse	0.30	3
Co	59	45	2	8.679	ppb	1.18	103,390.15	1.404E+00	Pulse	0.30	3
Ni	60	72	2	10.203	ppb	1.61	30,450.57	5.538E-01	Pulse	0.30	3
Cu	63	72	2	8.851	ppb	0.80	73,146.60	1.330E+00	Pulse	0.30	3
Zn	66	72	2	86.776	ppb	0.57	96,402.52	1.753E+00	Pulse	0.30	3
As	75	72	2	11.778	ppb	0.20	7,431.16	1.351E-01	Pulse	0.75	3
Se	78	72	1	8.910	ppb	0.94	3,025.96	4.348E-02	Pulse	0.30	3
Mo	95	103	2	14.216	ppb	1.38	56,039.95	3.181E-02	Pulse	0.30	3
Ag	107	103	3	8.710	ppb	1.69	335,573.40	7.777E-02	Pulse	0.30	3
Cd	111	115	3	7.786	ppb	1.50	70,743.11	1.419E-02	Pulse	0.30	3
Sb	121	115	3	9.815	ppb	0.51	289,816.38	5.813E-02	Pulse	0.30	3
Ba	137	159	3	206.404	ppb	0.41	2,713,386.65	3.598E-01	Analog	0.30	3
Tl	205	209	3	9.784	ppb	0.17	706,151.91	1.799E-01	Pulse	0.30	3
Pb	208	209	3	9.823	ppb	0.33	958,933.66	2.443E-01	Pulse	0.30	3
U	238	209	3	34.984	ppb	0.19	3,596,571.40	9.162E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	831,962.11	1.04	79.7	Analog	0.30	3
2	Sc	45	73,631.08	0.97	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,680,149.27	0.11	100.2	Analog	0.30	3
1	Ge	72	69,597.71	1.99	96.7	Pulse	0.30	3
2	Ge	72	54,995.83	1.82	92.6	Pulse	0.30	3
2	Rh	103	1,761,725.62	1.01	85.6	Analog	0.30	3
3	Rh	103	4,314,958.93	0.63	84.5	Analog	0.30	3
3	In	115	4,985,863.80	0.66	89.7	Analog	0.30	3
3	Tb	159	7,542,098.36	0.63	92.2	Analog	0.30	3
3	Bi	209	3,925,670.04	0.60	81.8	Analog	0.30	3

Quantitation Report

File Name	A0216047.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:18
Sample Name	N022951-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.568	ppb	1.24	45,335.39	5.589E-02	Pulse	0.30	3
Na	23	45	2	67928.571	ppb	0.68	57,252,461.37	7.781E+02	Analog	0.30	3
Mg	26	45	2	9398.306	ppb	0.57	728,062.06	9.894E+00	Pulse	0.30	3
Al	27	45	2	190.529	ppb	1.82	29,195.92	3.967E-01	Pulse	0.30	3
K	39	45	2	1694.632	ppb	0.50	521,423.62	7.086E+00	Pulse	0.30	3
Ca	44	45	3	48452.069	ppb	0.22	62,952,495.73	2.367E+01	Analog	0.30	3
V	51	45	2	17.827	ppb	1.31	81,179.90	1.103E+00	Pulse	0.30	3
Cr	52	45	2	12.185	ppb	1.57	73,888.12	1.004E+00	Pulse	0.30	3
Mn	55	45	2	93.493	ppb	0.80	305,547.36	4.152E+00	Pulse	0.30	3
Fe	56	45	2	95.000	ppb	0.73	504,181.28	6.852E+00	Pulse	0.30	3
Co	59	45	2	8.591	ppb	1.90	102,261.55	1.390E+00	Pulse	0.30	3
Ni	60	72	2	10.185	ppb	3.29	30,347.45	5.528E-01	Pulse	0.30	3
Cu	63	72	2	8.830	ppb	2.17	72,864.61	1.327E+00	Pulse	0.30	3
Zn	66	72	2	86.125	ppb	1.92	95,534.62	1.740E+00	Pulse	0.30	3
As	75	72	2	11.682	ppb	0.79	7,361.81	1.340E-01	Pulse	0.75	3
Se	78	72	1	9.264	ppb	5.85	3,118.21	4.520E-02	Pulse	0.30	3
Mo	95	103	2	14.110	ppb	0.87	54,805.71	3.157E-02	Pulse	0.30	3
Ag	107	103	3	8.685	ppb	1.27	332,100.07	7.754E-02	Pulse	0.30	3
Cd	111	115	3	7.767	ppb	0.54	70,073.29	1.416E-02	Pulse	0.30	3
Sb	121	115	3	9.782	ppb	0.84	286,809.80	5.794E-02	Pulse	0.30	3
Ba	137	159	3	205.953	ppb	0.65	2,689,554.95	3.590E-01	Analog	0.30	3
Tl	205	209	3	9.764	ppb	0.78	698,437.38	1.795E-01	Pulse	0.30	3
Pb	208	209	3	9.847	ppb	0.66	952,720.57	2.449E-01	Pulse	0.30	3
U	238	209	3	35.719	ppb	1.38	3,639,426.10	9.354E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	811,198.01	1.52	77.7	Mix	0.30	3
2	Sc	45	73,588.33	1.53	95.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,659,151.94	0.67	99.4	Analog	0.30	3
1	Ge	72	69,027.55	1.63	95.9	Pulse	0.30	3
2	Ge	72	54,922.43	2.15	92.5	Pulse	0.30	3
2	Rh	103	1,736,018.55	2.15	84.4	Analog	0.30	3
3	Rh	103	4,282,635.49	0.65	83.9	Analog	0.30	3
3	In	115	4,950,522.94	1.01	89.0	Analog	0.30	3
3	Tb	159	7,492,228.92	0.35	91.6	Analog	0.30	3
3	Bi	209	3,891,114.28	1.19	81.0	Analog	0.30	3

Quantitation Report

File Name	A0216048.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:24
Sample Name	N022951-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	372.10	14.44	1.838E-05	Pulse	0.30	3
Na	23	45	2	73324.092	ppb	0.67	59,091,068.01	8.398E+02	Analog	0.30	3
Mg	26	45	2	1927.644	ppb	0.08	142,904.67	2.031E+00	Pulse	0.30	3
Al	27	45	2	28.965	ppb	11.50	4,544.52	6.460E-02	Pulse	0.30	3
K	39	45	2	1906.052	ppb	0.38	559,736.34	7.955E+00	Pulse	0.30	3
Ca	44	45	3	16009.090	ppb	0.94	19,823,525.12	7.825E+00	Analog	0.30	3
V	51	45	2	13.877	ppb	1.09	60,508.94	8.600E-01	Pulse	0.30	3
Cr	52	45	2	4.417	ppb	0.71	25,734.77	3.657E-01	Pulse	0.30	3
Mn	55	45	2	3.289	ppb	2.55	10,374.84	1.475E-01	Pulse	0.30	3
Fe	56	45	2	26.463	ppb	1.00	135,763.93	1.929E+00	Pulse	0.30	3
Co	59	45	2	0.032	ppb	3.73	396.80	5.639E-03	Pulse	0.30	3
Ni	60	72	2	0.679	ppb	5.97	1,980.70	3.705E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	88.58	1.657E-03	Pulse	0.30	3
Zn	66	72	2	0.324	ppb	12.29	521.29	9.752E-03	Pulse	0.30	3
As	75	72	2	4.124	ppb	1.38	2,538.48	4.747E-02	Pulse	0.75	3
Se	78	72	1	0.150	ppb	20.77	55.56	8.053E-04	Pulse	0.30	3
Mo	95	103	2	5.628	ppb	1.02	21,373.85	1.261E-02	Pulse	0.30	3
Ag	107	103	3	0.167	ppb	0.60	7,866.74	1.877E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,441.31	-2.790E-03	Pulse	0.30	3
Sb	121	115	3	0.061	ppb	10.98	2,432.51	5.048E-04	Pulse	0.30	3
Ba	137	159	3	13.959	ppb	0.70	176,533.44	2.438E-02	Pulse	0.30	3
Tl	205	209	3	0.114	ppb	5.50	8,975.25	2.358E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-25,353.96	-6.660E-03	Pulse	0.30	3
U	238	209	3	9.287	ppb	0.65	925,975.84	2.433E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	786,786.74	0.57	75.4	Pulse	0.30	3
2	Sc	45	70,364.75	1.22	91.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,533,626.19	1.17	94.7	Analog	0.30	3
1	Ge	72	69,028.45	0.96	95.9	Pulse	0.30	3
2	Ge	72	53,477.31	1.09	90.0	Pulse	0.30	3
2	Rh	103	1,694,323.05	0.79	82.3	Analog	0.30	3
3	Rh	103	4,190,881.22	0.14	82.1	Analog	0.30	3
3	In	115	4,817,757.11	0.23	86.6	Analog	0.30	3
3	Tb	159	7,242,380.93	0.14	88.6	Analog	0.30	3
3	Bi	209	3,806,580.74	0.44	79.3	Analog	0.30	3

Quantitation Report

File Name	A0216049.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:30
Sample Name	N022951-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	2107.97	11.11	1.561E-05	Pulse	0.30	3
Na	23	45	2	92722.819	ppb	0.96	59,185,531.34	1.062E+03	Analog	0.30	3
Mg	26	45	2	62.937	ppb	3.50	3,800.59	6.818E-02	Pulse	0.30	3
Al	27	45	2	21.928	ppb	4.34	2,793.30	5.013E-02	Pulse	0.30	3
K	39	45	2	303.997	ppb	1.06	76,508.91	1.373E+00	Pulse	0.30	3
Ca	44	45	3	1915.013	ppb	0.91	2,052,040.89	9.395E-01	Analog	0.30	3
V	51	45	2	97.985	ppb	1.01	336,627.40	6.039E+00	Pulse	0.30	3
Cr	52	45	2	3.748	ppb	0.70	17,318.25	3.107E-01	Pulse	0.30	3
Mn	55	45	2	3.063	ppb	1.23	7,660.64	1.374E-01	Pulse	0.30	3
Fe	56	45	2	8.468	ppb	1.45	35,498.29	6.369E-01	Pulse	0.30	3
Co	59	45	2	0.017	ppb	20.16	181.97	3.260E-03	Pulse	0.30	3
Ni	60	72	2	0.802	ppb	0.76	1,871.96	4.373E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-276.21	-6.448E-03	Pulse	0.30	3
Zn	66	72	2	0.018	ppb	376.75	152.78	3.574E-03	Pulse	0.30	3
As	75	72	2	57.154	ppb	2.31	28,028.70	6.548E-01	Pulse	0.75	3
Se	78	72	1	0.177	ppb	24.75	47.78	9.377E-04	Pulse	0.30	3
Mo	95	103	2	8.247	ppb	0.14	26,889.00	1.847E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	873.03	2.313E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14,651.18	-3.380E-03	Pulse	0.30	3
Sb	121	115	3	0.152	ppb	1.87	4,517.52	1.042E-03	Pulse	0.30	3
Ba	137	159	3	0.130	ppb	14.49	1,831.32	2.746E-04	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	11.44	2,505.88	7.068E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-26,485.55	-7.467E-03	Pulse	0.30	3
U	238	209	3	3.204	ppb	0.10	297,853.04	8.397E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	712,497.29	1.32	68.2	Pulse	0.30	3
2	Sc	45	55,737.50	1.41	72.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,184,209.36	0.60	81.7	Analog	0.30	3
1	Ge	72	51,090.78	2.03	71.0	Pulse	0.30	3
2	Ge	72	42,808.25	0.75	72.1	Pulse	0.30	3
2	Rh	103	1,455,970.85	1.90	70.8	Analog	0.30	3
3	Rh	103	3,774,565.26	0.92	73.9	Analog	0.30	3
3	In	115	4,334,129.82	0.49	77.9	Analog	0.30	3
3	Tb	159	6,666,009.48	0.86	81.5	Analog	0.30	3
3	Bi	209	3,547,131.41	1.02	73.9	Analog	0.30	3

Quantitation Report

File Name	A0216050.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:35
Sample Name	N022951-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	1.358E-05	Pulse	0.30	3
Na	23	45	2	72757.325	ppb	0.67	51,990,269.23	8.333E+02	Analog	0.30	3
Mg	26	45	2	1313.554	ppb	1.37	86,384.79	1.385E+00	Pulse	0.30	3
Al	27	45	2	4.464	ppb	27.66	887.01	1.423E-02	Pulse	0.30	3
K	39	45	2	687.318	ppb	1.38	183,883.61	2.948E+00	Pulse	0.30	3
Ca	44	45	3	17878.891	ppb	1.30	20,466,772.06	8.738E+00	Analog	0.30	3
V	51	45	2	17.585	ppb	0.59	67,898.52	1.088E+00	Pulse	0.30	3
Cr	52	45	2	4.634	ppb	0.71	23,929.89	3.836E-01	Pulse	0.30	3
Mn	55	45	2	0.936	ppb	4.33	2,682.17	4.298E-02	Pulse	0.30	3
Fe	56	45	2	4.791	ppb	3.50	23,255.95	3.727E-01	Pulse	0.30	3
Co	59	45	2	0.012	ppb	20.16	153.46	2.460E-03	Pulse	0.30	3
Ni	60	72	2	0.886	ppb	5.21	2,316.43	4.833E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2.35	-5.043E-05	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	68.58	1.433E-03	Pulse	0.30	3
As	75	72	2	8.903	ppb	3.11	4,894.33	1.022E-01	Pulse	0.75	3
Se	78	72	1	0.258	ppb	19.89	80.00	1.333E-03	Pulse	0.30	3
Mo	95	103	2	4.995	ppb	1.24	17,509.08	1.120E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	623.85	1.589E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,460.71	-2.759E-03	Pulse	0.30	3
Sb	121	115	3	0.089	ppb	4.42	3,023.75	6.696E-04	Pulse	0.30	3
Ba	137	159	3	21.743	ppb	0.70	262,509.80	3.794E-02	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	9.85	2,129.13	5.773E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-23,341.07	-6.328E-03	Pulse	0.30	3
U	238	209	3	8.922	ppb	0.70	862,081.08	2.337E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	736,472.81	0.44	70.5	Pulse	0.30	3
2	Sc	45	62,389.89	1.24	81.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,342,469.13	1.35	87.6	Analog	0.30	3
1	Ge	72	60,074.70	0.67	83.4	Pulse	0.30	3
2	Ge	72	47,905.64	1.79	80.7	Pulse	0.30	3
2	Rh	103	1,563,432.83	0.31	76.0	Analog	0.30	3
3	Rh	103	3,922,551.05	1.23	76.8	Analog	0.30	3
3	In	115	4,516,064.54	0.49	81.2	Analog	0.30	3
3	Tb	159	6,918,742.40	0.48	84.6	Analog	0.30	3
3	Bi	209	3,688,701.58	1.24	76.8	Analog	0.30	3

Quantitation Report

File Name	A0216051.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:41
Sample Name	N022951-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	106.28	16.66	2.234E-05	Pulse	0.30	3
Na	23	45	2	135458.382	ppb	1.11	99,455,336.30	1.551E+03	Analog	0.30	3
Mg	26	45	2	22089.348	ppb	1.20	1,490,849.96	2.325E+01	Analog	0.30	3
Al	27	45	2	9.533	ppb	1.16	1,580.71	2.465E-02	Pulse	0.30	3
K	39	45	2	5814.197	ppb	1.83	1,539,574.58	2.401E+01	Analog	0.30	3
Ca	44	45	3	185873.210	ppb	0.22	221,601,921.14	9.081E+01	Analog	0.30	3
V	51	45	2	2.830	ppb	3.76	11,518.95	1.797E-01	Pulse	0.30	3
Cr	52	45	2	7.427	ppb	2.98	39,317.59	6.132E-01	Pulse	0.30	3
Mn	55	45	2	6.923	ppb	1.50	19,801.36	3.088E-01	Pulse	0.30	3
Fe	56	45	2	9.854	ppb	6.19	47,217.28	7.364E-01	Pulse	0.30	3
Co	59	45	2	0.042	ppb	20.30	467.39	7.301E-03	Pulse	0.30	3
Ni	60	72	2	0.154	ppb	9.04	407.90	8.606E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-175.41	-3.716E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	84.37	1.766E-03	Pulse	0.30	3
As	75	72	2	1.490	ppb	4.35	820.90	1.731E-02	Pulse	0.75	3
Se	78	72	1	0.237	ppb	22.31	71.12	1.233E-03	Pulse	0.30	3
Mo	95	103	2	3.371	ppb	4.03	11,354.44	7.571E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-377.41	-9.818E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-24,599.50	-5.473E-03	Pulse	0.30	3
Sb	121	115	3	6.867	ppb	0.49	182,999.62	4.072E-02	Pulse	0.30	3
Ba	137	159	3	85.416	ppb	0.20	1,020,863.36	1.489E-01	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	6.57	1,452.35	4.315E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-55,888.67	-1.661E-02	Pulse	0.30	3
U	238	209	3	31.701	ppb	0.12	2,794,092.76	8.302E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	746,976.97	0.88	71.5	Pulse	0.30	3
2	Sc	45	64,123.04	1.44	83.5	Pulse	0.30	3
3	Sc	45	2,440,377.83	0.61	91.2	Analog	0.30	3
1	Ge	72	57,554.33	1.96	79.9	Pulse	0.30	3
2	Ge	72	47,438.78	1.79	79.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,499,206.70	1.51	72.9	Analog	0.30	3
3	Rh	103	3,841,634.35	0.68	75.2	Analog	0.30	3
3	In	115	4,494,540.71	0.60	80.8	Analog	0.30	3
3	Tb	159	6,855,512.68	0.56	83.8	Analog	0.30	3
3	Bi	209	3,365,582.62	0.39	70.1	Analog	0.30	3

Quantitation Report

File Name	A0216052.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:47
Sample Name	N022951-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	4.516E-06	Pulse	0.30	3
Na	23	45	2	95777.673	ppb	0.75	70,154,226.73	1.097E+03	Analog	0.30	3
Mg	26	45	2	328.320	ppb	1.21	22,227.55	3.475E-01	Pulse	0.30	3
Al	27	45	2	7.482	ppb	6.93	1,307.89	2.043E-02	Pulse	0.30	3
K	39	45	2	1333.053	ppb	1.40	358,173.75	5.601E+00	Pulse	0.30	3
Ca	44	45	3	3783.380	ppb	0.24	4,379,437.68	1.852E+00	Analog	0.30	3
V	51	45	2	45.386	ppb	0.90	179,103.96	2.800E+00	Pulse	0.30	3
Cr	52	45	2	3.956	ppb	2.97	20,964.76	3.278E-01	Pulse	0.30	3
Mn	55	45	2	3.228	ppb	1.81	9,257.57	1.448E-01	Pulse	0.30	3
Fe	56	45	2	4.799	ppb	1.94	23,873.42	3.733E-01	Pulse	0.30	3
Co	59	45	2	0.006	ppb	33.85	95.92	1.501E-03	Pulse	0.30	3
Ni	60	72	2	1.779	ppb	2.48	4,667.56	9.678E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-823.07	-1.708E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	81.21	1.703E-03	Pulse	0.30	3
As	75	72	2	50.687	ppb	3.98	28,001.44	5.807E-01	Pulse	0.75	3
Se	78	72	1	0.197	ppb	25.41	63.34	1.035E-03	Pulse	0.30	3
Mo	95	103	2	9.203	ppb	1.41	32,487.13	2.061E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	132.82	3.390E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-16,310.12	-3.631E-03	Pulse	0.30	3
Sb	121	115	3	0.298	ppb	2.96	8,547.23	1.903E-03	Pulse	0.30	3
Ba	137	159	3	2.785	ppb	2.03	33,554.81	4.902E-03	Pulse	0.30	3
Tl	205	209	3	0.019	ppb	7.79	2,220.26	6.143E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,652.14	-8.479E-03	Pulse	0.30	3
U	238	209	3	8.598	ppb	0.93	814,213.92	2.252E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	738,700.60	0.43	70.8	Pulse	0.30	3
2	Sc	45	63,964.81	1.89	83.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,364,451.22	0.83	88.4	Analog	0.30	3
1	Ge	72	61,145.13	0.89	84.9	Pulse	0.30	3
2	Ge	72	48,251.18	2.90	81.2	Pulse	0.30	3
2	Rh	103	1,576,714.89	1.19	76.6	Analog	0.30	3
3	Rh	103	3,909,511.05	0.54	76.6	Analog	0.30	3
3	In	115	4,491,718.11	0.70	80.8	Analog	0.30	3
3	Tb	159	6,845,327.75	0.01	83.7	Analog	0.30	3
3	Bi	209	3,615,233.21	1.24	75.3	Analog	0.30	3

Quantitation Report

File Name	A0216053.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:52
Sample Name	N022951-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	291.87	14.44	1.964E-05	Pulse	0.30	3
Na	23	45	2	72580.679	ppb	0.26	53,645,233.65	8.313E+02	Analog	0.30	3
Mg	26	45	2	976.771	ppb	0.44	66,470.33	1.030E+00	Pulse	0.30	3
Al	27	45	2	13.461	ppb	5.46	2,111.53	3.273E-02	Pulse	0.30	3
K	39	45	2	624.438	ppb	0.51	173,532.50	2.689E+00	Pulse	0.30	3
Ca	44	45	3	15129.189	ppb	0.34	17,508,791.96	7.395E+00	Analog	0.30	3
V	51	45	2	17.603	ppb	0.66	70,302.80	1.089E+00	Pulse	0.30	3
Cr	52	45	2	4.877	ppb	0.46	26,038.57	4.035E-01	Pulse	0.30	3
Mn	55	45	2	0.956	ppb	2.09	2,833.97	4.391E-02	Pulse	0.30	3
Fe	56	45	2	11.477	ppb	1.99	55,043.95	8.530E-01	Pulse	0.30	3
Co	59	45	2	0.012	ppb	36.00	156.89	2.434E-03	Pulse	0.30	3
Ni	60	72	2	0.908	ppb	4.52	2,451.69	4.951E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	0.99	1.330E-05	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	158.04	3.194E-03	Pulse	0.30	3
As	75	72	2	8.915	ppb	0.21	5,066.88	1.023E-01	Pulse	0.75	3
Se	78	72	1	0.230	ppb	27.35	75.56	1.198E-03	Pulse	0.30	3
Mo	95	103	2	5.060	ppb	0.53	18,096.42	1.135E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	220.00	5.590E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-12,380.38	-2.725E-03	Pulse	0.30	3
Sb	121	115	3	0.071	ppb	2.34	2,574.77	5.669E-04	Pulse	0.30	3
Ba	137	159	3	16.813	ppb	0.47	202,465.71	2.935E-02	Pulse	0.30	3
Tl	205	209	3	0.016	ppb	16.60	2,101.34	5.721E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-23,008.40	-6.261E-03	Pulse	0.30	3
U	238	209	3	8.351	ppb	1.09	803,778.94	2.188E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	736,390.37	0.59	70.5	Pulse	0.30	3
2	Sc	45	64,531.46	1.11	84.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,367,681.62	0.49	88.5	Analog	0.30	3
1	Ge	72	63,208.69	1.56	87.8	Pulse	0.30	3
2	Ge	72	49,512.57	0.46	83.4	Pulse	0.30	3
2	Rh	103	1,595,055.50	0.87	77.5	Analog	0.30	3
3	Rh	103	3,932,000.39	1.01	77.0	Analog	0.30	3
3	In	115	4,542,707.01	1.03	81.7	Analog	0.30	3
3	Tb	159	6,898,744.48	0.86	84.4	Analog	0.30	3
3	Bi	209	3,674,688.59	1.08	76.5	Analog	0.30	3

Quantitation Report

File Name	A0216054.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 13:58
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.629	ppb	1.42	103,919.55	1.147E-01	Pulse	0.30	3
Na	23	45	2	274.713	ppb	4.34	249,477.83	3.621E+00	Pulse	0.30	3
Mg	26	45	2	217.589	ppb	1.96	15,918.11	2.310E-01	Pulse	0.30	3
Al	27	45	2	23.253	ppb	2.71	3,642.31	5.285E-02	Pulse	0.30	3
K	39	45	2	214.494	ppb	2.04	69,262.88	1.005E+00	Pulse	0.30	3
Ca	44	45	3	216.070	ppb	0.92	262,507.43	1.095E-01	Pulse	0.30	3
V	51	45	2	20.357	ppb	1.28	86,779.48	1.259E+00	Pulse	0.30	3
Cr	52	45	2	20.386	ppb	1.95	115,669.91	1.678E+00	Pulse	0.30	3
Mn	55	45	2	20.604	ppb	2.10	63,145.00	9.162E-01	Pulse	0.30	3
Fe	56	45	2	21.052	ppb	2.48	106,172.26	1.541E+00	Pulse	0.30	3
Co	59	45	2	20.408	ppb	2.78	227,466.62	3.301E+00	Pulse	0.30	3
Ni	60	72	2	20.024	ppb	1.68	59,880.46	1.087E+00	Pulse	0.30	3
Cu	63	72	2	20.119	ppb	0.31	166,154.91	3.015E+00	Pulse	0.30	3
Zn	66	72	2	19.934	ppb	1.30	22,329.23	4.052E-01	Pulse	0.30	3
As	75	72	2	20.220	ppb	0.87	12,776.23	2.318E-01	Pulse	0.75	3
Se	78	72	1	19.801	ppb	0.48	6,782.82	9.653E-02	Pulse	0.30	3
Mo	95	103	2	19.224	ppb	0.42	81,922.48	4.300E-02	Pulse	0.30	3
Ag	107	103	3	19.785	ppb	0.75	814,292.25	1.761E-01	Pulse	0.30	3
Cd	111	115	3	19.919	ppb	0.62	186,215.00	3.630E-02	Pulse	0.30	3
Sb	121	115	3	19.575	ppb	0.48	594,001.27	1.158E-01	Pulse	0.30	3
Ba	137	159	3	19.985	ppb	1.02	265,020.40	3.488E-02	Pulse	0.30	3
Tl	205	209	3	20.053	ppb	0.42	1,655,585.08	3.684E-01	Analog	0.30	3
Pb	208	209	3	19.734	ppb	0.22	2,204,534.87	4.905E-01	Pulse	0.30	3
U	238	209	3	19.777	ppb	0.85	2,327,792.45	5.180E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	906,496.86	1.33	86.8	Analog	0.30	3
2	Sc	45	68,941.89	2.65	89.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,396,721.79	0.33	89.6	Analog	0.30	3
1	Ge	72	70,269.21	0.50	97.6	Pulse	0.30	3
2	Ge	72	55,113.98	0.96	92.8	Pulse	0.30	3
2	Rh	103	1,905,058.50	0.59	92.6	Analog	0.30	3
3	Rh	103	4,622,941.91	0.23	90.5	Analog	0.30	3
3	In	115	5,130,033.27	0.19	92.2	Analog	0.30	3
3	Tb	159	7,598,619.89	0.54	92.9	Analog	0.30	3
3	Bi	209	4,494,224.20	0.05	93.6	Analog	0.30	3

Quantitation Report

File Name	A0216055.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:03
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	99.90	20.00	2.236E-05	Pulse	0.30	3
Na	23	45	2	14.201	ppb	17.38	42,608.16	6.389E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	126.67	1.898E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	290.00	4.350E-03	Pulse	0.30	3
K	39	45	2	4.712	ppb	52.91	9,539.89	1.431E-01	Pulse	0.30	3
Ca	44	45	3	1.019	ppb	21.63	10,349.21	4.474E-03	Pulse	0.30	3
V	51	45	2	0.014	ppb	111.87	417.80	6.265E-03	Pulse	0.30	3
Cr	52	45	2	0.015	ppb	49.39	256.63	3.850E-03	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	2167.85	97.62	1.462E-03	Pulse	0.30	3
Fe	56	45	2	0.052	ppb	11.66	2,161.07	3.239E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	177.71	38.84	5.813E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	9.93	1.852E-04	Pulse	0.30	3
Cu	63	72	2	0.013	ppb	79.82	468.55	8.761E-03	Pulse	0.30	3
Zn	66	72	2	0.015	ppb	182.86	188.64	3.525E-03	Pulse	0.30	3
As	75	72	2	0.010	ppb	107.76	19.11	3.569E-04	Pulse	0.75	3
Se	78	72	1	0.046	ppb	39.22	20.00	2.987E-04	Pulse	0.30	3
Mo	95	103	2	0.097	ppb	5.16	466.69	2.531E-04	Pulse	0.30	3
Ag	107	103	3	0.425	ppb	11.39	18,934.57	4.164E-03	Pulse	0.30	3
Cd	111	115	3	0.003	ppb	61.24	40.27	8.070E-06	Pulse	0.30	3
Sb	121	115	3	0.092	ppb	1.15	3,441.63	6.900E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	334.43	4.473E-05	Pulse	0.30	3
Tl	205	209	3	0.011	ppb	9.48	2,074.68	4.712E-04	Pulse	0.30	3
Pb	208	209	3	0.003	ppb	26.76	1,144.46	2.599E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	13.27	731.87	1.662E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	894,313.03	0.26	85.7	Analog	0.30	3
2	Sc	45	66,725.84	1.73	86.9	Pulse	0.30	3
3	Sc	45	2,313,407.97	0.63	86.5	Analog	0.30	3
1	Ge	72	66,977.95	0.47	93.0	Pulse	0.30	3

2	Ge	72	53,499.69	0.35	90.1	Pulse	0.30	3
2	Rh	103	1,843,833.58	0.29	89.6	Analog	0.30	3
3	Rh	103	4,546,853.85	0.12	89.0	Analog	0.30	3
3	In	115	4,987,764.15	0.13	89.7	Analog	0.30	3
3	Tb	159	7,476,702.87	0.10	91.4	Analog	0.30	3
3	Bi	209	4,403,331.50	0.23	91.7	Analog	0.30	3

Quantitation Report

File Name	A0216056.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:09
Sample Name	N022952-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	7.78	1.079E-05	Pulse	0.30	3
	Na	23	45	2	97592.775	ppb	1.79	70,390,433.95	1.118E+03	Analog	0.30	3
	Mg	26	45	2	19762.025	ppb	2.60	1,309,974.04	2.080E+01	Analog	0.30	3
	Al	27	45	2	<0.000	ppb	---	207.15	3.286E-03	Pulse	0.30	3
	K	39	45	2	3993.373	ppb	1.37	1,041,181.45	1.653E+01	Pulse	0.30	3
	Ca	44	45	3	112251.677	ppb	0.44	128,234,748.09	5.484E+01	Analog	0.30	3
	V	51	45	2	4.969	ppb	3.05	19,607.92	3.114E-01	Pulse	0.30	3
OLR	Cr	52	45	2	356.208	ppb	1.97	1,844,257.44	2.928E+01	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-2,300.96	-3.655E-02	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-1,373.15	-2.182E-02	Pulse	0.30	3
	Co	59	45	2	0.004	ppb	88.02	67.11	1.075E-03	Pulse	0.30	3
	Ni	60	72	2	0.151	ppb	13.42	394.09	8.452E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-610.17	-1.307E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	9.61	2.017E-04	Pulse	0.30	3
	As	75	72	2	0.807	ppb	5.01	442.31	9.482E-03	Pulse	0.75	3
	Se	78	72	1	0.779	ppb	21.70	223.34	3.872E-03	Pulse	0.30	3
	Mo	95	103	2	1.196	ppb	1.50	4,047.37	2.710E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-1,570.92	-4.186E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-16,858.85	-3.871E-03	Pulse	0.30	3
	Sb	121	115	3	0.139	ppb	1.86	4,196.29	9.635E-04	Pulse	0.30	3
	Ba	137	159	3	31.547	ppb	0.12	369,391.23	5.503E-02	Pulse	0.30	3
	Tl	205	209	3	0.013	ppb	22.46	1,735.74	5.086E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-37,584.98	-1.101E-02	Pulse	0.30	3
	U	238	209	3	31.829	ppb	0.54	2,845,663.28	8.335E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	719,188.71	0.59	68.9	Pulse	0.30	3
2	Sc	45	63,003.15	3.00	82.0	Pulse	0.30	3
3	Sc	45	2,338,334.58	0.69	87.4	Analog	0.30	3
1	Ge	72	57,689.61	0.59	80.1	Pulse	0.30	3
2	Ge	72	46,663.22	0.95	78.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,493,431.17	1.54	72.6	Analog	0.30	3
3	Rh	103	3,753,114.66	0.89	73.5	Analog	0.30	3
3	In	115	4,355,137.50	0.76	78.3	Analog	0.30	3
3	Tb	159	6,712,847.61	0.58	82.1	Analog	0.30	3
3	Bi	209	3,414,099.70	1.09	71.1	Analog	0.30	3

Quantitation Report

File Name	A0216057.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:14
Sample Name	N022952-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	258.68	14.44	2.005E-05	Pulse	0.30	3
Na	23	45	2	109576.559	ppb	0.61	79,778,671.04	1.255E+03	Analog	0.30	3
Mg	26	45	2	18217.887	ppb	0.95	1,219,292.65	1.918E+01	Analog	0.30	3
Al	27	45	2	0.615	ppb	39.28	401.76	6.318E-03	Pulse	0.30	3
K	39	45	2	7454.045	ppb	1.99	1,955,063.16	3.075E+01	Analog	0.30	3
Ca	44	45	3	92752.596	ppb	0.66	118,915,508.23	4.532E+01	Analog	0.30	3
V	51	45	2	3.926	ppb	2.38	15,714.70	2.472E-01	Pulse	0.30	3
Cr	52	45	2	171.346	ppb	0.43	895,643.73	1.409E+01	Pulse	0.30	3
Mn	55	45	2	16.997	ppb	0.49	48,067.69	7.561E-01	Pulse	0.30	3
Fe	56	45	2	34.247	ppb	0.51	158,206.21	2.488E+00	Pulse	0.30	3
Co	59	45	2	1.484	ppb	1.56	15,287.55	2.404E-01	Pulse	0.30	3
Ni	60	72	2	84.130	ppb	1.25	219,179.11	4.565E+00	Pulse	0.30	3
Cu	63	72	2	0.404	ppb	3.54	3,225.16	6.717E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-127.59	-2.659E-03	Pulse	0.30	3
As	75	72	2	2.016	ppb	7.30	1,119.95	2.333E-02	Pulse	0.75	3
Se	78	72	1	0.499	ppb	5.63	146.68	2.506E-03	Pulse	0.30	3
Mo	95	103	2	1.706	ppb	1.82	5,832.42	3.850E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,315.16	-6.099E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,038.71	-4.319E-03	Pulse	0.30	3
Sb	121	115	3	0.061	ppb	7.02	2,221.35	5.038E-04	Pulse	0.30	3
Ba	137	159	3	33.369	ppb	0.64	392,777.38	5.820E-02	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	1.70	1,512.36	4.389E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-43,553.95	-1.264E-02	Pulse	0.30	3
U	238	209	3	41.629	ppb	0.47	3,756,462.46	1.090E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	718,328.92	0.69	68.8	Pulse	0.30	3
2	Sc	45	63,576.57	0.80	82.8	Pulse	0.30	3
3	Sc	45	2,624,281.12	0.87	98.1	Analog	0.30	3
1	Ge	72	58,526.79	1.50	81.3	Pulse	0.30	3
2	Ge	72	48,018.16	1.00	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,514,876.38	0.40	73.6	Analog	0.30	3
3	Rh	103	3,796,395.88	0.47	74.3	Analog	0.30	3
3	In	115	4,408,170.06	0.99	79.3	Analog	0.30	3
3	Tb	159	6,748,577.19	1.03	82.5	Analog	0.30	3
3	Bi	209	3,445,822.07	0.84	71.8	Analog	0.30	3

Quantitation Report

File Name	A0216058.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:20
Sample Name	N022952-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	95.18	14.45	2.070E-05	Pulse	0.30	3
Na	23	45	2	96057.052	ppb	1.23	69,483,358.97	1.100E+03	Analog	0.30	3
Mg	26	45	2	20386.921	ppb	1.31	1,355,471.54	2.146E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	220.39	3.491E-03	Pulse	0.30	3
K	39	45	2	6950.854	ppb	0.60	1,811,828.83	2.868E+01	Analog	0.30	3
Ca	44	45	3	93104.028	ppb	0.17	120,346,814.87	4.549E+01	Analog	0.30	3
V	51	45	2	5.023	ppb	1.00	19,879.35	3.147E-01	Pulse	0.30	3
Cr	52	45	2	102.257	ppb	1.23	531,082.39	8.408E+00	Pulse	0.30	3
Mn	55	45	2	6.366	ppb	1.35	17,943.39	2.841E-01	Pulse	0.30	3
Fe	56	45	2	5.720	ppb	10.80	27,730.60	4.395E-01	Pulse	0.30	3
Co	59	45	2	0.215	ppb	1.32	2,224.44	3.522E-02	Pulse	0.30	3
Ni	60	72	2	10.252	ppb	3.63	26,428.44	5.565E-01	Pulse	0.30	3
Cu	63	72	2	0.108	ppb	14.83	1,092.62	2.303E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-559.01	-1.177E-02	Pulse	0.30	3
As	75	72	2	3.770	ppb	0.78	2,063.21	4.341E-02	Pulse	0.75	3
Se	78	72	1	0.554	ppb	14.60	165.57	2.774E-03	Pulse	0.30	3
Mo	95	103	2	1.865	ppb	5.46	6,330.39	4.204E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,194.92	-5.807E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-16,560.35	-3.788E-03	Pulse	0.30	3
Sb	121	115	3	0.041	ppb	7.63	1,687.94	3.861E-04	Pulse	0.30	3
Ba	137	159	3	39.488	ppb	0.29	462,090.10	6.887E-02	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	23.25	1,421.25	4.146E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-39,075.09	-1.140E-02	Pulse	0.30	3
U	238	209	3	51.656	ppb	0.47	4,638,438.28	1.353E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	697,899.58	0.51	66.8	Pulse	0.30	3
2	Sc	45	63,170.59	1.72	82.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,645,763.00	0.68	98.9	Analog	0.30	3
1	Ge	72	59,672.02	0.15	82.9	Pulse	0.30	3
2	Ge	72	47,524.63	2.74	80.0	Pulse	0.30	3
2	Rh	103	1,506,857.43	2.31	73.2	Analog	0.30	3
3	Rh	103	3,779,866.40	0.76	74.0	Analog	0.30	3
3	In	115	4,371,912.78	0.17	78.6	Analog	0.30	3
3	Tb	159	6,709,796.43	0.46	82.0	Analog	0.30	3
3	Bi	209	3,429,012.87	0.73	71.4	Analog	0.30	3

Quantitation Report

File Name	A0216059.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:26
Sample Name	N022952-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	1.122E-05	Pulse	0.30	3
Na	23	45	2	116439.671	ppb	0.99	82,790,004.88	1.333E+03	Analog	0.30	3
Mg	26	45	2	18383.127	ppb	0.60	1,201,610.67	1.935E+01	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	292.40	4.718E-03	Pulse	0.30	3
K	39	45	2	4563.530	ppb	1.12	1,171,805.63	1.887E+01	Pulse	0.30	3
Ca	44	45	3	92874.631	ppb	0.47	109,739,983.92	4.537E+01	Analog	0.30	3
V	51	45	2	4.432	ppb	0.64	17,281.84	2.783E-01	Pulse	0.30	3
Cr	52	45	2	165.430	ppb	1.03	844,465.49	1.360E+01	Pulse	0.30	3
Mn	55	45	2	3.472	ppb	3.38	9,658.10	1.556E-01	Pulse	0.30	3
Fe	56	45	2	7.880	ppb	0.58	36,923.87	5.946E-01	Pulse	0.30	3
Co	59	45	2	0.071	ppb	12.17	745.26	1.200E-02	Pulse	0.30	3
Ni	60	72	2	6.069	ppb	1.82	15,491.43	3.295E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,258.78	-2.677E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-673.57	-1.432E-02	Pulse	0.30	3
As	75	72	2	1.762	ppb	1.52	960.00	2.042E-02	Pulse	0.75	3
Se	78	72	1	0.303	ppb	26.72	91.12	1.552E-03	Pulse	0.30	3
Mo	95	103	2	2.332	ppb	2.18	7,803.35	5.249E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,502.63	-4.023E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,713.85	-4.556E-03	Pulse	0.30	3
Sb	121	115	3	0.019	ppb	14.24	1,101.20	2.545E-04	Pulse	0.30	3
Ba	137	159	3	61.735	ppb	0.15	709,222.51	1.076E-01	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	10.36	1,286.78	3.809E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-42,992.57	-1.273E-02	Pulse	0.30	3
U	238	209	3	44.267	ppb	0.46	3,915,246.80	1.159E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	691,552.51	0.44	66.2	Pulse	0.30	3
2	Sc	45	62,091.93	1.26	80.8	Pulse	0.30	3
3	Sc	45	2,418,505.33	0.53	90.4	Analog	0.30	3
1	Ge	72	58,850.33	1.40	81.7	Pulse	0.30	3
2	Ge	72	47,021.93	1.71	79.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,486,484.21	1.85	72.2	Analog	0.30	3
3	Rh	103	3,735,282.34	0.70	73.1	Analog	0.30	3
3	In	115	4,327,124.60	0.57	77.8	Analog	0.30	3
3	Tb	159	6,588,802.54	0.63	80.6	Analog	0.30	3
3	Bi	209	3,377,562.35	1.49	70.3	Analog	0.30	3

Quantitation Report

File Name	A0216060.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:31
Sample Name	N022952-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	4.728E-06	Pulse	0.30	3
Na	23	45	2	48373.533	ppb	0.53	36,188,029.19	5.542E+02	Analog	0.30	3
Mg	26	45	2	8261.989	ppb	0.42	567,959.10	8.698E+00	Pulse	0.30	3
Al	27	45	2	2.981	ppb	27.22	731.24	1.118E-02	Pulse	0.30	3
K	39	45	2	3874.352	ppb	0.13	1,047,453.06	1.604E+01	Pulse	0.30	3
Ca	44	45	3	34705.102	ppb	0.05	43,207,206.58	1.696E+01	Analog	0.30	3
V	51	45	2	5.122	ppb	0.65	20,948.37	3.208E-01	Pulse	0.30	3
Cr	52	45	2	14.351	ppb	2.17	77,186.70	1.182E+00	Pulse	0.30	3
Mn	55	45	2	0.512	ppb	2.02	1,577.59	2.416E-02	Pulse	0.30	3
Fe	56	45	2	5.251	ppb	1.89	26,499.93	4.058E-01	Pulse	0.30	3
Co	59	45	2	0.007	ppb	70.12	103.63	1.586E-03	Pulse	0.30	3
Ni	60	72	2	0.682	ppb	4.39	1,860.96	3.724E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-105.95	-2.120E-03	Pulse	0.30	3
Zn	66	72	2	0.034	ppb	162.23	194.43	3.891E-03	Pulse	0.30	3
As	75	72	2	2.645	ppb	1.30	1,525.50	3.053E-02	Pulse	0.75	3
Se	78	72	1	0.131	ppb	10.77	45.55	7.158E-04	Pulse	0.30	3
Mo	95	103	2	4.723	ppb	4.03	16,995.23	1.059E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-976.12	-2.482E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-8,374.08	-1.840E-03	Pulse	0.30	3
Sb	121	115	3	0.027	ppb	4.63	1,384.56	3.042E-04	Pulse	0.30	3
Ba	137	159	3	69.907	ppb	0.18	841,196.86	1.219E-01	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	5.25	1,769.07	4.816E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-12,409.03	-3.378E-03	Pulse	0.30	3
U	238	209	3	13.109	ppb	1.11	1,261,242.08	3.433E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	704,285.21	0.62	67.5	Pulse	0.30	3
2	Sc	45	65,297.79	1.50	85.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,547,888.26	0.44	95.3	Analog	0.30	3
1	Ge	72	63,683.91	1.15	88.5	Pulse	0.30	3
2	Ge	72	49,975.19	0.08	84.2	Pulse	0.30	3
2	Rh	103	1,604,866.57	1.14	78.0	Analog	0.30	3
3	Rh	103	3,933,271.50	0.85	77.0	Analog	0.30	3
3	In	115	4,550,983.60	0.48	81.8	Analog	0.30	3
3	Tb	159	6,901,708.86	0.41	84.4	Analog	0.30	3
3	Bi	209	3,673,724.49	0.94	76.5	Analog	0.30	3

Quantitation Report

File Name	A0216061.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:37
Sample Name	N022952-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	1.459E-05	Pulse	0.30	3
Na	23	45	2	45831.203	ppb	0.07	33,186,158.39	5.251E+02	Analog	0.30	3
Mg	26	45	2	7825.019	ppb	0.24	520,644.03	8.238E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	311.43	4.926E-03	Pulse	0.30	3
K	39	45	2	3696.590	ppb	0.33	967,626.01	1.531E+01	Pulse	0.30	3
Ca	44	45	3	33149.429	ppb	1.56	39,915,558.02	1.620E+01	Analog	0.30	3
V	51	45	2	4.922	ppb	0.62	19,497.71	3.085E-01	Pulse	0.30	3
Cr	52	45	2	13.707	ppb	0.81	71,375.00	1.129E+00	Pulse	0.30	3
Mn	55	45	2	0.304	ppb	3.05	944.82	1.495E-02	Pulse	0.30	3
Fe	56	45	2	1.546	ppb	7.28	8,829.55	1.397E-01	Pulse	0.30	3
Co	59	45	2	0.004	ppb	62.71	71.92	1.137E-03	Pulse	0.30	3
Ni	60	72	2	0.602	ppb	5.04	1,621.09	3.293E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-619.25	-1.257E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-15.01	-3.132E-04	Pulse	0.30	3
As	75	72	2	2.551	ppb	1.12	1,450.09	2.945E-02	Pulse	0.75	3
Se	78	72	1	0.115	ppb	19.24	40.00	6.378E-04	Pulse	0.30	3
Mo	95	103	2	4.509	ppb	3.03	15,697.19	1.011E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-896.59	-2.329E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7,731.80	-1.747E-03	Pulse	0.30	3
Sb	121	115	3	0.020	ppb	12.12	1,155.65	2.612E-04	Pulse	0.30	3
Ba	137	159	3	66.209	ppb	0.43	778,857.53	1.154E-01	Pulse	0.30	3
Tl	205	209	3	0.011	ppb	5.19	1,705.73	4.752E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-17,370.37	-4.839E-03	Pulse	0.30	3
U	238	209	3	12.407	ppb	0.43	1,166,515.07	3.250E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	685,680.14	0.35	65.7	Pulse	0.30	3
2	Sc	45	63,198.42	0.81	82.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,464,440.64	0.93	92.1	Analog	0.30	3
1	Ge	72	62,726.87	0.39	87.1	Pulse	0.30	3
2	Ge	72	49,236.38	1.19	82.9	Pulse	0.30	3
2	Rh	103	1,552,432.04	1.25	75.4	Analog	0.30	3
3	Rh	103	3,849,601.85	0.83	75.4	Analog	0.30	3
3	In	115	4,426,381.97	1.11	79.6	Analog	0.30	3
3	Tb	159	6,747,082.12	0.59	82.5	Analog	0.30	3
3	Bi	209	3,589,675.09	0.55	74.8	Analog	0.30	3

Quantitation Report

File Name	A0216062.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:42
Sample Name	N022952-009B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.55	8.089E-06	Pulse	0.30	3
Na	23	45	2	79420.161	ppb	0.23	56,386,205.27	9.096E+02	Analog	0.30	3
Mg	26	45	2	14681.041	ppb	0.63	958,004.85	1.545E+01	Pulse	0.30	3
Al	27	45	2	1.073	ppb	33.23	450.05	7.259E-03	Pulse	0.30	3
K	39	45	2	2745.762	ppb	0.37	706,968.28	1.140E+01	Pulse	0.30	3
Ca	44	45	3	82460.142	ppb	0.57	94,114,521.93	4.029E+01	Analog	0.30	3
V	51	45	2	6.353	ppb	1.07	24,591.28	3.967E-01	Pulse	0.30	3
Cr	52	45	2	12.962	ppb	1.59	66,211.02	1.068E+00	Pulse	0.30	3
Mn	55	45	2	0.242	ppb	24.24	755.55	1.220E-02	Pulse	0.30	3
Fe	56	45	2	3.978	ppb	1.35	19,488.27	3.144E-01	Pulse	0.30	3
Co	59	45	2	0.012	ppb	44.47	147.56	2.387E-03	Pulse	0.30	3
Ni	60	72	2	0.987	ppb	4.02	2,525.37	5.378E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-720.14	-1.534E-02	Pulse	0.30	3
Zn	66	72	2	0.281	ppb	15.48	417.33	8.887E-03	Pulse	0.30	3
As	75	72	2	1.365	ppb	4.33	745.16	1.587E-02	Pulse	0.75	3
Se	78	72	1	0.124	ppb	33.35	41.11	6.787E-04	Pulse	0.30	3
Mo	95	103	2	2.323	ppb	1.70	7,913.42	5.228E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-945.78	-2.509E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13,351.82	-3.038E-03	Pulse	0.30	3
Sb	121	115	3	0.058	ppb	7.78	2,132.46	4.852E-04	Pulse	0.30	3
Ba	137	159	3	57.686	ppb	0.64	675,016.73	1.006E-01	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	34.32	1,313.45	3.818E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,037.71	-8.443E-03	Pulse	0.30	3
U	238	209	3	34.441	ppb	0.61	3,101,838.92	9.019E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	686,341.41	0.18	65.7	Pulse	0.30	3
2	Sc	45	61,990.69	1.34	80.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,336,162.12	0.93	87.3	Analog	0.30	3
1	Ge	72	60,710.22	1.12	84.3	Pulse	0.30	3
2	Ge	72	46,975.23	1.35	79.1	Pulse	0.30	3
2	Rh	103	1,513,472.95	1.05	73.6	Analog	0.30	3
3	Rh	103	3,769,851.23	0.52	73.8	Analog	0.30	3
3	In	115	4,394,687.41	0.38	79.0	Analog	0.30	3
3	Tb	159	6,711,146.57	0.68	82.1	Analog	0.30	3
3	Bi	209	3,439,033.14	0.53	71.6	Analog	0.30	3

Quantitation Report

File Name	A0216063.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:48
Sample Name	N022985-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	155.46	11.11	2.060E-05	Pulse	0.30	3
Na	23	45	2	2108465.768	ppb	1.80	1,448,430,111.75	2.414E+04	Analog	0.30	3
Mg	26	45	2	6130.940	ppb	1.79	387,380.84	6.455E+00	Pulse	0.30	3
Al	27	45	2	0.155	ppb	65.56	322.50	5.371E-03	Pulse	0.30	3
K	39	45	2	16730.828	ppb	1.95	4,132,262.82	6.886E+01	Analog	0.30	3
Ca	44	45	3	89540.142	ppb	0.09	97,130,357.44	4.375E+01	Analog	0.30	3
V	51	45	2	6.103	ppb	1.89	22,879.92	3.813E-01	Pulse	0.30	3
Cr	52	45	2	16.461	ppb	1.34	81,370.45	1.356E+00	Pulse	0.30	3
Mn	55	45	2	4.508	ppb	3.24	12,094.51	2.016E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-112,822.95	-1.880E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,461.21	-2.434E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,195.83	-3.045E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-33,460.38	-8.517E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-3,002.93	-7.644E-02	Pulse	0.30	3
As	75	72	2	5.288	ppb	4.73	2,387.94	6.080E-02	Pulse	0.75	3
Se	78	72	1	0.073	ppb	91.69	20.00	4.346E-04	Pulse	0.30	3
Mo	95	103	2	84.265	ppb	0.65	214,014.72	1.884E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	34.25	1.189E-05	Pulse	0.30	3
Cd	111	115	3	0.045	ppb	21.73	298.00	8.363E-05	Pulse	0.30	3
Sb	121	115	3	0.016	ppb	13.06	863.40	2.420E-04	Pulse	0.30	3
Ba	137	159	3	17.219	ppb	0.77	158,602.03	3.006E-02	Pulse	0.30	3
Tl	205	209	3	0.037	ppb	4.55	2,202.49	9.451E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,229.50	-4.818E-03	Pulse	0.30	3
U	238	209	3	1.618	ppb	0.83	98,914.10	4.244E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	536,491.35	3.89	51.4	Analog	0.30	3
2	Sc	45	60,036.85	3.71	78.2	Pulse	0.30	3
3	Sc	45	2,220,338.51	0.68	83.0	Analog	0.30	3
1	Ge	72	45,738.32	1.31	63.5	Pulse	0.30	3
2	Ge	72	39,288.28	1.97	66.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,136,112.05	1.67	55.2	Pulse	0.30	3
3	Rh	103	3,005,317.49	0.72	58.9	Analog	0.30	3
3	In	115	3,566,690.12	0.73	64.1	Analog	0.30	3
3	Tb	159	5,276,930.20	1.00	64.5	Analog	0.30	3
3	Bi	209	2,330,580.42	0.57	48.5	Analog	0.30	3

Quantitation Report

File Name	A0216064.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:54
Sample Name	N022985-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	57.83	18.89	4.458E-05	Pulse	0.30	3
Na	23	45	2	3235063.178	ppb	1.31	2,173,538,154.28	3.703E+04	Analog	0.30	3
Mg	26	45	2	9291.085	ppb	1.77	574,037.81	9.781E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	290.55	4.959E-03	Pulse	0.30	3
K	39	45	2	28485.014	ppb	1.48	6,875,745.38	1.172E+02	Analog	0.30	3
Ca	44	45	3	118534.947	ppb	0.13	128,967,963.64	5.791E+01	Analog	0.30	3
V	51	45	2	1.165	ppb	4.48	4,529.71	7.719E-02	Pulse	0.30	3
Cr	52	45	2	42.916	ppb	2.07	207,174.06	3.530E+00	Pulse	0.30	3
Mn	55	45	2	24.679	ppb	1.50	64,402.33	1.097E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-168,051.60	-2.863E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,764.56	-3.008E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,251.23	-3.439E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-45,853.46	-1.260E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-6,401.23	-1.759E-01	Pulse	0.30	3
As	75	72	2	1.160	ppb	3.92	491.63	1.352E-02	Pulse	0.75	3
Se	78	72	1	0.070	ppb	42.29	16.66	4.193E-04	Pulse	0.30	3
Mo	95	103	2	58.142	ppb	1.01	133,873.31	1.300E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-5,235.03	-1.903E-03	Pulse	0.30	3
Cd	111	115	3	0.004	ppb	604.63	27.67	8.641E-06	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	25.34	885.62	2.710E-04	Pulse	0.30	3
Ba	137	159	3	17.764	ppb	0.90	147,818.57	3.101E-02	Pulse	0.30	3
Tl	205	209	3	0.418	ppb	1.13	16,060.39	7.953E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-21,342.57	-1.057E-02	Pulse	0.30	3
U	238	209	3	3.694	ppb	0.41	195,512.99	9.681E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	425,558.88	1.67	40.8	Analog	0.30	3
2	Sc	45	58,707.79	3.34	76.4	Pulse	0.30	3
3	Sc	45	2,227,044.24	0.94	83.3	Analog	0.30	3
1	Ge	72	39,736.22	1.21	55.2	Pulse	0.30	3
2	Ge	72	36,380.27	1.62	61.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,029,766.57	1.95	50.0	Pulse	0.30	3
3	Rh	103	2,751,367.15	0.62	53.9	Analog	0.30	3
3	In	115	3,267,574.80	0.71	58.8	Analog	0.30	3
3	Tb	159	4,767,250.35	0.59	58.3	Analog	0.30	3
3	Bi	209	2,019,505.13	0.42	42.1	Analog	0.30	3

Quantitation Report

File Name	A0216065.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 14:59
Sample Name	N022985-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	90.86	18.89	3.842E-05	Pulse	0.30	3
Na	23	45	2	3182562.749	ppb	2.36	2,309,111,858.92	3.643E+04	Analog	0.30	3
Mg	26	45	2	9100.397	ppb	1.80	607,332.33	9.581E+00	Pulse	0.30	3
Al	27	45	2	0.378	ppb	126.95	369.47	5.830E-03	Pulse	0.30	3
K	39	45	2	27725.235	ppb	1.77	7,228,656.77	1.140E+02	Analog	0.30	3
Ca	44	45	3	115189.169	ppb	0.73	136,929,864.63	5.628E+01	Analog	0.30	3
V	51	45	2	1.077	ppb	2.49	4,551.92	7.174E-02	Pulse	0.30	3
Cr	52	45	2	40.330	ppb	2.37	210,289.08	3.318E+00	Pulse	0.30	3
Mn	55	45	2	23.924	ppb	2.40	67,419.22	1.064E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-176,798.27	-2.789E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,853.62	-2.920E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,797.06	-4.640E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-53,655.55	-1.385E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-6,748.32	-1.742E-01	Pulse	0.30	3
As	75	72	2	1.230	ppb	4.35	555.08	1.432E-02	Pulse	0.75	3
Se	78	72	1	0.113	ppb	11.52	26.67	6.294E-04	Pulse	0.30	3
Mo	95	103	2	55.551	ppb	0.35	135,730.36	1.242E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,449.31	-2.194E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-14.09	-4.071E-06	Pulse	0.30	3
Sb	121	115	3	0.015	ppb	13.46	801.17	2.315E-04	Pulse	0.30	3
Ba	137	159	3	17.300	ppb	0.88	150,342.51	3.020E-02	Pulse	0.30	3
Tl	205	209	3	0.411	ppb	1.19	16,491.91	7.820E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-22,630.59	-1.073E-02	Pulse	0.30	3
U	238	209	3	3.547	ppb	0.47	196,044.72	9.296E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	488,787.90	2.88	46.8	Analog	0.30	3
2	Sc	45	63,422.74	4.15	82.6	Pulse	0.30	3
3	Sc	45	2,433,211.46	0.72	91.0	Analog	0.30	3
1	Ge	72	42,301.46	2.45	58.8	Pulse	0.30	3
2	Ge	72	38,758.18	3.56	65.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,092,840.64	1.76	53.1	Pulse	0.30	3
3	Rh	103	2,940,021.31	0.87	57.6	Analog	0.30	3
3	In	115	3,460,675.56	0.64	62.2	Analog	0.30	3
3	Tb	159	4,978,415.55	0.94	60.9	Analog	0.30	3
3	Bi	209	2,108,936.03	0.74	43.9	Analog	0.30	3

Quantitation Report

File Name	A0216066.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:05
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.329	ppb	1.28	135,548.13	1.129E-01	Pulse	0.30	3
Na	23	45	2	824.441	ppb	3.02	899,104.45	9.914E+00	Pulse	0.30	3
Mg	26	45	2	219.117	ppb	1.83	21,096.17	2.326E-01	Pulse	0.30	3
Al	27	45	2	24.967	ppb	1.65	5,113.47	5.638E-02	Pulse	0.30	3
K	39	45	2	252.172	ppb	1.57	105,192.47	1.160E+00	Pulse	0.30	3
Ca	44	45	3	219.344	ppb	0.69	350,389.46	1.111E-01	Pulse	0.30	3
V	51	45	2	20.161	ppb	0.21	113,106.79	1.247E+00	Pulse	0.30	3
Cr	52	45	2	20.244	ppb	0.75	151,176.07	1.667E+00	Pulse	0.30	3
Mn	55	45	2	20.121	ppb	0.87	81,161.36	8.948E-01	Pulse	0.30	3
Fe	56	45	2	20.570	ppb	0.65	136,607.12	1.506E+00	Pulse	0.30	3
Co	59	45	2	19.995	ppb	0.34	293,360.43	3.234E+00	Pulse	0.30	3
Ni	60	72	2	20.771	ppb	0.82	77,801.33	1.127E+00	Pulse	0.30	3
Cu	63	72	2	20.689	ppb	0.58	213,990.64	3.100E+00	Pulse	0.30	3
Zn	66	72	2	20.601	ppb	0.46	28,899.01	4.186E-01	Pulse	0.30	3
As	75	72	2	19.968	ppb	1.37	15,802.44	2.289E-01	Pulse	0.75	3
Se	78	72	1	20.266	ppb	1.28	8,464.73	9.879E-02	Pulse	0.30	3
Mo	95	103	2	19.789	ppb	1.56	101,422.79	4.426E-02	Pulse	0.30	3
Ag	107	103	3	19.537	ppb	0.48	986,488.46	1.739E-01	Pulse	0.30	3
Cd	111	115	3	19.916	ppb	0.86	223,930.70	3.629E-02	Pulse	0.30	3
Sb	121	115	3	19.420	ppb	0.76	708,743.87	1.149E-01	Pulse	0.30	3
Ba	137	159	3	20.445	ppb	0.52	312,583.28	3.568E-02	Pulse	0.30	3
Tl	205	209	3	19.874	ppb	1.76	1,824,916.14	3.651E-01	Analog	0.30	3
Pb	208	209	3	19.885	ppb	0.70	2,470,782.82	4.943E-01	Mix	0.30	3
U	238	209	3	19.638	ppb	1.20	2,570,840.14	5.143E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,200,747.36	1.10	115.0	Analog	0.30	3
2	Sc	45	90,707.06	0.86	118.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,153,024.74	0.24	117.9	Analog	0.30	3
1	Ge	72	85,687.02	1.16	119.0	Pulse	0.30	3
2	Ge	72	69,029.83	1.29	116.2	Pulse	0.30	3
2	Rh	103	2,291,446.56	0.79	111.4	Analog	0.30	3
3	Rh	103	5,671,353.67	0.44	111.1	Analog	0.30	3
3	In	115	6,170,047.30	0.68	110.9	Analog	0.30	3
3	Tb	159	8,760,969.52	0.34	107.1	Analog	0.30	3
3	Bi	209	4,999,017.84	1.09	104.1	Analog	0.30	3

Quantitation Report

File Name	A0216067.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:10
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	235.97	21.11	1.872E-05	Pulse	0.30	3
Na	23	45	2	392.610	ppb	4.73	431,520.14	4.971E+00	Pulse	0.30	3
Mg	26	45	2	0.341	ppb	166.41	198.90	2.295E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	431.12	4.967E-03	Pulse	0.30	3
K	39	45	2	32.951	ppb	5.73	22,499.48	2.591E-01	Pulse	0.30	3
Ca	44	45	3	0.420	ppb	16.05	12,465.29	4.181E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	404.47	4.660E-03	Pulse	0.30	3
Cr	52	45	2	0.013	ppb	81.84	320.68	3.699E-03	Pulse	0.30	3
Mn	55	45	2	0.004	ppb	207.54	141.16	1.623E-03	Pulse	0.30	3
Fe	56	45	2	0.199	ppb	112.95	3,710.06	4.292E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	67.85	59.56	6.838E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	13.98	2.117E-04	Pulse	0.30	3
Cu	63	72	2	0.011	ppb	54.68	558.99	8.427E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	206.34	3.112E-03	Pulse	0.30	3
As	75	72	2	0.007	ppb	65.65	20.89	3.151E-04	Pulse	0.75	3
Se	78	72	1	0.004	ppb	478.46	7.78	9.438E-05	Pulse	0.30	3
Mo	95	103	2	0.125	ppb	9.19	696.71	3.159E-04	Pulse	0.30	3
Ag	107	103	3	0.360	ppb	12.52	19,459.70	3.588E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-70.23	-1.191E-05	Pulse	0.30	3
Sb	121	115	3	0.085	ppb	2.14	3,812.84	6.467E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	309.16	3.661E-05	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	18.42	1,864.64	3.845E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	864.34	1.782E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	7.72	737.49	1.521E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,127,882.73	0.54	108.0	Analog	0.30	3
2	Sc	45	86,865.80	2.10	113.1	Pulse	0.30	3
3	Sc	45	2,981,717.22	0.64	111.5	Analog	0.30	3
1	Ge	72	82,471.56	1.18	114.6	Pulse	0.30	3
2	Ge	72	66,278.49	1.61	111.6	Pulse	0.30	3
2	Rh	103	2,205,062.36	0.66	107.2	Analog	0.30	3
3	Rh	103	5,426,424.22	0.56	106.3	Analog	0.30	3
3	In	115	5,896,385.12	0.59	106.0	Analog	0.30	3
3	Tb	159	8,438,352.30	0.57	103.2	Analog	0.30	3
3	Bi	209	4,849,804.86	0.23	101.0	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

For Mo only

File Name	A0216068.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:16
Sample Name	N023091-001D,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	1.099E-05	Pulse	0.30	3
Na	23	45	2	36363.948	ppb	1.37	33,695,202.28	4.167E+02	Analog	0.30	3
Mg	26	45	2	1953.618	ppb	0.81	166,429.53	2.058E+00	Pulse	0.30	3
Al	27	45	2	90.123	ppb	1.06	15,389.12	1.903E-01	Pulse	0.30	3
K	39	45	2	2883.701	ppb	1.07	967,918.04	1.197E+01	Pulse	0.30	3
Ca	44	45	3	6777.999	ppb	0.68	9,280,489.51	3.315E+00	Analog	0.30	3
V	51	45	2	2.173	ppb	3.91	11,255.35	1.393E-01	Pulse	0.30	3
Cr	52	45	2	0.641	ppb	5.02	4,476.12	5.537E-02	Pulse	0.30	3
Mn	55	45	2	8.847	ppb	0.57	31,882.32	3.942E-01	Pulse	0.30	3
Fe	56	45	2	209.543	ppb	0.64	1,219,238.03	1.508E+01	Mix	0.30	3
Co	59	45	2	0.118	ppb	7.33	1,575.42	1.950E-02	Pulse	0.30	3
Ni	60	72	2	0.579	ppb	7.03	1,940.05	3.164E-02	Pulse	0.30	3
Cu	63	72	2	0.741	ppb	2.18	7,211.71	1.176E-01	Pulse	0.30	3
Zn	66	72	2	74.126	ppb	1.06	91,900.34	1.498E+00	Pulse	0.30	3
As	75	72	2	1.489	ppb	4.91	1,060.89	1.729E-02	Pulse	0.75	3
Se	78	72	1	2.844	ppb	5.18	1,061.19	1.393E-02	Pulse	0.30	3
Mo	95	103	2	77.821	ppb	1.58	341,523.18	1.740E-01	Pulse	0.30	3
Ag	107	103	3	0.014	ppb	25.42	2,469.15	5.143E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6,412.44	-1.190E-03	Pulse	0.30	3
Sb	121	115	3	0.730	ppb	1.39	24,019.15	4.459E-03	Pulse	0.30	3
Ba	137	159	3	6.285	ppb	0.28	86,763.75	1.100E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	132.96	1,224.55	2.860E-04	Pulse	0.30	3
Pb	208	209	3	0.221	ppb	2.49	24,296.24	5.676E-03	Pulse	0.30	3
U	238	209	3	1.451	ppb	0.41	163,002.67	3.808E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,010,397.36	0.77	96.8	Analog	0.30	3
2	Sc	45	80,864.86	2.00	105.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,799,431.59	0.49	104.7	Analog	0.30	3
1	Ge	72	76,174.70	0.71	105.8	Pulse	0.30	3
2	Ge	72	61,358.50	1.79	103.3	Pulse	0.30	3
2	Rh	103	1,963,013.46	0.72	95.4	Analog	0.30	3
3	Rh	103	4,803,063.16	0.89	94.1	Analog	0.30	3
3	In	115	5,387,151.94	0.26	96.9	Analog	0.30	3
3	Tb	159	7,886,850.37	0.70	96.4	Analog	0.30	3
3	Bi	209	4,280,765.84	0.13	89.2	Analog	0.30	3

Quantitation Report

File Name	A0216069.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:21
Sample Name	N023091-001D-DUP,DUP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	44.08	34.45	3.487E-05	Pulse	0.30	3
Na	23	45	2	33928.721	ppb	1.65	31,021,636.48	3.889E+02	Analog	0.30	3
Mg	26	45	2	1825.059	ppb	2.11	153,396.42	1.923E+00	Pulse	0.30	3
Al	27	45	2	89.897	ppb	3.48	15,144.71	1.899E-01	Pulse	0.30	3
K	39	45	2	2692.179	ppb	1.85	892,197.48	1.118E+01	Pulse	0.30	3
Ca	44	45	3	6432.743	ppb	0.60	8,538,650.50	3.146E+00	Analog	0.30	3
V	51	45	2	1.998	ppb	1.37	10,253.59	1.285E-01	Pulse	0.30	3
Cr	52	45	2	0.618	ppb	5.11	4,263.02	5.345E-02	Pulse	0.30	3
Mn	55	45	2	8.450	ppb	1.29	30,046.30	3.766E-01	Pulse	0.30	3
Fe	56	45	2	199.626	ppb	1.76	1,146,047.86	1.437E+01	Mix	0.30	3
Co	59	45	2	0.108	ppb	1.08	1,437.78	1.802E-02	Pulse	0.30	3
Ni	60	72	2	0.499	ppb	1.46	1,655.14	2.733E-02	Pulse	0.30	3
Cu	63	72	2	0.750	ppb	2.49	7,199.09	1.189E-01	Pulse	0.30	3
Zn	66	72	2	69.536	ppb	0.36	85,107.99	1.405E+00	Pulse	0.30	3
As	75	72	2	1.392	ppb	2.94	980.03	1.618E-02	Pulse	0.75	3
Se	78	72	1	2.528	ppb	2.05	928.96	1.239E-02	Pulse	0.30	3
Mo	95	103	2	73.605	ppb	1.49	319,879.15	1.645E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,227.03	2.578E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-5,841.13	-1.088E-03	Pulse	0.30	3
Sb	121	115	3	0.661	ppb	1.03	21,756.84	4.052E-03	Pulse	0.30	3
Ba	137	159	3	5.847	ppb	0.73	81,340.18	1.024E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	966.74	2.229E-04	Pulse	0.30	3
Pb	208	209	3	0.208	ppb	0.30	23,290.89	5.370E-03	Pulse	0.30	3
U	238	209	3	1.360	ppb	0.53	154,876.68	3.571E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	989,611.29	1.44	94.8	Analog	0.30	3
2	Sc	45	79,788.07	1.71	103.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,713,774.99	0.68	101.5	Analog	0.30	3
1	Ge	72	74,978.01	1.11	104.1	Pulse	0.30	3
2	Ge	72	60,558.66	0.51	102.0	Pulse	0.30	3
2	Rh	103	1,944,114.10	0.60	94.5	Analog	0.30	3
3	Rh	103	4,760,024.93	0.44	93.2	Analog	0.30	3
3	In	115	5,368,862.23	0.20	96.5	Analog	0.30	3
3	Tb	159	7,944,855.30	0.58	97.1	Analog	0.30	3
3	Bi	209	4,337,579.73	0.47	90.3	Analog	0.30	3

Quantitation Report

File Name	A0216070.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:27
Sample Name	N022952-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	6.945E-06	Pulse	0.30	3
Na	23	45	2	21628.019	ppb	1.53	19,260,651.10	2.481E+02	Analog	0.30	3
Mg	26	45	2	4307.345	ppb	2.73	352,109.44	4.536E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	374.91	4.828E-03	Pulse	0.30	3
K	39	45	2	864.078	ppb	1.47	285,259.14	3.674E+00	Pulse	0.30	3
Ca	44	45	3	24499.039	ppb	0.59	32,379,120.63	1.197E+01	Analog	0.30	3
V	51	45	2	0.997	ppb	6.08	5,185.49	6.681E-02	Pulse	0.30	3
Cr	52	45	2	73.580	ppb	1.64	469,829.17	6.051E+00	Pulse	0.30	3
Mn	55	45	2	0.083	ppb	22.67	397.10	5.127E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	2,090.31	2.690E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	7.77	9.943E-05	Pulse	0.30	3
Ni	60	72	2	0.058	ppb	24.24	199.48	3.400E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	254.48	4.330E-03	Pulse	0.30	3
Zn	66	72	2	0.052	ppb	118.44	250.76	4.270E-03	Pulse	0.30	3
As	75	72	2	0.180	ppb	17.03	135.39	2.302E-03	Pulse	0.75	3
Se	78	72	1	0.174	ppb	25.25	67.78	9.245E-04	Pulse	0.30	3
Mo	95	103	2	0.606	ppb	5.30	2,658.12	1.390E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,092.91	2.335E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,404.53	-8.270E-04	Pulse	0.30	3
Sb	121	115	3	0.018	ppb	28.09	1,352.34	2.541E-04	Pulse	0.30	3
Ba	137	159	3	6.343	ppb	0.43	87,491.42	1.110E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	591.15	1.374E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,356.44	-1.942E-03	Pulse	0.30	3
U	238	209	3	5.663	ppb	1.26	638,643.78	1.484E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	962,391.90	2.04	92.2	Analog	0.30	3
2	Sc	45	77,667.17	2.61	101.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,704,585.55	0.54	101.1	Analog	0.30	3
1	Ge	72	73,303.99	0.38	101.8	Pulse	0.30	3
2	Ge	72	58,757.35	1.42	98.9	Pulse	0.30	3
2	Rh	103	1,911,336.62	0.93	92.9	Analog	0.30	3
3	Rh	103	4,680,448.54	0.53	91.7	Analog	0.30	3
3	In	115	5,326,093.14	0.98	95.8	Analog	0.30	3
3	Tb	159	7,879,811.62	0.13	96.3	Analog	0.30	3
3	Bi	209	4,304,344.94	1.10	89.7	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0216071.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:32
Sample Name	N022952-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	5.939E-06	Pulse	0.30	3
Na	23	45	2	23648.986	ppb	1.18	20,680,421.08	2.712E+02	Analog	0.30	3
Mg	26	45	2	3862.411	ppb	1.32	310,165.06	4.067E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	256.86	3.371E-03	Pulse	0.30	3
K	39	45	2	1580.263	ppb	1.17	504,542.92	6.616E+00	Pulse	0.30	3
Ca	44	45	3	21610.163	ppb	0.84	28,531,370.13	1.056E+01	Analog	0.30	3
V	51	45	2	0.823	ppb	0.95	4,280.74	5.613E-02	Pulse	0.30	3
Cr	52	45	2	35.409	ppb	1.85	222,137.92	2.913E+00	Pulse	0.30	3
Mn	55	45	2	3.547	ppb	3.67	12,116.40	1.589E-01	Pulse	0.30	3
Fe	56	45	2	7.559	ppb	2.56	43,584.09	5.716E-01	Pulse	0.30	3
Co	59	45	2	0.320	ppb	5.67	3,980.30	5.222E-02	Pulse	0.30	3
Ni	60	72	2	18.011	ppb	1.38	56,903.46	9.774E-01	Pulse	0.30	3
Cu	63	72	2	0.126	ppb	10.34	1,491.01	2.562E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	141.38	2.429E-03	Pulse	0.30	3
As	75	72	2	0.404	ppb	2.07	283.08	4.863E-03	Pulse	0.75	3
Se	78	72	1	0.125	ppb	13.10	48.89	6.854E-04	Pulse	0.30	3
Mo	95	103	2	0.413	ppb	1.99	1,803.52	9.590E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	584.32	1.260E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-4,755.14	-9.064E-04	Pulse	0.30	3
Sb	121	115	3	0.002	ppb	94.67	820.06	1.563E-04	Pulse	0.30	3
Ba	137	159	3	6.681	ppb	0.58	91,261.93	1.169E-02	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	497.80	1.170E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,109.24	-2.377E-03	Pulse	0.30	3
U	238	209	3	7.499	ppb	0.74	835,401.99	1.965E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	934,601.90	0.59	89.5	Analog	0.30	3
2	Sc	45	76,271.00	2.14	99.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,701,721.45	0.82	101.0	Analog	0.30	3
1	Ge	72	71,403.30	1.26	99.2	Pulse	0.30	3
2	Ge	72	58,223.36	1.20	98.0	Pulse	0.30	3
2	Rh	103	1,880,721.87	0.81	91.4	Analog	0.30	3
3	Rh	103	4,639,235.24	1.11	90.8	Analog	0.30	3
3	In	115	5,246,094.41	0.30	94.3	Analog	0.30	3
3	Tb	159	7,805,464.95	0.65	95.4	Analog	0.30	3
3	Bi	209	4,252,489.90	0.91	88.6	Analog	0.30	3

Quantitation Report

File Name	A0216072.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:38
Sample Name	N022985-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	0.00	0.000E+00	Pulse	0.30	3
Na	23	45	2	441830.535	ppb	0.50	367,017,976.75	5.058E+03	Analog	0.30	3
Mg	26	45	2	1296.173	ppb	1.08	99,126.47	1.366E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	219.02	3.022E-03	Pulse	0.30	3
K	39	45	2	3444.020	ppb	0.14	1,035,709.72	1.427E+01	Pulse	0.30	3
Ca	44	45	3	19345.123	ppb	0.45	23,837,809.09	9.454E+00	Analog	0.30	3
V	51	45	2	1.248	ppb	3.52	5,967.99	8.227E-02	Pulse	0.30	3
Cr	52	45	2	3.419	ppb	3.12	20,580.86	2.837E-01	Pulse	0.30	3
Mn	55	45	2	0.945	ppb	3.68	3,148.01	4.340E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-26,578.22	-3.663E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-365.28	-5.035E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-281.26	-5.413E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-7,678.50	-1.479E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-530.90	-1.022E-02	Pulse	0.30	3
As	75	72	2	1.049	ppb	7.90	636.17	1.225E-02	Pulse	0.75	3
Se	78	72	1	0.010	ppb	129.57	7.78	1.245E-04	Pulse	0.30	3
Mo	95	103	2	15.019	ppb	1.23	54,329.59	3.360E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	462.09	1.152E-04	Pulse	0.30	3
Cd	111	115	3	0.010	ppb	11.53	96.02	2.060E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	524.48	1.125E-04	Pulse	0.30	3
Ba	137	159	3	3.492	ppb	0.76	43,182.50	6.134E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	881.17	2.532E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,014.21	-5.789E-04	Pulse	0.30	3
U	238	209	3	0.304	ppb	1.83	28,036.58	8.057E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	847,134.16	2.53	81.1	Analog	0.30	3
2	Sc	45	72,563.99	1.92	94.5	Pulse	0.30	3
3	Sc	45	2,521,351.44	0.62	94.3	Analog	0.30	3
1	Ge	72	62,494.69	0.94	86.8	Pulse	0.30	3
2	Ge	72	51,931.45	1.09	87.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,616,712.58	1.31	78.6	Analog	0.30	3
3	Rh	103	4,007,154.52	0.60	78.5	Analog	0.30	3
3	In	115	4,660,389.24	0.19	83.8	Analog	0.30	3
3	Tb	159	7,040,161.70	0.84	86.1	Analog	0.30	3
3	Bi	209	3,479,840.51	0.70	72.5	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0216073.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:44
Sample Name	N022985-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	8.130E-06	Pulse	0.30	3
Na	23	45	2	94080.302	ppb	0.68	81,782,697.67	1.077E+03	Analog	0.30	3
Mg	26	45	2	274.636	ppb	2.45	22,088.56	2.910E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	214.47	2.826E-03	Pulse	0.30	3
K	39	45	2	733.566	ppb	0.22	238,170.12	3.138E+00	Pulse	0.30	3
Ca	44	45	3	3963.767	ppb	0.31	5,093,451.94	1.940E+00	Analog	0.30	3
V	51	45	2	0.239	ppb	13.72	1,530.14	2.017E-02	Pulse	0.30	3
Cr	52	45	2	0.717	ppb	5.51	4,674.41	6.158E-02	Pulse	0.30	3
Mn	55	45	2	0.206	ppb	2.86	805.31	1.061E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,517.79	-5.952E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-72.75	-9.587E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-58.53	-1.007E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,336.61	-2.309E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-14.55	-2.560E-04	Pulse	0.30	3
As	75	72	2	0.214	ppb	13.17	155.93	2.689E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	1.11	1.566E-05	Pulse	0.30	3
Mo	95	103	2	2.959	ppb	2.31	12,299.66	6.650E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	888.44	1.963E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-18,330.76	-3.586E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	347.80	6.805E-05	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-11,095.26	-1.439E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	502.25	1.231E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-35,013.33	-8.583E-03	Pulse	0.30	3
U	238	209	3	0.056	ppb	4.21	6,354.15	1.558E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	954,490.23	1.17	91.4	Analog	0.30	3
2	Sc	45	75,908.84	0.97	98.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,625,013.56	0.17	98.1	Analog	0.30	3
1	Ge	72	71,199.92	0.40	98.9	Pulse	0.30	3
2	Ge	72	57,930.18	1.70	97.5	Pulse	0.30	3
2	Rh	103	1,849,624.92	0.18	89.9	Analog	0.30	3
3	Rh	103	4,525,960.77	0.39	88.6	Analog	0.30	3
3	In	115	5,111,609.65	0.66	91.9	Analog	0.30	3
3	Tb	159	7,712,978.29	0.37	94.3	Analog	0.30	3
3	Bi	209	4,079,575.39	0.42	85.0	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0216074.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:49
Sample Name	N022985-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	9.462E-06	Pulse	0.30	3
Na	23	45	2	679699.455	ppb	0.73	559,881,342.77	7.781E+03	Analog	0.30	3
Mg	26	45	2	1972.813	ppb	0.93	149,539.46	2.078E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	317.32	4.416E-03	Pulse	0.30	3
K	39	45	2	5823.008	ppb	1.26	1,730,314.84	2.405E+01	Analog	0.30	3
Ca	44	45	3	25427.123	ppb	0.68	31,981,852.02	1.243E+01	Analog	0.30	3
V	51	45	2	0.243	ppb	5.04	1,466.80	2.038E-02	Pulse	0.30	3
Cr	52	45	2	8.889	ppb	0.85	52,768.94	7.333E-01	Pulse	0.30	3
Mn	55	45	2	5.313	ppb	0.93	17,079.22	2.373E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-40,946.44	-5.691E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-439.20	-6.109E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-294.84	-5.867E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-11,133.10	-2.217E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,451.41	-2.890E-02	Pulse	0.30	3
As	75	72	2	0.246	ppb	17.24	152.89	3.052E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	4.44	7.592E-05	Pulse	0.30	3
Mo	95	103	2	10.473	ppb	1.27	35,784.35	2.344E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-561.07	-1.432E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	2.53	5.354E-07	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	505.59	1.112E-04	Pulse	0.30	3
Ba	137	159	3	3.566	ppb	0.69	42,506.54	6.262E-03	Pulse	0.30	3
Tl	205	209	3	0.074	ppb	0.01	5,271.15	1.624E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,476.43	-1.379E-03	Pulse	0.30	3
U	238	209	3	0.685	ppb	1.03	58,510.13	1.802E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	825,711.40	0.79	79.1	Analog	0.30	3
2	Sc	45	71,956.02	1.90	93.7	Pulse	0.30	3
3	Sc	45	2,573,947.55	1.04	96.2	Analog	0.30	3
1	Ge	72	59,065.41	1.36	82.0	Pulse	0.30	3
2	Ge	72	50,215.92	2.24	84.6	Pulse	0.30	3

2/17/2017

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,526,344.34	1.32	74.2	Analog	0.30	3
3	Rh	103	3,921,148.90	1.06	76.8	Analog	0.30	3
3	In	115	4,545,676.71	1.29	81.7	Analog	0.30	3
3	Tb	159	6,788,374.97	0.82	83.0	Analog	0.30	3
3	Bi	209	3,246,359.64	1.01	67.6	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0216075.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 15:55
Sample Name	N022985-003B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	1.11	1.161E-06	Pulse	0.30	3
Na	23	45	2	138200.937	ppb	0.19	127,134,842.55	1.582E+03	Analog	0.30	3
Mg	26	45	2	405.793	ppb	0.50	34,470.66	4.291E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	236.57	2.945E-03	Pulse	0.30	3
K	39	45	2	1194.450	ppb	0.11	404,192.79	5.031E+00	Pulse	0.30	3
Ca	44	45	3	5229.223	ppb	0.19	6,880,627.26	2.559E+00	Analog	0.30	3
V	51	45	2	0.025	ppb	39.20	558.93	6.959E-03	Pulse	0.30	3
Cr	52	45	2	1.870	ppb	1.59	12,562.81	1.564E-01	Pulse	0.30	3
Mn	55	45	2	1.121	ppb	1.85	4,116.09	5.123E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-7,635.54	-9.504E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-102.45	-1.275E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2.07	-3.896E-05	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,697.08	-2.878E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-183.22	-3.110E-03	Pulse	0.30	3
As	75	72	2	0.039	ppb	29.17	40.79	6.904E-04	Pulse	0.75	3
Se	78	72	1	0.013	ppb	225.16	10.00	1.384E-04	Pulse	0.30	3
Mo	95	103	2	2.060	ppb	1.09	8,552.66	4.641E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	484.53	1.077E-04	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	191.20	18.62	3.629E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	363.35	7.100E-05	Pulse	0.30	3
Ba	137	159	3	0.700	ppb	1.08	9,647.85	1.268E-03	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	32.04	1,562.37	3.935E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	21.51	5.452E-06	Pulse	0.30	3
U	238	209	3	0.129	ppb	0.61	13,766.57	3.468E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	965,586.25	0.89	92.5	Analog	0.30	3
2	Sc	45	80,339.63	0.71	104.6	Pulse	0.30	3
3	Sc	45	2,689,269.54	0.23	100.5	Analog	0.30	3
1	Ge	72	72,279.57	0.14	100.4	Pulse	0.30	3
2	Ge	72	59,003.07	1.05	99.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,843,070.37	0.94	89.6	Analog	0.30	3
3	Rh	103	4,499,530.49	0.20	88.1	Analog	0.30	3
3	In	115	5,117,674.04	0.45	92.0	Analog	0.30	3
3	Tb	159	7,607,351.83	0.59	93.0	Analog	0.30	3
3	Bi	209	3,970,184.49	0.31	82.7	Analog	0.30	3

Quantitation Report

File Name	A0216076.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:00
Sample Name	N022985-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	4.44	5.215E-06	Pulse	0.30	3
Na	23	45	2	686434.239	ppb	1.97	583,961,133.52	7.858E+03	Analog	0.30	3
Mg	26	45	2	1998.411	ppb	1.20	156,480.71	2.105E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	189.96	2.555E-03	Pulse	0.30	3
K	39	45	2	5858.024	ppb	1.16	1,797,985.27	2.419E+01	Analog	0.30	3
Ca	44	45	3	25435.424	ppb	0.62	33,032,549.23	1.243E+01	Analog	0.30	3
V	51	45	2	0.220	ppb	4.28	1,412.35	1.899E-02	Pulse	0.30	3
Cr	52	45	2	8.944	ppb	1.18	54,838.99	7.378E-01	Pulse	0.30	3
Mn	55	45	2	5.312	ppb	2.85	17,632.19	2.373E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-41,020.34	-5.520E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-470.53	-6.325E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-432.16	-8.425E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-13,165.59	-2.567E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,621.88	-3.162E-02	Pulse	0.30	3
As	75	72	2	0.270	ppb	5.28	171.09	3.337E-03	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	3.33	5.525E-05	Pulse	0.30	3
Mo	95	103	2	10.644	ppb	0.69	36,878.88	2.383E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-824.22	-2.063E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	7.81	1.687E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	431.14	9.358E-05	Pulse	0.30	3
Ba	137	159	3	3.512	ppb	0.63	42,588.32	6.169E-03	Pulse	0.30	3
Tl	205	209	3	0.071	ppb	0.27	5,129.98	1.565E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,663.09	-1.422E-03	Pulse	0.30	3
U	238	209	3	0.696	ppb	1.27	60,052.63	1.832E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	860,982.00	1.39	82.5	Analog	0.30	3
2	Sc	45	74,340.98	2.92	96.8	Pulse	0.30	3
3	Sc	45	2,657,692.25	1.17	99.4	Analog	0.30	3
1	Ge	72	60,269.83	0.48	83.7	Pulse	0.30	3
2	Ge	72	51,293.83	1.16	86.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,547,931.14	1.92	75.2	Analog	0.30	3
3	Rh	103	3,998,291.36	1.02	78.3	Analog	0.30	3
3	In	115	4,609,485.00	1.07	82.9	Analog	0.30	3
3	Tb	159	6,903,870.66	0.82	84.4	Analog	0.30	3
3	Bi	209	3,278,264.08	0.52	68.3	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0216077.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:06
Sample Name	N022985-004B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	3.33	3.296E-06	Pulse	0.30	3
Na	23	45	2	134942.336	ppb	1.94	124,657,010.36	1.545E+03	Analog	0.30	3
Mg	26	45	2	395.870	ppb	2.14	33,773.71	4.186E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	188.86	2.343E-03	Pulse	0.30	3
K	39	45	2	1157.867	ppb	1.62	393,776.15	4.881E+00	Pulse	0.30	3
Ca	44	45	3	5015.623	ppb	0.31	6,773,587.12	2.454E+00	Analog	0.30	3
V	51	45	2	0.025	ppb	52.91	562.26	6.965E-03	Pulse	0.30	3
Cr	52	45	2	1.704	ppb	1.78	11,521.16	1.427E-01	Pulse	0.30	3
Mn	55	45	2	1.036	ppb	2.00	3,828.29	4.745E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-6,503.04	-8.059E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-92.06	-1.144E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-60.54	-1.019E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,260.24	-3.805E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-138.95	-2.340E-03	Pulse	0.30	3
As	75	72	2	0.055	ppb	18.93	51.45	8.664E-04	Pulse	0.75	3
Se	78	72	1	0.006	ppb	235.26	7.78	1.063E-04	Pulse	0.30	3
Mo	95	103	2	1.890	ppb	1.71	7,963.42	4.259E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	357.55	7.791E-05	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	58.89	15.66	3.037E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	320.02	6.200E-05	Pulse	0.30	3
Ba	137	159	3	0.685	ppb	1.35	9,556.72	1.242E-03	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	22.91	1,500.14	3.718E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8.99	-2.200E-06	Pulse	0.30	3
U	238	209	3	0.123	ppb	0.29	13,362.09	3.311E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,007,679.87	0.80	96.5	Analog	0.30	3
2	Sc	45	80,695.71	2.08	105.1	Pulse	0.30	3
3	Sc	45	2,760,018.64	0.31	103.2	Analog	0.30	3
1	Ge	72	73,191.26	1.15	101.7	Pulse	0.30	3
2	Ge	72	59,410.00	0.46	100.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,869,734.30	0.46	90.9	Analog	0.30	3
3	Rh	103	4,590,094.69	0.21	89.9	Analog	0.30	3
3	In	115	5,160,601.35	0.41	92.8	Analog	0.30	3
3	Tb	159	7,695,664.75	0.38	94.1	Analog	0.30	3
3	Bi	209	4,035,372.61	0.24	84.0	Analog	0.30	3

Quantitation Report

File Name	A0216078.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:11
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.631	ppb	1.42	123,467.92	1.147E-01	Pulse	0.30	3
Na	23	45	2	416.994	ppb	3.85	449,672.72	5.250E+00	Pulse	0.30	3
Mg	26	45	2	216.994	ppb	2.49	19,733.36	2.303E-01	Pulse	0.30	3
Al	27	45	2	23.119	ppb	0.87	4,506.60	5.258E-02	Pulse	0.30	3
K	39	45	2	225.364	ppb	1.72	89,935.44	1.050E+00	Pulse	0.30	3
Ca	44	45	3	217.499	ppb	0.27	312,968.64	1.102E-01	Pulse	0.30	3
V	51	45	2	19.883	ppb	1.64	105,376.81	1.230E+00	Pulse	0.30	3
Cr	52	45	2	19.962	ppb	1.68	140,816.88	1.643E+00	Pulse	0.30	3
Mn	55	45	2	19.865	ppb	1.12	75,700.64	8.834E-01	Pulse	0.30	3
Fe	56	45	2	20.449	ppb	1.88	128,289.17	1.497E+00	Pulse	0.30	3
Co	59	45	2	19.598	ppb	1.82	271,604.48	3.170E+00	Pulse	0.30	3
Ni	60	72	2	20.264	ppb	0.67	72,214.33	1.100E+00	Pulse	0.30	3
Cu	63	72	2	20.110	ppb	0.11	197,884.37	3.013E+00	Pulse	0.30	3
Zn	66	72	2	20.263	ppb	1.12	27,041.87	4.118E-01	Pulse	0.30	3
As	75	72	2	19.989	ppb	1.57	15,047.94	2.292E-01	Pulse	0.75	3
Se	78	72	1	20.299	ppb	1.50	7,974.50	9.895E-02	Pulse	0.30	3
Mo	95	103	2	19.263	ppb	0.82	94,661.09	4.309E-02	Pulse	0.30	3
Ag	107	103	3	19.647	ppb	0.28	918,414.79	1.749E-01	Pulse	0.30	3
Cd	111	115	3	20.077	ppb	0.50	210,915.58	3.659E-02	Pulse	0.30	3
Sb	121	115	3	19.482	ppb	0.38	664,308.04	1.152E-01	Pulse	0.30	3
Ba	137	159	3	20.314	ppb	0.74	295,101.81	3.545E-02	Pulse	0.30	3
Tl	205	209	3	20.043	ppb	1.07	1,780,549.70	3.682E-01	Analog	0.30	3
Pb	208	209	3	19.718	ppb	0.58	2,370,135.15	4.901E-01	Pulse	0.30	3
U	238	209	3	19.682	ppb	0.36	2,492,682.56	5.155E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,076,919.40	1.12	103.1	Analog	0.30	3
2	Sc	45	85,703.28	2.33	111.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,839,309.06	0.36	106.2	Analog	0.30	3
1	Ge	72	80,582.45	0.82	111.9	Pulse	0.30	3
2	Ge	72	65,669.21	0.53	110.6	Pulse	0.30	3
2	Rh	103	2,196,823.00	0.39	106.8	Analog	0.30	3
3	Rh	103	5,250,473.64	0.13	102.8	Analog	0.30	3
3	In	115	5,764,694.06	0.16	103.7	Analog	0.30	3
3	Tb	159	8,324,400.57	0.71	101.8	Analog	0.30	3
3	Bi	209	4,835,785.28	0.18	100.7	Analog	0.30	3

Quantitation Report

File Name	A0216079.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:17
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	411.68	17.78	1.716E-05	Pulse	0.30	3
Na	23	45	2	157.407	ppb	7.88	185,745.41	2.278E+00	Pulse	0.30	3
Mg	26	45	2	0.076	ppb	253.86	164.45	2.017E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	385.56	4.725E-03	Pulse	0.30	3
K	39	45	2	15.449	ppb	13.33	15,266.47	1.872E-01	Pulse	0.30	3
Ca	44	45	3	0.690	ppb	40.46	11,840.32	4.313E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	405.58	4.972E-03	Pulse	0.30	3
Cr	52	45	2	0.011	ppb	56.20	292.04	3.584E-03	Pulse	0.30	3
Mn	55	45	2	0.005	ppb	250.82	136.96	1.686E-03	Pulse	0.30	3
Fe	56	45	2	0.065	ppb	35.25	2,718.56	3.331E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	32.03	3.941E-04	Pulse	0.30	3
Ni	60	72	2	0.003	ppb	121.64	24.23	3.780E-04	Pulse	0.30	3
Cu	63	72	2	0.011	ppb	38.15	541.66	8.466E-03	Pulse	0.30	3
Zn	66	72	2	0.043	ppb	138.49	261.53	4.080E-03	Pulse	0.30	3
As	75	72	2	0.008	ppb	76.23	20.89	3.267E-04	Pulse	0.75	3
Se	78	72	1	0.002	ppb	547.19	6.67	8.469E-05	Pulse	0.30	3
Mo	95	103	2	0.109	ppb	5.75	597.82	2.793E-04	Pulse	0.30	3
Ag	107	103	3	0.389	ppb	12.45	19,761.69	3.845E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-13.37	-2.391E-06	Pulse	0.30	3
Sb	121	115	3	0.092	ppb	5.48	3,853.97	6.877E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	378.54	4.620E-05	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	20.02	1,907.98	4.002E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	169.99	951.85	1.995E-04	Pulse	0.30	3
U	238	209	3	0.002	ppb	21.21	686.08	1.439E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,036,553.20	0.98	99.3	Analog	0.30	3
2	Sc	45	81,598.00	1.93	106.2	Pulse	0.30	3
3	Sc	45	2,745,422.39	0.26	102.6	Analog	0.30	3
1	Ge	72	78,879.58	0.69	109.6	Pulse	0.30	3
2	Ge	72	63,999.34	0.88	107.8	Pulse	0.30	3
2	Rh	103	2,140,860.61	0.20	104.0	Analog	0.30	3
3	Rh	103	5,142,341.10	0.68	100.7	Analog	0.30	3
3	In	115	5,604,474.87	0.23	100.8	Analog	0.30	3
3	Tb	159	8,192,832.03	0.26	100.2	Analog	0.30	3
3	Bi	209	4,770,067.08	1.07	99.4	Analog	0.30	3

Quantitation Report

File Name	A0216080.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:22
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.505	ppb	2.76	2,991.50	2.965E-03	Pulse	0.30	3
Na	23	45	2	132.871	ppb	6.30	158,465.86	1.997E+00	Pulse	0.30	3
Mg	26	45	2	1.379	ppb	22.42	268.90	3.388E-03	Pulse	0.30	3
Al	27	45	2	9.698	ppb	5.15	1,984.63	2.499E-02	Pulse	0.30	3
K	39	45	2	12.600	ppb	15.92	13,924.12	1.755E-01	Pulse	0.30	3
Ca	44	45	3	3.421	ppb	5.64	14,965.18	5.647E-03	Pulse	0.30	3
V	51	45	2	1.037	ppb	4.47	5,500.03	6.930E-02	Pulse	0.30	3
Cr	52	45	2	1.038	ppb	1.11	6,980.46	8.794E-02	Pulse	0.30	3
Mn	55	45	2	0.536	ppb	6.36	2,002.36	2.522E-02	Pulse	0.30	3
Fe	56	45	2	10.605	ppb	1.70	62,734.34	7.903E-01	Pulse	0.30	3
Co	59	45	2	0.505	ppb	1.86	6,523.61	8.218E-02	Pulse	0.30	3
Ni	60	72	2	0.994	ppb	3.92	3,352.50	5.415E-02	Pulse	0.30	3
Cu	63	72	2	1.108	ppb	2.14	10,668.26	1.724E-01	Pulse	0.30	3
Zn	66	72	2	10.816	ppb	0.79	13,697.77	2.213E-01	Pulse	0.30	3
As	75	72	2	0.084	ppb	12.92	74.22	1.198E-03	Pulse	0.75	3
Se	78	72	1	0.624	ppb	1.72	238.90	3.118E-03	Pulse	0.30	3
Mo	95	103	2	0.493	ppb	2.17	2,383.62	1.139E-03	Pulse	0.30	3
Ag	107	103	3	0.457	ppb	2.37	22,466.04	4.449E-03	Pulse	0.30	3
Cd	111	115	3	0.501	ppb	1.46	5,028.55	9.144E-04	Pulse	0.30	3
Sb	121	115	3	0.543	ppb	2.26	18,455.93	3.356E-03	Pulse	0.30	3
Ba	137	159	3	1.092	ppb	2.26	15,704.26	1.951E-03	Pulse	0.30	3
Tl	205	209	3	0.405	ppb	1.58	36,064.84	7.713E-03	Pulse	0.30	3
Pb	208	209	3	1.018	ppb	1.08	119,094.99	2.547E-02	Pulse	0.30	3
U	238	209	3	0.503	ppb	1.53	61,939.48	1.325E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,008,982.80	0.16	96.6	Analog	0.30	3
2	Sc	45	79,391.64	2.04	103.4	Pulse	0.30	3
3	Sc	45	2,650,264.16	0.19	99.1	Analog	0.30	3
1	Ge	72	76,627.67	0.73	106.4	Pulse	0.30	3
2	Ge	72	61,888.98	1.70	104.2	Pulse	0.30	3
2	Rh	103	2,093,373.88	0.44	101.7	Analog	0.30	3
3	Rh	103	5,049,894.99	0.28	98.9	Analog	0.30	3
3	In	115	5,499,476.34	0.24	98.9	Analog	0.30	3
3	Tb	159	8,050,488.49	0.07	98.4	Analog	0.30	3
3	Bi	209	4,675,242.33	0.83	97.4	Analog	0.30	3

Quantitation Report

File Name	A0216081.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:28
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	29.79	27.78	2.868E-05	Pulse	0.30	3
Na	23	45	2	98734.367	ppb	1.23	88,061,849.80	1.131E+03	Analog	0.30	3
Mg	26	45	2	98576.430	ppb	1.84	8,079,958.14	1.038E+02	Analog	0.30	3
Al	27	45	2	<0.000	ppb	---	13.11	1.582E-04	Pulse	0.30	3
K	39	45	2	101286.568	ppb	1.22	32,419,905.63	4.163E+02	Analog	0.30	3
Ca	44	45	3	95330.040	ppb	1.20	129,668,285.84	4.657E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	407.80	5.242E-03	Pulse	0.30	3
Cr	52	45	2	0.181	ppb	3.95	1,367.21	1.756E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-7,954.74	-1.022E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,813.79	-4.965E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-4.41	-6.032E-05	Pulse	0.30	3
Ni	60	72	2	0.348	ppb	8.39	1,056.27	1.914E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,199.86	-3.987E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-896.82	-1.627E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-2.90	-5.257E-05	Pulse	0.75	3
Se	78	72	1	<0.000	ppb	---	3.33	5.135E-05	Pulse	0.30	3
Mo	95	103	2	0.048	ppb	22.78	245.57	1.430E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-24,560.97	-5.590E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21,210.04	-4.261E-03	Pulse	0.30	3
Sb	121	115	3	0.011	ppb	11.80	1,034.53	2.079E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-80,038.53	-1.090E-02	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	6.06	1,512.36	4.284E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-119,650.54	-3.389E-02	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	-7,660.51	-2.170E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	969,082.35	0.56	92.8	Analog	0.30	3
2	Sc	45	77,902.68	3.31	101.4	Pulse	0.30	3
3	Sc	45	2,784,398.47	1.54	104.1	Analog	0.30	3
1	Ge	72	64,855.01	0.57	90.1	Pulse	0.30	3
2	Ge	72	55,152.88	1.55	92.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,719,829.99	1.90	83.6	Analog	0.30	3
3	Rh	103	4,393,402.40	0.64	86.0	Analog	0.30	3
3	In	115	4,977,158.04	0.75	89.5	Analog	0.30	3
3	Tb	159	7,340,177.67	0.69	89.7	Analog	0.30	3
3	Bi	209	3,530,822.55	0.97	73.5	Analog	0.30	3

Quantitation Report

File Name	A0216082.D
File Path	C:\ICPMH\1\DATA\170216A1.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/16/2017 16:33
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/16/2017 13:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	18.811	ppb	1.40	109,765.28	1.099E-01	Pulse	0.30	3
Na	23	45	2	96592.883	ppb	1.56	91,827,000.85	1.106E+03	Analog	0.30	3
Mg	26	45	2	96970.816	ppb	1.34	8,473,265.22	1.021E+02	Analog	0.30	3
Al	27	45	2	18.562	ppb	7.99	3,583.51	4.321E-02	Pulse	0.30	3
K	39	45	2	98004.934	ppb	1.94	33,432,280.89	4.028E+02	Analog	0.30	3
Ca	44	45	3	94404.772	ppb	0.37	134,009,519.11	4.612E+01	Analog	0.30	3
V	51	45	2	20.191	ppb	1.82	103,661.12	1.249E+00	Pulse	0.30	3
Cr	52	45	2	19.297	ppb	1.39	131,898.24	1.589E+00	Pulse	0.30	3
Mn	55	45	2	16.671	ppb	2.43	61,552.20	7.416E-01	Pulse	0.30	3
Fe	56	45	2	17.539	ppb	2.11	106,937.10	1.288E+00	Pulse	0.30	3
Co	59	45	2	18.203	ppb	1.11	244,447.98	2.945E+00	Pulse	0.30	3
Ni	60	72	2	20.207	ppb	1.31	63,146.59	1.097E+00	Pulse	0.30	3
Cu	63	72	2	18.129	ppb	1.52	156,479.53	2.717E+00	Pulse	0.30	3
Zn	66	72	2	16.841	ppb	3.20	19,738.28	3.428E-01	Pulse	0.30	3
As	75	72	2	19.674	ppb	1.55	12,989.73	2.256E-01	Pulse	0.75	3
Se	78	72	1	18.593	ppb	2.53	6,234.78	9.064E-02	Pulse	0.30	3
Mo	95	103	2	22.665	ppb	1.02	90,042.61	5.069E-02	Pulse	0.30	3
Ag	107	103	3	18.218	ppb	0.59	735,404.39	1.622E-01	Pulse	0.30	3
Cd	111	115	3	16.592	ppb	0.70	153,753.65	3.024E-02	Pulse	0.30	3
Sb	121	115	3	19.710	ppb	0.14	592,860.25	1.166E-01	Pulse	0.30	3
Ba	137	159	3	17.679	ppb	0.51	231,460.21	3.086E-02	Pulse	0.30	3
Tl	205	209	3	22.201	ppb	0.33	1,453,308.59	4.078E-01	Analog	0.30	3
Pb	208	209	3	20.070	ppb	0.52	1,777,800.37	4.989E-01	Pulse	0.30	3
U	238	209	3	22.823	ppb	0.94	2,129,977.47	5.977E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	999,150.91	1.76	95.7	Analog	0.30	3
2	Sc	45	83,036.14	2.96	108.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	2,905,534.92	0.47	108.6	Analog	0.30	3
1	Ge	72	68,784.42	1.01	95.5	Pulse	0.30	3
2	Ge	72	57,593.54	1.41	97.0	Pulse	0.30	3
2	Rh	103	1,776,247.40	1.66	86.3	Analog	0.30	3
3	Rh	103	4,533,309.10	0.55	88.8	Analog	0.30	3
3	In	115	5,085,174.90	0.67	91.4	Analog	0.30	3
3	Tb	159	7,500,466.55	0.48	91.7	Analog	0.30	3
3	Bi	209	3,563,703.24	0.53	74.2	Analog	0.30	3

RAW DATA

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

Nancy 2/21/2017

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N022985-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0219001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0219002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0219003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0219004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0219005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0219006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0219007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0219008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0219009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0219010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0219011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0219012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219016	LLICV,CCV1,1	2MWST- 170107G	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3101	A0219017	MB-61298,MBLK,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3102	A0219018	LCS-61298,LCS,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3103	A0219019	N023063-001B,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3104	A0219020	N023063-001B,SAMP,5		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3105	A0219021	N023063-001B-PS,PS,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3106	A0219022	N023063-001B-MS,MS,1		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3107	A0219023	N023063-001B-MSD,MSD,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3108	A0219024	N022985-001B,SAMP,5		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3109	A0219025	N022985-003B,SAMP,5		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3110	A0219026	N022985-004B,SAMP,5		1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219027	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219028	CCB1,CCB,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3201	A0219029	MB-61302,MBLK,1		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3202	A0219030	LCS-61302,LCS,1		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3203	A0219031	N023107-001C,SAMP,1		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3204	A0219032	N023107-001C,SAMP,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3205	A0219033	N023107-001C-PS,PS,1		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3206	A0219034	N023107-001C-MS,MS,1		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3207	A0219035	N023107-001C-MSD,MSD,1		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3208	A0219036	N023107-002C,SAMP,1		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3209	A0219037	N023107-003C,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3210	A0219038	N023107-004C,SAMP,1		1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219039	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219040	CCB2,CCB,1		1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3211	A0219041	N023137-001A,SAMP,1		1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3212	A0219042	N023137-002A,SAMP,1		1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3301	A0219043	N023137-003A,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3302	A0219044	N023137-004A,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3303	A0219045	N023137-005A,SAMP,1		1.000				
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3304	A0219046	N023137-006A,SAMP,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3305	A0219047	N023063-001B,SAMP,25		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3306	A0219048	N023063-001B-PS,PS,5		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3307	A0219049	N023063-001B-MS,MS,5		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3308	A0219050	N023063-001B-MSD,MSD,5		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219051	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219052	CCB3,CCB,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3309	A0219053	N022985-003B,SAMP,5		1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3310	A0219054	N023107-001C,SAMP,25		1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3311	A0219055	N023107-001C,SAMP,125		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3312	A0219056	N023107-001C-PS,PS,25		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3401	A0219057	N023107-001C-MS,MS,25		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3402	A0219058	N023107-001C-MSD,MSD,25		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3403	A0219059	N023107-002C,SAMP,10		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3404	A0219060	N023107-003C,SAMP,10		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3405	A0219061	N023107-004C,SAMP,5		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3406	A0219062	N023137-001A,SAMP,2		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219063	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219064	CCB4,CCB,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219065	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219066	ICSA2,ICSA,1	2MWST- 170107H	1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219067	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3407	A0219068	N023137-002A,SAMP,5		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3408	A0219069	N023137-003A,SAMP,5		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3409	A0219070	N023137-004A,SAMP,5		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0219071	MB-61257,MBLK,1		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0219072	LCS-61257,LCS,1		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0219073	N022998-001B,SAMP,1		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0219074	N022998-001B,SAMP,5		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0219075	N022998-001B,SAMP,25		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0219076	N022998-001B-PS,PS,1		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0219077	N022998-001B-PS,PS,5		1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219078	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219079	CCB5,CCB,1		1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0219080	N022998-001B-MS,MS,1		1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0219081	N022998-001B-MS,MS,5		1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0219082	N022998-001B-MSD,MSD,1		1.000				
83	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0219083	N022998-001B-MSD,MSD,5		1.000				
84	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0219084	N022998-002B,SAMP,1		1.000				
85	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0219085	N022998-002B,SAMP,5		1.000				
86	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0219086	N022998-003B,SAMP,1		1.000				
87	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0219087	N022998-003B,SAMP,5		1.000				
88	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0219088	N022998-004B,SAMP,1		1.000				
89	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0219089	N022998-004B,SAMP,5		1.000				
90	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219090	CCV6,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
91	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219091	CCB6,CCB,1		1.000				
92	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0219092	N023014-001B,SAMP,1		1.000				
93	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2207	A0219093	N023014-001B,SAMP,5		1.000				
94	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2208	A0219094	N023014-001B,SAMP,250		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2209	A0219095	N023014-002B,SAMP,1		1.000				
96	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2210	A0219096	N023014-002B,SAMP,5		1.000				
97	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2211	A0219097	N023014-002B,SAMP,250		1.000				
98	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2212	A0219098	N023014-003B,SAMP,1		1.000				
99	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2301	A0219099	N023014-003B,SAMP,5		1.000				
100	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2302	A0219100	N023014-004B,SAMP,1		1.000				
101	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2303	A0219101	N023014-004B,SAMP,5		1.000				
102	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219102	CCV7,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
103	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219103	CCB7,CCB,1		1.000				
104	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2304	A0219104	N023014-005B,SAMP,1		1.000				
105	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2305	A0219105	N023014-005B,SAMP,5		1.000				
106	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2306	A0219106	N023014-006B,SAMP,1		1.000				
107	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2307	A0219107	N023014-006B,SAMP,5		1.000				
108	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2308	A0219108	N023014-007B,SAMP,1		1.000				
109	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2309	A0219109	N023014-007B,SAMP,5		1.000				
110	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2310	A0219110	N023014-008B,SAMP,1		1.000				
111	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2311	A0219111	N023014-008B,SAMP,5		1.000				
112	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2312	A0219112	N023028-001B,SAMP,1		1.000				
113	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2401	A0219113	N023028-001B,SAMP,5		1.000				
114	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219114	CCV8,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
115	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219115	CCB8,CCB,1		1.000				
116	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219116	LLCCV2,CCV2,1	2MWST- 170107G	1.000				
117	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219117	ICSA3,ICSA,1	2MWST- 170107H	1.000				
118	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219118	ICSAB3,ICSAB,1	2MWST- 170107I	1.000				
119	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2402	A0219119	N023028-002B,SAMP,1		1.000				
120	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2403	A0219120	N023028-002B,SAMP,5		1.000				
121	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2404	A0219121	N023028-003B,SAMP,1		1.000				
122	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2405	A0219122	N023028-003B,SAMP,5		1.000				
123	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2406	A0219123	N023029-001B,SAMP,1		1.000				
124	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2407	A0219124	N023029-001B,SAMP,5		1.000				
125	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2408	A0219125	N023029-002B,SAMP,1		1.000				
126	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2409	A0219126	N023029-002B,SAMP,5		1.000				
127	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2410	A0219127	N023029-003B,SAMP,1		1.000				
128	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2411	A0219128	N023029-003B,SAMP,5		1.000				
129	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219129	CCV9,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
130	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219130	CCB9,CCB,1		1.000				
131	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2412	A0219131	N023029-004B,SAMP,1		1.000				
132	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	A0219132	N023029-004B,SAMP,5		1.000				
133	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2502	A0219133	N023029-005B,SAMP,1		1.000				
134	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2503	A0219134	N023029-005B,SAMP,5		1.000				
135	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219135	CCV10,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
136	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219136	CCB10,CCB,1		1.000				
137	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219137	LLCCV3,CCV2,1	2MWST- 170107G	1.000				
138	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219138	ICSA4,ICSA,1	2MWST- 170107H	1.000				
139	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219139	ICSAB4,ICSAB,1	2MWST- 170107I	1.000				

Quantitation Report

File Name	A0219002.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:06
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	20.00	1.142E-05	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	100,319.33	8.870E-01	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	94.45	8.369E-04	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	383.35	3.396E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	13,609.40	1.203E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	19,679.07	4.211E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	770.05	6.807E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	1,701.17	1.504E-02	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	382.39	3.378E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	2,163.24	1.914E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	27.67	2.439E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	261.00	2.930E-03	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	5,554.85	6.234E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	2,730.99	3.066E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	13.78	1.547E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	1.11	9.973E-06	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	24.44	7.897E-06	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	3,653.80	4.352E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	52.46	5.912E-06	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	2,519.20	2.843E-04	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	164.82	1.315E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,575.72	2.152E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	2,256.56	3.081E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	---	219.05	2.992E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,745,197.15	1.06	100.0	Analog	0.30	3
2	Sc	45	113,178.09	2.67	100.0	Pulse	0.30	3
3	Sc	45	4,673,438.68	0.48	100.0	Analog	0.30	3
1	Ge	72	110,413.98	1.14	100.0	Pulse	0.30	3

2	Ge	72	89,091.79	0.47	100.0	Pulse	0.30	3
2	Rh	103	3,080,409.78	1.47	100.0	Analog	0.30	3
3	Rh	103	8,395,890.78	0.41	100.0	Analog	0.30	3
3	In	115	8,862,188.68	0.65	100.0	Analog	0.30	3
3	Tb	159	12,541,647.73	1.07	100.0	Analog	0.30	3
3	Bi	209	7,325,168.78	0.44	100.0	Analog	0.30	3

Quantitation Report

FOR AS ONLY

File Name	A0219003.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:11
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.106	ppb	4.99	1,156.76	6.542E-04	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	96,141.90	8.275E-01	Pulse	0.30	3
Mg	26	45	2	1.232	ppb	32.15	262.23	2.250E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	301.11	2.595E-03	Pulse	0.30	3
K	39	45	2	1.987	ppb	59.15	14,878.39	1.281E-01	Pulse	0.30	3
Ca	44	45	3	6.198	ppb	7.90	34,202.31	7.209E-03	Pulse	0.30	3
V	51	45	2	0.103	ppb	14.78	1,563.48	1.346E-02	Pulse	0.30	3
Cr	52	45	2	0.093	ppb	20.47	2,702.45	2.328E-02	Pulse	0.30	3
Mn	55	45	2	0.136	ppb	14.46	1,089.80	9.380E-03	Pulse	0.30	3
Fe	56	45	2	0.358	ppb	8.96	5,283.22	4.542E-02	Pulse	0.30	3
Co	59	45	2	0.100	ppb	5.36	2,041.21	1.755E-02	Pulse	0.30	3
Ni	60	72	2	0.340	ppb	3.43	2,137.85	2.350E-02	Pulse	0.30	3
Cu	63	72	2	0.172	ppb	2.59	8,198.21	9.010E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,675.36	2.941E-02	Pulse	0.30	3
As	75	72	2	0.114	ppb	6.80	134.22	1.475E-03	Pulse	0.75	3
Se	78	72	1	0.113	ppb	29.10	64.45	5.826E-04	Pulse	0.30	3
Mo	95	103	2	0.093	ppb	7.19	672.27	2.146E-04	Pulse	0.30	3
Ag	107	103	3	0.028	ppb	13.13	5,746.21	6.819E-04	Pulse	0.30	3
Cd	111	115	3	0.103	ppb	3.66	1,757.23	1.979E-04	Pulse	0.30	3
Sb	121	115	3	0.097	ppb	3.14	7,639.92	8.605E-04	Pulse	0.30	3
Ba	137	159	3	0.179	ppb	0.38	3,991.29	3.164E-04	Pulse	0.30	3
Tl	205	209	3	0.100	ppb	1.14	14,921.41	2.026E-03	Pulse	0.30	3
Pb	208	209	3	0.109	ppb	1.06	21,974.48	2.983E-03	Pulse	0.30	3
U	238	209	3	0.103	ppb	1.84	19,908.93	2.703E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,768,527.68	1.24	101.3	Analog	0.30	3
2	Sc	45	116,237.50	2.46	102.7	Pulse	0.30	3
3	Sc	45	4,744,825.90	0.34	101.5	Analog	0.30	3
1	Ge	72	110,623.51	0.67	100.2	Pulse	0.30	3

2	Ge	72	90,988.56	1.03	102.1	Pulse	0.30	3
2	Rh	103	3,133,695.89	0.78	101.7	Analog	0.30	3
3	Rh	103	8,427,348.07	0.23	100.4	Analog	0.30	3
3	In	115	8,878,910.48	0.26	100.2	Analog	0.30	3
3	Tb	159	12,613,397.45	0.43	100.6	Analog	0.30	3
3	Bi	209	7,365,862.53	0.08	100.6	Analog	0.30	3

Quantitation Report

File Name	A0219004.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:17
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.494	ppb	4.61	5,254.36	3.014E-03	Pulse	0.30	3
Na	23	45	2	9.151	ppb	7.27	114,787.42	1.002E+00	Pulse	0.30	3
Mg	26	45	2	6.869	ppb	7.36	1,000.08	8.717E-03	Pulse	0.30	3
Al	27	45	2	0.073	ppb	203.15	406.60	3.546E-03	Pulse	0.30	3
K	39	45	2	5.609	ppb	9.44	16,298.60	1.423E-01	Pulse	0.30	3
Ca	44	45	3	24.364	ppb	2.49	74,258.27	1.599E-02	Pulse	0.30	3
V	51	45	2	0.525	ppb	4.67	4,653.09	4.063E-02	Pulse	0.30	3
Cr	52	45	2	0.498	ppb	2.29	6,757.05	5.898E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	5.75	3,053.86	2.667E-02	Pulse	0.30	3
Fe	56	45	2	2.531	ppb	22.77	23,573.75	2.050E-01	Pulse	0.30	3
Co	59	45	2	0.529	ppb	2.25	10,504.68	9.169E-02	Pulse	0.30	3
Ni	60	72	2	0.536	ppb	5.39	3,204.59	3.533E-02	Pulse	0.30	3
Cu	63	72	2	0.557	ppb	5.04	13,805.67	1.523E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,728.44	3.009E-02	Pulse	0.30	3
As	75	72	2	0.489	ppb	4.77	528.91	5.833E-03	Pulse	0.75	3
Se	78	72	1	0.446	ppb	33.30	250.01	2.267E-03	Pulse	0.30	3
Mo	95	103	2	0.490	ppb	7.37	3,440.52	1.102E-03	Pulse	0.30	3
Ag	107	103	3	0.394	ppb	5.64	33,077.96	3.957E-03	Pulse	0.30	3
Cd	111	115	3	0.525	ppb	0.78	8,646.27	9.824E-04	Pulse	0.30	3
Sb	121	115	3	0.507	ppb	1.50	29,127.89	3.310E-03	Pulse	0.30	3
Ba	137	159	3	0.601	ppb	2.94	12,899.76	1.029E-03	Pulse	0.30	3
Tl	205	209	3	0.522	ppb	0.71	71,015.11	9.665E-03	Pulse	0.30	3
Pb	208	209	3	0.533	ppb	1.24	98,242.79	1.337E-02	Pulse	0.30	3
U	238	209	3	0.512	ppb	0.88	98,017.13	1.334E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,743,461.77	0.40	99.9	Analog	0.30	3
2	Sc	45	114,588.58	2.69	101.2	Pulse	0.30	3
3	Sc	45	4,642,707.95	0.55	99.3	Analog	0.30	3
1	Ge	72	110,306.75	0.83	99.9	Pulse	0.30	3

2	Ge	72	90,684.86	0.61	101.8	Pulse	0.30	3
2	Rh	103	3,121,173.56	1.42	101.3	Analog	0.30	3
3	Rh	103	8,361,108.14	0.61	99.6	Analog	0.30	3
3	In	115	8,801,059.80	0.05	99.3	Analog	0.30	3
3	Tb	159	12,541,196.06	0.42	100.0	Analog	0.30	3
3	Bi	209	7,347,368.57	0.26	100.3	Analog	0.30	3

Quantitation Report

File Name	A0219005.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:22
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	5.002	ppb	2.04	51,903.06	3.042E-02	Pulse	0.30	3
Na	23	45	2	43.373	ppb	5.73	162,792.83	1.430E+00	Pulse	0.30	3
Mg	26	45	2	51.382	ppb	3.54	6,803.91	5.978E-02	Pulse	0.30	3
Al	27	45	2	5.296	ppb	11.02	1,632.88	1.432E-02	Pulse	0.30	3
K	39	45	2	52.614	ppb	5.97	37,156.80	3.265E-01	Pulse	0.30	3
Ca	44	45	3	58.655	ppb	0.20	148,393.64	3.258E-02	Pulse	0.30	3
V	51	45	2	5.098	ppb	2.50	38,149.39	3.352E-01	Pulse	0.30	3
Cr	52	45	2	5.066	ppb	2.55	52,586.99	4.620E-01	Pulse	0.30	3
Mn	55	45	2	5.080	ppb	3.50	25,931.08	2.277E-01	Pulse	0.30	3
Fe	56	45	2	5.488	ppb	2.40	48,046.83	4.221E-01	Pulse	0.30	3
Co	59	45	2	5.197	ppb	1.51	102,352.11	8.991E-01	Pulse	0.30	3
Ni	60	72	2	5.148	ppb	2.69	28,141.63	3.144E-01	Pulse	0.30	3
Cu	63	72	2	5.394	ppb	1.04	83,503.46	9.328E-01	Pulse	0.30	3
Zn	66	72	2	4.838	ppb	6.09	11,956.46	1.336E-01	Pulse	0.30	3
As	75	72	2	5.076	ppb	3.25	5,294.71	5.914E-02	Pulse	0.75	3
Se	78	72	1	4.824	ppb	0.66	2,637.01	2.439E-02	Pulse	0.30	3
Mo	95	103	2	4.892	ppb	0.72	33,780.94	1.093E-02	Pulse	0.30	3
Ag	107	103	3	5.049	ppb	0.61	374,991.74	4.553E-02	Pulse	0.30	3
Cd	111	115	3	5.254	ppb	0.34	85,529.48	9.779E-03	Pulse	0.30	3
Sb	121	115	3	5.076	ppb	0.34	267,285.31	3.056E-02	Pulse	0.30	3
Ba	137	159	3	5.306	ppb	0.67	111,359.10	8.978E-03	Pulse	0.30	3
Tl	205	209	3	5.224	ppb	0.93	691,072.37	9.473E-02	Pulse	0.30	3
Pb	208	209	3	5.272	ppb	0.81	945,262.70	1.296E-01	Pulse	0.30	3
U	238	209	3	5.099	ppb	0.10	966,535.00	1.325E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,706,751.38	1.40	97.8	Analog	0.30	3
2	Sc	45	113,872.25	2.65	100.6	Pulse	0.30	3
3	Sc	45	4,554,689.20	0.61	97.5	Analog	0.30	3
1	Ge	72	108,093.94	1.49	97.9	Pulse	0.30	3

2	Ge	72	89,530.76	1.78	100.5	Pulse	0.30	3
2	Rh	103	3,091,363.26	0.66	100.4	Analog	0.30	3
3	Rh	103	8,236,314.88	0.10	98.1	Analog	0.30	3
3	In	115	8,746,631.15	0.21	98.7	Analog	0.30	3
3	Tb	159	12,403,571.48	1.14	98.9	Analog	0.30	3
3	Bi	209	7,295,656.56	0.73	99.6	Analog	0.30	3

Quantitation Report

File Name	A0219006.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:28
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.911	ppb	0.83	101,127.25	6.025E-02	Pulse	0.30	3
Na	23	45	2	94.867	ppb	4.40	231,787.62	2.075E+00	Pulse	0.30	3
Mg	26	45	2	103.700	ppb	3.77	13,382.52	1.198E-01	Pulse	0.30	3
Al	27	45	2	10.009	ppb	1.59	2,687.89	2.405E-02	Pulse	0.30	3
K	39	45	2	104.299	ppb	6.61	59,122.46	5.291E-01	Pulse	0.30	3
Ca	44	45	3	111.943	ppb	5.79	259,019.59	5.835E-02	Pulse	0.30	3
V	51	45	2	10.188	ppb	1.67	74,070.37	6.630E-01	Pulse	0.30	3
Cr	52	45	2	10.240	ppb	2.07	102,612.20	9.185E-01	Pulse	0.30	3
Mn	55	45	2	10.146	ppb	1.70	50,434.92	4.514E-01	Pulse	0.30	3
Fe	56	45	2	10.591	ppb	1.56	89,028.62	7.968E-01	Pulse	0.30	3
Co	59	45	2	10.391	ppb	2.13	200,788.67	1.797E+00	Pulse	0.30	3
Ni	60	72	2	10.197	ppb	0.99	54,296.07	6.199E-01	Pulse	0.30	3
Cu	63	72	2	10.599	ppb	0.59	155,262.33	1.773E+00	Pulse	0.30	3
Zn	66	72	2	9.553	ppb	2.42	20,486.30	2.339E-01	Pulse	0.30	3
As	75	72	2	10.066	ppb	0.73	10,259.33	1.171E-01	Pulse	0.75	3
Se	78	72	1	10.023	ppb	3.87	5,404.46	5.068E-02	Pulse	0.30	3
Mo	95	103	2	9.795	ppb	2.59	66,955.02	2.187E-02	Pulse	0.30	3
Ag	107	103	3	10.287	ppb	0.83	749,564.07	9.232E-02	Pulse	0.30	3
Cd	111	115	3	10.448	ppb	0.75	167,578.50	1.944E-02	Pulse	0.30	3
Sb	121	115	3	10.232	ppb	0.18	528,575.58	6.131E-02	Pulse	0.30	3
Ba	137	159	3	10.493	ppb	0.87	218,706.32	1.774E-02	Pulse	0.30	3
Tl	205	209	3	10.214	ppb	2.26	1,344,401.20	1.850E-01	Mix	0.30	3
Pb	208	209	3	10.484	ppb	0.71	1,869,999.38	2.573E-01	Pulse	0.30	3
U	238	209	3	9.932	ppb	1.15	1,874,772.70	2.580E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,678,406.05	0.72	96.2	Analog	0.30	3
2	Sc	45	111,751.86	2.53	98.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,438,519.07	0.16	95.0	Analog	0.30	3
1	Ge	72	106,640.18	0.58	96.6	Pulse	0.30	3
2	Ge	72	87,586.79	1.50	98.3	Pulse	0.30	3
2	Rh	103	3,061,200.75	1.16	99.4	Analog	0.30	3
3	Rh	103	8,119,612.31	0.33	96.7	Analog	0.30	3
3	In	115	8,620,994.48	0.58	97.3	Analog	0.30	3
3	Tb	159	12,325,315.79	0.25	98.3	Analog	0.30	3
3	Bi	209	7,266,841.35	0.54	99.2	Analog	0.30	3

Quantitation Report

File Name	A0219007.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:33
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.956	ppb	0.72	188,867.47	1.213E-01	Pulse	0.30	3
Na	23	45	2	187.547	ppb	1.23	359,026.92	3.236E+00	Pulse	0.30	3
Mg	26	45	2	199.134	ppb	0.55	25,441.17	2.293E-01	Pulse	0.30	3
Al	27	45	2	20.139	ppb	4.43	4,987.31	4.495E-02	Pulse	0.30	3
K	39	45	2	195.527	ppb	1.54	98,387.08	8.867E-01	Pulse	0.30	3
Ca	44	45	3	210.829	ppb	0.72	443,034.42	1.062E-01	Pulse	0.30	3
V	51	45	2	19.920	ppb	0.17	143,119.81	1.290E+00	Pulse	0.30	3
Cr	52	45	2	20.040	ppb	0.63	197,861.83	1.783E+00	Pulse	0.30	3
Mn	55	45	2	19.815	ppb	1.04	97,459.06	8.783E-01	Pulse	0.30	3
Fe	56	45	2	20.903	ppb	0.16	172,446.18	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.365	ppb	1.03	390,871.54	3.523E+00	Pulse	0.30	3
Ni	60	72	2	20.104	ppb	1.08	106,246.33	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.970	ppb	1.32	300,251.16	3.446E+00	Pulse	0.30	3
Zn	66	72	2	19.975	ppb	2.21	39,703.02	4.557E-01	Pulse	0.30	3
As	75	72	2	19.865	ppb	1.47	20,124.06	2.310E-01	Pulse	0.75	3
Se	78	72	1	19.989	ppb	0.48	10,995.32	1.011E-01	Pulse	0.30	3
Mo	95	103	2	20.722	ppb	0.95	140,715.23	4.627E-02	Pulse	0.30	3
Ag	107	103	3	20.370	ppb	0.32	1,424,841.62	1.824E-01	Analog	0.30	3
Cd	111	115	3	20.828	ppb	1.15	325,994.18	3.874E-02	Pulse	0.30	3
Sb	121	115	3	21.128	ppb	0.98	1,062,798.84	1.263E-01	Pulse	0.30	3
Ba	137	159	3	20.966	ppb	0.72	429,918.99	3.544E-02	Pulse	0.30	3
Tl	205	209	3	20.358	ppb	1.51	2,663,575.62	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.718	ppb	0.19	3,673,493.75	5.082E-01	Analog	0.30	3
U	238	209	3	19.993	ppb	0.62	3,753,705.00	5.193E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,556,934.53	1.12	89.2	Analog	0.30	3
2	Sc	45	110,961.69	0.29	98.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,172,590.56	0.83	89.3	Analog	0.30	3
1	Ge	72	108,806.34	1.25	98.5	Pulse	0.30	3
2	Ge	72	87,134.46	1.19	97.8	Pulse	0.30	3
2	Rh	103	3,041,671.31	1.20	98.7	Analog	0.30	3
3	Rh	103	7,812,911.62	0.16	93.1	Analog	0.30	3
3	In	115	8,414,551.72	0.63	94.9	Analog	0.30	3
3	Tb	159	12,131,089.54	0.53	96.7	Analog	0.30	3
3	Bi	209	7,227,840.80	0.37	98.7	Analog	0.30	3

Quantitation Report

File Name	A0219008.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:39
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	40.080	ppb	1.49	366,934.23	2.436E-01	Pulse	0.30	3
Na	23	45	2	388.863	ppb	1.46	624,929.90	5.757E+00	Pulse	0.30	3
Mg	26	45	2	398.728	ppb	0.69	49,748.85	4.583E-01	Pulse	0.30	3
Al	27	45	2	40.207	ppb	1.76	9,373.60	8.635E-02	Pulse	0.30	3
K	39	45	2	394.097	ppb	0.96	180,754.29	1.665E+00	Pulse	0.30	3
Ca	44	45	3	416.120	ppb	0.32	826,132.86	2.055E-01	Pulse	0.30	3
V	51	45	2	40.027	ppb	0.74	280,619.67	2.585E+00	Pulse	0.30	3
Cr	52	45	2	40.099	ppb	1.06	385,693.43	3.553E+00	Pulse	0.30	3
Mn	55	45	2	39.540	ppb	1.05	189,893.86	1.749E+00	Pulse	0.30	3
Fe	56	45	2	41.030	ppb	0.72	329,162.04	3.032E+00	Pulse	0.30	3
Co	59	45	2	40.788	ppb	1.11	765,868.23	7.055E+00	Pulse	0.30	3
Ni	60	72	2	40.819	ppb	0.89	208,279.54	2.473E+00	Pulse	0.30	3
Cu	63	72	2	42.423	ppb	0.50	581,842.58	6.908E+00	Pulse	0.30	3
Zn	66	72	2	40.822	ppb	0.86	75,747.18	8.993E-01	Pulse	0.30	3
As	75	72	2	40.276	ppb	0.72	39,431.14	4.682E-01	Pulse	0.75	3
Se	78	72	1	40.222	ppb	0.61	21,344.72	2.033E-01	Pulse	0.30	3
Mo	95	103	2	40.241	ppb	1.05	268,543.38	8.984E-02	Pulse	0.30	3
Ag	107	103	3	40.169	ppb	0.34	2,753,228.93	3.592E-01	Analog	0.30	3
Cd	111	115	3	41.386	ppb	0.25	632,111.40	7.698E-02	Pulse	0.30	3
Sb	121	115	3	40.201	ppb	0.52	1,971,351.86	2.401E-01	Analog	0.30	3
Ba	137	159	3	41.442	ppb	0.55	836,640.11	7.004E-02	Pulse	0.30	3
Tl	205	209	3	40.269	ppb	0.68	5,164,125.58	7.288E-01	Analog	0.30	3
Pb	208	209	3	40.683	ppb	0.47	7,069,833.78	9.977E-01	Analog	0.30	3
U	238	209	3	39.598	ppb	1.10	7,288,076.41	1.029E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,287.14	1.58	86.3	Analog	0.30	3
2	Sc	45	108,566.74	1.25	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,020,657.51	0.38	86.0	Analog	0.30	3
1	Ge	72	104,974.79	0.85	95.1	Pulse	0.30	3
2	Ge	72	84,230.67	1.02	94.5	Pulse	0.30	3
2	Rh	103	2,989,323.74	0.82	97.0	Analog	0.30	3
3	Rh	103	7,664,703.08	0.34	91.3	Analog	0.30	3
3	In	115	8,211,515.63	0.16	92.7	Analog	0.30	3
3	Tb	159	11,945,550.24	0.97	95.2	Analog	0.30	3
3	Bi	209	7,085,985.45	0.58	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219009.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:45
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	100.637	ppb	0.75	887,847.32	6.117E-01	Pulse	0.30	3
Na	23	45	2	1020.661	ppb	0.63	1,396,207.20	1.367E+01	Analog	0.30	3
Mg	26	45	2	1007.907	ppb	0.30	118,189.64	1.157E+00	Pulse	0.30	3
Al	27	45	2	100.770	ppb	0.79	21,583.91	2.113E-01	Pulse	0.30	3
K	39	45	2	998.022	ppb	1.09	411,854.20	4.032E+00	Pulse	0.30	3
Ca	44	45	3	1002.291	ppb	0.73	1,906,490.67	4.890E-01	Analog	0.30	3
V	51	45	2	101.779	ppb	0.41	670,305.59	6.562E+00	Pulse	0.30	3
Cr	52	45	2	101.948	ppb	0.34	920,291.55	9.010E+00	Pulse	0.30	3
Mn	55	45	2	100.296	ppb	0.41	452,690.94	4.432E+00	Pulse	0.30	3
Fe	56	45	2	103.740	ppb	0.75	780,044.46	7.637E+00	Pulse	0.30	3
Co	59	45	2	101.133	ppb	0.76	1,786,688.57	1.749E+01	Analog	0.30	3
Ni	60	72	2	100.278	ppb	0.46	493,314.73	6.071E+00	Pulse	0.30	3
Cu	63	72	2	101.511	ppb	1.25	1,336,212.93	1.644E+01	Analog	0.30	3
Zn	66	72	2	100.449	ppb	0.24	176,191.27	2.168E+00	Pulse	0.30	3
As	75	72	2	100.051	ppb	0.89	94,483.76	1.163E+00	Pulse	0.75	3
Se	78	72	1	101.449	ppb	1.00	50,753.59	5.129E-01	Pulse	0.30	3
Mo	95	103	2	99.792	ppb	0.99	639,336.34	2.228E-01	Pulse	0.30	3
Ag	107	103	3	99.828	ppb	0.43	6,648,899.94	8.920E-01	Analog	0.30	3
Cd	111	115	3	100.721	ppb	1.55	1,508,598.60	1.873E-01	Analog	0.30	3
Sb	121	115	3	99.343	ppb	0.48	4,774,093.50	5.928E-01	Analog	0.30	3
Ba	137	159	3	100.793	ppb	0.88	1,992,278.97	1.703E-01	Analog	0.30	3
Tl	205	209	3	100.162	ppb	0.40	12,666,801.06	1.812E+00	Analog	0.30	3
Pb	208	209	3	100.586	ppb	0.08	17,237,632.39	2.466E+00	Analog	0.30	3
U	238	209	3	99.470	ppb	0.51	18,057,696.94	2.584E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,418.58	0.74	83.2	Analog	0.30	3
2	Sc	45	102,144.37	0.68	90.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,898,961.33	0.70	83.4	Analog	0.30	3
1	Ge	72	98,972.09	1.27	89.6	Pulse	0.30	3
2	Ge	72	81,263.63	0.80	91.2	Pulse	0.30	3
2	Rh	103	2,869,889.96	0.36	93.2	Analog	0.30	3
3	Rh	103	7,453,587.60	0.46	88.8	Analog	0.30	3
3	In	115	8,053,039.16	0.22	90.9	Analog	0.30	3
3	Tb	159	11,696,657.88	0.43	93.3	Analog	0.30	3
3	Bi	209	6,989,187.05	0.19	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219010.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:50
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	199.674	ppb	1.05	1,726,287.14	1.214E+00	Analog	0.30	3
Na	23	45	2	1993.565	ppb	1.89	2,585,971.49	2.585E+01	Analog	0.30	3
Mg	26	45	2	1996.168	ppb	0.79	229,178.15	2.291E+00	Pulse	0.30	3
Al	27	45	2	199.552	ppb	2.36	41,520.23	4.151E-01	Pulse	0.30	3
K	39	45	2	2002.337	ppb	1.71	797,133.16	7.969E+00	Pulse	0.30	3
Ca	44	45	3	1993.734	ppb	0.40	3,698,899.18	9.685E-01	Analog	0.30	3
V	51	45	2	199.101	ppb	1.23	1,283,566.12	1.283E+01	Analog	0.30	3
Cr	52	45	2	198.988	ppb	1.11	1,757,874.53	1.757E+01	Analog	0.30	3
Mn	55	45	2	199.953	ppb	1.25	883,551.81	8.832E+00	Pulse	0.30	3
Fe	56	45	2	197.792	ppb	1.78	1,454,822.35	1.454E+01	Analog	0.30	3
Co	59	45	2	199.215	ppb	1.31	3,446,875.95	3.446E+01	Analog	0.30	3
Ni	60	72	2	199.673	ppb	0.56	963,160.41	1.208E+01	Pulse	0.30	3
Cu	63	72	2	198.623	ppb	0.67	2,559,392.17	3.211E+01	Analog	0.30	3
Zn	66	72	2	199.642	ppb	0.66	341,022.54	4.279E+00	Pulse	0.30	3
As	75	72	2	199.927	ppb	0.59	185,164.06	2.323E+00	Pulse	0.75	3
Se	78	72	1	199.236	ppb	0.51	97,318.62	1.007E+00	Pulse	0.30	3
Mo	95	103	2	199.996	ppb	0.63	1,257,668.74	4.465E-01	Pulse	0.30	3
Ag	107	103	3	198.298	ppb	0.89	12,915,944.29	1.772E+00	Analog	0.30	3
Cd	111	115	3	199.251	ppb	0.52	2,934,552.14	3.706E-01	Analog	0.30	3
Sb	121	115	3	200.162	ppb	0.31	9,456,260.00	1.194E+00	Analog	0.30	3
Ba	137	159	3	199.186	ppb	0.32	3,916,026.40	3.366E-01	Analog	0.30	3
Tl	205	209	3	199.813	ppb	0.39	24,772,062.13	3.615E+00	Analog	0.30	3
Pb	208	209	3	199.467	ppb	0.43	33,510,547.61	4.891E+00	Analog	0.30	3
U	238	209	3	200.347	ppb	0.10	35,657,352.05	5.204E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,422,353.87	0.77	81.5	Analog	0.30	3
2	Sc	45	100,053.02	2.02	88.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,819,183.24	0.53	81.7	Analog	0.30	3
1	Ge	72	96,626.32	0.69	87.5	Pulse	0.30	3
2	Ge	72	79,698.13	0.41	89.5	Pulse	0.30	3
2	Rh	103	2,816,893.81	0.80	91.4	Analog	0.30	3
3	Rh	103	7,291,192.74	0.93	86.8	Analog	0.30	3
3	In	115	7,918,525.38	0.19	89.4	Analog	0.30	3
3	Tb	159	11,634,266.35	0.67	92.8	Analog	0.30	3
3	Bi	209	6,852,124.07	0.31	93.5	Analog	0.30	3

Quantitation Report

File Name	A0219011.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:57
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.047	ppb	1.59	97,746.88	6.108E-02	Pulse	0.30	3
Na	23	45	2	251.085	ppb	0.57	451,279.02	4.031E+00	Pulse	0.30	3
Mg	26	45	2	105.182	ppb	1.20	13,600.42	1.215E-01	Pulse	0.30	3
Al	27	45	2	201.532	ppb	1.18	46,923.90	4.192E-01	Pulse	0.30	3
K	39	45	2	99.250	ppb	1.97	57,012.36	5.093E-01	Pulse	0.30	3
Ca	44	45	3	113.695	ppb	0.63	255,296.31	5.920E-02	Pulse	0.30	3
V	51	45	2	10.250	ppb	0.28	74,665.91	6.670E-01	Pulse	0.30	3
Cr	52	45	2	10.224	ppb	0.23	102,660.67	9.171E-01	Pulse	0.30	3
Mn	55	45	2	102.049	ppb	0.74	504,817.82	4.509E+00	Pulse	0.30	3
Fe	56	45	2	107.655	ppb	0.34	887,086.50	7.924E+00	Pulse	0.30	3
Co	59	45	2	10.325	ppb	0.42	199,942.41	1.786E+00	Pulse	0.30	3
Ni	60	72	2	10.145	ppb	1.19	56,139.61	6.168E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	1.28	159,687.18	1.754E+00	Pulse	0.30	3
Zn	66	72	2	101.946	ppb	0.78	200,237.86	2.200E+00	Pulse	0.30	3
As	75	72	2	10.108	ppb	0.95	10,704.06	1.176E-01	Pulse	0.75	3
Se	78	72	1	9.772	ppb	2.24	5,423.37	4.941E-02	Pulse	0.30	3
Mo	95	103	2	10.590	ppb	0.71	75,268.19	2.365E-02	Pulse	0.30	3
Ag	107	103	3	10.581	ppb	0.47	792,058.08	9.494E-02	Pulse	0.30	3
Cd	111	115	3	10.608	ppb	0.76	176,516.74	1.974E-02	Pulse	0.30	3
Sb	121	115	3	11.186	ppb	0.42	599,268.44	6.700E-02	Pulse	0.30	3
Ba	137	159	3	104.140	ppb	0.34	2,301,932.41	1.760E-01	Analog	0.30	3
Tl	205	209	3	10.341	ppb	1.56	1,441,182.46	1.873E-01	Analog	0.30	3
Pb	208	209	3	10.734	ppb	0.77	2,027,332.29	2.635E-01	Pulse	0.30	3
U	238	209	3	10.556	ppb	0.60	2,110,009.71	2.742E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,600,423.18	0.96	91.7	Analog	0.30	3
2	Sc	45	111,945.78	0.95	98.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,312,414.24	0.46	92.3	Analog	0.30	3
1	Ge	72	109,770.52	0.71	99.4	Pulse	0.30	3
2	Ge	72	91,023.24	1.56	102.2	Pulse	0.30	3
2	Rh	103	3,182,725.61	0.83	103.3	Analog	0.30	3
3	Rh	103	8,342,891.33	0.09	99.4	Analog	0.30	3
3	In	115	8,943,942.46	0.57	100.9	Analog	0.30	3
3	Tb	159	13,080,388.83	0.53	104.3	Analog	0.30	3
3	Bi	209	7,695,111.21	0.90	105.1	Analog	0.30	3

Quantitation Report

File Name	A0219012.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:02
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	45.55	27.78	1.956E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	61,635.09	6.306E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	20.00	2.048E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	108.89	1.112E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	11,588.92	1.185E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,590.51	2.797E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	366.69	3.750E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,196.71	1.225E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	212.42	2.174E-03	Pulse	0.30	3
Fe	56	45	2	0.024	ppb	88.42	2,041.35	2.090E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.82	1.924E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	108.82	1.361E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,195.92	1.497E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	475.28	5.945E-03	Pulse	0.30	3
As	75	72	2	0.020	ppb	31.72	31.11	3.897E-04	Pulse	0.75	3
Se	78	72	1	0.025	ppb	72.42	13.33	1.372E-04	Pulse	0.30	3
Mo	95	103	2	0.214	ppb	0.09	1,387.90	4.860E-04	Pulse	0.30	3
Ag	107	103	3	0.427	ppb	12.43	31,288.20	4.249E-03	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	158.51	63.45	8.040E-06	Pulse	0.30	3
Sb	121	115	3	0.202	ppb	2.67	11,762.66	1.491E-03	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	30.63	221.78	1.922E-05	Pulse	0.30	3
Tl	205	209	3	0.135	ppb	2.69	18,149.63	2.658E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	47.04	2,319.77	3.398E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	8.21	962.75	1.410E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,421,136.21	0.60	81.4	Analog	0.30	3
2	Sc	45	97,797.48	2.88	86.4	Pulse	0.30	3
3	Sc	45	3,785,994.53	0.43	81.0	Analog	0.30	3
1	Ge	72	97,530.02	1.21	88.3	Pulse	0.30	3

2	Ge	72	80,002.96	1.67	89.8	Pulse	0.30	3
2	Rh	103	2,856,016.31	0.63	92.7	Analog	0.30	3
3	Rh	103	7,364,745.66	0.15	87.7	Analog	0.30	3
3	In	115	7,891,741.66	0.01	89.0	Analog	0.30	3
3	Tb	159	11,537,285.80	0.49	92.0	Analog	0.30	3
3	Bi	209	6,826,853.02	0.28	93.2	Analog	0.30	3

Quantitation Report

File Name	A0219013.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:08
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.474	ppb	1.52	4,551.93	2.890E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	71,184.50	6.531E-01	Pulse	0.30	3
Mg	26	45	2	3.921	ppb	6.30	582.26	5.335E-03	Pulse	0.30	3
Al	27	45	2	11.463	ppb	6.86	2,947.00	2.705E-02	Pulse	0.30	3
K	39	45	2	0.879	ppb	212.97	13,482.66	1.237E-01	Pulse	0.30	3
Ca	44	45	3	8.459	ppb	1.35	34,702.76	8.302E-03	Pulse	0.30	3
V	51	45	2	0.952	ppb	0.73	7,433.09	6.815E-02	Pulse	0.30	3
Cr	52	45	2	0.968	ppb	1.77	10,956.19	1.005E-01	Pulse	0.30	3
Mn	55	45	2	0.525	ppb	6.59	2,892.51	2.655E-02	Pulse	0.30	3
Fe	56	45	2	11.475	ppb	2.15	93,952.31	8.618E-01	Pulse	0.30	3
Co	59	45	2	0.501	ppb	3.06	9,466.36	8.683E-02	Pulse	0.30	3
Ni	60	72	2	0.993	ppb	5.61	5,609.90	6.303E-02	Pulse	0.30	3
Cu	63	72	2	0.817	ppb	0.76	17,289.34	1.941E-01	Pulse	0.30	3
Zn	66	72	2	9.173	ppb	2.92	20,109.15	2.259E-01	Pulse	0.30	3
As	75	72	2	0.119	ppb	13.87	136.45	1.533E-03	Pulse	0.75	3
Se	78	72	1	0.502	ppb	11.16	275.57	2.548E-03	Pulse	0.30	3
Mo	95	103	2	0.573	ppb	7.07	4,057.36	1.287E-03	Pulse	0.30	3
Ag	107	103	3	0.488	ppb	2.84	39,441.24	4.794E-03	Pulse	0.30	3
Cd	111	115	3	0.520	ppb	1.93	8,578.41	9.724E-04	Pulse	0.30	3
Sb	121	115	3	0.635	ppb	1.36	35,915.21	4.072E-03	Pulse	0.30	3
Ba	137	159	3	1.115	ppb	0.41	24,603.86	1.898E-03	Pulse	0.30	3
Tl	205	209	3	0.517	ppb	0.65	73,392.00	9.572E-03	Pulse	0.30	3
Pb	208	209	3	1.042	ppb	0.18	198,241.83	2.586E-02	Pulse	0.30	3
U	238	209	3	0.523	ppb	0.78	104,412.82	1.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,575,111.98	0.67	90.3	Analog	0.30	3
2	Sc	45	109,056.76	2.28	96.4	Pulse	0.30	3
3	Sc	45	4,179,866.99	0.06	89.4	Analog	0.30	3
1	Ge	72	108,245.10	1.20	98.0	Pulse	0.30	3

2	Ge	72	89,054.75	1.63	100.0	Pulse	0.30	3
2	Rh	103	3,153,043.32	0.38	102.4	Analog	0.30	3
3	Rh	103	8,226,623.07	0.26	98.0	Analog	0.30	3
3	In	115	8,821,021.13	0.67	99.5	Analog	0.30	3
3	Tb	159	12,963,602.72	0.07	103.4	Analog	0.30	3
3	Bi	209	7,667,175.02	0.20	104.7	Analog	0.30	3

Quantitation Report

File Name	A0219014.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:13
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	63.67	57.78	3.637E-05	Pulse	0.30	3
Na	23	45	2	94514.911	ppb	1.51	142,139,736.77	1.184E+03	Analog	0.30	3
Mg	26	45	2	92243.670	ppb	1.90	12,697,610.09	1.058E+02	Analog	0.30	3
Al	27	45	2	0.503	ppb	103.22	534.92	4.435E-03	Pulse	0.30	3
K	39	45	2	95501.469	ppb	1.73	44,933,462.66	3.745E+02	Analog	0.30	3
Ca	44	45	3	96156.983	ppb	0.65	222,664,918.91	4.651E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	508.92	4.251E-03	Pulse	0.30	3
Cr	52	45	2	0.133	ppb	7.68	3,214.59	2.679E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,994.01	-1.083E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,605.38	-3.844E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	377.99	39.86	3.340E-04	Pulse	0.30	3
Ni	60	72	2	0.355	ppb	7.26	2,123.86	2.438E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-854.99	-9.812E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-943.45	-1.085E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	5.92	6.745E-05	Pulse	0.75	3
Se	78	72	1	0.035	ppb	103.21	18.89	1.875E-04	Pulse	0.30	3
Mo	95	103	2	0.091	ppb	5.95	591.15	2.116E-04	Pulse	0.30	3
Ag	107	103	3	0.084	ppb	10.10	8,877.89	1.183E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-409.28	-5.030E-05	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.52	5,243.33	6.444E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,786.15	-1.721E-03	Pulse	0.30	3
Tl	205	209	3	0.035	ppb	1.84	4,964.41	8.463E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	225.47	3.834E-05	Pulse	0.30	3
U	238	209	3	0.002	ppb	26.54	496.96	8.470E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,588,395.85	0.74	91.0	Analog	0.30	3
2	Sc	45	120,040.22	3.29	106.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,787,550.66	1.37	102.4	Analog	0.30	3
1	Ge	72	101,109.65	0.59	91.6	Pulse	0.30	3
2	Ge	72	87,052.10	1.68	97.7	Pulse	0.30	3
2	Rh	103	2,794,445.65	1.24	90.7	Analog	0.30	3
3	Rh	103	7,507,253.50	0.32	89.4	Analog	0.30	3
3	In	115	8,135,506.25	0.28	91.8	Analog	0.30	3
3	Tb	159	12,076,023.71	0.23	96.3	Analog	0.30	3
3	Bi	209	5,865,942.62	0.46	80.1	Analog	0.30	3

Quantitation Report

File Name	A0219015.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:19
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.505	ppb	1.28	200,097.03	1.186E-01	Pulse	0.30	3
Na	23	45	2	94129.359	ppb	0.82	151,239,929.97	1.180E+03	Analog	0.30	3
Mg	26	45	2	92238.408	ppb	0.76	13,566,239.52	1.058E+02	Analog	0.30	3
Al	27	45	2	20.098	ppb	3.21	5,749.92	4.486E-02	Pulse	0.30	3
K	39	45	2	93853.877	ppb	0.89	47,179,008.74	3.680E+02	Analog	0.30	3
Ca	44	45	3	95749.463	ppb	0.28	242,683,789.72	4.631E+01	Analog	0.30	3
V	51	45	2	20.674	ppb	1.39	171,575.36	1.338E+00	Pulse	0.30	3
Cr	52	45	2	19.735	ppb	1.53	225,128.85	1.756E+00	Pulse	0.30	3
Mn	55	45	2	16.293	ppb	0.61	92,671.89	7.228E-01	Pulse	0.30	3
Fe	56	45	2	20.789	ppb	2.06	198,234.92	1.546E+00	Pulse	0.30	3
Co	59	45	2	18.805	ppb	1.60	416,961.22	3.253E+00	Pulse	0.30	3
Ni	60	72	2	20.384	ppb	1.22	110,582.44	1.236E+00	Pulse	0.30	3
Cu	63	72	2	19.801	ppb	0.93	291,398.65	3.258E+00	Pulse	0.30	3
Zn	66	72	2	17.808	ppb	2.93	36,638.58	4.096E-01	Pulse	0.30	3
As	75	72	2	19.913	ppb	2.18	20,712.28	2.315E-01	Pulse	0.75	3
Se	78	72	1	17.309	ppb	1.83	8,744.30	8.751E-02	Pulse	0.30	3
Mo	95	103	2	23.248	ppb	1.24	145,899.61	5.190E-02	Pulse	0.30	3
Ag	107	103	3	18.880	ppb	0.63	1,322,297.26	1.691E-01	Analog	0.30	3
Cd	111	115	3	19.409	ppb	1.01	306,366.92	3.610E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.11	1,068,315.45	1.259E-01	Pulse	0.30	3
Ba	137	159	3	23.886	ppb	0.23	498,976.61	4.037E-02	Pulse	0.30	3
Tl	205	209	3	22.487	ppb	1.02	2,414,027.93	4.070E-01	Analog	0.30	3
Pb	208	209	3	22.379	ppb	0.36	3,255,779.57	5.490E-01	Analog	0.30	3
U	238	209	3	22.691	ppb	1.00	3,495,448.30	5.894E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,715.73	1.25	96.7	Analog	0.30	3
2	Sc	45	128,225.35	2.93	113.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,239,920.03	0.57	112.1	Analog	0.30	3
1	Ge	72	99,923.91	0.53	90.5	Pulse	0.30	3
2	Ge	72	89,453.99	1.88	100.4	Pulse	0.30	3
2	Rh	103	2,810,672.87	1.56	91.2	Analog	0.30	3
3	Rh	103	7,821,166.07	0.50	93.2	Analog	0.30	3
3	In	115	8,485,923.21	0.45	95.8	Analog	0.30	3
3	Tb	159	12,358,773.43	0.38	98.5	Analog	0.30	3
3	Bi	209	5,930,884.77	0.87	81.0	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219016.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:24
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.500	ppb	1.08	5,413.30	3.050E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	89,440.10	6.930E-01	Pulse	0.30	3
Mg	26	45	2	4.463	ppb	5.62	768.94	5.957E-03	Pulse	0.30	3
Al	27	45	2	12.391	ppb	3.90	3,738.30	2.896E-02	Pulse	0.30	3
K	39	45	2	6.649	ppb	24.56	18,884.66	1.463E-01	Pulse	0.30	3
Ca	44	45	3	7.957	ppb	2.11	39,121.40	8.059E-03	Pulse	0.30	3
V	51	45	2	1.015	ppb	5.24	9,316.35	7.220E-02	Pulse	0.30	3
Cr	52	45	2	0.963	ppb	2.61	12,903.21	9.998E-02	Pulse	0.30	3
Mn	55	45	2	0.534	ppb	4.74	3,481.13	2.697E-02	Pulse	0.30	3
Fe	56	45	2	11.257	ppb	1.01	109,166.42	8.458E-01	Pulse	0.30	3
Co	59	45	2	0.508	ppb	1.31	11,364.26	8.805E-02	Pulse	0.30	3
Ni	60	72	2	0.988	ppb	4.30	6,473.53	6.270E-02	Pulse	0.30	3
Cu	63	72	2	0.883	ppb	2.07	21,149.82	2.048E-01	Pulse	0.30	3
Zn	66	72	2	8.916	ppb	1.80	22,761.42	2.204E-01	Pulse	0.30	3
As	75	72	2	0.121	ppb	7.01	161.33	1.561E-03	Pulse	0.75	3
Se	78	72	1	0.461	ppb	13.79	304.46	2.343E-03	Pulse	0.30	3
Mo	95	103	2	0.608	ppb	1.15	4,774.26	1.366E-03	Pulse	0.30	3
Ag	107	103	3	0.772	ppb	6.00	66,337.23	7.326E-03	Pulse	0.30	3
Cd	111	115	3	0.523	ppb	2.01	9,264.52	9.778E-04	Pulse	0.30	3
Sb	121	115	3	0.622	ppb	1.54	37,828.74	3.993E-03	Pulse	0.30	3
Ba	137	159	3	1.175	ppb	1.00	26,920.74	1.998E-03	Pulse	0.30	3
Tl	205	209	3	0.487	ppb	2.10	70,495.87	9.026E-03	Pulse	0.30	3
Pb	208	209	3	1.045	ppb	1.13	202,455.80	2.592E-02	Pulse	0.30	3
U	238	209	3	0.514	ppb	1.11	104,502.37	1.338E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,774,791.35	0.93	101.7	Analog	0.30	3
2	Sc	45	129,078.25	1.01	114.0	Pulse	0.30	3
3	Sc	45	4,854,170.66	0.80	103.9	Analog	0.30	3
1	Ge	72	130,055.68	0.85	117.8	Pulse	0.30	3

2	Ge	72	103,291.38	1.53	115.9	Pulse	0.30	3
2	Rh	103	3,495,165.36	1.22	113.5	Analog	0.30	3
3	Rh	103	9,052,348.48	0.61	107.8	Analog	0.30	3
3	In	115	9,474,611.61	0.22	106.9	Analog	0.30	3
3	Tb	159	13,474,382.99	0.24	107.4	Analog	0.30	3
3	Bi	209	7,811,111.90	0.85	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219017.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:30
Sample Name	MB-61298,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	1.073E-05	Pulse	0.30	3
Na	23	45	2	19.697	ppb	18.65	123,056.01	1.134E+00	Pulse	0.30	3
Mg	26	45	2	1.038	ppb	17.66	220.01	2.028E-03	Pulse	0.30	3
Al	27	45	2	29.029	ppb	5.49	6,869.47	6.329E-02	Pulse	0.30	3
K	39	45	2	12.865	ppb	5.85	18,536.46	1.707E-01	Pulse	0.30	3
Ca	44	45	3	1.754	ppb	6.39	20,624.32	5.059E-03	Pulse	0.30	3
V	51	45	2	0.021	ppb	12.12	885.62	8.152E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,195.52	1.102E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	192.14	1.773E-03	Pulse	0.30	3
Fe	56	45	2	0.379	ppb	5.97	5,097.33	4.696E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	117.23	36.52	3.358E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	125.39	1.463E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,775.30	2.074E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,610.68	1.882E-02	Pulse	0.30	3
As	75	72	2	0.003	ppb	254.35	16.00	1.864E-04	Pulse	0.75	3
Se	78	72	1	0.008	ppb	42.57	5.56	5.218E-05	Pulse	0.30	3
Mo	95	103	2	0.052	ppb	5.79	381.13	1.245E-04	Pulse	0.30	3
Ag	107	103	3	0.123	ppb	11.89	11,975.16	1.533E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	46.01	5.498E-06	Pulse	0.30	3
Sb	121	115	3	0.016	ppb	18.24	3,186.03	3.810E-04	Pulse	0.30	3
Ba	137	159	3	0.032	ppb	6.85	800.27	6.727E-05	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	2.88	2,704.81	3.838E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	57.55	2,455.32	3.484E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	14.74	354.10	5.024E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,555,822.60	0.65	89.1	Analog	0.30	3
2	Sc	45	108,605.67	2.25	96.0	Pulse	0.30	3
3	Sc	45	4,076,458.55	0.65	87.2	Analog	0.30	3
1	Ge	72	106,396.93	0.46	96.4	Pulse	0.30	3

2	Ge	72	85,615.43	1.37	96.1	Pulse	0.30	3
2	Rh	103	3,060,101.83	1.19	99.3	Analog	0.30	3
3	Rh	103	7,812,738.01	0.81	93.1	Analog	0.30	3
3	In	115	8,363,631.12	0.30	94.4	Analog	0.30	3
3	Tb	159	11,896,041.07	0.39	94.9	Analog	0.30	3
3	Bi	209	7,047,928.30	0.19	96.2	Analog	0.30	3

Quantitation Report

File Name	A0219018.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:35
Sample Name	LCS-61298,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.072	ppb	1.87	97,221.49	6.123E-02	Pulse	0.30	3
Na	23	45	2	247.105	ppb	1.78	449,216.62	3.981E+00	Pulse	0.30	3
Mg	26	45	2	104.437	ppb	1.68	13,613.73	1.206E-01	Pulse	0.30	3
Al	27	45	2	206.803	ppb	1.50	48,522.70	4.301E-01	Pulse	0.30	3
K	39	45	2	101.734	ppb	2.80	58,557.96	5.191E-01	Pulse	0.30	3
Ca	44	45	3	118.596	ppb	0.62	265,728.26	6.157E-02	Pulse	0.30	3
V	51	45	2	10.545	ppb	0.90	77,405.54	6.860E-01	Pulse	0.30	3
Cr	52	45	2	10.376	ppb	1.91	104,981.99	9.305E-01	Pulse	0.30	3
Mn	55	45	2	102.846	ppb	1.17	512,758.40	4.545E+00	Pulse	0.30	3
Fe	56	45	2	108.684	ppb	0.68	902,695.91	8.000E+00	Pulse	0.30	3
Co	59	45	2	10.370	ppb	1.47	202,391.47	1.794E+00	Pulse	0.30	3
Ni	60	72	2	10.189	ppb	1.96	57,129.59	6.195E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	0.79	161,823.10	1.754E+00	Pulse	0.30	3
Zn	66	72	2	102.146	ppb	0.34	203,309.74	2.204E+00	Pulse	0.30	3
As	75	72	2	10.202	ppb	2.09	10,946.89	1.187E-01	Pulse	0.75	3
Se	78	72	1	9.749	ppb	0.28	5,641.23	4.929E-02	Pulse	0.30	3
Mo	95	103	2	9.992	ppb	0.84	71,935.01	2.231E-02	Pulse	0.30	3
Ag	107	103	3	10.434	ppb	0.68	788,406.98	9.363E-02	Pulse	0.30	3
Cd	111	115	3	10.664	ppb	0.90	178,603.72	1.984E-02	Pulse	0.30	3
Sb	121	115	3	10.632	ppb	0.23	573,463.51	6.370E-02	Pulse	0.30	3
Ba	137	159	3	105.161	ppb	0.79	2,314,739.20	1.777E-01	Analog	0.30	3
Tl	205	209	3	10.399	ppb	0.20	1,434,072.34	1.884E-01	Analog	0.30	3
Pb	208	209	3	10.749	ppb	0.57	2,008,728.42	2.638E-01	Pulse	0.30	3
U	238	209	3	10.469	ppb	1.58	2,070,590.20	2.720E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,587,920.39	1.19	91.0	Analog	0.30	3
2	Sc	45	112,845.83	1.84	99.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,315,823.93	0.77	92.3	Analog	0.30	3
1	Ge	72	114,446.09	1.11	103.7	Pulse	0.30	3
2	Ge	72	92,235.57	1.29	103.5	Pulse	0.30	3
2	Rh	103	3,223,924.64	0.83	104.7	Analog	0.30	3
3	Rh	103	8,420,453.28	0.42	100.3	Analog	0.30	3
3	In	115	9,002,502.60	0.34	101.6	Analog	0.30	3
3	Tb	159	13,025,680.08	0.85	103.9	Analog	0.30	3
3	Bi	209	7,613,684.61	0.14	103.9	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219019.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:41
Sample Name	N023063-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	72.46	21.11	1.696E-05	Pulse	0.30	3
	Na	23	45	2	119335.052	ppb	0.96	145,217,538.95	1.495E+03	Analog	0.30	3
	Mg	26	45	2	14734.562	ppb	1.14	1,641,689.94	1.690E+01	Analog	0.30	3
	Al	27	45	2	7.981	ppb	6.27	1,929.82	1.986E-02	Pulse	0.30	3
	K	39	45	2	6300.621	ppb	1.54	2,410,068.02	2.482E+01	Analog	0.30	3
	Ca	44	45	3	89655.756	ppb	0.15	173,378,555.19	4.337E+01	Analog	0.30	3
	V	51	45	2	3.469	ppb	1.56	22,364.73	2.303E-01	Pulse	0.30	3
OLR	Cr	52	45	2	298.179	ppb	1.49	2,556,274.88	2.632E+01	Analog	0.30	3
	Mn	55	45	2	235.318	ppb	0.55	1,009,433.78	1.039E+01	Pulse	0.30	3
	Fe	56	45	2	42.254	ppb	1.02	303,186.61	3.122E+00	Pulse	0.30	3
	Co	59	45	2	0.413	ppb	4.20	6,955.36	7.159E-02	Pulse	0.30	3
	Ni	60	72	2	4.734	ppb	1.93	21,491.70	2.894E-01	Pulse	0.30	3
	Cu	63	72	2	10.779	ppb	0.60	133,807.74	1.802E+00	Pulse	0.30	3
	Zn	66	72	2	141.627	ppb	0.13	226,099.45	3.044E+00	Pulse	0.30	3
	As	75	72	2	2.136	ppb	0.55	1,854.77	2.497E-02	Pulse	0.75	3
	Se	78	72	1	0.580	ppb	8.56	275.57	2.941E-03	Pulse	0.30	3
	Mo	95	103	2	3.427	ppb	3.23	18,198.81	7.657E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,688.79	2.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.190	ppb	0.56	2,491.30	3.599E-04	Pulse	0.30	3
	Sb	121	115	3	0.133	ppb	3.55	7,446.50	1.076E-03	Pulse	0.30	3
	Ba	137	159	3	38.330	ppb	0.31	676,824.92	6.478E-02	Pulse	0.30	3
	Tl	205	209	3	0.234	ppb	3.65	24,078.22	4.449E-03	Pulse	0.30	3
	Pb	208	209	3	0.900	ppb	0.37	121,080.95	2.237E-02	Pulse	0.30	3
	U	238	209	3	29.016	ppb	0.75	4,079,960.88	7.537E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,243,737.79	0.54	71.3	Analog	0.30	3
2	Sc	45	97,124.59	1.59	85.8	Pulse	0.30	3
3	Sc	45	3,997,911.95	0.59	85.5	Analog	0.30	3
1	Ge	72	93,645.93	1.16	84.8	Pulse	0.30	3
2	Ge	72	74,267.09	0.85	83.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,232.38	0.86	77.1	Analog	0.30	3
3	Rh	103	6,096,434.91	0.60	72.6	Analog	0.30	3
3	In	115	6,922,919.41	0.28	78.1	Analog	0.30	3
3	Tb	159	10,447,985.05	0.61	83.3	Analog	0.30	3
3	Bi	209	5,413,417.63	0.81	73.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE
For Cr only

File Name	A0219020.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:46
Sample Name	N023063-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	133.05	27.78	2.092E-05	Pulse	0.30	3
Na	23	45	2	26244.694	ppb	0.99	31,109,554.54	3.295E+02	Analog	0.30	3
Mg	26	45	2	3285.349	ppb	0.49	355,871.80	3.770E+00	Pulse	0.30	3
Al	27	45	2	9.515	ppb	6.39	2,173.64	2.303E-02	Pulse	0.30	3
K	39	45	2	1414.595	ppb	0.60	534,790.36	5.665E+00	Pulse	0.30	3
Ca	44	45	3	20661.639	ppb	0.34	36,647,578.90	9.998E+00	Analog	0.30	3
V	51	45	2	0.749	ppb	5.92	5,197.71	5.506E-02	Pulse	0.30	3
Cr	52	45	2	66.219	ppb	0.27	552,973.40	5.857E+00	Pulse	0.30	3
Mn	55	45	2	50.978	ppb	0.98	212,804.66	2.254E+00	Pulse	0.30	3
Fe	56	45	2	9.368	ppb	0.93	66,747.88	7.071E-01	Pulse	0.30	3
Co	59	45	2	0.092	ppb	1.54	1,523.02	1.613E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	5.39	4,679.86	6.153E-02	Pulse	0.30	3
Cu	63	72	2	2.130	ppb	2.16	30,896.23	4.061E-01	Pulse	0.30	3
Zn	66	72	2	32.622	ppb	0.91	55,147.09	7.248E-01	Pulse	0.30	3
As	75	72	2	0.457	ppb	1.58	415.83	5.466E-03	Pulse	0.75	3
Se	78	72	1	0.112	ppb	35.07	55.56	5.752E-04	Pulse	0.30	3
Mo	95	103	2	0.670	ppb	5.66	3,803.97	1.504E-03	Pulse	0.30	3
Ag	107	103	3	0.236	ppb	12.97	16,696.51	2.546E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6,938.20	-9.506E-04	Pulse	0.30	3
Sb	121	115	3	0.018	ppb	3.61	2,863.74	3.924E-04	Pulse	0.30	3
Ba	137	159	3	7.581	ppb	0.66	138,535.45	1.282E-02	Pulse	0.30	3
Tl	205	209	3	0.041	ppb	1.35	5,906.98	9.621E-04	Pulse	0.30	3
Pb	208	209	3	0.092	ppb	4.46	15,765.04	2.568E-03	Pulse	0.30	3
U	238	209	3	5.862	ppb	0.42	934,996.06	1.523E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,333,837.07	1.10	76.4	Analog	0.30	3
2	Sc	45	94,404.05	0.91	83.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,665,683.59	0.15	78.4	Analog	0.30	3
1	Ge	72	96,524.58	0.90	87.4	Pulse	0.30	3
2	Ge	72	76,086.76	1.09	85.4	Pulse	0.30	3
2	Rh	103	2,529,294.95	0.39	82.1	Analog	0.30	3
3	Rh	103	6,559,199.76	0.22	78.1	Analog	0.30	3
3	In	115	7,298,471.43	0.51	82.4	Analog	0.30	3
3	Tb	159	10,804,231.51	0.43	86.1	Analog	0.30	3
3	Bi	209	6,139,748.80	0.48	83.8	Analog	0.30	3

Quantitation Report

File Name	A0219021.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:52
Sample Name	N023063-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.554	ppb	0.77	80,819.45	5.808E-02	Pulse	0.30	3
	Na	23	45	2	111953.545	ppb	1.16	149,884,218.88	1.403E+03	Analog	0.30	3
	Mg	26	45	2	13722.815	ppb	1.27	1,682,217.49	1.574E+01	Analog	0.30	3
	Al	27	45	2	200.769	ppb	2.04	44,618.36	4.176E-01	Pulse	0.30	3
	K	39	45	2	5977.490	ppb	1.49	2,516,146.05	2.355E+01	Analog	0.30	3
	Ca	44	45	3	85525.104	ppb	0.79	183,273,297.27	4.137E+01	Analog	0.30	3
	V	51	45	2	13.229	ppb	2.64	91,758.11	8.589E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.411	ppb	1.77	2,691,775.16	2.520E+01	Analog	0.30	3
	Mn	55	45	2	306.020	ppb	1.52	1,443,921.97	1.352E+01	Analog	0.30	3
	Fe	56	45	2	136.671	ppb	0.83	1,074,339.24	1.006E+01	Pulse	0.30	3
	Co	59	45	2	9.273	ppb	0.69	171,378.14	1.604E+00	Pulse	0.30	3
	Ni	60	72	2	13.487	ppb	0.93	66,213.15	8.190E-01	Pulse	0.30	3
	Cu	63	72	2	19.131	ppb	0.73	254,591.41	3.149E+00	Pulse	0.30	3
	Zn	66	72	2	214.407	ppb	0.12	371,316.90	4.593E+00	Pulse	0.30	3
	As	75	72	2	11.515	ppb	0.92	10,829.39	1.340E-01	Pulse	0.75	3
	Se	78	72	1	8.818	ppb	4.23	4,483.03	4.458E-02	Pulse	0.30	3
	Mo	95	103	2	14.551	ppb	0.40	84,038.87	3.249E-02	Pulse	0.30	3
	Ag	107	103	3	8.124	ppb	3.31	498,176.43	7.299E-02	Pulse	0.30	3
	Cd	111	115	3	9.733	ppb	0.34	139,815.46	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.475	ppb	0.15	484,583.42	6.276E-02	Pulse	0.30	3
	Ba	137	159	3	134.855	ppb	0.08	2,657,147.67	2.279E-01	Analog	0.30	3
	Tl	205	209	3	10.368	ppb	0.59	1,132,023.11	1.878E-01	Pulse	0.30	3
	Pb	208	209	3	11.798	ppb	0.50	1,745,406.14	2.895E-01	Pulse	0.30	3
	U	238	209	3	38.151	ppb	0.70	5,973,837.90	9.910E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,391,476.73	0.56	79.7	Analog	0.30	3
2	Sc	45	106,849.84	1.67	94.4	Pulse	0.30	3
3	Sc	45	4,430,292.92	0.70	94.8	Analog	0.30	3
1	Ge	72	100,536.08	0.61	91.1	Pulse	0.30	3
2	Ge	72	80,840.61	1.00	90.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,586,662.25	0.42	84.0	Analog	0.30	3
3	Rh	103	6,824,063.58	0.52	81.3	Analog	0.30	3
3	In	115	7,720,723.92	0.39	87.1	Analog	0.30	3
3	Tb	159	11,660,006.63	0.47	93.0	Analog	0.30	3
3	Bi	209	6,028,229.56	0.53	82.3	Analog	0.30	3

Quantitation Report

File Name	A0219022.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:57
Sample Name	N023063-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.524	ppb	0.70	78,863.97	5.790E-02	Pulse	0.30	3
	Na	23	45	2	112300.467	ppb	1.13	149,683,931.10	1.407E+03	Analog	0.30	3
	Mg	26	45	2	13897.562	ppb	0.83	1,695,983.40	1.594E+01	Analog	0.30	3
	Al	27	45	2	197.521	ppb	1.59	43,705.28	4.109E-01	Pulse	0.30	3
	K	39	45	2	6012.822	ppb	1.53	2,519,717.58	2.369E+01	Analog	0.30	3
	Ca	44	45	3	85546.221	ppb	0.60	182,729,417.28	4.138E+01	Analog	0.30	3
OLR	V	51	45	2	13.061	ppb	1.32	90,205.23	8.480E-01	Pulse	0.30	3
	Cr	52	45	2	285.955	ppb	0.90	2,685,276.71	2.524E+01	Analog	0.30	3
	Mn	55	45	2	304.080	ppb	1.16	1,428,654.82	1.343E+01	Analog	0.30	3
	Fe	56	45	2	134.081	ppb	1.16	1,049,316.14	9.865E+00	Pulse	0.30	3
	Co	59	45	2	9.263	ppb	0.89	170,443.78	1.602E+00	Pulse	0.30	3
	Ni	60	72	2	13.566	ppb	1.01	65,692.38	8.238E-01	Pulse	0.30	3
	Cu	63	72	2	19.302	ppb	1.89	253,339.99	3.177E+00	Pulse	0.30	3
	Zn	66	72	2	216.825	ppb	1.55	370,378.58	4.645E+00	Pulse	0.30	3
	As	75	72	2	11.479	ppb	1.63	10,649.22	1.335E-01	Pulse	0.75	3
	Se	78	72	1	8.757	ppb	3.89	4,426.35	4.428E-02	Pulse	0.30	3
	Mo	95	103	2	14.568	ppb	0.25	82,484.41	3.253E-02	Pulse	0.30	3
	Ag	107	103	3	8.782	ppb	1.95	523,929.88	7.887E-02	Pulse	0.30	3
	Cd	111	115	3	9.724	ppb	0.28	136,361.82	1.809E-02	Pulse	0.30	3
	Sb	121	115	3	10.466	ppb	0.34	472,637.06	6.271E-02	Pulse	0.30	3
	Ba	137	159	3	135.709	ppb	0.46	2,579,725.65	2.293E-01	Analog	0.30	3
	Tl	205	209	3	10.400	ppb	0.34	1,090,818.25	1.884E-01	Pulse	0.30	3
	Pb	208	209	3	11.787	ppb	0.70	1,675,159.70	2.893E-01	Pulse	0.30	3
	U	238	209	3	38.194	ppb	1.14	5,745,089.90	9.921E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,362,001.97	0.21	78.0	Analog	0.30	3
2	Sc	45	106,381.26	1.93	94.0	Pulse	0.30	3
3	Sc	45	4,416,126.70	1.30	94.5	Analog	0.30	3
1	Ge	72	99,965.82	0.37	90.5	Pulse	0.30	3
2	Ge	72	79,748.22	0.58	89.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,535,812.13	1.28	82.3	Analog	0.30	3
3	Rh	103	6,642,396.57	0.51	79.1	Analog	0.30	3
3	In	115	7,536,916.86	0.52	85.0	Analog	0.30	3
3	Tb	159	11,248,909.28	0.31	89.7	Analog	0.30	3
3	Bi	209	5,790,867.90	0.98	79.1	Analog	0.30	3

Quantitation Report

File Name	A0219023.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:03
Sample Name	N023063-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.589	ppb	0.34	81,452.64	5.830E-02	Pulse	0.30	3
	Na	23	45	2	113466.483	ppb	0.51	152,317,006.62	1.422E+03	Analog	0.30	3
	Mg	26	45	2	14033.261	ppb	0.32	1,724,719.51	1.610E+01	Analog	0.30	3
	Al	27	45	2	200.738	ppb	0.15	44,733.13	4.176E-01	Pulse	0.30	3
	K	39	45	2	6049.140	ppb	0.73	2,552,873.92	2.383E+01	Analog	0.30	3
	Ca	44	45	3	85075.813	ppb	0.37	186,297,139.45	4.115E+01	Analog	0.30	3
	V	51	45	2	13.148	ppb	1.10	91,455.14	8.537E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.514	ppb	1.56	2,699,901.94	2.521E+01	Analog	0.30	3
	Mn	55	45	2	304.543	ppb	0.91	1,440,825.03	1.345E+01	Analog	0.30	3
	Fe	56	45	2	134.937	ppb	0.47	1,063,525.42	9.928E+00	Pulse	0.30	3
	Co	59	45	2	9.280	ppb	0.36	171,976.90	1.605E+00	Pulse	0.30	3
	Ni	60	72	2	13.548	ppb	1.68	66,255.25	8.227E-01	Pulse	0.30	3
	Cu	63	72	2	19.286	ppb	1.79	255,645.14	3.174E+00	Pulse	0.30	3
	Zn	66	72	2	215.674	ppb	1.34	372,087.97	4.620E+00	Pulse	0.30	3
	As	75	72	2	11.447	ppb	4.24	10,723.83	1.332E-01	Pulse	0.75	3
	Se	78	72	1	8.553	ppb	2.23	4,413.02	4.324E-02	Pulse	0.30	3
	Mo	95	103	2	14.423	ppb	0.45	82,502.20	3.220E-02	Pulse	0.30	3
	Ag	107	103	3	8.762	ppb	2.05	529,657.94	7.869E-02	Pulse	0.30	3
	Cd	111	115	3	9.732	ppb	0.66	137,478.48	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.473	ppb	0.43	476,440.35	6.275E-02	Pulse	0.30	3
	Ba	137	159	3	135.784	ppb	0.64	2,593,140.41	2.295E-01	Analog	0.30	3
	Tl	205	209	3	10.406	ppb	1.35	1,094,527.37	1.885E-01	Pulse	0.30	3
	Pb	208	209	3	11.776	ppb	1.16	1,678,513.57	2.890E-01	Pulse	0.30	3
	U	238	209	3	37.991	ppb	0.53	5,731,162.13	9.868E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,397,135.98	0.91	80.1	Analog	0.30	3
2	Sc	45	107,131.63	1.69	94.7	Pulse	0.30	3
3	Sc	45	4,527,114.27	0.94	96.9	Analog	0.30	3
1	Ge	72	102,058.20	0.80	92.4	Pulse	0.30	3
2	Ge	72	80,552.19	2.24	90.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,561,765.50	1.00	83.2	Analog	0.30	3
3	Rh	103	6,730,290.87	0.55	80.2	Analog	0.30	3
3	In	115	7,592,865.26	0.74	85.7	Analog	0.30	3
3	Tb	159	11,301,174.55	0.32	90.1	Analog	0.30	3
3	Bi	209	5,808,018.59	1.28	79.3	Analog	0.30	3

Quantitation Report

File Name	A0219024.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:08
Sample Name	N022985-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.572E-06	Pulse	0.30	3
Na	23	45	2	457979.498	ppb	0.85	576,827,164.74	5.736E+03	Analog	0.30	3
Mg	26	45	2	1362.852	ppb	1.49	157,291.74	1.564E+00	Pulse	0.30	3
Al	27	45	2	2.040	ppb	29.29	764.37	7.605E-03	Pulse	0.30	3
K	39	45	2	3553.337	ppb	1.64	1,412,530.41	1.405E+01	Analog	0.30	3
Ca	44	45	3	20807.842	ppb	0.35	39,755,575.52	1.007E+01	Analog	0.30	3
V	51	45	2	1.300	ppb	0.57	9,105.15	9.054E-02	Pulse	0.30	3
Cr	52	45	2	3.685	ppb	3.19	34,197.62	3.402E-01	Pulse	0.30	3
Mn	55	45	2	1.056	ppb	4.38	5,026.14	5.000E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-35,713.31	-3.552E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-568.01	-5.649E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-372.54	-5.036E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,275.24	-1.660E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-493.51	-6.693E-03	Pulse	0.30	3
As	75	72	2	1.125	ppb	8.34	978.24	1.323E-02	Pulse	0.75	3
Se	78	72	1	0.027	ppb	27.55	13.33	1.477E-04	Pulse	0.30	3
Mo	95	103	2	16.704	ppb	0.71	85,794.05	3.730E-02	Pulse	0.30	3
Ag	107	103	3	0.702	ppb	12.53	40,746.82	6.708E-03	Pulse	0.30	3
Cd	111	115	3	0.009	ppb	16.14	154.77	2.269E-05	Pulse	0.30	3
Sb	121	115	3	0.010	ppb	47.32	2,324.72	3.410E-04	Pulse	0.30	3
Ba	137	159	3	3.963	ppb	1.17	67,268.55	6.710E-03	Pulse	0.30	3
Tl	205	209	3	0.086	ppb	3.62	8,827.45	1.772E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,539.08	-5.093E-04	Pulse	0.30	3
U	238	209	3	0.355	ppb	1.24	46,072.01	9.245E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,296,868.20	0.58	74.3	Analog	0.30	3
2	Sc	45	100,570.83	2.14	88.9	Pulse	0.30	3
3	Sc	45	3,948,631.33	0.82	84.5	Analog	0.30	3
1	Ge	72	90,403.15	0.71	81.9	Pulse	0.30	3
2	Ge	72	73,970.37	1.85	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,300,423.96	1.36	74.7	Analog	0.30	3
3	Rh	103	6,077,618.87	0.74	72.4	Analog	0.30	3
3	In	115	6,821,156.88	1.33	77.0	Analog	0.30	3
3	Tb	159	10,025,475.89	1.07	79.9	Analog	0.30	3
3	Bi	209	4,983,637.77	1.21	68.0	Analog	0.30	3

Quantitation Report

File Name	A0219025.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:14
Sample Name	N022985-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.788E-06	Pulse	0.30	3
Na	23	45	2	650264.599	ppb	0.63	861,405,676.05	8.144E+03	Analog	0.30	3
Mg	26	45	2	1930.978	ppb	0.41	234,410.05	2.216E+00	Pulse	0.30	3
Al	27	45	2	0.965	ppb	17.43	569.99	5.386E-03	Pulse	0.30	3
K	39	45	2	5594.851	ppb	1.25	2,332,496.87	2.205E+01	Analog	0.30	3
Ca	44	45	3	26012.402	ppb	0.65	52,118,278.67	1.259E+01	Analog	0.30	3
V	51	45	2	0.200	ppb	6.25	2,082.45	1.970E-02	Pulse	0.30	3
Cr	52	45	2	8.909	ppb	0.67	84,733.97	8.011E-01	Pulse	0.30	3
Mn	55	45	2	5.228	ppb	1.27	24,770.91	2.342E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-61,726.51	-5.836E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-635.42	-6.010E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-555.09	-7.431E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,656.34	-2.498E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,121.63	-2.841E-02	Pulse	0.30	3
As	75	72	2	0.257	ppb	18.74	235.30	3.147E-03	Pulse	0.75	3
Se	78	72	1	0.018	ppb	120.83	8.89	9.958E-05	Pulse	0.30	3
Mo	95	103	2	10.684	ppb	1.35	54,354.12	2.386E-02	Pulse	0.30	3
Ag	107	103	3	0.062	ppb	18.39	5,982.68	9.919E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.24	1.660E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,680.16	2.496E-04	Pulse	0.30	3
Ba	137	159	3	3.835	ppb	0.36	63,959.49	6.493E-03	Pulse	0.30	3
Tl	205	209	3	0.120	ppb	0.32	11,400.42	2.391E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,882.49	-1.024E-03	Pulse	0.30	3
U	238	209	3	0.736	ppb	0.58	91,283.64	1.914E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,275,817.58	1.48	73.1	Analog	0.30	3
2	Sc	45	105,778.68	1.94	93.5	Pulse	0.30	3
3	Sc	45	4,141,110.95	0.86	88.6	Analog	0.30	3
1	Ge	72	89,574.25	0.61	81.1	Pulse	0.30	3
2	Ge	72	74,694.61	1.02	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,278,216.82	1.99	74.0	Analog	0.30	3
3	Rh	103	6,036,206.86	1.14	71.9	Analog	0.30	3
3	In	115	6,728,897.19	0.56	75.9	Analog	0.30	3
3	Tb	159	9,850,671.24	0.90	78.5	Analog	0.30	3
3	Bi	209	4,768,408.47	0.57	65.1	Analog	0.30	3

Quantitation Report

File Name	A0219026.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:19
Sample Name	N022985-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.588E-06	Pulse	0.30	3
Na	23	45	2	693680.135	ppb	1.52	960,718,385.69	8.688E+03	Analog	0.30	3
Mg	26	45	2	2046.112	ppb	0.81	259,665.25	2.348E+00	Pulse	0.30	3
Al	27	45	2	0.086	ppb	82.42	395.24	3.574E-03	Pulse	0.30	3
K	39	45	2	5903.083	ppb	2.08	2,572,105.45	2.326E+01	Analog	0.30	3
Ca	44	45	3	26912.427	ppb	0.71	56,945,571.93	1.302E+01	Analog	0.30	3
V	51	45	2	0.212	ppb	11.26	2,261.37	2.046E-02	Pulse	0.30	3
Cr	52	45	2	9.155	ppb	1.27	90,986.03	8.228E-01	Pulse	0.30	3
Mn	55	45	2	5.542	ppb	1.17	27,432.24	2.481E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-70,625.55	-6.387E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-781.76	-7.072E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-612.53	-7.797E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,667.89	-2.759E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,298.66	-1.654E-02	Pulse	0.30	3
As	75	72	2	0.256	ppb	8.90	245.45	3.124E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	86.35	8.89	9.696E-05	Pulse	0.30	3
Mo	95	103	2	11.156	ppb	1.27	58,369.54	2.491E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	852.67	1.386E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	19.13	2.785E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,551.26	2.262E-04	Pulse	0.30	3
Ba	137	159	3	3.926	ppb	0.35	66,583.01	6.647E-03	Pulse	0.30	3
Tl	205	209	3	0.110	ppb	2.99	10,578.67	2.205E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,380.96	-1.539E-03	Pulse	0.30	3
U	238	209	3	0.766	ppb	0.05	95,583.77	1.992E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,317,028.61	0.66	75.5	Analog	0.30	3
2	Sc	45	110,587.59	1.86	97.7	Pulse	0.30	3
3	Sc	45	4,373,659.62	1.11	93.6	Analog	0.30	3
1	Ge	72	91,494.99	0.87	82.9	Pulse	0.30	3
2	Ge	72	78,544.68	1.27	88.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,342,690.16	1.95	76.1	Analog	0.30	3
3	Rh	103	6,163,141.09	0.81	73.4	Analog	0.30	3
3	In	115	6,857,616.19	0.69	77.4	Analog	0.30	3
3	Tb	159	10,017,579.16	0.58	79.9	Analog	0.30	3
3	Bi	209	4,797,225.73	0.32	65.5	Analog	0.30	3

Quantitation Report

File Name	A0219027.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:25
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.794	ppb	0.20	214,411.91	1.203E-01	Pulse	0.30	3
Na	23	45	2	318.930	ppb	4.16	619,389.44	4.881E+00	Pulse	0.30	3
Mg	26	45	2	201.806	ppb	2.83	29,484.36	2.323E-01	Pulse	0.30	3
Al	27	45	2	21.683	ppb	2.25	6,108.42	4.813E-02	Pulse	0.30	3
K	39	45	2	216.515	ppb	2.19	122,970.40	9.690E-01	Pulse	0.30	3
Ca	44	45	3	210.826	ppb	0.65	512,292.58	1.062E-01	Pulse	0.30	3
V	51	45	2	20.162	ppb	0.51	165,689.26	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.058	ppb	1.28	226,524.80	1.785E+00	Pulse	0.30	3
Mn	55	45	2	20.045	ppb	0.93	112,765.74	8.885E-01	Pulse	0.30	3
Fe	56	45	2	20.737	ppb	1.41	195,694.05	1.542E+00	Pulse	0.30	3
Co	59	45	2	20.213	ppb	0.80	443,749.72	3.496E+00	Pulse	0.30	3
Ni	60	72	2	20.095	ppb	0.32	120,245.88	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.807	ppb	0.46	337,381.30	3.420E+00	Pulse	0.30	3
Zn	66	72	2	19.410	ppb	0.76	43,774.08	4.437E-01	Pulse	0.30	3
As	75	72	2	19.976	ppb	0.14	22,915.75	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.741	ppb	2.86	11,840.33	9.475E-02	Pulse	0.30	3
Mo	95	103	2	19.913	ppb	0.79	145,067.89	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.833	ppb	0.71	1,500,405.28	1.776E-01	Analog	0.30	3
Cd	111	115	3	20.785	ppb	0.09	344,649.51	3.866E-02	Pulse	0.30	3
Sb	121	115	3	20.367	ppb	0.73	1,085,414.36	1.218E-01	Pulse	0.30	3
Ba	137	159	3	21.573	ppb	0.70	451,551.30	3.647E-02	Pulse	0.30	3
Tl	205	209	3	20.297	ppb	0.38	2,615,596.45	3.674E-01	Analog	0.30	3
Pb	208	209	3	20.632	ppb	0.80	3,602,895.23	5.061E-01	Analog	0.30	3
U	238	209	3	19.553	ppb	0.55	3,615,642.16	5.079E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,781,878.98	0.52	102.1	Analog	0.30	3
2	Sc	45	126,930.47	1.33	112.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,824,747.46	0.44	103.2	Analog	0.30	3
1	Ge	72	124,959.01	0.64	113.2	Pulse	0.30	3
2	Ge	72	98,656.86	1.16	110.7	Pulse	0.30	3
2	Rh	103	3,262,670.78	1.03	105.9	Analog	0.30	3
3	Rh	103	8,449,640.15	0.41	100.6	Analog	0.30	3
3	In	115	8,914,087.45	0.55	100.6	Analog	0.30	3
3	Tb	159	12,383,373.29	0.80	98.7	Analog	0.30	3
3	Bi	209	7,118,676.84	0.29	97.2	Analog	0.30	3

Quantitation Report

File Name	A0219028.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:30
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	232.31	23.34	1.357E-05	Pulse	0.30	3
Na	23	45	2	76.375	ppb	6.16	219,270.91	1.843E+00	Pulse	0.30	3
Mg	26	45	2	0.043	ppb	374.73	105.56	8.867E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	371.13	3.120E-03	Pulse	0.30	3
K	39	45	2	9.246	ppb	7.56	18,621.12	1.565E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,071.65	3.703E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	610.04	5.126E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,338.77	1.124E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	297.25	2.494E-03	Pulse	0.30	3
Fe	56	45	2	0.025	ppb	25.45	2,492.79	2.095E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.32	2.125E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	70.87	7.432E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	755.19	7.943E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	485.86	5.099E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	86.51	33.33	3.494E-04	Pulse	0.75	3
Se	78	72	1	0.015	ppb	113.87	10.00	8.379E-05	Pulse	0.30	3
Mo	95	103	2	0.126	ppb	14.25	904.51	2.892E-04	Pulse	0.30	3
Ag	107	103	3	0.442	ppb	13.09	35,985.06	4.381E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	4.87	5.649E-07	Pulse	0.30	3
Sb	121	115	3	0.057	ppb	7.88	5,378.91	6.246E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	12.11	292.92	2.424E-05	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	10.57	3,687.29	5.317E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,251.16	1.804E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	8.46	837.32	1.207E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,715,630.93	0.95	98.3	Analog	0.30	3
2	Sc	45	118,989.40	1.73	105.1	Pulse	0.30	3
3	Sc	45	4,610,525.35	0.18	98.7	Analog	0.30	3
1	Ge	72	120,040.27	0.87	108.7	Pulse	0.30	3

2	Ge	72	95,257.46	1.62	106.9	Pulse	0.30	3
2	Rh	103	3,125,253.11	1.04	101.5	Analog	0.30	3
3	Rh	103	8,215,051.89	0.63	97.8	Analog	0.30	3
3	In	115	8,612,108.42	0.12	97.2	Analog	0.30	3
3	Tb	159	12,082,911.63	0.24	96.3	Analog	0.30	3
3	Bi	209	6,936,292.88	0.33	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219029.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:36
Sample Name	MB-61302,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.319E-06	Pulse	0.30	3
Na	23	45	2	40.078	ppb	9.63	161,116.14	1.389E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	43.33	3.739E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.24	2.690E-03	Pulse	0.30	3
K	39	45	2	6.391	ppb	17.33	16,860.29	1.453E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	12,600.86	2.807E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	648.94	5.591E-03	Pulse	0.30	3
Cr	52	45	2	0.027	ppb	73.28	2,018.94	1.741E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	204.96	1.765E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,958.21	1.687E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.72	1.616E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	126.54	1.368E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	628.89	6.781E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	388.29	4.184E-03	Pulse	0.30	3
As	75	72	2	0.000	ppb	850.97	14.67	1.583E-04	Pulse	0.75	3
Se	78	72	1	0.006	ppb	155.20	4.44	3.880E-05	Pulse	0.30	3
Mo	95	103	2	0.037	ppb	18.89	275.57	8.988E-05	Pulse	0.30	3
Ag	107	103	3	0.055	ppb	6.91	7,458.67	9.254E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	8.73	1.031E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,234.72	2.633E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	113.91	9.579E-06	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	6.73	2,755.93	4.011E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,123.81	1.636E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	189.87	2.763E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,680,580.88	0.79	96.3	Analog	0.30	3
2	Sc	45	116,037.80	1.28	102.5	Pulse	0.30	3
3	Sc	45	4,490,004.55	0.78	96.1	Analog	0.30	3
1	Ge	72	115,032.52	0.97	104.2	Pulse	0.30	3

2	Ge	72	92,775.19	0.89	104.1	Pulse	0.30	3
2	Rh	103	3,066,529.19	0.52	99.5	Analog	0.30	3
3	Rh	103	8,060,372.03	0.43	96.0	Analog	0.30	3
3	In	115	8,487,645.79	0.45	95.8	Analog	0.30	3
3	Tb	159	11,890,521.21	0.84	94.8	Analog	0.30	3
3	Bi	209	6,870,824.97	0.20	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219030.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:41
Sample Name	LCS-61302,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.545	ppb	0.99	102,183.49	5.803E-02	Pulse	0.30	3
Na	23	45	2	345.165	ppb	2.18	675,847.30	5.209E+00	Pulse	0.30	3
Mg	26	45	2	102.616	ppb	1.25	15,382.01	1.186E-01	Pulse	0.30	3
Al	27	45	2	199.844	ppb	2.08	53,931.47	4.157E-01	Pulse	0.30	3
K	39	45	2	107.012	ppb	1.78	70,027.18	5.397E-01	Pulse	0.30	3
Ca	44	45	3	113.251	ppb	0.80	286,810.63	5.899E-02	Pulse	0.30	3
V	51	45	2	9.730	ppb	1.10	82,193.49	6.335E-01	Pulse	0.30	3
Cr	52	45	2	9.612	ppb	2.63	111,961.16	8.631E-01	Pulse	0.30	3
Mn	55	45	2	98.037	ppb	1.25	562,076.25	4.332E+00	Pulse	0.30	3
Fe	56	45	2	104.861	ppb	1.58	1,001,474.76	7.719E+00	Pulse	0.30	3
Co	59	45	2	9.573	ppb	1.43	214,838.88	1.656E+00	Pulse	0.30	3
Ni	60	72	2	9.728	ppb	0.93	60,065.12	5.916E-01	Pulse	0.30	3
Cu	63	72	2	9.874	ppb	0.89	168,116.97	1.656E+00	Pulse	0.30	3
Zn	66	72	2	93.352	ppb	1.32	204,798.70	2.017E+00	Pulse	0.30	3
As	75	72	2	9.494	ppb	0.61	11,217.73	1.105E-01	Pulse	0.75	3
Se	78	72	1	8.769	ppb	4.05	5,710.14	4.434E-02	Pulse	0.30	3
Mo	95	103	2	9.993	ppb	1.77	74,722.37	2.231E-02	Pulse	0.30	3
Ag	107	103	3	8.079	ppb	4.37	634,211.77	7.259E-02	Pulse	0.30	3
Cd	111	115	3	10.126	ppb	0.96	174,718.74	1.884E-02	Pulse	0.30	3
Sb	121	115	3	10.195	ppb	0.20	566,636.18	6.110E-02	Pulse	0.30	3
Ba	137	159	3	105.811	ppb	0.39	2,319,960.46	1.788E-01	Analog	0.30	3
Tl	205	209	3	9.948	ppb	0.39	1,317,630.80	1.802E-01	Analog	0.30	3
Pb	208	209	3	10.685	ppb	1.00	1,917,698.50	2.623E-01	Pulse	0.30	3
U	238	209	3	9.942	ppb	0.74	1,888,554.18	2.583E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,760,907.80	0.34	100.9	Analog	0.30	3
2	Sc	45	129,767.40	2.19	114.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,862,335.55	0.11	104.0	Analog	0.30	3
1	Ge	72	128,774.75	0.47	116.6	Pulse	0.30	3
2	Ge	72	101,536.96	1.08	114.0	Pulse	0.30	3
2	Rh	103	3,348,327.48	1.12	108.7	Analog	0.30	3
3	Rh	103	8,735,848.20	0.45	104.0	Analog	0.30	3
3	In	115	9,274,588.33	0.28	104.7	Analog	0.30	3
3	Tb	159	12,974,559.39	0.68	103.5	Analog	0.30	3
3	Bi	209	7,312,113.57	0.71	99.8	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219031.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:47
Sample Name	N023107-001C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.039	ppb	13.97	396.69	2.493E-04	Pulse	0.30	3
	Na	23	45	2	19509.394	ppb	0.43	29,323,846.78	2.452E+02	Analog	0.30	3
	Mg	26	45	2	1020.629	ppb	1.57	140,117.67	1.172E+00	Pulse	0.30	3
OLR	Al	27	45	2	1930.746	ppb	1.16	476,771.45	3.987E+00	Pulse	0.30	3
	K	39	45	2	5555.566	ppb	1.51	2,618,610.69	2.190E+01	Analog	0.30	3
	Ca	44	45	3	12269.086	ppb	0.17	27,607,721.81	5.938E+00	Analog	0.30	3
	V	51	45	2	6.890	ppb	2.07	53,876.06	4.506E-01	Pulse	0.30	3
	Cr	52	45	2	6.662	ppb	0.90	72,091.39	6.029E-01	Pulse	0.30	3
	Mn	55	45	2	67.064	ppb	0.49	354,525.94	2.965E+00	Pulse	0.30	3
	Fe	56	45	2	3836.785	ppb	0.88	33,694,932.37	2.818E+02	Analog	0.30	3
	Co	59	45	2	1.285	ppb	2.05	26,605.26	2.225E-01	Pulse	0.30	3
	Ni	60	72	2	17.740	ppb	1.26	99,209.57	1.076E+00	Pulse	0.30	3
	Cu	63	72	2	69.457	ppb	0.79	1,038,811.00	1.127E+01	Pulse	0.30	3
OLR	Zn	66	72	2	485.900	ppb	0.47	955,897.47	1.037E+01	Pulse	0.30	3
	As	75	72	2	3.496	ppb	2.55	3,759.63	4.078E-02	Pulse	0.75	3
	Se	78	72	1	0.237	ppb	24.74	142.23	1.210E-03	Pulse	0.30	3
	Mo	95	103	2	5.465	ppb	1.13	35,994.93	1.221E-02	Pulse	0.30	3
	Ag	107	103	3	0.154	ppb	1.49	14,081.43	1.813E-03	Pulse	0.30	3
	Cd	111	115	3	0.185	ppb	4.66	2,940.21	3.506E-04	Pulse	0.30	3
	Sb	121	115	3	5.724	ppb	1.35	288,724.07	3.443E-02	Pulse	0.30	3
	Ba	137	159	3	1516.844	ppb	0.45	30,732,428.14	2.563E+00	Analog	0.30	3
	Tl	205	209	3	0.090	ppb	2.17	12,278.87	1.851E-03	Pulse	0.30	3
	Pb	208	209	3	14.087	ppb	0.23	2,293,048.38	3.457E-01	Pulse	0.30	3
	U	238	209	3	0.201	ppb	0.80	34,771.32	5.242E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,590,652.23	0.78	91.1	Analog	0.30	3
2	Sc	45	119,594.12	1.65	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,649,080.94	0.21	99.5	Analog	0.30	3
1	Ge	72	117,594.49	0.57	106.5	Pulse	0.30	3
2	Ge	72	92,176.99	1.32	103.5	Pulse	0.30	3
2	Rh	103	2,948,743.60	0.94	95.7	Analog	0.30	3
3	Rh	103	7,768,478.01	0.36	92.5	Analog	0.30	3
3	In	115	8,386,824.54	0.50	94.6	Analog	0.30	3
3	Tb	159	11,990,509.13	0.68	95.6	Analog	0.30	3
3	Bi	209	6,633,490.11	0.43	90.6	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219032.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:53
Sample Name	N023107-001C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

OLR

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	42.34	107.78	6.956E-05	Pulse	0.30	3
Na	23	45	2	4165.341	ppb	2.30	6,070,498.45	5.305E+01	Analog	0.30	3
Mg	26	45	2	213.888	ppb	2.28	28,173.24	2.462E-01	Pulse	0.30	3
Al	27	45	2	405.326	ppb	0.84	96,099.63	8.397E-01	Pulse	0.30	3
K	39	45	2	1224.082	ppb	1.77	562,842.33	4.918E+00	Pulse	0.30	3
Ca	44	45	3	2634.168	ppb	0.90	5,557,049.43	1.278E+00	Analog	0.30	3
V	51	45	2	1.430	ppb	3.74	11,322.10	9.893E-02	Pulse	0.30	3
Cr	52	45	2	1.363	ppb	1.84	15,482.08	1.353E-01	Pulse	0.30	3
Mn	55	45	2	14.384	ppb	2.29	73,061.72	6.385E-01	Pulse	0.30	3
Fe	56	45	2	816.210	ppb	2.07	6,860,874.45	5.995E+01	Analog	0.30	3
Co	59	45	2	0.277	ppb	3.90	5,508.44	4.814E-02	Pulse	0.30	3
Ni	60	72	2	3.616	ppb	1.14	20,320.91	2.218E-01	Pulse	0.30	3
Cu	63	72	2	14.453	ppb	0.55	219,424.58	2.395E+00	Pulse	0.30	3
Zn	66	72	2	107.192	ppb	0.82	211,834.94	2.312E+00	Pulse	0.30	3
As	75	72	2	0.786	ppb	5.24	851.52	9.291E-03	Pulse	0.75	3
Se	78	72	1	0.053	ppb	60.49	32.23	2.792E-04	Pulse	0.30	3
Mo	95	103	2	1.090	ppb	4.57	7,280.89	2.442E-03	Pulse	0.30	3
Ag	107	103	3	0.535	ppb	11.07	40,449.58	5.215E-03	Pulse	0.30	3
Cd	111	115	3	0.039	ppb	20.27	656.11	7.910E-05	Pulse	0.30	3
Sb	121	115	3	1.195	ppb	1.25	61,496.57	7.413E-03	Pulse	0.30	3
Ba	137	159	3	317.691	ppb	0.40	6,290,837.98	5.368E-01	Analog	0.30	3
Tl	205	209	3	0.016	ppb	7.94	3,397.20	5.060E-04	Pulse	0.30	3
Pb	208	209	3	2.917	ppb	1.30	482,203.38	7.183E-02	Pulse	0.30	3
U	238	209	3	0.041	ppb	0.40	7,271.41	1.083E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,998.40	0.74	88.8	Analog	0.30	3
2	Sc	45	114,462.10	1.89	101.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,347,583.06	0.96	93.0	Analog	0.30	3
1	Ge	72	115,189.93	0.64	104.3	Pulse	0.30	3
2	Ge	72	91,635.93	0.44	102.9	Pulse	0.30	3
2	Rh	103	2,981,445.96	1.15	96.8	Analog	0.30	3
3	Rh	103	7,758,476.90	0.81	92.4	Analog	0.30	3
3	In	115	8,296,337.59	0.45	93.6	Analog	0.30	3
3	Tb	159	11,718,333.16	0.62	93.4	Analog	0.30	3
3	Bi	209	6,713,791.22	1.18	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219033.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:58
Sample Name	N023107-001C-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.289	ppb	0.68	90,811.23	5.647E-02	Pulse	0.30	3
	Na	23	45	2	19048.672	ppb	1.92	29,410,389.28	2.394E+02	Analog	0.30	3
	Mg	26	45	2	1078.775	ppb	0.67	152,113.24	1.238E+00	Pulse	0.30	3
OLR	Al	27	45	2	2034.795	ppb	0.52	516,099.36	4.202E+00	Pulse	0.30	3
	K	39	45	2	5491.315	ppb	1.56	2,658,857.60	2.164E+01	Analog	0.30	3
	Ca	44	45	3	12122.607	ppb	0.87	27,821,909.59	5.867E+00	Analog	0.30	3
	V	51	45	2	16.224	ppb	0.98	129,190.69	1.052E+00	Pulse	0.30	3
	Cr	52	45	2	15.485	ppb	0.80	169,670.44	1.381E+00	Pulse	0.30	3
	Mn	55	45	2	158.326	ppb	1.26	859,115.83	6.994E+00	Pulse	0.30	3
	Fe	56	45	2	3754.480	ppb	1.03	33,867,388.91	2.757E+02	Analog	0.30	3
	Co	59	45	2	10.237	ppb	0.79	217,512.58	1.771E+00	Pulse	0.30	3
	Ni	60	72	2	26.785	ppb	0.25	152,787.10	1.624E+00	Pulse	0.30	3
	Cu	63	72	2	77.997	ppb	1.05	1,190,125.76	1.265E+01	Pulse	0.30	3
OLR	Zn	66	72	2	560.945	ppb	0.86	1,126,107.91	1.197E+01	Pulse	0.30	3
	As	75	72	2	12.898	ppb	1.40	14,117.82	1.500E-01	Pulse	0.75	3
	Se	78	72	1	8.344	ppb	5.36	5,102.16	4.219E-02	Pulse	0.30	3
	Mo	95	103	2	15.320	ppb	0.92	103,483.70	3.421E-02	Pulse	0.30	3
	Ag	107	103	3	7.465	ppb	5.66	532,645.82	6.711E-02	Pulse	0.30	3
	Cd	111	115	3	9.943	ppb	0.82	158,428.47	1.850E-02	Pulse	0.30	3
	Sb	121	115	3	15.533	ppb	0.91	795,839.07	9.293E-02	Pulse	0.30	3
	Ba	137	159	3	1499.852	ppb	0.91	31,052,399.50	2.534E+00	Analog	0.30	3
	Tl	205	209	3	10.039	ppb	0.71	1,226,949.89	1.818E-01	Pulse	0.30	3
	Pb	208	209	3	23.364	ppb	0.69	3,866,944.69	5.731E-01	Analog	0.30	3
	U	238	209	3	10.249	ppb	0.31	1,796,441.04	2.662E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,608,139.56	1.00	92.1	Analog	0.30	3
2	Sc	45	122,833.82	0.76	108.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,742,074.86	1.34	101.5	Analog	0.30	3
1	Ge	72	120,931.97	0.15	109.5	Pulse	0.30	3
2	Ge	72	94,099.68	1.12	105.6	Pulse	0.30	3
2	Rh	103	3,025,029.26	1.71	98.2	Analog	0.30	3
3	Rh	103	7,937,392.73	0.35	94.5	Analog	0.30	3
3	In	115	8,564,090.04	0.85	96.6	Analog	0.30	3
3	Tb	159	12,252,784.96	0.61	97.7	Analog	0.30	3
3	Bi	209	6,747,435.39	0.45	92.1	Analog	0.30	3

Quantitation Report

File Name	A0219034.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:04
Sample Name	N023107-001C-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.582	ppb	0.16	92,901.29	5.825E-02	Pulse	0.30	3
	Na	23	45	2	18341.761	ppb	0.20	28,395,759.30	2.306E+02	Analog	0.30	3
	Mg	26	45	2	1044.347	ppb	0.61	147,639.20	1.199E+00	Pulse	0.30	3
OLR	Al	27	45	2	1986.939	ppb	0.94	505,225.00	4.103E+00	Pulse	0.30	3
	K	39	45	2	5362.788	ppb	0.61	2,603,387.31	2.114E+01	Analog	0.30	3
	Ca	44	45	3	11687.298	ppb	0.42	27,056,808.21	5.657E+00	Analog	0.30	3
	V	51	45	2	16.310	ppb	0.80	130,200.37	1.057E+00	Pulse	0.30	3
	Cr	52	45	2	15.565	ppb	0.64	170,966.40	1.388E+00	Pulse	0.30	3
	Mn	55	45	2	159.125	ppb	0.14	865,673.98	7.030E+00	Pulse	0.30	3
	Fe	56	45	2	3635.805	ppb	0.60	32,879,687.06	2.670E+02	Analog	0.30	3
	Co	59	45	2	10.423	ppb	0.75	222,017.81	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.424	ppb	0.68	150,655.89	1.602E+00	Pulse	0.30	3
	Cu	63	72	2	76.588	ppb	0.71	1,168,237.27	1.242E+01	Pulse	0.30	3
OLR	Zn	66	72	2	548.298	ppb	0.45	1,100,286.48	1.170E+01	Pulse	0.30	3
	As	75	72	2	12.765	ppb	1.00	13,966.62	1.485E-01	Pulse	0.75	3
	Se	78	72	1	8.580	ppb	3.26	5,241.10	4.338E-02	Pulse	0.30	3
	Mo	95	103	2	15.703	ppb	0.29	105,860.69	3.506E-02	Pulse	0.30	3
	Ag	107	103	3	8.498	ppb	2.36	608,852.96	7.633E-02	Pulse	0.30	3
	Cd	111	115	3	10.094	ppb	1.17	161,921.78	1.878E-02	Pulse	0.30	3
	Sb	121	115	3	15.516	ppb	0.39	800,431.39	9.283E-02	Pulse	0.30	3
	Ba	137	159	3	1511.671	ppb	0.21	31,071,170.28	2.554E+00	Analog	0.30	3
	Tl	205	209	3	10.293	ppb	0.29	1,249,439.76	1.864E-01	Pulse	0.30	3
	Pb	208	209	3	23.334	ppb	0.68	3,836,010.73	5.724E-01	Analog	0.30	3
	U	238	209	3	10.225	ppb	1.12	1,780,229.79	2.656E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,766.60	0.62	91.4	Analog	0.30	3
2	Sc	45	123,149.68	1.24	108.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,782,904.58	0.47	102.3	Analog	0.30	3
1	Ge	72	120,825.62	1.00	109.4	Pulse	0.30	3
2	Ge	72	94,057.39	1.15	105.6	Pulse	0.30	3
2	Rh	103	3,019,309.61	1.44	98.0	Analog	0.30	3
3	Rh	103	7,975,857.24	0.58	95.0	Analog	0.30	3
3	In	115	8,622,350.72	0.36	97.3	Analog	0.30	3
3	Tb	159	12,164,031.48	0.83	97.0	Analog	0.30	3
3	Bi	209	6,702,085.87	0.91	91.5	Analog	0.30	3

Quantitation Report

File Name	A0219035.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:09
Sample Name	N023107-001C-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.644	ppb	0.69	94,079.85	5.863E-02	Pulse	0.30	3
	Na	23	45	2	18324.680	ppb	0.54	28,860,210.68	2.304E+02	Analog	0.30	3
	Mg	26	45	2	1050.555	ppb	0.65	151,085.21	1.206E+00	Pulse	0.30	3
OLR	Al	27	45	2	1997.576	ppb	0.32	516,755.85	4.125E+00	Pulse	0.30	3
	K	39	45	2	5337.619	ppb	1.72	2,636,247.35	2.104E+01	Analog	0.30	3
	Ca	44	45	3	11786.686	ppb	0.44	27,420,781.82	5.705E+00	Analog	0.30	3
	V	51	45	2	16.322	ppb	0.82	132,554.51	1.058E+00	Pulse	0.30	3
	Cr	52	45	2	15.490	ppb	0.85	173,090.00	1.382E+00	Pulse	0.30	3
	Mn	55	45	2	158.765	ppb	0.14	878,675.24	7.014E+00	Pulse	0.30	3
	Fe	56	45	2	3648.059	ppb	0.14	33,563,158.28	2.679E+02	Analog	0.30	3
	Co	59	45	2	10.422	ppb	0.30	225,843.85	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.063	ppb	0.54	152,317.68	1.580E+00	Pulse	0.30	3
	Cu	63	72	2	75.601	ppb	0.87	1,182,063.53	1.226E+01	Pulse	0.30	3
OLR	Zn	66	72	2	541.622	ppb	1.39	1,113,963.91	1.156E+01	Pulse	0.30	3
	As	75	72	2	12.585	ppb	0.77	14,112.51	1.464E-01	Pulse	0.75	3
	Se	78	72	1	8.768	ppb	0.33	5,365.57	4.433E-02	Pulse	0.30	3
	Mo	95	103	2	15.671	ppb	0.52	107,365.89	3.499E-02	Pulse	0.30	3
	Ag	107	103	3	8.521	ppb	2.91	613,080.41	7.654E-02	Pulse	0.30	3
	Cd	111	115	3	10.142	ppb	0.60	163,126.14	1.887E-02	Pulse	0.30	3
	Sb	121	115	3	15.603	ppb	0.74	807,060.82	9.335E-02	Pulse	0.30	3
	Ba	137	159	3	1517.472	ppb	0.30	31,407,455.10	2.564E+00	Analog	0.30	3
	Tl	205	209	3	10.308	ppb	0.18	1,255,185.22	1.867E-01	Pulse	0.30	3
	Pb	208	209	3	23.292	ppb	0.53	3,840,975.20	5.714E-01	Analog	0.30	3
	U	238	209	3	10.154	ppb	1.09	1,773,199.23	2.638E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,632.24	0.40	91.9	Analog	0.30	3
2	Sc	45	125,280.62	1.07	110.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,806,488.54	0.44	102.8	Analog	0.30	3
1	Ge	72	121,023.80	0.37	109.6	Pulse	0.30	3
2	Ge	72	96,408.68	1.59	108.2	Pulse	0.30	3
2	Rh	103	3,068,662.07	1.51	99.6	Analog	0.30	3
3	Rh	103	8,009,303.22	0.20	95.4	Analog	0.30	3
3	In	115	8,645,523.06	0.58	97.6	Analog	0.30	3
3	Tb	159	12,248,633.70	0.38	97.7	Analog	0.30	3
3	Bi	209	6,722,614.97	0.29	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219036.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:15
Sample Name	N023107-002C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.022	ppb	23.65	234.46	1.453E-04	Pulse	0.30	3
	Na	23	45	2	13216.677	ppb	0.46	21,009,201.91	1.664E+02	Analog	0.30	3
OLR	Mg	26	45	2	434.833	ppb	0.50	63,086.34	4.997E-01	Pulse	0.30	3
	Al	27	45	2	878.927	ppb	0.97	229,381.36	1.817E+00	Pulse	0.30	3
	K	39	45	2	3532.848	ppb	1.49	1,763,540.69	1.397E+01	Analog	0.30	3
	Ca	44	45	3	3351.739	ppb	0.28	7,817,937.04	1.625E+00	Analog	0.30	3
	V	51	45	2	13.877	ppb	0.71	113,706.51	9.006E-01	Pulse	0.30	3
	Cr	52	45	2	5.068	ppb	1.77	58,345.91	4.622E-01	Pulse	0.30	3
	Mn	55	45	2	50.738	ppb	0.26	283,273.71	2.244E+00	Pulse	0.30	3
	Fe	56	45	2	2370.001	ppb	0.84	21,974,477.51	1.741E+02	Analog	0.30	3
	Co	59	45	2	0.771	ppb	2.02	16,860.31	1.336E-01	Pulse	0.30	3
	Ni	60	72	2	15.946	ppb	0.59	93,782.54	9.678E-01	Pulse	0.30	3
	Cu	63	72	2	55.620	ppb	0.37	875,759.93	9.038E+00	Pulse	0.30	3
OLR	Zn	66	72	2	395.772	ppb	0.48	819,062.82	8.453E+00	Pulse	0.30	3
	As	75	72	2	2.275	ppb	0.57	2,576.50	2.659E-02	Pulse	0.75	3
	Se	78	72	1	0.118	ppb	14.33	75.56	6.070E-04	Pulse	0.30	3
	Mo	95	103	2	2.707	ppb	1.09	18,849.55	6.051E-03	Pulse	0.30	3
	Ag	107	103	3	0.170	ppb	0.31	16,048.51	1.957E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-331.12	-3.775E-05	Pulse	0.30	3
	Sb	121	115	3	27.422	ppb	1.74	1,437,461.96	1.638E-01	Analog	0.30	3
	Ba	137	159	3	423.884	ppb	0.74	8,836,352.66	7.163E-01	Analog	0.30	3
	Tl	205	209	3	0.082	ppb	4.70	11,420.39	1.698E-03	Pulse	0.30	3
	Pb	208	209	3	10.369	ppb	0.81	1,711,882.78	2.545E-01	Pulse	0.30	3
	U	238	209	3	0.090	ppb	1.67	15,877.07	2.360E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,615,750.94	1.61	92.6	Analog	0.30	3
2	Sc	45	126,255.55	1.39	111.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,810,082.05	0.77	102.9	Analog	0.30	3
1	Ge	72	124,560.53	1.35	112.8	Pulse	0.30	3
2	Ge	72	96,904.32	1.00	108.8	Pulse	0.30	3
2	Rh	103	3,114,711.34	1.29	101.1	Analog	0.30	3
3	Rh	103	8,200,317.52	0.33	97.7	Analog	0.30	3
3	In	115	8,774,015.03	1.20	99.0	Analog	0.30	3
3	Tb	159	12,336,499.54	0.35	98.4	Analog	0.30	3
3	Bi	209	6,726,190.18	1.11	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219037.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:20
Sample Name	N023107-003C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.024	ppb	23.25	250.01	1.559E-04	Pulse	0.30	3
	Na	23	45	2	11520.563	ppb	0.61	18,258,328.48	1.452E+02	Analog	0.30	3
	Mg	26	45	2	560.740	ppb	0.40	81,016.85	6.441E-01	Pulse	0.30	3
OLR	Al	27	45	2	807.278	ppb	1.04	209,924.41	1.669E+00	Pulse	0.30	3
	K	39	45	2	2913.126	ppb	0.58	1,451,393.00	1.154E+01	Analog	0.30	3
	Ca	44	45	3	4681.658	ppb	0.94	10,781,309.15	2.269E+00	Analog	0.30	3
	V	51	45	2	9.638	ppb	1.01	78,938.35	6.276E-01	Pulse	0.30	3
	Cr	52	45	2	3.893	ppb	1.03	45,093.97	3.585E-01	Pulse	0.30	3
	Mn	55	45	2	43.407	ppb	1.47	241,479.98	1.920E+00	Pulse	0.30	3
	Fe	56	45	2	2717.071	ppb	0.83	25,098,937.07	1.995E+02	Analog	0.30	3
	Co	59	45	2	0.843	ppb	1.59	18,375.01	1.461E-01	Pulse	0.30	3
	Ni	60	72	2	5.749	ppb	0.61	33,898.97	3.508E-01	Pulse	0.30	3
	Cu	63	72	2	45.954	ppb	0.81	722,606.77	7.478E+00	Pulse	0.30	3
OLR	Zn	66	72	2	295.378	ppb	0.30	610,394.58	6.316E+00	Pulse	0.30	3
	As	75	72	2	4.161	ppb	1.80	4,686.73	4.850E-02	Pulse	0.75	3
	Se	78	72	1	0.110	ppb	39.51	71.11	5.658E-04	Pulse	0.30	3
	Mo	95	103	2	1.839	ppb	1.78	12,722.27	4.114E-03	Pulse	0.30	3
	Ag	107	103	3	0.058	ppb	6.22	7,757.39	9.573E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-657.07	-7.561E-05	Pulse	0.30	3
	Sb	121	115	3	2.417	ppb	0.37	127,772.73	1.470E-02	Pulse	0.30	3
	Ba	137	159	3	453.564	ppb	0.67	9,285,531.34	7.664E-01	Analog	0.30	3
	Tl	205	209	3	0.056	ppb	4.43	8,178.13	1.233E-03	Pulse	0.30	3
	Pb	208	209	3	5.996	ppb	0.89	976,865.92	1.473E-01	Pulse	0.30	3
	U	238	209	3	0.066	ppb	3.21	11,608.55	1.751E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,197.95	0.61	91.9	Analog	0.30	3
2	Sc	45	125,781.66	0.86	111.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,752,729.44	0.83	101.7	Analog	0.30	3
1	Ge	72	125,544.32	0.74	113.7	Pulse	0.30	3
2	Ge	72	96,639.84	1.09	108.5	Pulse	0.30	3
2	Rh	103	3,092,595.41	0.82	100.4	Analog	0.30	3
3	Rh	103	8,103,391.55	0.20	96.5	Analog	0.30	3
3	In	115	8,689,928.45	0.19	98.1	Analog	0.30	3
3	Tb	159	12,115,474.40	0.46	96.6	Analog	0.30	3
3	Bi	209	6,632,214.07	1.13	90.5	Analog	0.30	3

Quantitation Report

File Name	A0219038.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:26
Sample Name	N023107-004C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	147.66	27.78	1.693E-05	Pulse	0.30	3
	Na	23	45	2	2459.087	ppb	0.78	4,007,503.79	3.168E+01	Analog	0.30	3
	Mg	26	45	2	219.266	ppb	2.85	31,922.19	2.524E-01	Pulse	0.30	3
	Al	27	45	2	93.057	ppb	5.05	24,712.23	1.954E-01	Pulse	0.30	3
	K	39	45	2	805.312	ppb	0.78	414,496.63	3.277E+00	Pulse	0.30	3
	Ca	44	45	3	3593.764	ppb	0.67	8,275,001.27	1.742E+00	Analog	0.30	3
	V	51	45	2	0.711	ppb	2.94	6,653.83	5.260E-02	Pulse	0.30	3
	Cr	52	45	2	5.572	ppb	1.05	64,087.09	5.066E-01	Pulse	0.30	3
	Mn	55	45	2	17.283	ppb	1.09	96,953.24	7.665E-01	Pulse	0.30	3
	Fe	56	45	2	302.554	ppb	1.47	2,812,531.84	2.224E+01	Analog	0.30	3
	Co	59	45	2	0.164	ppb	0.69	3,615.90	2.858E-02	Pulse	0.30	3
	Ni	60	72	2	7.140	ppb	0.51	43,216.82	4.350E-01	Pulse	0.30	3
	Cu	63	72	2	9.123	ppb	1.22	152,438.10	1.534E+00	Pulse	0.30	3
OLR	Zn	66	72	2	224.355	ppb	0.86	477,357.87	4.805E+00	Pulse	0.30	3
	As	75	72	2	1.010	ppb	1.34	1,180.86	1.189E-02	Pulse	0.75	3
	Se	78	72	1	0.114	ppb	22.60	76.67	5.873E-04	Pulse	0.30	3
	Mo	95	103	2	0.591	ppb	5.46	4,263.00	1.327E-03	Pulse	0.30	3
	Ag	107	103	3	0.021	ppb	10.06	5,183.96	6.198E-04	Pulse	0.30	3
	Cd	111	115	3	0.100	ppb	2.07	1,699.83	1.925E-04	Pulse	0.30	3
	Sb	121	115	3	2.160	ppb	0.81	116,247.37	1.317E-02	Pulse	0.30	3
	Ba	137	159	3	86.379	ppb	0.44	1,788,487.21	1.460E-01	Analog	0.30	3
	Tl	205	209	3	0.041	ppb	4.47	6,435.02	9.496E-04	Pulse	0.30	3
	Pb	208	209	3	1.129	ppb	1.23	189,710.15	2.799E-02	Pulse	0.30	3
	U	238	209	3	0.010	ppb	8.19	1,981.64	2.925E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,638,775.80	0.59	93.9	Analog	0.30	3
2	Sc	45	126,495.34	1.03	111.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,749,382.19	0.73	101.6	Analog	0.30	3
1	Ge	72	130,472.11	0.35	118.2	Pulse	0.30	3
2	Ge	72	99,355.46	1.37	111.5	Pulse	0.30	3
2	Rh	103	3,212,644.95	1.08	104.3	Analog	0.30	3
3	Rh	103	8,363,344.67	0.30	99.6	Analog	0.30	3
3	In	115	8,829,257.25	0.36	99.6	Analog	0.30	3
3	Tb	159	12,252,364.96	0.71	97.7	Analog	0.30	3
3	Bi	209	6,777,691.63	1.04	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219039.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:31
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.688	ppb	0.65	188,122.84	1.197E-01	Pulse	0.30	3
Na	23	45	2	202.417	ppb	3.55	404,971.81	3.422E+00	Pulse	0.30	3
Mg	26	45	2	196.725	ppb	1.08	26,814.38	2.265E-01	Pulse	0.30	3
Al	27	45	2	21.614	ppb	4.20	5,678.54	4.799E-02	Pulse	0.30	3
K	39	45	2	209.229	ppb	3.80	111,284.40	9.404E-01	Pulse	0.30	3
Ca	44	45	3	211.944	ppb	0.52	467,149.56	1.067E-01	Pulse	0.30	3
V	51	45	2	20.053	ppb	1.72	153,686.83	1.298E+00	Pulse	0.30	3
Cr	52	45	2	19.746	ppb	1.57	207,995.73	1.757E+00	Pulse	0.30	3
Mn	55	45	2	20.156	ppb	0.97	105,756.72	8.934E-01	Pulse	0.30	3
Fe	56	45	2	20.830	ppb	2.82	183,293.49	1.549E+00	Pulse	0.30	3
Co	59	45	2	19.990	ppb	1.42	409,281.74	3.458E+00	Pulse	0.30	3
Ni	60	72	2	19.379	ppb	0.73	110,063.84	1.176E+00	Pulse	0.30	3
Cu	63	72	2	20.252	ppb	0.43	311,810.56	3.330E+00	Pulse	0.30	3
Zn	66	72	2	19.198	ppb	0.57	41,122.99	4.392E-01	Pulse	0.30	3
As	75	72	2	19.750	ppb	0.43	21,501.82	2.296E-01	Pulse	0.75	3
Se	78	72	1	19.048	ppb	1.09	11,630.23	9.630E-02	Pulse	0.30	3
Mo	95	103	2	19.815	ppb	0.82	136,309.08	4.424E-02	Pulse	0.30	3
Ag	107	103	3	20.027	ppb	0.30	1,443,869.29	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.709	ppb	0.26	328,451.00	3.852E-02	Pulse	0.30	3
Sb	121	115	3	20.505	ppb	0.66	1,045,211.65	1.226E-01	Pulse	0.30	3
Ba	137	159	3	21.759	ppb	0.36	434,082.71	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.250	ppb	0.66	2,515,616.78	3.666E-01	Analog	0.30	3
Pb	208	209	3	20.649	ppb	0.70	3,476,109.05	5.065E-01	Analog	0.30	3
U	238	209	3	19.562	ppb	0.55	3,487,010.81	5.081E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,571,817.70	0.54	90.1	Analog	0.30	3
2	Sc	45	118,396.37	2.30	104.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,377,428.10	0.83	93.7	Analog	0.30	3
1	Ge	72	120,769.56	0.80	109.4	Pulse	0.30	3
2	Ge	72	93,631.35	0.89	105.1	Pulse	0.30	3
2	Rh	103	3,080,994.47	0.73	100.0	Analog	0.30	3
3	Rh	103	8,052,352.52	0.29	95.9	Analog	0.30	3
3	In	115	8,526,113.91	0.39	96.2	Analog	0.30	3
3	Tb	159	11,802,323.99	0.93	94.1	Analog	0.30	3
3	Bi	209	6,862,468.09	0.51	93.7	Analog	0.30	3

Quantitation Report

File Name	A0219040.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:37
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	103.27	25.56	1.659E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	99,480.76	8.744E-01	Pulse	0.30	3
Mg	26	45	2	0.230	ppb	62.68	125.56	1.101E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.23	2.742E-03	Pulse	0.30	3
K	39	45	2	2.282	ppb	37.02	14,702.60	1.292E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,965.21	3.745E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	5.600E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,138.87	1.001E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	270.08	2.369E-03	Pulse	0.30	3
Fe	56	45	2	0.085	ppb	8.29	2,888.56	2.538E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	53.54	34.33	3.014E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	68.75	7.512E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,174.80	1.285E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	365.07	3.990E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	168.15	17.33	1.896E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	45.75	12.22	1.044E-04	Pulse	0.30	3
Mo	95	103	2	0.112	ppb	2.27	791.17	2.582E-04	Pulse	0.30	3
Ag	107	103	3	0.520	ppb	11.33	40,375.60	5.080E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	48.44	5.769E-06	Pulse	0.30	3
Sb	121	115	3	0.058	ppb	0.68	5,296.69	6.316E-04	Pulse	0.30	3
Ba	137	159	3	0.024	ppb	7.66	641.51	5.438E-05	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	18.67	2,256.95	3.315E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,554.34	2.283E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	12.59	754.02	1.107E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,804.95	0.76	88.1	Analog	0.30	3
2	Sc	45	113,808.15	1.91	100.6	Pulse	0.30	3
3	Sc	45	4,263,224.59	0.78	91.2	Analog	0.30	3
1	Ge	72	116,954.37	0.46	105.9	Pulse	0.30	3

2	Ge	72	91,488.13	0.72	102.7	Pulse	0.30	3
2	Rh	103	3,064,233.63	1.39	99.5	Analog	0.30	3
3	Rh	103	7,948,730.64	0.20	94.7	Analog	0.30	3
3	In	115	8,385,445.21	0.54	94.6	Analog	0.30	3
3	Tb	159	11,795,585.38	0.26	94.1	Analog	0.30	3
3	Bi	209	6,810,085.11	0.43	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219041.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:42
Sample Name	N023137-001A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	16.77	83.33	5.396E-05	Pulse	0.30	3
	Na	23	45	2	2140.859	ppb	1.36	3,269,645.47	2.770E+01	Analog	0.30	3
	Mg	26	45	2	1031.467	ppb	0.96	139,789.97	1.184E+00	Pulse	0.30	3
OLR	Al	27	45	2	203.316	ppb	1.56	49,920.40	4.229E-01	Pulse	0.30	3
	K	39	45	2	1030.442	ppb	0.55	491,044.05	4.159E+00	Pulse	0.30	3
	Ca	44	45	3	12325.137	ppb	0.61	25,989,299.34	5.965E+00	Analog	0.30	3
	V	51	45	2	2.210	ppb	1.52	17,611.12	1.492E-01	Pulse	0.30	3
	Cr	52	45	2	0.832	ppb	16.71	10,450.75	8.844E-02	Pulse	0.30	3
	Mn	55	45	2	9.308	ppb	1.04	48,925.26	4.144E-01	Pulse	0.30	3
	Fe	56	45	2	231.349	ppb	0.73	2,007,891.11	1.701E+01	Analog	0.30	3
	Co	59	45	2	0.193	ppb	0.68	3,975.32	3.367E-02	Pulse	0.30	3
	Ni	60	72	2	1.904	ppb	1.84	10,900.98	1.181E-01	Pulse	0.30	3
	Cu	63	72	2	13.180	ppb	1.10	202,030.88	2.189E+00	Pulse	0.30	3
	Zn	66	72	2	70.984	ppb	1.65	142,219.93	1.541E+00	Pulse	0.30	3
	As	75	72	2	0.576	ppb	1.85	632.05	6.849E-03	Pulse	0.75	3
	Se	78	72	1	0.124	ppb	29.72	76.67	6.354E-04	Pulse	0.30	3
	Mo	95	103	2	1.269	ppb	2.95	8,620.49	2.840E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-198.76	-2.546E-05	Pulse	0.30	3
	Cd	111	115	3	0.008	ppb	11.72	171.91	2.049E-05	Pulse	0.30	3
	Sb	121	115	3	1.680	ppb	0.54	86,419.33	1.030E-02	Pulse	0.30	3
	Ba	137	159	3	27.941	ppb	0.28	560,873.04	4.723E-02	Pulse	0.30	3
	Tl	205	209	3	0.027	ppb	0.30	4,605.34	6.978E-04	Pulse	0.30	3
	Pb	208	209	3	1.331	ppb	0.79	217,454.83	3.295E-02	Pulse	0.30	3
	U	238	209	3	0.135	ppb	0.46	23,332.70	3.535E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,543,337.27	1.22	88.4	Analog	0.30	3
2	Sc	45	118,062.44	1.13	104.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,356,688.27	0.25	93.2	Analog	0.30	3
1	Ge	72	120,818.38	0.92	109.4	Pulse	0.30	3
2	Ge	72	92,293.73	1.37	103.6	Pulse	0.30	3
2	Rh	103	3,035,606.24	1.04	98.5	Analog	0.30	3
3	Rh	103	7,803,226.76	0.81	92.9	Analog	0.30	3
3	In	115	8,387,919.35	0.51	94.6	Analog	0.30	3
3	Tb	159	11,876,189.96	0.43	94.7	Analog	0.30	3
3	Bi	209	6,600,061.15	0.51	90.1	Analog	0.30	3

Quantitation Report

File Name	A0219042.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:48
Sample Name	N023137-002A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.008	ppb	23.84	87.78	5.835E-05	Pulse	0.30	3
	Na	23	45	2	2325.162	ppb	0.19	3,422,747.62	3.000E+01	Analog	0.30	3
	Mg	26	45	2	1061.363	ppb	0.11	138,987.75	1.218E+00	Pulse	0.30	3
OLR	Al	27	45	2	276.598	ppb	2.17	65,477.68	5.741E-01	Pulse	0.30	3
	K	39	45	2	1230.861	ppb	0.34	564,074.57	4.945E+00	Pulse	0.30	3
	Ca	44	45	3	12176.880	ppb	0.47	24,920,603.79	5.894E+00	Analog	0.30	3
	V	51	45	2	2.350	ppb	0.04	18,043.96	1.582E-01	Pulse	0.30	3
	Cr	52	45	2	0.907	ppb	1.34	10,845.89	9.509E-02	Pulse	0.30	3
	Mn	55	45	2	11.098	ppb	2.19	56,278.80	4.934E-01	Pulse	0.30	3
	Fe	56	45	2	321.610	ppb	4.04	2,696,120.65	2.364E+01	Analog	0.30	3
	Co	59	45	2	0.235	ppb	4.21	4,657.67	4.082E-02	Pulse	0.30	3
	Ni	60	72	2	2.081	ppb	2.15	11,641.72	1.289E-01	Pulse	0.30	3
	Cu	63	72	2	13.651	ppb	0.40	204,605.15	2.265E+00	Pulse	0.30	3
	Zn	66	72	2	78.119	ppb	0.90	152,915.04	1.693E+00	Pulse	0.30	3
	As	75	72	2	0.603	ppb	2.19	647.16	7.166E-03	Pulse	0.75	3
	Se	78	72	1	0.183	ppb	20.91	108.90	9.367E-04	Pulse	0.30	3
	Mo	95	103	2	1.372	ppb	1.38	9,103.01	3.070E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-224.71	-2.947E-05	Pulse	0.30	3
	Cd	111	115	3	0.019	ppb	17.93	333.11	4.046E-05	Pulse	0.30	3
	Sb	121	115	3	2.259	ppb	0.65	113,282.82	1.376E-02	Pulse	0.30	3
	Ba	137	159	3	27.493	ppb	0.36	543,249.24	4.647E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	0.74	4,969.93	7.687E-04	Pulse	0.30	3
	Pb	208	209	3	4.845	ppb	0.97	769,881.55	1.191E-01	Pulse	0.30	3
	U	238	209	3	0.135	ppb	1.28	22,886.48	3.540E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,566.68	0.47	86.2	Analog	0.30	3
2	Sc	45	114,071.78	0.82	100.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,228,342.37	0.21	90.5	Analog	0.30	3
1	Ge	72	116,403.82	0.95	105.4	Pulse	0.30	3
2	Ge	72	90,330.70	1.59	101.4	Pulse	0.30	3
2	Rh	103	2,964,536.42	1.45	96.2	Analog	0.30	3
3	Rh	103	7,628,910.24	0.50	90.9	Analog	0.30	3
3	In	115	8,232,197.23	0.19	92.9	Analog	0.30	3
3	Tb	159	11,690,427.33	0.29	93.2	Analog	0.30	3
3	Bi	209	6,464,892.68	0.75	88.3	Analog	0.30	3

Quantitation Report

File Name	A0219043.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:53
Sample Name	N023137-003A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.015	ppb	9.23	152.23	1.013E-04	Pulse	0.30	3
	Na	23	45	2	3814.152	ppb	0.83	5,510,344.22	4.865E+01	Analog	0.30	3
	Mg	26	45	2	1071.745	ppb	1.27	139,342.66	1.230E+00	Pulse	0.30	3
OLR	Al	27	45	2	504.586	ppb	2.62	118,275.23	1.044E+00	Pulse	0.30	3
	K	39	45	2	1301.836	ppb	2.00	591,520.67	5.223E+00	Pulse	0.30	3
	Ca	44	45	3	8138.466	ppb	0.49	16,715,639.89	3.940E+00	Analog	0.30	3
	V	51	45	2	2.393	ppb	0.88	18,227.79	1.609E-01	Pulse	0.30	3
	Cr	52	45	2	2.776	ppb	7.39	29,424.73	2.600E-01	Pulse	0.30	3
	Mn	55	45	2	27.924	ppb	0.88	140,030.17	1.236E+00	Pulse	0.30	3
	Fe	56	45	2	622.859	ppb	0.64	5,183,063.01	4.576E+01	Analog	0.30	3
	Co	59	45	2	0.741	ppb	0.27	14,536.50	1.283E-01	Pulse	0.30	3
	Ni	60	72	2	6.938	ppb	6.71	37,551.86	4.228E-01	Pulse	0.30	3
	Cu	63	72	2	32.256	ppb	1.49	467,768.37	5.267E+00	Pulse	0.30	3
OLR	Zn	66	72	2	496.990	ppb	0.92	941,971.90	1.061E+01	Pulse	0.30	3
	As	75	72	2	0.526	ppb	0.98	556.49	6.265E-03	Pulse	0.75	3
	Se	78	72	1	0.160	ppb	13.17	95.56	8.197E-04	Pulse	0.30	3
	Mo	95	103	2	5.575	ppb	3.31	36,965.65	1.245E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	102.21	1.327E-05	Pulse	0.30	3
	Cd	111	115	3	0.188	ppb	6.05	2,932.91	3.557E-04	Pulse	0.30	3
	Sb	121	115	3	6.796	ppb	1.27	336,612.84	4.082E-02	Pulse	0.30	3
	Ba	137	159	3	34.150	ppb	0.69	675,315.19	5.772E-02	Pulse	0.30	3
	Tl	205	209	3	0.034	ppb	7.21	5,483.49	8.381E-04	Pulse	0.30	3
	Pb	208	209	3	40.885	ppb	0.64	6,561,138.40	1.003E+00	Analog	0.30	3
	U	238	209	3	0.164	ppb	1.28	28,124.79	4.298E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,104.00	1.23	86.2	Analog	0.30	3
2	Sc	45	113,270.80	1.53	100.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,242,008.31	0.66	90.8	Analog	0.30	3
1	Ge	72	116,556.28	0.59	105.6	Pulse	0.30	3
2	Ge	72	88,817.98	1.37	99.7	Pulse	0.30	3
2	Rh	103	2,969,177.97	1.05	96.4	Analog	0.30	3
3	Rh	103	7,705,187.32	0.10	91.8	Analog	0.30	3
3	In	115	8,246,465.29	0.61	93.1	Analog	0.30	3
3	Tb	159	11,700,553.02	0.56	93.3	Analog	0.30	3
3	Bi	209	6,544,132.12	1.52	89.3	Analog	0.30	3

Quantitation Report

File Name	A0219044.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:59
Sample Name	N023137-004A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.012	ppb	22.75	125.56	8.213E-05	Pulse	0.30	3
	Na	23	45	2	5293.788	ppb	1.15	7,690,138.01	6.718E+01	Analog	0.30	3
	Mg	26	45	2	893.580	ppb	0.34	117,449.31	1.026E+00	Pulse	0.30	3
OLR	Al	27	45	2	510.840	ppb	1.89	121,063.67	1.057E+00	Pulse	0.30	3
	K	39	45	2	1655.259	ppb	0.50	756,518.91	6.608E+00	Pulse	0.30	3
	Ca	44	45	3	9419.663	ppb	0.50	19,575,420.54	4.560E+00	Analog	0.30	3
	V	51	45	2	2.260	ppb	0.55	17,440.95	1.523E-01	Pulse	0.30	3
	Cr	52	45	2	6.699	ppb	13.39	69,494.63	6.061E-01	Pulse	0.30	3
	Mn	55	45	2	41.588	ppb	0.46	210,605.03	1.840E+00	Pulse	0.30	3
	Fe	56	45	2	691.059	ppb	0.98	5,811,147.29	5.076E+01	Analog	0.30	3
	Co	59	45	2	0.696	ppb	2.17	13,815.41	1.207E-01	Pulse	0.30	3
	Ni	60	72	2	15.443	ppb	0.90	84,573.69	9.374E-01	Pulse	0.30	3
	Cu	63	72	2	28.295	ppb	0.46	417,523.48	4.628E+00	Pulse	0.30	3
OLR	Zn	66	72	2	244.149	ppb	0.56	471,455.45	5.226E+00	Pulse	0.30	3
	As	75	72	2	0.490	ppb	3.00	527.22	5.845E-03	Pulse	0.75	3
	Se	78	72	1	0.107	ppb	24.16	65.56	5.509E-04	Pulse	0.30	3
	Mo	95	103	2	7.371	ppb	9.59	49,085.64	1.646E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,372.49	1.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.854	ppb	1.14	13,203.25	1.594E-03	Pulse	0.30	3
	Sb	121	115	3	3.349	ppb	1.82	167,800.22	2.026E-02	Pulse	0.30	3
	Ba	137	159	3	31.650	ppb	0.33	633,301.42	5.349E-02	Pulse	0.30	3
	Tl	205	209	3	0.032	ppb	2.81	5,208.92	8.019E-04	Pulse	0.30	3
	Pb	208	209	3	19.565	ppb	0.77	3,117,926.63	4.800E-01	Analog	0.30	3
	U	238	209	3	0.190	ppb	0.87	32,238.95	4.963E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,527,362.24	1.14	87.5	Analog	0.30	3
2	Sc	45	114,484.55	1.86	101.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,292,714.10	0.15	91.9	Analog	0.30	3
1	Ge	72	118,959.58	0.34	107.7	Pulse	0.30	3
2	Ge	72	90,216.94	1.49	101.3	Pulse	0.30	3
2	Rh	103	2,983,216.66	0.93	96.8	Analog	0.30	3
3	Rh	103	7,750,173.63	0.28	92.3	Analog	0.30	3
3	In	115	8,281,794.92	0.34	93.5	Analog	0.30	3
3	Tb	159	11,838,723.02	0.23	94.4	Analog	0.30	3
3	Bi	209	6,496,317.26	0.61	88.7	Analog	0.30	3

Quantitation Report

File Name	A0219045.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:05
Sample Name	N023138-005A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.056	ppb	4.67	424.47	3.512E-04	Pulse	0.30	3
Na	23	45	2	1249167.705	ppb	0.15	1,589,730,447.42	1.564E+04	Analog	0.30	3
Mg	26	45	2	16891.856	ppb	0.28	1,969,282.80	1.938E+01	Analog	0.30	3
Al	27	45	2	96.154	ppb	2.12	20,503.14	2.018E-01	Pulse	0.30	3
K	39	45	2	12639.038	ppb	0.43	5,046,823.60	4.966E+01	Analog	0.30	3
Ca	44	45	3	28957.208	ppb	0.61	59,827,153.00	1.401E+01	Analog	0.30	3
V	51	45	2	20.905	ppb	0.54	137,523.62	1.353E+00	Pulse	0.30	3
Cr	52	45	2	44.618	ppb	0.34	401,574.23	3.952E+00	Pulse	0.30	3
Mn	55	45	2	22.429	ppb	0.31	100,979.56	9.937E-01	Pulse	0.30	3
Fe	56	45	2	1415.366	ppb	0.04	10,563,458.08	1.040E+02	Analog	0.30	3
Co	59	45	2	0.931	ppb	0.84	16,378.58	1.612E-01	Pulse	0.30	3
Ni	60	72	2	13.858	ppb	2.27	58,703.37	8.415E-01	Pulse	0.30	3
Cu	63	72	2	10.418	ppb	0.70	121,646.30	1.744E+00	Pulse	0.30	3
Zn	66	72	2	305.351	ppb	0.92	455,445.83	6.528E+00	Pulse	0.30	3
As	75	72	2	4.212	ppb	2.74	3,425.18	4.909E-02	Pulse	0.75	3
Se	78	72	1	1.843	ppb	3.52	803.39	9.326E-03	Pulse	0.30	3
Mo	95	103	2	177.054	ppb	1.60	799,142.29	3.952E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	107.74	2.071E-05	Pulse	0.30	3
Cd	111	115	3	11.398	ppb	1.75	124,981.84	2.121E-02	Pulse	0.30	3
Sb	121	115	3	1.496	ppb	0.79	54,263.43	9.206E-03	Pulse	0.30	3
Ba	137	159	3	27.106	ppb	0.35	398,160.53	4.582E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	9.00	1,855.75	4.586E-04	Pulse	0.30	3
Pb	208	209	3	2.549	ppb	0.06	254,204.43	6.280E-02	Pulse	0.30	3
U	238	209	3	7.041	ppb	0.25	740,320.99	1.829E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,209,611.49	2.69	69.3	Analog	0.30	3
2	Sc	45	101,618.97	1.64	89.8	Pulse	0.30	3
3	Sc	45	4,270,436.12	1.40	91.4	Analog	0.30	3
1	Ge	72	86,143.73	0.12	78.0	Pulse	0.30	3
2	Ge	72	69,770.60	1.94	78.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,021,752.90	0.95	65.6	Analog	0.30	3
3	Rh	103	5,223,832.15	0.62	62.2	Analog	0.30	3
3	In	115	5,894,451.98	1.21	66.5	Analog	0.30	3
3	Tb	159	8,690,531.12	1.01	69.3	Analog	0.30	3
3	Bi	209	4,047,551.85	0.82	55.3	Analog	0.30	3

Quantitation Report

File Name	A0219046.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:10
Sample Name	N023138-006A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.026	ppb	13.69	224.46	1.713E-04	Pulse	0.30	3
Na	23	45	2	967508.186	ppb	1.01	1,314,156,104.86	1.212E+04	Analog	0.30	3
Mg	26	45	2	33681.629	ppb	0.41	4,190,723.75	3.864E+01	Analog	0.30	3
Al	27	45	2	59.904	ppb	3.64	13,778.68	1.270E-01	Pulse	0.30	3
K	39	45	2	16795.017	ppb	0.45	7,152,981.07	6.595E+01	Analog	0.30	3
Ca	44	45	3	40200.898	ppb	0.62	91,195,145.31	1.945E+01	Analog	0.30	3
V	51	45	2	25.412	ppb	0.18	178,253.86	1.644E+00	Pulse	0.30	3
Cr	52	45	2	76.531	ppb	0.14	733,960.82	6.767E+00	Pulse	0.30	3
Mn	55	45	2	14.984	ppb	0.42	72,126.00	6.650E-01	Pulse	0.30	3
Fe	56	45	2	324.346	ppb	0.38	2,585,126.89	2.384E+01	Analog	0.30	3
Co	59	45	2	1.010	ppb	1.63	18,974.47	1.750E-01	Pulse	0.30	3
Ni	60	72	2	44.222	ppb	0.93	197,983.37	2.679E+00	Pulse	0.30	3
Cu	63	72	2	19.111	ppb	1.49	232,506.37	3.146E+00	Pulse	0.30	3
Zn	66	72	2	57.061	ppb	1.62	92,000.86	1.245E+00	Pulse	0.30	3
As	75	72	2	2.851	ppb	5.86	2,457.88	3.328E-02	Pulse	0.75	3
Se	78	72	1	2.534	ppb	1.67	1,124.53	1.282E-02	Pulse	0.30	3
Mo	95	103	2	76.239	ppb	0.89	371,318.77	1.702E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,028.39	-5.336E-04	Pulse	0.30	3
Cd	111	115	3	0.233	ppb	2.61	2,787.64	4.385E-04	Pulse	0.30	3
Sb	121	115	3	1.836	ppb	2.42	71,436.97	1.124E-02	Pulse	0.30	3
Ba	137	159	3	59.087	ppb	0.67	926,771.28	9.986E-02	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	4.01	2,927.09	6.454E-04	Pulse	0.30	3
Pb	208	209	3	3.113	ppb	1.01	347,543.26	7.663E-02	Pulse	0.30	3
U	238	209	3	8.001	ppb	0.47	942,755.87	2.079E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,310,892.69	0.97	75.1	Analog	0.30	3
2	Sc	45	108,457.21	2.09	95.8	Pulse	0.30	3
3	Sc	45	4,689,279.03	0.94	100.3	Analog	0.30	3
1	Ge	72	87,711.78	1.15	79.4	Pulse	0.30	3
2	Ge	72	73,916.58	2.52	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,181,590.72	1.43	70.8	Analog	0.30	3
3	Rh	103	5,674,024.57	0.76	67.6	Analog	0.30	3
3	In	115	6,357,284.42	0.33	71.7	Analog	0.30	3
3	Tb	159	9,281,162.50	0.29	74.0	Analog	0.30	3
3	Bi	209	4,535,772.40	1.21	61.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219047.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:16
Sample Name	N023063-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	6.148E-06	Pulse	0.30	3
Na	23	45	2	5708.222	ppb	0.48	9,561,103.75	7.237E+01	Analog	0.30	3
Mg	26	45	2	689.866	ppb	1.23	104,658.45	7.922E-01	Pulse	0.30	3
Al	27	45	2	2.609	ppb	4.15	1,159.66	8.780E-03	Pulse	0.30	3
K	39	45	2	311.179	ppb	1.77	177,015.95	1.340E+00	Pulse	0.30	3
Ca	44	45	3	4420.396	ppb	0.65	11,137,574.00	2.142E+00	Analog	0.30	3
V	51	45	2	0.107	ppb	5.25	1,807.97	1.369E-02	Pulse	0.30	3
Cr	52	45	2	13.388	ppb	0.55	158,034.97	1.196E+00	Pulse	0.30	3
Mn	55	45	2	10.263	ppb	0.36	60,321.63	4.566E-01	Pulse	0.30	3
Fe	56	45	2	1.986	ppb	2.56	21,797.83	1.650E-01	Pulse	0.30	3
Co	59	45	2	0.017	ppb	10.60	409.31	3.100E-03	Pulse	0.30	3
Ni	60	72	2	0.191	ppb	4.52	1,486.34	1.450E-02	Pulse	0.30	3
Cu	63	72	2	0.248	ppb	3.01	10,501.80	1.024E-01	Pulse	0.30	3
Zn	66	72	2	5.867	ppb	0.59	15,945.27	1.555E-01	Pulse	0.30	3
As	75	72	2	0.110	ppb	20.25	147.24	1.434E-03	Pulse	0.75	3
Se	78	72	1	0.020	ppb	52.50	14.45	1.102E-04	Pulse	0.30	3
Mo	95	103	2	0.527	ppb	6.70	3,853.97	1.185E-03	Pulse	0.30	3
Ag	107	103	3	0.268	ppb	10.63	24,588.92	2.833E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,106.24	-2.283E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,671.27	1.811E-04	Pulse	0.30	3
Ba	137	159	3	1.605	ppb	2.24	34,409.27	2.726E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,475.69	2.083E-04	Pulse	0.30	3
Pb	208	209	3	0.014	ppb	7.44	4,616.49	6.519E-04	Pulse	0.30	3
U	238	209	3	1.112	ppb	1.17	204,832.84	2.892E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,804,909.07	0.29	103.4	Analog	0.30	3
2	Sc	45	132,118.68	1.49	116.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,199,109.37	0.10	111.2	Analog	0.30	3
1	Ge	72	130,956.33	0.48	118.6	Pulse	0.30	3
2	Ge	72	102,536.21	0.98	115.1	Pulse	0.30	3
2	Rh	103	3,251,181.06	0.50	105.5	Analog	0.30	3
3	Rh	103	8,682,149.11	0.43	103.4	Analog	0.30	3
3	In	115	9,227,482.59	0.18	104.1	Analog	0.30	3
3	Tb	159	12,625,817.87	0.56	100.7	Analog	0.30	3
3	Bi	209	7,082,786.35	0.49	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219048.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:21
Sample Name	N023063-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.281	ppb	0.92	23,637.17	1.387E-02	Pulse	0.30	3
Na	23	45	2	26989.871	ppb	0.90	43,512,365.46	3.389E+02	Analog	0.30	3
Mg	26	45	2	3360.457	ppb	1.38	495,072.28	3.856E+00	Pulse	0.30	3
Al	27	45	2	48.211	ppb	1.31	13,207.49	1.029E-01	Pulse	0.30	3
K	39	45	2	1492.643	ppb	0.88	766,689.65	5.971E+00	Pulse	0.30	3
Ca	44	45	3	21300.812	ppb	0.25	51,802,739.78	1.031E+01	Analog	0.30	3
V	51	45	2	3.003	ppb	1.34	25,713.09	2.002E-01	Pulse	0.30	3
Cr	52	45	2	67.797	ppb	1.12	769,961.01	5.997E+00	Pulse	0.30	3
Mn	55	45	2	72.104	ppb	1.21	409,214.33	3.187E+00	Pulse	0.30	3
Fe	56	45	2	32.915	ppb	1.11	312,797.48	2.436E+00	Pulse	0.30	3
Co	59	45	2	2.166	ppb	1.40	48,136.86	3.749E-01	Pulse	0.30	3
Ni	60	72	2	3.198	ppb	1.65	19,310.18	1.965E-01	Pulse	0.30	3
Cu	63	72	2	4.337	ppb	0.52	74,907.56	7.621E-01	Pulse	0.30	3
Zn	66	72	2	53.308	ppb	1.13	114,500.56	1.165E+00	Pulse	0.30	3
As	75	72	2	2.698	ppb	2.12	3,096.19	3.150E-02	Pulse	0.75	3
Se	78	72	1	2.098	ppb	7.55	1,342.34	1.062E-02	Pulse	0.30	3
Mo	95	103	2	3.158	ppb	2.69	21,616.36	7.058E-03	Pulse	0.30	3
Ag	107	103	3	2.077	ppb	2.07	151,581.83	1.898E-02	Pulse	0.30	3
Cd	111	115	3	1.671	ppb	3.40	27,249.96	3.114E-03	Pulse	0.30	3
Sb	121	115	3	2.356	ppb	0.91	125,442.53	1.434E-02	Pulse	0.30	3
Ba	137	159	3	32.017	ppb	0.32	666,361.45	5.411E-02	Pulse	0.30	3
Tl	205	209	3	1.971	ppb	0.81	238,940.10	3.587E-02	Pulse	0.30	3
Pb	208	209	3	2.458	ppb	0.51	403,519.01	6.058E-02	Pulse	0.30	3
U	238	209	3	7.952	ppb	0.73	1,375,971.89	2.066E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,703,603.19	0.88	97.6	Analog	0.30	3
2	Sc	45	128,413.65	1.71	113.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,026,150.48	0.11	107.5	Analog	0.30	3
1	Ge	72	126,424.97	0.81	114.5	Pulse	0.30	3
2	Ge	72	98,291.66	1.38	110.3	Pulse	0.30	3
2	Rh	103	3,063,135.86	1.14	99.4	Analog	0.30	3
3	Rh	103	7,985,617.45	0.44	95.1	Analog	0.30	3
3	In	115	8,749,614.19	0.75	98.7	Analog	0.30	3
3	Tb	159	12,314,079.54	0.15	98.2	Analog	0.30	3
3	Bi	209	6,661,101.29	0.66	90.9	Analog	0.30	3

Quantitation Report

File Name	A0219049.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:27
Sample Name	N023063-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.166	ppb	1.72	21,546.55	1.318E-02	Pulse	0.30	3
Na	23	45	2	26329.855	ppb	1.50	40,441,022.18	3.306E+02	Analog	0.30	3
Mg	26	45	2	3296.903	ppb	1.07	462,759.27	3.783E+00	Pulse	0.30	3
Al	27	45	2	45.120	ppb	1.30	11,802.92	9.649E-02	Pulse	0.30	3
K	39	45	2	1442.579	ppb	1.51	706,379.04	5.775E+00	Pulse	0.30	3
Ca	44	45	3	20825.805	ppb	0.72	47,776,417.62	1.008E+01	Analog	0.30	3
V	51	45	2	2.951	ppb	2.17	24,081.60	1.969E-01	Pulse	0.30	3
Cr	52	45	2	65.769	ppb	0.59	711,694.05	5.818E+00	Pulse	0.30	3
Mn	55	45	2	69.862	ppb	0.77	377,764.82	3.088E+00	Pulse	0.30	3
Fe	56	45	2	30.412	ppb	0.96	275,518.24	2.252E+00	Pulse	0.30	3
Co	59	45	2	2.103	ppb	1.07	44,525.03	3.640E-01	Pulse	0.30	3
Ni	60	72	2	3.128	ppb	3.47	17,906.75	1.922E-01	Pulse	0.30	3
Cu	63	72	2	4.262	ppb	0.26	69,887.00	7.500E-01	Pulse	0.30	3
Zn	66	72	2	52.750	ppb	0.64	107,444.21	1.153E+00	Pulse	0.30	3
As	75	72	2	2.601	ppb	1.37	2,830.90	3.038E-02	Pulse	0.75	3
Se	78	72	1	2.178	ppb	2.38	1,304.55	1.102E-02	Pulse	0.30	3
Mo	95	103	2	2.997	ppb	0.98	19,683.92	6.698E-03	Pulse	0.30	3
Ag	107	103	3	2.213	ppb	0.89	155,750.70	2.020E-02	Pulse	0.30	3
Cd	111	115	3	1.638	ppb	2.50	25,718.91	3.052E-03	Pulse	0.30	3
Sb	121	115	3	2.296	ppb	0.62	117,803.75	1.398E-02	Pulse	0.30	3
Ba	137	159	3	31.186	ppb	0.44	629,049.96	5.271E-02	Pulse	0.30	3
Tl	205	209	3	1.931	ppb	0.50	230,108.87	3.515E-02	Pulse	0.30	3
Pb	208	209	3	2.382	ppb	0.68	384,232.81	5.870E-02	Pulse	0.30	3
U	238	209	3	7.993	ppb	1.00	1,359,171.22	2.076E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,634,842.82	0.94	93.7	Analog	0.30	3
2	Sc	45	122,337.19	1.35	108.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,741,296.70	0.53	101.5	Analog	0.30	3
1	Ge	72	118,415.47	1.30	107.2	Pulse	0.30	3
2	Ge	72	93,176.49	1.07	104.6	Pulse	0.30	3
2	Rh	103	2,938,845.96	0.42	95.4	Analog	0.30	3
3	Rh	103	7,711,396.83	0.26	91.8	Analog	0.30	3
3	In	115	8,427,379.32	0.47	95.1	Analog	0.30	3
3	Tb	159	11,934,342.18	0.27	95.2	Analog	0.30	3
3	Bi	209	6,546,038.93	0.73	89.4	Analog	0.30	3

Quantitation Report

File Name	A0219050.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:32
Sample Name	N023063-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.199	ppb	3.00	21,336.26	1.338E-02	Pulse	0.30	3
Na	23	45	2	26518.754	ppb	1.71	38,984,946.09	3.330E+02	Analog	0.30	3
Mg	26	45	2	3310.413	ppb	1.71	444,721.18	3.798E+00	Pulse	0.30	3
Al	27	45	2	45.587	ppb	2.98	11,414.45	9.745E-02	Pulse	0.30	3
K	39	45	2	1449.175	ppb	1.81	679,124.37	5.801E+00	Pulse	0.30	3
Ca	44	45	3	20828.837	ppb	0.67	46,611,339.31	1.008E+01	Analog	0.30	3
V	51	45	2	2.934	ppb	2.73	22,917.69	1.958E-01	Pulse	0.30	3
Cr	52	45	2	66.572	ppb	2.01	689,391.21	5.889E+00	Pulse	0.30	3
Mn	55	45	2	70.550	ppb	1.73	365,107.04	3.119E+00	Pulse	0.30	3
Fe	56	45	2	30.540	ppb	1.81	264,795.46	2.262E+00	Pulse	0.30	3
Co	59	45	2	2.154	ppb	2.54	43,643.65	3.728E-01	Pulse	0.30	3
Ni	60	72	2	3.052	ppb	1.86	17,053.99	1.876E-01	Pulse	0.30	3
Cu	63	72	2	4.232	ppb	0.88	67,747.38	7.453E-01	Pulse	0.30	3
Zn	66	72	2	52.426	ppb	1.07	104,194.73	1.146E+00	Pulse	0.30	3
As	75	72	2	2.602	ppb	1.98	2,762.50	3.039E-02	Pulse	0.75	3
Se	78	72	1	2.056	ppb	3.99	1,196.77	1.040E-02	Pulse	0.30	3
Mo	95	103	2	2.973	ppb	1.01	19,036.46	6.645E-03	Pulse	0.30	3
Ag	107	103	3	2.223	ppb	0.41	153,291.09	2.029E-02	Pulse	0.30	3
Cd	111	115	3	1.625	ppb	1.49	25,088.02	3.028E-03	Pulse	0.30	3
Sb	121	115	3	2.301	ppb	0.22	116,065.48	1.401E-02	Pulse	0.30	3
Ba	137	159	3	30.925	ppb	0.31	616,549.03	5.227E-02	Pulse	0.30	3
Tl	205	209	3	1.958	ppb	0.70	230,298.26	3.563E-02	Pulse	0.30	3
Pb	208	209	3	2.368	ppb	0.15	377,242.18	5.837E-02	Pulse	0.30	3
U	238	209	3	8.011	ppb	1.08	1,344,917.69	2.081E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,920.51	0.63	91.4	Analog	0.30	3
2	Sc	45	117,109.54	2.39	103.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,625,024.06	0.77	99.0	Analog	0.30	3
1	Ge	72	115,052.61	0.27	104.2	Pulse	0.30	3
2	Ge	72	90,901.38	1.17	102.0	Pulse	0.30	3
2	Rh	103	2,864,484.02	1.02	93.0	Analog	0.30	3
3	Rh	103	7,555,751.48	0.38	90.0	Analog	0.30	3
3	In	115	8,286,054.28	0.53	93.5	Analog	0.30	3
3	Tb	159	11,795,585.10	0.24	94.1	Analog	0.30	3
3	Bi	209	6,462,586.08	0.81	88.2	Analog	0.30	3

Quantitation Report

File Name	A0219051.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:38
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.016	ppb	1.10	197,173.35	1.217E-01	Pulse	0.30	3
Na	23	45	2	242.775	ppb	2.39	463,721.19	3.927E+00	Pulse	0.30	3
Mg	26	45	2	204.624	ppb	1.24	27,823.92	2.356E-01	Pulse	0.30	3
Al	27	45	2	21.970	ppb	4.88	5,751.76	4.872E-02	Pulse	0.30	3
K	39	45	2	213.197	ppb	2.57	112,873.17	9.560E-01	Pulse	0.30	3
Ca	44	45	3	213.254	ppb	0.38	482,215.89	1.074E-01	Pulse	0.30	3
V	51	45	2	20.179	ppb	0.75	154,285.74	1.307E+00	Pulse	0.30	3
Cr	52	45	2	20.055	ppb	1.27	210,719.40	1.784E+00	Pulse	0.30	3
Mn	55	45	2	20.244	ppb	1.61	105,949.57	8.973E-01	Pulse	0.30	3
Fe	56	45	2	21.023	ppb	1.20	184,557.81	1.563E+00	Pulse	0.30	3
Co	59	45	2	20.153	ppb	1.55	411,624.80	3.486E+00	Pulse	0.30	3
Ni	60	72	2	19.687	ppb	0.69	110,679.01	1.194E+00	Pulse	0.30	3
Cu	63	72	2	20.576	ppb	0.22	313,505.32	3.383E+00	Pulse	0.30	3
Zn	66	72	2	19.239	ppb	1.74	40,787.37	4.401E-01	Pulse	0.30	3
As	75	72	2	20.100	ppb	0.92	21,661.63	2.337E-01	Pulse	0.75	3
Se	78	72	1	19.013	ppb	3.24	11,345.59	9.612E-02	Pulse	0.30	3
Mo	95	103	2	19.826	ppb	0.92	135,591.17	4.427E-02	Pulse	0.30	3
Ag	107	103	3	20.030	ppb	0.93	1,447,282.24	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.560	ppb	0.29	328,974.72	3.825E-02	Pulse	0.30	3
Sb	121	115	3	20.439	ppb	0.61	1,051,069.26	1.222E-01	Pulse	0.30	3
Ba	137	159	3	21.679	ppb	0.98	437,635.61	3.665E-02	Pulse	0.30	3
Tl	205	209	3	20.032	ppb	0.44	2,514,394.91	3.626E-01	Analog	0.30	3
Pb	208	209	3	20.608	ppb	0.53	3,505,124.52	5.055E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	1.39	3,519,035.81	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,620,595.30	1.40	92.9	Analog	0.30	3
2	Sc	45	118,098.24	1.43	104.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,491,826.08	0.49	96.1	Analog	0.30	3
1	Ge	72	118,039.76	0.35	106.9	Pulse	0.30	3
2	Ge	72	92,681.27	0.44	104.0	Pulse	0.30	3
2	Rh	103	3,063,413.84	1.77	99.4	Analog	0.30	3
3	Rh	103	8,070,367.03	0.48	96.1	Analog	0.30	3
3	In	115	8,601,687.02	0.48	97.1	Analog	0.30	3
3	Tb	159	11,942,777.32	0.46	95.2	Analog	0.30	3
3	Bi	209	6,933,543.37	1.13	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219052.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:43
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	7.558E-06	Pulse	0.30	3
Na	23	45	2	39.871	ppb	7.59	157,761.97	1.386E+00	Pulse	0.30	3
Mg	26	45	2	0.223	ppb	57.68	124.45	1.093E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	342.23	3.007E-03	Pulse	0.30	3
K	39	45	2	5.993	ppb	26.87	16,359.83	1.438E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,610.08	3.972E-03	Pulse	0.30	3
V	51	45	2	0.014	ppb	47.90	880.06	7.735E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,203.26	1.057E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	341.42	3.001E-03	Pulse	0.30	3
Fe	56	45	2	0.087	ppb	10.68	2,904.27	2.551E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.38	2.238E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	80.93	8.920E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	647.80	7.145E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	403.80	4.456E-03	Pulse	0.30	3
As	75	72	2	0.014	ppb	43.41	28.89	3.188E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	28.41	13.33	1.148E-04	Pulse	0.30	3
Mo	95	103	2	0.116	ppb	12.30	810.06	2.668E-04	Pulse	0.30	3
Ag	107	103	3	0.461	ppb	13.67	36,427.07	4.554E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	12.94	1.524E-06	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	0.77	5,272.21	6.198E-04	Pulse	0.30	3
Ba	137	159	3	0.010	ppb	30.76	363.28	3.058E-05	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	3.79	4,423.08	6.420E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,396.08	2.026E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	10.09	837.87	1.216E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,906.95	1.65	92.1	Analog	0.30	3
2	Sc	45	113,827.28	1.27	100.6	Pulse	0.30	3
3	Sc	45	4,434,656.18	1.06	94.9	Analog	0.30	3
1	Ge	72	116,273.62	1.47	105.3	Pulse	0.30	3

2	Ge	72	90,707.11	1.49	101.8	Pulse	0.30	3
2	Rh	103	3,034,069.78	0.76	98.5	Analog	0.30	3
3	Rh	103	8,004,709.95	1.11	95.3	Analog	0.30	3
3	In	115	8,505,968.91	0.95	96.0	Analog	0.30	3
3	Tb	159	11,879,937.46	0.21	94.7	Analog	0.30	3
3	Bi	209	6,889,766.98	0.46	94.1	Analog	0.30	3

Quantitation Report

File Name	A0219053.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:49
Sample Name	~~N023085-003B,SAMP,5~~ N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	1.022E-05	Pulse	0.30	3
Na	23	45	2	652061.549	ppb	0.66	834,622,698.67	8.167E+03	Analog	0.30	3
Mg	26	45	2	1929.157	ppb	0.97	226,252.91	2.214E+00	Pulse	0.30	3
Al	27	45	2	1.144	ppb	21.53	588.58	5.756E-03	Pulse	0.30	3
K	39	45	2	5623.916	ppb	0.49	2,265,294.67	2.216E+01	Analog	0.30	3
Ca	44	45	3	25853.868	ppb	0.37	50,285,383.14	1.251E+01	Analog	0.30	3
V	51	45	2	0.213	ppb	12.17	2,093.56	2.051E-02	Pulse	0.30	3
Cr	52	45	2	8.994	ppb	1.18	82,654.50	8.086E-01	Pulse	0.30	3
Mn	55	45	2	5.397	ppb	1.18	24,704.70	2.417E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-58,693.54	-5.743E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-616.23	-6.030E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-531.04	-7.192E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,003.98	-2.441E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,082.59	-2.823E-02	Pulse	0.30	3
As	75	72	2	0.249	ppb	5.68	225.10	3.054E-03	Pulse	0.75	3
Se	78	72	1	0.031	ppb	78.67	14.45	1.650E-04	Pulse	0.30	3
Mo	95	103	2	10.608	ppb	1.31	52,947.23	2.369E-02	Pulse	0.30	3
Ag	107	103	3	0.025	ppb	14.63	3,889.30	6.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	7.53	1.133E-06	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	92.67	2,016.89	3.020E-04	Pulse	0.30	3
Ba	137	159	3	3.765	ppb	1.19	62,624.15	6.375E-03	Pulse	0.30	3
Tl	205	209	3	0.093	ppb	1.08	9,029.79	1.893E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,263.79	-8.937E-04	Pulse	0.30	3
U	238	209	3	0.725	ppb	0.62	90,023.62	1.887E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,162.89	0.63	68.8	Analog	0.30	3
2	Sc	45	102,208.66	2.10	90.3	Pulse	0.30	3
3	Sc	45	4,020,075.81	0.81	86.0	Analog	0.30	3
1	Ge	72	87,457.81	0.32	79.2	Pulse	0.30	3
2	Ge	72	73,765.98	1.98	82.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,234,960.77	1.43	72.6	Analog	0.30	3
3	Rh	103	5,936,385.75	0.50	70.7	Analog	0.30	3
3	In	115	6,677,499.61	0.27	75.3	Analog	0.30	3
3	Tb	159	9,824,263.19	0.81	78.3	Analog	0.30	3
3	Bi	209	4,771,202.70	0.59	65.1	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

For Al & Zn only

File Name	A0219054.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:54
Sample Name	N023107-001C,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	186.09	23.33	1.434E-05	Pulse	0.30	3
Na	23	45	2	975.767	ppb	1.86	1,526,601.59	1.311E+01	Analog	0.30	3
Mg	26	45	2	46.366	ppb	2.39	6,292.55	5.403E-02	Pulse	0.30	3
Al	27	45	2	85.151	ppb	0.90	20,862.05	1.791E-01	Pulse	0.30	3
K	39	45	2	264.682	ppb	1.17	134,862.32	1.158E+00	Pulse	0.30	3
Ca	44	45	3	557.040	ppb	1.03	1,234,254.63	2.736E-01	Analog	0.30	3
V	51	45	2	0.292	ppb	9.01	2,987.07	2.564E-02	Pulse	0.30	3
Cr	52	45	2	0.244	ppb	3.70	4,265.42	3.661E-02	Pulse	0.30	3
Mn	55	45	2	2.915	ppb	2.36	15,385.32	1.321E-01	Pulse	0.30	3
Fe	56	45	2	172.368	ppb	0.69	1,476,678.61	1.268E+01	Analog	0.30	3
Co	59	45	2	0.058	ppb	7.69	1,187.36	1.020E-02	Pulse	0.30	3
Ni	60	72	2	0.748	ppb	0.85	4,462.69	4.820E-02	Pulse	0.30	3
Cu	63	72	2	2.837	ppb	1.03	48,156.06	5.202E-01	Pulse	0.30	3
Zn	66	72	2	22.197	ppb	0.73	46,566.35	5.030E-01	Pulse	0.30	3
As	75	72	2	0.146	ppb	2.43	171.54	1.853E-03	Pulse	0.75	3
Se	78	72	1	0.022	ppb	104.64	14.44	1.224E-04	Pulse	0.30	3
Mo	95	103	2	0.283	ppb	6.82	1,949.10	6.388E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,807.05	3.489E-04	Pulse	0.30	3
Cd	111	115	3	0.006	ppb	30.79	142.85	1.672E-05	Pulse	0.30	3
Sb	121	115	3	0.220	ppb	0.99	13,641.99	1.597E-03	Pulse	0.30	3
Ba	137	159	3	65.952	ppb	0.36	1,322,201.72	1.115E-01	Analog	0.30	3
Tl	205	209	3	0.007	ppb	4.98	2,352.51	3.410E-04	Pulse	0.30	3
Pb	208	209	3	0.603	ppb	1.33	104,171.98	1.510E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	6.54	1,566.39	2.270E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,628,151.17	0.94	93.3	Analog	0.30	3
2	Sc	45	116,496.95	1.53	102.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,510,662.47	0.08	96.5	Analog	0.30	3
1	Ge	72	117,971.02	0.25	106.8	Pulse	0.30	3
2	Ge	72	92,577.69	1.45	103.9	Pulse	0.30	3
2	Rh	103	3,050,894.36	0.36	99.0	Analog	0.30	3
3	Rh	103	8,045,042.94	0.66	95.8	Analog	0.30	3
3	In	115	8,542,516.40	0.31	96.4	Analog	0.30	3
3	Tb	159	11,863,153.71	0.72	94.6	Analog	0.30	3
3	Bi	209	6,899,652.68	0.27	94.2	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219055.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:00
Sample Name	N023107-001C,SAMP,125
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.34	8.265E-06	Pulse	0.30	3
Na	23	45	2	225.063	ppb	3.54	428,600.05	3.705E+00	Pulse	0.30	3
Mg	26	45	2	8.737	ppb	7.91	1,255.66	1.086E-02	Pulse	0.30	3
Al	27	45	2	16.058	ppb	5.68	4,223.92	3.653E-02	Pulse	0.30	3
K	39	45	2	58.347	ppb	4.04	40,367.76	3.490E-01	Pulse	0.30	3
Ca	44	45	3	116.689	ppb	0.13	268,532.65	6.065E-02	Pulse	0.30	3
V	51	45	2	0.060	ppb	19.94	1,237.89	1.069E-02	Pulse	0.30	3
Cr	52	45	2	0.022	ppb	66.04	1,964.12	1.699E-02	Pulse	0.30	3
Mn	55	45	2	0.570	ppb	3.27	3,300.01	2.853E-02	Pulse	0.30	3
Fe	56	45	2	35.820	ppb	1.57	306,519.07	2.649E+00	Pulse	0.30	3
Co	59	45	2	0.011	ppb	10.06	250.45	2.162E-03	Pulse	0.30	3
Ni	60	72	2	0.134	ppb	7.84	1,008.10	1.103E-02	Pulse	0.30	3
Cu	63	72	2	0.302	ppb	1.89	10,146.51	1.110E-01	Pulse	0.30	3
Zn	66	72	2	3.492	ppb	2.43	9,592.54	1.050E-01	Pulse	0.30	3
As	75	72	2	0.032	ppb	29.77	48.00	5.243E-04	Pulse	0.75	3
Se	78	72	1	0.009	ppb	60.35	6.67	5.770E-05	Pulse	0.30	3
Mo	95	103	2	0.070	ppb	9.67	497.81	1.641E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,634.08	3.306E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	388.10	56.49	6.606E-06	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	15.93	3,473.87	4.071E-04	Pulse	0.30	3
Ba	137	159	3	13.851	ppb	0.68	277,066.27	2.342E-02	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	19.80	1,807.96	2.630E-04	Pulse	0.30	3
Pb	208	209	3	0.129	ppb	2.10	23,929.11	3.482E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	370.25	5.384E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,193.61	1.77	92.1	Analog	0.30	3
2	Sc	45	115,718.35	2.44	102.2	Pulse	0.30	3
3	Sc	45	4,427,632.02	0.20	94.7	Analog	0.30	3
1	Ge	72	115,540.58	0.31	104.6	Pulse	0.30	3
2	Ge	72	91,389.82	1.34	102.6	Pulse	0.30	3
2	Rh	103	3,032,968.98	0.59	98.5	Analog	0.30	3
3	Rh	103	7,967,603.49	0.29	94.9	Analog	0.30	3
3	In	115	8,534,750.54	0.72	96.3	Analog	0.30	3
3	Tb	159	11,831,440.52	0.33	94.3	Analog	0.30	3
3	Bi	209	6,873,907.61	0.92	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219056.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:06
Sample Name	N023107-001C-PS,PS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.398	ppb	2.99	3,805.03	2.433E-03	Pulse	0.30	3
Na	23	45	2	916.537	ppb	1.30	1,396,367.57	1.236E+01	Analog	0.30	3
Mg	26	45	2	47.515	ppb	3.54	6,250.29	5.534E-02	Pulse	0.30	3
Al	27	45	2	89.443	ppb	1.25	21,227.36	1.879E-01	Pulse	0.30	3
K	39	45	2	258.506	ppb	2.34	127,998.60	1.134E+00	Pulse	0.30	3
Ca	44	45	3	551.348	ppb	1.38	1,165,371.41	2.709E-01	Mix	0.30	3
V	51	45	2	0.704	ppb	3.00	5,887.97	5.215E-02	Pulse	0.30	3
Cr	52	45	2	0.633	ppb	5.94	8,002.66	7.090E-02	Pulse	0.30	3
Mn	55	45	2	6.983	ppb	2.05	35,195.71	3.117E-01	Pulse	0.30	3
Fe	56	45	2	169.921	ppb	2.09	1,411,057.04	1.250E+01	Analog	0.30	3
Co	59	45	2	0.464	ppb	1.12	9,088.13	8.045E-02	Pulse	0.30	3
Ni	60	72	2	1.165	ppb	3.33	6,571.47	7.340E-02	Pulse	0.30	3
Cu	63	72	2	3.217	ppb	1.33	52,064.22	5.814E-01	Pulse	0.30	3
Zn	66	72	2	25.515	ppb	0.89	51,359.10	5.736E-01	Pulse	0.30	3
As	75	72	2	0.605	ppb	4.52	643.56	7.186E-03	Pulse	0.75	3
Se	78	72	1	0.405	ppb	28.67	234.46	2.057E-03	Pulse	0.30	3
Mo	95	103	2	0.624	ppb	5.39	4,197.40	1.401E-03	Pulse	0.30	3
Ag	107	103	3	0.262	ppb	7.80	21,668.76	2.779E-03	Pulse	0.30	3
Cd	111	115	3	0.435	ppb	1.27	6,829.22	8.143E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.99	33,958.86	4.049E-03	Pulse	0.30	3
Ba	137	159	3	64.967	ppb	0.42	1,288,939.85	1.098E-01	Analog	0.30	3
Tl	205	209	3	0.364	ppb	0.64	45,978.96	6.792E-03	Pulse	0.30	3
Pb	208	209	3	1.014	ppb	0.48	170,348.08	2.516E-02	Pulse	0.30	3
U	238	209	3	0.431	ppb	1.23	75,915.63	1.121E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,564,069.65	0.25	89.6	Analog	0.30	3
2	Sc	45	112,953.92	2.52	99.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,302,224.69	0.41	92.1	Analog	0.30	3
1	Ge	72	114,134.49	0.83	103.4	Pulse	0.30	3
2	Ge	72	89,537.58	0.98	100.5	Pulse	0.30	3
2	Rh	103	2,996,179.57	1.06	97.3	Analog	0.30	3
3	Rh	103	7,797,470.51	0.47	92.9	Analog	0.30	3
3	In	115	8,387,038.90	0.42	94.6	Analog	0.30	3
3	Tb	159	11,739,695.10	0.68	93.6	Analog	0.30	3
3	Bi	209	6,769,743.58	0.93	92.4	Analog	0.30	3

Quantitation Report

File Name	A0219057.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:11
Sample Name	N023107-001C-MS,MS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.409	ppb	1.33	3,843.92	2.500E-03	Pulse	0.30	3
Na	23	45	2	876.147	ppb	3.27	1,301,436.10	1.186E+01	Analog	0.30	3
Mg	26	45	2	46.935	ppb	1.40	6,002.46	5.468E-02	Pulse	0.30	3
Al	27	45	2	86.444	ppb	1.98	19,948.85	1.817E-01	Pulse	0.30	3
K	39	45	2	248.520	ppb	1.32	120,145.40	1.094E+00	Pulse	0.30	3
Ca	44	45	3	541.118	ppb	0.45	1,130,444.94	2.659E-01	Pulse	0.30	3
V	51	45	2	0.737	ppb	1.25	5,961.33	5.429E-02	Pulse	0.30	3
Cr	52	45	2	0.665	ppb	4.67	8,085.01	7.368E-02	Pulse	0.30	3
Mn	55	45	2	6.980	ppb	2.74	34,198.28	3.116E-01	Pulse	0.30	3
Fe	56	45	2	164.134	ppb	1.20	1,325,189.79	1.207E+01	Analog	0.30	3
Co	59	45	2	0.467	ppb	1.41	8,887.08	8.095E-02	Pulse	0.30	3
Ni	60	72	2	1.119	ppb	2.09	6,211.53	7.065E-02	Pulse	0.30	3
Cu	63	72	2	3.074	ppb	0.71	49,098.06	5.584E-01	Pulse	0.30	3
Zn	66	72	2	24.545	ppb	1.30	48,620.42	5.530E-01	Pulse	0.30	3
As	75	72	2	0.559	ppb	1.53	584.45	6.647E-03	Pulse	0.75	3
Se	78	72	1	0.417	ppb	12.58	236.68	2.119E-03	Pulse	0.30	3
Mo	95	103	2	0.621	ppb	3.46	4,107.37	1.394E-03	Pulse	0.30	3
Ag	107	103	3	0.401	ppb	1.39	31,330.80	4.020E-03	Pulse	0.30	3
Cd	111	115	3	0.449	ppb	0.67	7,014.94	8.409E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.77	33,757.13	4.047E-03	Pulse	0.30	3
Ba	137	159	3	66.793	ppb	0.52	1,323,261.04	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.373	ppb	0.79	47,439.33	6.959E-03	Pulse	0.30	3
Pb	208	209	3	0.998	ppb	0.72	168,877.92	2.477E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	0.57	74,024.68	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,233.40	1.11	88.1	Analog	0.30	3
2	Sc	45	109,797.71	2.51	97.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,250,996.29	0.82	91.0	Analog	0.30	3
1	Ge	72	111,672.69	1.17	101.1	Pulse	0.30	3
2	Ge	72	87,920.96	0.87	98.7	Pulse	0.30	3
2	Rh	103	2,946,767.04	1.02	95.7	Analog	0.30	3
3	Rh	103	7,793,361.00	0.74	92.8	Analog	0.30	3
3	In	115	8,342,307.15	0.36	94.1	Analog	0.30	3
3	Tb	159	11,723,287.88	0.66	93.5	Analog	0.30	3
3	Bi	209	6,817,213.58	0.46	93.1	Analog	0.30	3

Quantitation Report

File Name	A0219058.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:17
Sample Name	N023107-001C-MSD,MSD,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.430	ppb	1.09	3,970.64	2.624E-03	Pulse	0.30	3
Na	23	45	2	867.953	ppb	1.34	1,276,517.47	1.176E+01	Analog	0.30	3
Mg	26	45	2	47.220	ppb	3.87	5,972.46	5.501E-02	Pulse	0.30	3
Al	27	45	2	86.837	ppb	1.05	19,823.96	1.826E-01	Pulse	0.30	3
K	39	45	2	245.166	ppb	0.03	117,414.04	1.081E+00	Pulse	0.30	3
Ca	44	45	3	535.668	ppb	0.80	1,100,425.19	2.633E-01	Pulse	0.30	3
V	51	45	2	0.721	ppb	5.03	5,783.48	5.324E-02	Pulse	0.30	3
Cr	52	45	2	0.654	ppb	3.16	7,893.84	7.271E-02	Pulse	0.30	3
Mn	55	45	2	7.042	ppb	1.25	34,131.45	3.143E-01	Pulse	0.30	3
Fe	56	45	2	163.871	ppb	0.29	1,308,765.18	1.205E+01	Analog	0.30	3
Co	59	45	2	0.477	ppb	0.95	8,981.61	8.271E-02	Pulse	0.30	3
Ni	60	72	2	1.086	ppb	2.90	6,023.73	6.861E-02	Pulse	0.30	3
Cu	63	72	2	3.034	ppb	0.94	48,462.64	5.520E-01	Pulse	0.30	3
Zn	66	72	2	24.081	ppb	0.72	47,686.88	5.431E-01	Pulse	0.30	3
As	75	72	2	0.557	ppb	3.36	581.78	6.627E-03	Pulse	0.75	3
Se	78	72	1	0.378	ppb	10.15	212.23	1.922E-03	Pulse	0.30	3
Mo	95	103	2	0.603	ppb	3.21	3,971.78	1.355E-03	Pulse	0.30	3
Ag	107	103	3	0.409	ppb	2.01	31,405.66	4.085E-03	Pulse	0.30	3
Cd	111	115	3	0.439	ppb	3.70	6,784.98	8.229E-04	Pulse	0.30	3
Sb	121	115	3	0.633	ppb	2.21	33,498.79	4.062E-03	Pulse	0.30	3
Ba	137	159	3	66.785	ppb	0.22	1,307,194.38	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.370	ppb	0.75	46,649.90	6.907E-03	Pulse	0.30	3
Pb	208	209	3	0.995	ppb	0.17	166,832.36	2.470E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	1.30	73,368.74	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,513,027.32	1.20	86.7	Analog	0.30	3
2	Sc	45	108,589.21	0.98	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,179,501.99	0.24	89.4	Analog	0.30	3
1	Ge	72	110,371.18	0.51	100.0	Pulse	0.30	3
2	Ge	72	87,803.72	0.73	98.6	Pulse	0.30	3
2	Rh	103	2,930,998.78	0.90	95.1	Analog	0.30	3
3	Rh	103	7,688,174.47	0.62	91.6	Analog	0.30	3
3	In	115	8,246,383.21	0.86	93.1	Analog	0.30	3
3	Tb	159	11,582,076.08	0.35	92.3	Analog	0.30	3
3	Bi	209	6,754,241.63	0.15	92.2	Analog	0.30	3

Quantitation Report

File Name	A0219059.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:22
Sample Name	N023107-002C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	44.38	25.55	1.709E-05	Pulse	0.30	3
Na	23	45	2	1547.301	ppb	0.74	2,165,468.08	2.026E+01	Analog	0.30	3
Mg	26	45	2	47.984	ppb	2.19	5,971.31	5.588E-02	Pulse	0.30	3
Al	27	45	2	94.894	ppb	3.78	21,278.73	1.992E-01	Pulse	0.30	3
K	39	45	2	403.419	ppb	0.93	181,833.77	1.702E+00	Pulse	0.30	3
Ca	44	45	3	369.776	ppb	0.76	761,033.97	1.831E-01	Pulse	0.30	3
V	51	45	2	1.523	ppb	0.92	11,209.82	1.049E-01	Pulse	0.30	3
Cr	52	45	2	0.518	ppb	3.99	6,493.39	6.078E-02	Pulse	0.30	3
Mn	55	45	2	5.609	ppb	3.06	26,824.48	2.510E-01	Pulse	0.30	3
Fe	56	45	2	266.180	ppb	0.92	2,090,908.89	1.957E+01	Analog	0.30	3
Co	59	45	2	0.085	ppb	2.67	1,590.56	1.489E-02	Pulse	0.30	3
Ni	60	72	2	1.711	ppb	5.36	9,264.85	1.064E-01	Pulse	0.30	3
Cu	63	72	2	5.839	ppb	1.85	87,447.11	1.005E+00	Pulse	0.30	3
Zn	66	72	2	45.212	ppb	1.24	86,429.53	9.928E-01	Pulse	0.30	3
As	75	72	2	0.241	ppb	12.03	257.76	2.959E-03	Pulse	0.75	3
Se	78	72	1	0.004	ppb	148.01	3.33	3.114E-05	Pulse	0.30	3
Mo	95	103	2	0.279	ppb	3.64	1,835.74	6.298E-04	Pulse	0.30	3
Ag	107	103	3	0.092	ppb	5.38	9,542.78	1.254E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.93	-9.716E-07	Pulse	0.30	3
Sb	121	115	3	2.972	ppb	0.43	147,102.87	1.801E-02	Pulse	0.30	3
Ba	137	159	3	46.028	ppb	0.13	899,615.76	7.779E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	6.15	2,353.63	3.495E-04	Pulse	0.30	3
Pb	208	209	3	1.062	ppb	0.80	177,368.49	2.634E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	8.01	1,634.60	2.428E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,494,959.24	0.69	85.7	Analog	0.30	3
2	Sc	45	106,870.80	1.55	94.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,157,441.22	0.55	89.0	Analog	0.30	3
1	Ge	72	107,780.82	1.08	97.6	Pulse	0.30	3
2	Ge	72	87,061.96	1.30	97.7	Pulse	0.30	3
2	Rh	103	2,915,295.51	0.79	94.6	Analog	0.30	3
3	Rh	103	7,613,773.98	0.93	90.7	Analog	0.30	3
3	In	115	8,166,288.26	0.31	92.1	Analog	0.30	3
3	Tb	159	11,564,675.10	0.28	92.2	Analog	0.30	3
3	Bi	209	6,734,192.12	0.34	91.9	Analog	0.30	3

Quantitation Report

File Name	A0219060.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:28
Sample Name	N023107-003C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	85.33	25.56	1.753E-05	Pulse	0.30	3
Na	23	45	2	1296.569	ppb	1.85	1,821,523.72	1.712E+01	Analog	0.30	3
Mg	26	45	2	59.985	ppb	4.00	7,408.62	6.965E-02	Pulse	0.30	3
Al	27	45	2	82.052	ppb	4.53	18,362.35	1.727E-01	Pulse	0.30	3
K	39	45	2	321.812	ppb	1.91	146,980.33	1.382E+00	Pulse	0.30	3
Ca	44	45	3	512.800	ppb	0.71	1,026,229.29	2.522E-01	Pulse	0.30	3
V	51	45	2	1.024	ppb	3.41	7,744.35	7.276E-02	Pulse	0.30	3
Cr	52	45	2	0.367	ppb	6.01	5,039.77	4.739E-02	Pulse	0.30	3
Mn	55	45	2	4.646	ppb	1.26	22,186.02	2.085E-01	Pulse	0.30	3
Fe	56	45	2	295.629	ppb	1.41	2,311,348.96	2.173E+01	Analog	0.30	3
Co	59	45	2	0.095	ppb	0.72	1,770.75	1.664E-02	Pulse	0.30	3
Ni	60	72	2	0.594	ppb	5.48	3,330.01	3.889E-02	Pulse	0.30	3
Cu	63	72	2	4.567	ppb	0.91	68,412.15	7.993E-01	Pulse	0.30	3
Zn	66	72	2	33.356	ppb	0.37	63,372.88	7.405E-01	Pulse	0.30	3
As	75	72	2	0.461	ppb	11.15	471.11	5.508E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	74.90	10.00	9.431E-05	Pulse	0.30	3
Mo	95	103	2	0.183	ppb	3.79	1,198.99	4.158E-04	Pulse	0.30	3
Ag	107	103	3	0.014	ppb	13.97	4,234.28	5.596E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9.88	-1.218E-06	Pulse	0.30	3
Sb	121	115	3	0.217	ppb	1.95	12,893.57	1.580E-03	Pulse	0.30	3
Ba	137	159	3	47.940	ppb	0.52	932,906.31	8.102E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	12.98	1,629.05	2.424E-04	Pulse	0.30	3
Pb	208	209	3	0.601	ppb	0.34	101,143.62	1.505E-02	Pulse	0.30	3
U	238	209	3	0.006	ppb	5.46	1,225.11	1.823E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,456,254.06	0.89	83.4	Analog	0.30	3
2	Sc	45	106,399.75	2.16	94.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,068,579.42	0.29	87.1	Analog	0.30	3
1	Ge	72	106,071.14	0.61	96.1	Pulse	0.30	3
2	Ge	72	85,588.82	1.38	96.1	Pulse	0.30	3
2	Rh	103	2,883,816.14	1.75	93.6	Analog	0.30	3
3	Rh	103	7,566,477.32	0.21	90.1	Analog	0.30	3
3	In	115	8,162,124.28	0.21	92.1	Analog	0.30	3
3	Tb	159	11,514,592.05	0.33	91.8	Analog	0.30	3
3	Bi	209	6,720,685.73	0.55	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219061.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:33
Sample Name	N023107-004C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.535E-06	Pulse	0.30	3
Na	23	45	2	548.615	ppb	1.81	826,975.87	7.757E+00	Pulse	0.30	3
Mg	26	45	2	46.754	ppb	3.12	5,810.13	5.447E-02	Pulse	0.30	3
Al	27	45	2	18.083	ppb	5.65	4,336.85	4.070E-02	Pulse	0.30	3
K	39	45	2	167.829	ppb	1.77	82,956.84	7.781E-01	Pulse	0.30	3
Ca	44	45	3	748.298	ppb	0.53	1,491,085.86	3.661E-01	Analog	0.30	3
V	51	45	2	0.156	ppb	7.94	1,796.85	1.686E-02	Pulse	0.30	3
Cr	52	45	2	1.102	ppb	2.01	11,970.21	1.123E-01	Pulse	0.30	3
Mn	55	45	2	3.556	ppb	0.68	17,105.60	1.604E-01	Pulse	0.30	3
Fe	56	45	2	66.463	ppb	1.77	522,321.19	4.900E+00	Pulse	0.30	3
Co	59	45	2	0.032	ppb	10.40	612.20	5.739E-03	Pulse	0.30	3
Ni	60	72	2	1.459	ppb	1.23	7,936.82	9.121E-02	Pulse	0.30	3
Cu	63	72	2	1.620	ppb	3.18	28,158.28	3.237E-01	Pulse	0.30	3
Zn	66	72	2	47.917	ppb	1.03	91,374.59	1.050E+00	Pulse	0.30	3
As	75	72	2	0.204	ppb	2.56	219.54	2.524E-03	Pulse	0.75	3
Se	78	72	1	0.035	ppb	17.55	20.00	1.855E-04	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	3.91	802.28	2.761E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,569.51	3.355E-04	Pulse	0.30	3
Cd	111	115	3	0.024	ppb	10.03	412.75	5.028E-05	Pulse	0.30	3
Sb	121	115	3	0.423	ppb	2.21	23,067.65	2.809E-03	Pulse	0.30	3
Ba	137	159	3	18.003	ppb	0.38	353,460.30	3.043E-02	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	407.59	1,495.70	2.197E-04	Pulse	0.30	3
Pb	208	209	3	0.239	ppb	1.90	41,924.61	6.157E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	4.32	429.52	6.308E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,461,534.94	1.84	83.7	Analog	0.30	3
2	Sc	45	106,634.31	2.51	94.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,072,457.82	0.25	87.1	Analog	0.30	3
1	Ge	72	107,797.73	0.40	97.6	Pulse	0.30	3
2	Ge	72	87,008.55	1.85	97.7	Pulse	0.30	3
2	Rh	103	2,905,985.69	1.37	94.3	Analog	0.30	3
3	Rh	103	7,659,656.07	0.66	91.2	Analog	0.30	3
3	In	115	8,210,849.46	0.31	92.7	Analog	0.30	3
3	Tb	159	11,613,964.97	1.00	92.6	Analog	0.30	3
3	Bi	209	6,809,217.75	0.47	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219062.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:39
Sample Name	N023137-001A,SAMP,2
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	175.00	27.78	1.945E-05	Pulse	0.30	3
Na	23	45	2	1169.758	ppb	0.99	1,625,196.87	1.554E+01	Analog	0.30	3
Mg	26	45	2	536.909	ppb	0.97	64,518.49	6.168E-01	Pulse	0.30	3
Al	27	45	2	106.848	ppb	3.53	23,417.02	2.238E-01	Pulse	0.30	3
K	39	45	2	534.528	ppb	1.13	231,750.99	2.215E+00	Pulse	0.30	3
Ca	44	45	3	6320.894	ppb	0.78	12,214,375.38	3.061E+00	Analog	0.30	3
V	51	45	2	1.131	ppb	1.58	8,333.58	7.966E-02	Pulse	0.30	3
Cr	52	45	2	0.351	ppb	5.35	4,811.20	4.597E-02	Pulse	0.30	3
Mn	55	45	2	4.785	ppb	2.13	22,454.13	2.147E-01	Pulse	0.30	3
Fe	56	45	2	124.763	ppb	0.80	960,516.66	9.181E+00	Pulse	0.30	3
Co	59	45	2	0.096	ppb	6.22	1,763.03	1.685E-02	Pulse	0.30	3
Ni	60	72	2	0.917	ppb	5.19	4,945.27	5.843E-02	Pulse	0.30	3
Cu	63	72	2	6.568	ppb	1.37	95,030.53	1.122E+00	Pulse	0.30	3
Zn	66	72	2	36.450	ppb	0.53	68,284.71	8.063E-01	Pulse	0.30	3
As	75	72	2	0.295	ppb	3.55	302.93	3.578E-03	Pulse	0.75	3
Se	78	72	1	0.073	ppb	38.73	40.00	3.774E-04	Pulse	0.30	3
Mo	95	103	2	0.613	ppb	2.20	3,937.40	1.376E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	821.02	1.101E-04	Pulse	0.30	3
Cd	111	115	3	0.002	ppb	200.86	70.41	8.729E-06	Pulse	0.30	3
Sb	121	115	3	0.820	ppb	0.87	41,693.99	5.176E-03	Pulse	0.30	3
Ba	137	159	3	13.942	ppb	0.77	270,848.83	2.357E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	8.51	1,693.50	2.574E-04	Pulse	0.30	3
Pb	208	209	3	0.662	ppb	1.02	108,763.59	1.653E-02	Pulse	0.30	3
U	238	209	3	0.068	ppb	2.12	11,826.77	1.798E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,424,963.21	0.59	81.7	Analog	0.30	3
2	Sc	45	104,617.50	1.69	92.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,989,872.20	0.41	85.4	Analog	0.30	3
1	Ge	72	105,853.88	0.75	95.9	Pulse	0.30	3
2	Ge	72	84,693.28	1.92	95.1	Pulse	0.30	3
2	Rh	103	2,860,790.58	0.88	92.9	Analog	0.30	3
3	Rh	103	7,460,905.24	0.61	88.9	Analog	0.30	3
3	In	115	8,056,073.23	0.43	90.9	Analog	0.30	3
3	Tb	159	11,490,496.77	0.49	91.6	Analog	0.30	3
3	Bi	209	6,578,641.57	0.64	89.8	Analog	0.30	3

Quantitation Report

File Name	A0219063.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:44
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.432	ppb	0.55	172,200.15	1.181E-01	Pulse	0.30	3
Na	23	45	2	221.479	ppb	1.25	385,824.10	3.661E+00	Pulse	0.30	3
Mg	26	45	2	202.731	ppb	0.75	24,602.12	2.334E-01	Pulse	0.30	3
Al	27	45	2	21.467	ppb	3.06	5,026.27	4.769E-02	Pulse	0.30	3
K	39	45	2	210.370	ppb	0.55	99,594.71	9.449E-01	Pulse	0.30	3
Ca	44	45	3	211.707	ppb	0.67	425,018.51	1.066E-01	Pulse	0.30	3
V	51	45	2	20.411	ppb	0.26	139,290.18	1.321E+00	Pulse	0.30	3
Cr	52	45	2	20.280	ppb	0.88	190,182.55	1.804E+00	Pulse	0.30	3
Mn	55	45	2	20.365	ppb	1.18	95,132.01	9.026E-01	Pulse	0.30	3
Fe	56	45	2	21.400	ppb	1.00	167,644.48	1.591E+00	Pulse	0.30	3
Co	59	45	2	20.730	ppb	0.80	377,938.99	3.586E+00	Pulse	0.30	3
Ni	60	72	2	19.670	ppb	1.71	102,533.42	1.193E+00	Pulse	0.30	3
Cu	63	72	2	20.360	ppb	1.19	287,674.97	3.348E+00	Pulse	0.30	3
Zn	66	72	2	18.808	ppb	2.06	37,027.76	4.309E-01	Pulse	0.30	3
As	75	72	2	19.580	ppb	0.81	19,566.06	2.277E-01	Pulse	0.75	3
Se	78	72	1	19.361	ppb	0.76	10,213.64	9.788E-02	Pulse	0.30	3
Mo	95	103	2	19.643	ppb	1.39	127,931.47	4.386E-02	Pulse	0.30	3
Ag	107	103	3	19.929	ppb	0.33	1,356,935.43	1.784E-01	Analog	0.30	3
Cd	111	115	3	20.613	ppb	0.70	310,944.71	3.834E-02	Pulse	0.30	3
Sb	121	115	3	20.597	ppb	0.42	998,592.16	1.231E-01	Pulse	0.30	3
Ba	137	159	3	21.303	ppb	0.42	415,987.87	3.601E-02	Pulse	0.30	3
Tl	205	209	3	20.175	ppb	0.95	2,474,987.41	3.652E-01	Analog	0.30	3
Pb	208	209	3	20.705	ppb	0.76	3,442,029.74	5.079E-01	Analog	0.30	3
U	238	209	3	19.628	ppb	0.54	3,455,074.41	5.098E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,457,734.49	0.49	83.5	Analog	0.30	3
2	Sc	45	105,409.21	1.35	93.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,986,958.79	0.91	85.3	Analog	0.30	3
1	Ge	72	104,345.70	0.30	94.5	Pulse	0.30	3
2	Ge	72	85,941.48	1.22	96.5	Pulse	0.30	3
2	Rh	103	2,917,095.86	0.28	94.7	Analog	0.30	3
3	Rh	103	7,604,613.15	0.04	90.6	Analog	0.30	3
3	In	115	8,109,390.88	0.29	91.5	Analog	0.30	3
3	Tb	159	11,551,906.63	0.43	92.1	Analog	0.30	3
3	Bi	209	6,776,784.55	0.48	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219064.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:50
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	9.488E-06	Pulse	0.30	3
Na	23	45	2	21.873	ppb	11.36	119,500.41	1.161E+00	Pulse	0.30	3
Mg	26	45	2	0.445	ppb	59.64	138.90	1.347E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	300.00	2.916E-03	Pulse	0.30	3
K	39	45	2	3.626	ppb	41.09	13,841.83	1.345E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,657.49	4.014E-03	Pulse	0.30	3
V	51	45	2	0.007	ppb	115.37	750.05	7.278E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,053.29	1.023E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.45	2.562E-03	Pulse	0.30	3
Fe	56	45	2	0.093	ppb	17.89	2,673.57	2.598E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	22.08	2.131E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	54.29	6.517E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	697.70	8.373E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	371.70	4.455E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	34.39	29.78	3.580E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	83.45	11.11	1.069E-04	Pulse	0.30	3
Mo	95	103	2	0.102	ppb	8.84	680.05	2.356E-04	Pulse	0.30	3
Ag	107	103	3	0.443	ppb	15.11	33,183.86	4.394E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	20.92	2.598E-06	Pulse	0.30	3
Sb	121	115	3	0.051	ppb	1.04	4,730.92	5.865E-04	Pulse	0.30	3
Ba	137	159	3	0.014	ppb	8.05	429.12	3.730E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	53.34	1,679.06	2.491E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,174.81	1.743E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	12.44	849.98	1.261E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,403,258.64	0.25	80.4	Analog	0.30	3
2	Sc	45	102,974.34	2.05	91.0	Pulse	0.30	3
3	Sc	45	3,901,056.02	0.49	83.5	Analog	0.30	3
1	Ge	72	103,875.21	0.72	94.1	Pulse	0.30	3

2	Ge	72	83,349.43	1.52	93.6	Pulse	0.30	3
2	Rh	103	2,886,174.09	0.63	93.7	Analog	0.30	3
3	Rh	103	7,552,502.67	0.17	90.0	Analog	0.30	3
3	In	115	8,066,673.38	0.49	91.0	Analog	0.30	3
3	Tb	159	11,504,500.94	0.12	91.7	Analog	0.30	3
3	Bi	209	6,739,121.01	0.31	92.0	Analog	0.30	3

Quantitation Report

File Name	A0219065.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:55
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.487	ppb	2.21	4,553.02	2.972E-03	Pulse	0.30	3
Na	23	45	2	2.810	ppb	49.26	104,484.03	9.222E-01	Pulse	0.30	3
Mg	26	45	2	3.578	ppb	10.23	560.03	4.942E-03	Pulse	0.30	3
Al	27	45	2	11.715	ppb	5.70	3,122.60	2.757E-02	Pulse	0.30	3
K	39	45	2	2.648	ppb	16.93	14,804.86	1.307E-01	Pulse	0.30	3
Ca	44	45	3	8.215	ppb	1.09	34,857.46	8.184E-03	Pulse	0.30	3
V	51	45	2	0.992	ppb	0.50	8,013.38	7.071E-02	Pulse	0.30	3
Cr	52	45	2	0.943	ppb	2.51	11,136.29	9.828E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	2.92	3,022.71	2.667E-02	Pulse	0.30	3
Fe	56	45	2	11.290	ppb	0.23	96,114.67	8.482E-01	Pulse	0.30	3
Co	59	45	2	0.511	ppb	2.03	10,037.76	8.857E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	3.47	5,706.57	6.148E-02	Pulse	0.30	3
Cu	63	72	2	0.749	ppb	3.20	17,006.06	1.832E-01	Pulse	0.30	3
Zn	66	72	2	8.823	ppb	0.60	20,278.20	2.184E-01	Pulse	0.30	3
As	75	72	2	0.085	ppb	21.56	106.22	1.147E-03	Pulse	0.75	3
Se	78	72	1	0.497	ppb	16.02	291.13	2.523E-03	Pulse	0.30	3
Mo	95	103	2	0.514	ppb	3.02	3,687.26	1.155E-03	Pulse	0.30	3
Ag	107	103	3	0.457	ppb	1.09	37,249.17	4.521E-03	Pulse	0.30	3
Cd	111	115	3	0.513	ppb	0.88	8,522.73	9.602E-04	Pulse	0.30	3
Sb	121	115	3	0.524	ppb	1.37	30,261.13	3.409E-03	Pulse	0.30	3
Ba	137	159	3	1.173	ppb	1.58	25,420.23	1.996E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.56	65,447.48	8.741E-03	Pulse	0.30	3
Pb	208	209	3	1.035	ppb	1.25	192,243.67	2.568E-02	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.42	100,320.81	1.340E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,531,860.01	0.61	87.8	Analog	0.30	3
2	Sc	45	113,317.15	1.20	100.1	Pulse	0.30	3
3	Sc	45	4,259,075.73	0.46	91.1	Analog	0.30	3
1	Ge	72	115,487.39	1.07	104.6	Pulse	0.30	3

2	Ge	72	92,848.63	2.00	104.2	Pulse	0.30	3
2	Rh	103	3,193,504.64	0.34	103.7	Analog	0.30	3
3	Rh	103	8,239,404.67	0.50	98.1	Analog	0.30	3
3	In	115	8,876,788.72	0.82	100.2	Analog	0.30	3
3	Tb	159	12,738,041.48	0.20	101.6	Analog	0.30	3
3	Bi	209	7,487,344.75	0.95	102.2	Analog	0.30	3

Quantitation Report

File Name	A0219066.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:01
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	185.02	26.67	1.761E-05	Pulse	0.30	3
Na	23	45	2	93642.739	ppb	1.64	135,547,466.87	1.174E+03	Analog	0.30	3
Mg	26	45	2	91761.974	ppb	1.44	12,159,026.21	1.053E+02	Analog	0.30	3
Al	27	45	2	0.331	ppb	155.88	471.95	4.079E-03	Pulse	0.30	3
K	39	45	2	97154.993	ppb	0.89	44,005,661.57	3.809E+02	Analog	0.30	3
Ca	44	45	3	96250.448	ppb	0.57	213,957,810.15	4.656E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	558.92	4.844E-03	Pulse	0.30	3
Cr	52	45	2	0.119	ppb	11.65	2,952.69	2.556E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-11,797.48	-1.022E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,979.48	-3.454E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	24.22	2.125E-04	Pulse	0.30	3
Ni	60	72	2	0.350	ppb	8.46	2,049.66	2.410E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,716.99	-2.016E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,111.92	-1.305E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.91	-5.664E-05	Pulse	0.75	3
Se	78	72	1	0.018	ppb	73.29	10.00	9.887E-05	Pulse	0.30	3
Mo	95	103	2	0.051	ppb	22.61	327.80	1.220E-04	Pulse	0.30	3
Ag	107	103	3	0.081	ppb	4.60	8,394.51	1.160E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-447.20	-5.631E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,629.05	2.051E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-19,079.95	-1.637E-03	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	26.17	1,856.87	3.272E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-425.19	-7.496E-05	Pulse	0.30	3
U	238	209	3	0.001	ppb	22.79	319.41	5.630E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,515,147.11	1.17	86.8	Analog	0.30	3
2	Sc	45	115,538.84	3.10	102.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,595,748.79	1.15	98.3	Analog	0.30	3
1	Ge	72	100,654.47	1.10	91.2	Pulse	0.30	3
2	Ge	72	85,119.42	2.01	95.5	Pulse	0.30	3
2	Rh	103	2,692,887.69	2.13	87.4	Analog	0.30	3
3	Rh	103	7,240,122.95	0.53	86.2	Analog	0.30	3
3	In	115	7,940,775.25	0.23	89.6	Analog	0.30	3
3	Tb	159	11,657,066.35	0.42	92.9	Analog	0.30	3
3	Bi	209	5,675,417.62	0.44	77.5	Analog	0.30	3

Quantitation Report

File Name	A0219067.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:06
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.549	ppb	1.49	191,380.81	1.188E-01	Pulse	0.30	3
Na	23	45	2	93131.371	ppb	1.49	149,184,135.56	1.167E+03	Analog	0.30	3
Mg	26	45	2	91663.474	ppb	1.49	13,440,731.61	1.052E+02	Analog	0.30	3
Al	27	45	2	21.091	ppb	3.75	5,997.04	4.691E-02	Pulse	0.30	3
K	39	45	2	95563.026	ppb	1.49	47,891,720.95	3.747E+02	Analog	0.30	3
Ca	44	45	3	96048.568	ppb	0.38	231,565,823.22	4.646E+01	Analog	0.30	3
V	51	45	2	20.711	ppb	1.58	171,374.93	1.341E+00	Pulse	0.30	3
Cr	52	45	2	19.750	ppb	1.25	224,653.34	1.758E+00	Pulse	0.30	3
Mn	55	45	2	16.492	ppb	2.01	93,504.42	7.316E-01	Pulse	0.30	3
Fe	56	45	2	20.589	ppb	2.16	195,668.78	1.531E+00	Pulse	0.30	3
Co	59	45	2	18.900	ppb	1.02	417,900.90	3.269E+00	Pulse	0.30	3
Ni	60	72	2	19.686	ppb	1.19	110,150.90	1.194E+00	Pulse	0.30	3
Cu	63	72	2	19.188	ppb	0.34	291,341.42	3.159E+00	Pulse	0.30	3
Zn	66	72	2	17.740	ppb	0.73	37,648.99	4.082E-01	Pulse	0.30	3
As	75	72	2	19.556	ppb	1.08	20,972.05	2.274E-01	Pulse	0.75	3
Se	78	72	1	17.529	ppb	0.18	9,748.86	8.862E-02	Pulse	0.30	3
Mo	95	103	2	23.324	ppb	0.79	148,049.34	5.207E-02	Pulse	0.30	3
Ag	107	103	3	19.211	ppb	0.88	1,308,136.69	1.720E-01	Mix	0.30	3
Cd	111	115	3	19.357	ppb	0.80	301,171.07	3.601E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.57	1,052,995.69	1.259E-01	Pulse	0.30	3
Ba	137	159	3	24.096	ppb	0.48	492,776.51	4.073E-02	Pulse	0.30	3
Tl	205	209	3	22.093	ppb	0.79	2,341,947.14	3.999E-01	Analog	0.30	3
Pb	208	209	3	22.271	ppb	0.84	3,199,201.83	5.463E-01	Analog	0.30	3
U	238	209	3	22.767	ppb	0.27	3,463,210.38	5.914E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,610,545.96	0.89	92.3	Analog	0.30	3
2	Sc	45	127,842.65	2.32	113.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,984,177.63	0.76	106.6	Analog	0.30	3
1	Ge	72	110,007.65	0.86	99.6	Pulse	0.30	3
2	Ge	72	92,238.97	1.69	103.5	Pulse	0.30	3
2	Rh	103	2,842,872.88	1.80	92.3	Analog	0.30	3
3	Rh	103	7,604,470.79	0.63	90.6	Analog	0.30	3
3	In	115	8,364,111.15	0.29	94.4	Analog	0.30	3
3	Tb	159	12,098,636.62	0.22	96.5	Analog	0.30	3
3	Bi	209	5,856,107.06	0.35	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219068.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:11
Sample Name	N023137-002A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	25.38	35.55	1.898E-05	Pulse	0.30	3
Na	23	45	2	930.445	ppb	3.76	1,538,874.16	1.254E+01	Analog	0.30	3
Mg	26	45	2	236.547	ppb	1.03	33,415.17	2.722E-01	Pulse	0.30	3
Al	27	45	2	59.148	ppb	5.75	15,391.02	1.254E-01	Pulse	0.30	3
K	39	45	2	268.668	ppb	1.16	144,046.71	1.173E+00	Pulse	0.30	3
Ca	44	45	3	2519.195	ppb	0.37	6,272,579.42	1.223E+00	Analog	0.30	3
V	51	45	2	0.472	ppb	5.27	4,566.39	3.719E-02	Pulse	0.30	3
Cr	52	45	2	0.316	ppb	6.42	5,267.05	4.291E-02	Pulse	0.30	3
Mn	55	45	2	2.321	ppb	4.21	12,993.17	1.059E-01	Pulse	0.30	3
Fe	56	45	2	67.183	ppb	1.53	607,980.89	4.953E+00	Pulse	0.30	3
Co	59	45	2	0.049	ppb	7.74	1,061.76	8.648E-03	Pulse	0.30	3
Ni	60	72	2	0.433	ppb	4.75	2,737.14	2.916E-02	Pulse	0.30	3
Cu	63	72	2	2.719	ppb	1.28	47,051.89	5.011E-01	Pulse	0.30	3
Zn	66	72	2	16.185	ppb	1.48	35,210.82	3.751E-01	Pulse	0.30	3
As	75	72	2	0.136	ppb	14.55	163.02	1.735E-03	Pulse	0.75	3
Se	78	72	1	0.063	ppb	40.23	34.44	3.276E-04	Pulse	0.30	3
Mo	95	103	2	0.655	ppb	2.16	4,551.95	1.469E-03	Pulse	0.30	3
Ag	107	103	3	0.133	ppb	10.13	13,814.35	1.622E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6.41	-7.101E-07	Pulse	0.30	3
Sb	121	115	3	0.440	ppb	1.91	26,490.99	2.911E-03	Pulse	0.30	3
Ba	137	159	3	5.598	ppb	0.78	120,109.00	9.473E-03	Pulse	0.30	3
Tl	205	209	3	0.129	ppb	11.79	18,216.40	2.546E-03	Pulse	0.30	3
Pb	208	209	3	0.969	ppb	0.91	172,239.80	2.406E-02	Pulse	0.30	3
U	238	209	3	0.029	ppb	1.68	5,632.35	7.868E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,871,949.06	0.84	107.3	Analog	0.30	3
2	Sc	45	122,772.72	1.61	108.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,130,306.45	0.12	109.8	Analog	0.30	3
1	Ge	72	104,809.73	1.21	94.9	Pulse	0.30	3
2	Ge	72	93,882.83	1.73	105.4	Pulse	0.30	3
2	Rh	103	3,098,226.90	0.53	100.6	Analog	0.30	3
3	Rh	103	8,517,910.08	0.43	101.5	Analog	0.30	3
3	In	115	9,099,579.88	0.42	102.7	Analog	0.30	3
3	Tb	159	12,679,645.23	0.66	101.1	Analog	0.30	3
3	Bi	209	7,158,279.76	0.50	97.7	Analog	0.30	3

Quantitation Report

File Name	A0219069.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:16
Sample Name	N023137-003A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	19.66	38.89	2.148E-05	Pulse	0.30	3
Na	23	45	2	1099.762	ppb	1.93	1,832,702.21	1.466E+01	Analog	0.30	3
Mg	26	45	2	229.137	ppb	2.55	32,967.61	2.637E-01	Pulse	0.30	3
Al	27	45	2	103.911	ppb	1.40	27,236.80	2.178E-01	Pulse	0.30	3
K	39	45	2	277.469	ppb	1.48	151,018.65	1.208E+00	Pulse	0.30	3
Ca	44	45	3	1709.619	ppb	0.66	4,067,600.25	8.311E-01	Analog	0.30	3
V	51	45	2	0.459	ppb	5.02	4,547.48	3.638E-02	Pulse	0.30	3
Cr	52	45	2	0.531	ppb	2.75	7,736.85	6.188E-02	Pulse	0.30	3
Mn	55	45	2	5.706	ppb	1.16	31,925.70	2.553E-01	Pulse	0.30	3
Fe	56	45	2	131.242	ppb	1.78	1,207,380.33	9.656E+00	Pulse	0.30	3
Co	59	45	2	0.157	ppb	5.11	3,426.98	2.742E-02	Pulse	0.30	3
Ni	60	72	2	1.509	ppb	9.46	8,995.39	9.423E-02	Pulse	0.30	3
Cu	63	72	2	6.632	ppb	0.96	108,066.32	1.132E+00	Pulse	0.30	3
Zn	66	72	2	107.974	ppb	1.88	222,157.90	2.328E+00	Pulse	0.30	3
As	75	72	2	0.115	ppb	15.65	142.12	1.490E-03	Pulse	0.75	3
Se	78	72	1	0.030	ppb	60.17	18.89	1.608E-04	Pulse	0.30	3
Mo	95	103	2	1.175	ppb	7.64	8,292.17	2.631E-03	Pulse	0.30	3
Ag	107	103	3	0.021	ppb	15.97	5,202.76	6.236E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	5.97	561.36	6.326E-05	Pulse	0.30	3
Sb	121	115	3	1.358	ppb	0.74	74,423.12	8.386E-03	Pulse	0.30	3
Ba	137	159	3	6.955	ppb	0.61	145,517.85	1.176E-02	Pulse	0.30	3
Tl	205	209	3	0.040	ppb	3.73	6,689.56	9.408E-04	Pulse	0.30	3
Pb	208	209	3	8.445	ppb	0.31	1,474,229.26	2.074E-01	Pulse	0.30	3
U	238	209	3	0.032	ppb	4.71	6,038.00	8.492E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,809,627.96	0.66	103.7	Analog	0.30	3
2	Sc	45	125,046.77	1.77	110.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,894,445.59	0.77	104.7	Analog	0.30	3
1	Ge	72	117,317.12	0.62	106.3	Pulse	0.30	3
2	Ge	72	95,433.17	1.77	107.1	Pulse	0.30	3
2	Rh	103	3,151,227.69	0.71	102.3	Analog	0.30	3
3	Rh	103	8,345,096.54	0.51	99.4	Analog	0.30	3
3	In	115	8,875,222.70	0.63	100.1	Analog	0.30	3
3	Tb	159	12,369,176.34	0.58	98.6	Analog	0.30	3
3	Bi	209	7,109,823.44	0.27	97.1	Analog	0.30	3

Quantitation Report

File Name	A0219070.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:22
Sample Name	N023137-004A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	27.18	74.45	4.178E-05	Pulse	0.30	3
Na	23	45	2	1393.202	ppb	1.76	2,210,406.60	1.833E+01	Analog	0.30	3
Mg	26	45	2	194.401	ppb	0.37	26,992.41	2.239E-01	Pulse	0.30	3
Al	27	45	2	106.548	ppb	1.45	26,912.47	2.232E-01	Pulse	0.30	3
K	39	45	2	361.676	ppb	2.19	185,406.17	1.538E+00	Pulse	0.30	3
Ca	44	45	3	1985.203	ppb	0.25	4,576,194.62	9.644E-01	Analog	0.30	3
V	51	45	2	0.453	ppb	6.42	4,339.66	3.601E-02	Pulse	0.30	3
Cr	52	45	2	1.168	ppb	2.46	14,238.04	1.181E-01	Pulse	0.30	3
Mn	55	45	2	8.684	ppb	3.02	46,623.13	3.868E-01	Pulse	0.30	3
Fe	56	45	2	146.935	ppb	1.07	1,303,186.82	1.081E+01	Analog	0.30	3
Co	59	45	2	0.142	ppb	2.11	2,987.08	2.476E-02	Pulse	0.30	3
Ni	60	72	2	3.210	ppb	2.76	18,506.81	1.972E-01	Pulse	0.30	3
Cu	63	72	2	5.805	ppb	0.41	93,798.94	9.990E-01	Pulse	0.30	3
Zn	66	72	2	52.644	ppb	2.39	108,034.27	1.151E+00	Pulse	0.30	3
As	75	72	2	0.111	ppb	25.79	135.48	1.446E-03	Pulse	0.75	3
Se	78	72	1	0.052	ppb	22.93	31.11	2.720E-04	Pulse	0.30	3
Mo	95	103	2	1.578	ppb	16.24	10,937.91	3.530E-03	Pulse	0.30	3
Ag	107	103	3	0.043	ppb	9.54	6,699.83	8.196E-04	Pulse	0.30	3
Cd	111	115	3	0.171	ppb	6.36	2,844.31	3.240E-04	Pulse	0.30	3
Sb	121	115	3	0.643	ppb	1.12	36,169.15	4.120E-03	Pulse	0.30	3
Ba	137	159	3	6.928	ppb	1.11	143,591.39	1.172E-02	Pulse	0.30	3
Tl	205	209	3	0.027	ppb	4.25	4,856.57	6.951E-04	Pulse	0.30	3
Pb	208	209	3	4.013	ppb	0.34	689,564.21	9.870E-02	Pulse	0.30	3
U	238	209	3	0.036	ppb	1.85	6,714.83	9.611E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,780,964.46	0.45	102.0	Analog	0.30	3
2	Sc	45	120,584.36	2.02	106.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,745,192.53	0.21	101.5	Analog	0.30	3
1	Ge	72	114,331.02	0.28	103.5	Pulse	0.30	3
2	Ge	72	93,897.27	1.98	105.4	Pulse	0.30	3
2	Rh	103	3,101,081.66	2.31	100.7	Analog	0.30	3
3	Rh	103	8,175,388.42	0.44	97.4	Analog	0.30	3
3	In	115	8,778,581.01	0.29	99.1	Analog	0.30	3
3	Tb	159	12,253,007.87	0.62	97.7	Analog	0.30	3
3	Bi	209	6,986,674.55	0.54	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219071.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:27
Sample Name	MB-61257,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	7.466E-06	Pulse	0.30	3
Na	23	45	2	176.444	ppb	4.54	372,419.93	3.097E+00	Pulse	0.30	3
Mg	26	45	2	1.666	ppb	26.34	330.02	2.749E-03	Pulse	0.30	3
Al	27	45	2	0.254	ppb	71.97	471.11	3.920E-03	Pulse	0.30	3
K	39	45	2	26.330	ppb	7.09	26,880.29	2.235E-01	Pulse	0.30	3
Ca	44	45	3	6.656	ppb	4.83	35,457.61	7.430E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	650.05	5.412E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,398.61	1.163E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	266.16	2.212E-03	Pulse	0.30	3
Fe	56	45	2	0.156	ppb	40.05	3,680.60	3.061E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	8.49	7.049E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	69.56	7.288E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	738.93	7.774E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,724.47	2.863E-02	Pulse	0.30	3
As	75	72	2	0.002	ppb	392.28	16.89	1.785E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	77.62	7.78	6.678E-05	Pulse	0.30	3
Mo	95	103	2	0.044	ppb	13.53	338.91	1.071E-04	Pulse	0.30	3
Ag	107	103	3	0.037	ppb	17.23	6,388.29	7.638E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19.49	-2.194E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	815.61	9.181E-05	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	3.94	600.57	4.852E-05	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	9.04	3,103.80	4.370E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,094.07	1.541E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	9.47	309.21	4.355E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,787,561.23	0.77	102.4	Analog	0.30	3
2	Sc	45	120,318.49	1.96	106.3	Pulse	0.30	3
3	Sc	45	4,772,175.80	0.32	102.1	Analog	0.30	3
1	Ge	72	116,702.90	0.61	105.7	Pulse	0.30	3
2	Ge	72	95,132.14	1.99	106.8	Pulse	0.30	3
2	Rh	103	3,165,068.77	1.24	102.7	Analog	0.30	3
3	Rh	103	8,366,029.60	0.81	99.6	Analog	0.30	3
3	In	115	8,883,523.63	0.07	100.2	Analog	0.30	3
3	Tb	159	12,377,543.84	0.53	98.7	Analog	0.30	3
3	Bi	209	7,100,382.26	0.76	96.9	Analog	0.30	3

Quantitation Report

File Name	A0219072.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:33
Sample Name	LCS-61257,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.825	ppb	1.05	113,926.08	5.973E-02	Pulse	0.30	3
Na	23	45	2	390.901	ppb	1.76	761,262.06	5.782E+00	Pulse	0.30	3
Mg	26	45	2	105.924	ppb	0.86	16,109.42	1.224E-01	Pulse	0.30	3
Al	27	45	2	212.526	ppb	1.09	58,186.15	4.419E-01	Pulse	0.30	3
K	39	45	2	111.811	ppb	1.70	73,537.71	5.586E-01	Pulse	0.30	3
Ca	44	45	3	121.515	ppb	0.95	324,681.52	6.298E-02	Pulse	0.30	3
V	51	45	2	10.157	ppb	0.57	87,037.06	6.610E-01	Pulse	0.30	3
Cr	52	45	2	10.028	ppb	0.32	118,476.02	8.998E-01	Pulse	0.30	3
Mn	55	45	2	101.371	ppb	1.06	589,760.74	4.479E+00	Pulse	0.30	3
Fe	56	45	2	105.565	ppb	0.83	1,023,159.97	7.771E+00	Pulse	0.30	3
Co	59	45	2	9.886	ppb	1.34	225,160.93	1.710E+00	Pulse	0.30	3
Ni	60	72	2	10.039	ppb	1.11	62,649.06	6.104E-01	Pulse	0.30	3
Cu	63	72	2	10.359	ppb	1.51	177,964.70	1.734E+00	Pulse	0.30	3
Zn	66	72	2	101.569	ppb	1.01	224,987.69	2.192E+00	Pulse	0.30	3
As	75	72	2	10.010	ppb	1.30	11,954.71	1.165E-01	Pulse	0.75	3
Se	78	72	1	9.607	ppb	2.47	6,022.50	4.858E-02	Pulse	0.30	3
Mo	95	103	2	10.075	ppb	1.13	76,540.83	2.250E-02	Pulse	0.30	3
Ag	107	103	3	10.233	ppb	0.69	827,163.15	9.183E-02	Pulse	0.30	3
Cd	111	115	3	10.614	ppb	0.56	189,218.44	1.975E-02	Pulse	0.30	3
Sb	121	115	3	10.430	ppb	0.38	598,820.48	6.249E-02	Pulse	0.30	3
Ba	137	159	3	107.586	ppb	0.82	2,434,614.80	1.818E-01	Analog	0.30	3
Tl	205	209	3	10.169	ppb	1.46	1,418,836.44	1.842E-01	Analog	0.30	3
Pb	208	209	3	10.669	ppb	0.35	2,017,230.29	2.619E-01	Pulse	0.30	3
U	238	209	3	10.376	ppb	1.04	2,076,159.41	2.695E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,907,310.09	0.92	109.3	Analog	0.30	3
2	Sc	45	131,672.75	1.33	116.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,155,212.91	0.62	110.3	Analog	0.30	3
1	Ge	72	123,953.64	1.23	112.3	Pulse	0.30	3
2	Ge	72	102,643.72	1.18	115.2	Pulse	0.30	3
2	Rh	103	3,401,856.34	0.85	110.4	Analog	0.30	3
3	Rh	103	9,007,882.85	0.58	107.3	Analog	0.30	3
3	In	115	9,582,152.96	0.34	108.1	Analog	0.30	3
3	Tb	159	13,391,451.19	0.58	106.8	Analog	0.30	3
3	Bi	209	7,702,850.30	0.62	105.2	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219073.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:38
Sample Name	N022998-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	46.05	13.33	4.535E-05	Pulse	0.30	3
Na	23	45	2	3697597.968	ppb	0.98	3,875,718,235.58	4.631E+04	Analog	0.30	3
Mg	26	45	2	2695.905	ppb	0.80	258,916.51	3.094E+00	Pulse	0.30	3
Al	27	45	2	4.512	ppb	2.54	1,063.20	1.270E-02	Pulse	0.30	3
K	39	45	2	30711.190	ppb	1.11	10,085,954.92	1.205E+02	Analog	0.30	3
Ca	44	45	3	90436.756	ppb	0.24	134,780,581.32	4.375E+01	Analog	0.30	3
V	51	45	2	2.630	ppb	0.59	14,746.05	1.762E-01	Pulse	0.30	3
Cr	52	45	2	18.201	ppb	0.45	135,647.01	1.621E+00	Pulse	0.30	3
Mn	55	45	2	13.458	ppb	1.63	50,018.76	5.976E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-316,264.24	-3.779E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,782.49	-4.519E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,577.46	-7.100E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-88,947.75	-1.765E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,030.75	-1.991E-01	Pulse	0.30	3
As	75	72	2	1.949	ppb	1.74	1,149.06	2.280E-02	Pulse	0.75	3
Se	78	72	1	0.562	ppb	22.08	154.45	2.849E-03	Pulse	0.30	3
Mo	95	103	2	213.393	ppb	0.70	686,490.88	4.764E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,616.82	-7.321E-04	Pulse	0.30	3
Cd	111	115	3	0.115	ppb	12.19	918.93	2.191E-04	Pulse	0.30	3
Sb	121	115	3	0.087	ppb	6.92	3,371.61	8.037E-04	Pulse	0.30	3
Ba	137	159	3	28.734	ppb	0.26	304,301.58	4.857E-02	Pulse	0.30	3
Tl	205	209	3	0.699	ppb	2.06	35,155.86	1.285E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-28,354.29	-1.037E-02	Pulse	0.30	3
U	238	209	3	0.099	ppb	2.44	7,140.56	2.611E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	288,829.26	8.68	16.5	Analog	0.30	3
2	Sc	45	83,691.45	1.69	73.9	Pulse	0.30	3
3	Sc	45	3,081,007.63	0.80	65.9	Analog	0.30	3
1	Ge	72	54,232.19	1.03	49.1	Pulse	0.30	3
2	Ge	72	50,385.49	2.16	56.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,440,984.91	1.87	46.8	Analog	0.30	3
3	Rh	103	3,579,234.63	0.41	42.6	Analog	0.30	3
3	In	115	4,195,173.17	0.52	47.3	Analog	0.30	3
3	Tb	159	6,265,773.45	0.32	50.0	Analog	0.30	3
3	Bi	209	2,735,025.69	0.87	37.3	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE

For As, Mo & Se only

File Name	A0219074.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:44
Sample Name	N022998-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.099E-06	Pulse	0.30	3
Na	23	45	2	774247.183	ppb	1.37	1,188,861,164.51	9.697E+03	Analog	0.30	3
Mg	26	45	2	578.956	ppb	1.50	81,531.25	6.650E-01	Pulse	0.30	3
Al	27	45	2	1.820	ppb	13.23	877.48	7.151E-03	Pulse	0.30	3
K	39	45	2	6127.292	ppb	0.84	2,959,662.73	2.414E+01	Analog	0.30	3
Ca	44	45	3	18850.082	ppb	0.34	44,435,614.89	9.121E+00	Analog	0.30	3
V	51	45	2	0.505	ppb	3.52	4,823.15	3.935E-02	Pulse	0.30	3
Cr	52	45	2	3.874	ppb	1.44	43,760.12	3.569E-01	Pulse	0.30	3
Mn	55	45	2	2.889	ppb	1.71	16,056.69	1.309E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-91,682.20	-7.478E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,156.71	-9.433E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-989.15	-1.205E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-26,775.49	-3.263E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,344.10	-2.857E-02	Pulse	0.30	3
As	75	72	2	0.421	ppb	3.37	414.43	5.050E-03	Pulse	0.75	3
Se	78	72	1	0.086	ppb	67.16	41.11	4.467E-04	Pulse	0.30	3
Mo	95	103	2	39.146	ppb	0.76	214,589.09	8.739E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,151.48	-3.308E-04	Pulse	0.30	3
Cd	111	115	3	0.030	ppb	9.91	450.96	6.207E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,529.03	2.104E-04	Pulse	0.30	3
Ba	137	159	3	5.801	ppb	1.38	104,803.29	9.816E-03	Pulse	0.30	3
Tl	205	209	3	0.157	ppb	2.47	15,477.55	3.057E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,292.16	-1.243E-03	Pulse	0.30	3
U	238	209	3	0.018	ppb	2.75	2,473.16	4.884E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,459,666.82	1.03	83.6	Analog	0.30	3
2	Sc	45	122,635.24	2.78	108.4	Pulse	0.30	3
3	Sc	45	4,871,647.70	0.64	104.2	Analog	0.30	3
1	Ge	72	92,539.54	1.31	83.8	Pulse	0.30	3
2	Ge	72	82,056.17	1.44	92.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,455,300.67	1.44	79.7	Analog	0.30	3
3	Rh	103	6,503,768.72	0.13	77.5	Analog	0.30	3
3	In	115	7,266,894.53	0.52	82.0	Analog	0.30	3
3	Tb	159	10,676,794.98	0.31	85.1	Analog	0.30	3
3	Bi	209	5,063,566.90	0.39	69.1	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219075.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:50
Sample Name	N022998-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.028E-06	Pulse	0.30	3
Na	23	45	2	159527.210	ppb	1.41	266,832,760.47	1.999E+03	Analog	0.30	3
Mg	26	45	2	120.599	ppb	2.01	18,580.89	1.392E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	413.73	3.100E-03	Pulse	0.30	3
K	39	45	2	1311.672	ppb	0.57	702,543.25	5.262E+00	Pulse	0.30	3
Ca	44	45	3	3883.325	ppb	0.50	10,041,024.29	1.882E+00	Analog	0.30	3
V	51	45	2	0.080	ppb	6.76	1,594.59	1.194E-02	Pulse	0.30	3
Cr	52	45	2	0.791	ppb	4.00	11,324.96	8.485E-02	Pulse	0.30	3
Mn	55	45	2	0.584	ppb	3.29	3,894.13	2.917E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-17,898.47	-1.341E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-246.03	-1.843E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-146.57	-1.504E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,345.64	-5.485E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-112.95	-1.154E-03	Pulse	0.30	3
As	75	72	2	0.088	ppb	19.50	114.61	1.177E-03	Pulse	0.75	3
Se	78	72	1	0.048	ppb	49.05	28.89	2.522E-04	Pulse	0.30	3
Mo	95	103	2	7.603	ppb	1.35	50,208.46	1.698E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	253.43	3.184E-05	Pulse	0.30	3
Cd	111	115	3	0.005	ppb	28.28	130.01	1.489E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	854.50	9.788E-05	Pulse	0.30	3
Ba	137	159	3	1.248	ppb	1.64	26,271.14	2.123E-03	Pulse	0.30	3
Tl	205	209	3	0.051	ppb	3.76	7,248.76	1.133E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	256.78	2,052.42	3.208E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	21.97	751.23	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,836,246.38	0.47	105.2	Analog	0.30	3
2	Sc	45	133,530.28	1.96	118.0	Pulse	0.30	3
3	Sc	45	5,334,135.20	0.44	114.1	Analog	0.30	3
1	Ge	72	114,693.32	0.73	103.9	Pulse	0.30	3
2	Ge	72	97,457.75	1.11	109.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,956,995.23	0.66	96.0	Analog	0.30	3
3	Rh	103	7,962,917.45	0.23	94.8	Analog	0.30	3
3	In	115	8,729,524.15	0.25	98.5	Analog	0.30	3
3	Tb	159	12,377,439.12	0.54	98.7	Analog	0.30	3
3	Bi	209	6,399,614.00	0.63	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219076.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:56
Sample Name	N022998-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	37.781	ppb	3.01	50,677.04	2.297E-01	Pulse	0.30	3
Na	23	45	2	OR	ppb	---	OR	1.545E+04	Error	0.30	3
Mg	26	45	2	2799.004	ppb	0.51	307,929.80	3.212E+00	Pulse	0.30	3
Al	27	45	2	195.250	ppb	0.66	38,946.30	4.062E-01	Pulse	0.30	3
K	39	45	2	30498.973	ppb	0.77	11,473,246.77	1.197E+02	Analog	0.30	3
Ca	44	45	3	91287.726	ppb	0.68	144,552,743.40	4.416E+01	Analog	0.30	3
V	51	45	2	11.868	ppb	1.11	73,945.12	7.712E-01	Pulse	0.30	3
Cr	52	45	2	26.403	ppb	2.86	224,809.05	2.345E+00	Pulse	0.30	3
Mn	55	45	2	88.487	ppb	1.48	374,878.44	3.911E+00	Pulse	0.30	3
Fe	56	45	2	62.045	ppb	52.77	439,832.46	4.575E+00	Pulse	0.30	3
Co	59	45	2	6.838	ppb	3.62	113,425.74	1.183E+00	Pulse	0.30	3
Ni	60	72	2	8.507	ppb	9.40	29,109.60	5.177E-01	Pulse	0.30	3
Cu	63	72	2	4.602	ppb	145.06	45,931.99	8.049E-01	Pulse	0.30	3
Zn	66	72	2	67.408	ppb	8.25	82,363.07	1.465E+00	Pulse	0.30	3
As	75	72	2	10.588	ppb	1.46	6,917.54	1.232E-01	Pulse	0.75	3
Se	78	72	1	8.675	ppb	3.64	2,618.09	4.386E-02	Pulse	0.30	3
Mo	95	103	2	232.246	ppb	1.28	793,646.47	5.184E-01	Pulse	0.30	3
Ag	107	103	3	8.373	ppb	0.78	273,121.32	7.522E-02	Pulse	0.30	3
Cd	111	115	3	8.022	ppb	0.95	63,785.27	1.493E-02	Pulse	0.30	3
Sb	121	115	3	9.329	ppb	0.85	238,993.14	5.593E-02	Pulse	0.30	3
Ba	137	159	3	126.860	ppb	1.34	1,359,493.07	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.277	ppb	0.48	515,017.80	1.861E-01	Pulse	0.30	3
Pb	208	209	3	10.675	ppb	0.24	724,955.07	2.620E-01	Pulse	0.30	3
U	238	209	3	14.125	ppb	0.03	1,015,183.61	3.669E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	220,799.58	3.23	12.7	Analog	0.30	3
2	Sc	45	95,871.88	0.90	84.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,273,742.24	0.96	70.0	Analog	0.30	3
1	Ge	72	59,668.80	2.10	54.0	Pulse	0.30	3
2	Ge	72	56,166.57	1.80	63.0	Pulse	0.30	3
2	Rh	103	1,530,700.50	0.85	49.7	Analog	0.30	3
3	Rh	103	3,630,986.79	0.64	43.2	Analog	0.30	3
3	In	115	4,273,432.94	0.79	48.2	Analog	0.30	3
3	Tb	159	6,341,989.56	0.77	50.6	Analog	0.30	3
3	Bi	209	2,766,838.78	0.33	37.8	Analog	0.30	3

Quantitation Report

File Name	A0219077.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:01
Sample Name	N022998-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.009	ppb	1.63	18,066.84	1.222E-02	Pulse	0.30	3
Na	23	45	2	802284.904	ppb	0.81	1,270,323,154.40	1.005E+04	Analog	0.30	3
Mg	26	45	2	609.762	ppb	1.41	88,535.24	7.003E-01	Pulse	0.30	3
Al	27	45	2	40.746	ppb	1.53	11,056.38	8.746E-02	Pulse	0.30	3
K	39	45	2	6305.995	ppb	0.83	3,140,025.30	2.484E+01	Analog	0.30	3
Ca	44	45	3	19108.719	ppb	0.52	46,457,370.42	9.246E+00	Analog	0.30	3
V	51	45	2	2.425	ppb	1.90	20,605.75	1.630E-01	Pulse	0.30	3
Cr	52	45	2	5.650	ppb	1.64	64,921.53	5.135E-01	Pulse	0.30	3
Mn	55	45	2	20.169	ppb	1.26	113,015.20	8.939E-01	Pulse	0.30	3
Fe	56	45	2	6.605	ppb	2.44	63,729.63	5.042E-01	Pulse	0.30	3
Co	59	45	2	1.583	ppb	1.39	34,639.40	2.740E-01	Pulse	0.30	3
Ni	60	72	2	1.592	ppb	2.72	8,452.27	9.926E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,128.63	-2.497E-02	Pulse	0.30	3
Zn	66	72	2	13.393	ppb	1.50	26,870.52	3.157E-01	Pulse	0.30	3
As	75	72	2	2.339	ppb	5.13	2,327.05	2.733E-02	Pulse	0.75	3
Se	78	72	1	1.738	ppb	6.65	842.28	8.796E-03	Pulse	0.30	3
Mo	95	103	2	42.358	ppb	0.70	240,076.12	9.456E-02	Pulse	0.30	3
Ag	107	103	3	1.828	ppb	1.02	111,489.65	1.676E-02	Pulse	0.30	3
Cd	111	115	3	1.856	ppb	0.33	25,794.93	3.458E-03	Pulse	0.30	3
Sb	121	115	3	2.017	ppb	0.62	91,874.06	1.232E-02	Pulse	0.30	3
Ba	137	159	3	26.510	ppb	0.83	490,006.64	4.481E-02	Pulse	0.30	3
Tl	205	209	3	2.199	ppb	0.74	207,595.04	4.001E-02	Pulse	0.30	3
Pb	208	209	3	2.130	ppb	0.27	272,579.00	5.253E-02	Pulse	0.30	3
U	238	209	3	2.705	ppb	0.07	364,769.79	7.030E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,478,020.90	0.76	84.7	Analog	0.30	3
2	Sc	45	126,434.49	2.10	111.7	Pulse	0.30	3
3	Sc	45	5,024,496.49	0.79	107.5	Analog	0.30	3
1	Ge	72	95,765.63	0.94	86.7	Pulse	0.30	3
2	Ge	72	85,134.40	1.19	95.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,538,616.56	1.45	82.4	Analog	0.30	3
3	Rh	103	6,651,488.65	0.07	79.2	Analog	0.30	3
3	In	115	7,459,483.66	0.64	84.2	Analog	0.30	3
3	Tb	159	10,936,340.67	1.06	87.2	Analog	0.30	3
3	Bi	209	5,188,888.32	0.59	70.8	Analog	0.30	3

Quantitation Report

File Name	A0219078.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:08
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.562	ppb	1.32	142,832.93	1.189E-01	Pulse	0.30	3
Na	23	45	2	208.000	ppb	4.06	329,692.29	3.492E+00	Pulse	0.30	3
Mg	26	45	2	197.519	ppb	0.95	21,479.97	2.274E-01	Pulse	0.30	3
Al	27	45	2	21.651	ppb	3.19	4,542.00	4.807E-02	Pulse	0.30	3
K	39	45	2	209.983	ppb	1.61	89,094.01	9.434E-01	Pulse	0.30	3
Ca	44	45	3	212.966	ppb	0.39	389,090.76	1.072E-01	Pulse	0.30	3
V	51	45	2	19.882	ppb	1.55	121,579.72	1.287E+00	Pulse	0.30	3
Cr	52	45	2	19.667	ppb	1.53	165,295.09	1.750E+00	Pulse	0.30	3
Mn	55	45	2	20.142	ppb	0.98	84,324.18	8.927E-01	Pulse	0.30	3
Fe	56	45	2	20.807	ppb	0.37	146,127.93	1.547E+00	Pulse	0.30	3
Co	59	45	2	20.157	ppb	1.09	329,288.40	3.487E+00	Pulse	0.30	3
Ni	60	72	2	19.869	ppb	0.93	88,869.51	1.205E+00	Pulse	0.30	3
Cu	63	72	2	20.638	ppb	0.82	250,151.18	3.393E+00	Pulse	0.30	3
Zn	66	72	2	19.149	ppb	1.03	32,306.24	4.381E-01	Pulse	0.30	3
As	75	72	2	20.033	ppb	0.82	17,177.18	2.329E-01	Pulse	0.75	3
Se	78	72	1	18.524	ppb	1.57	8,415.89	9.365E-02	Pulse	0.30	3
Mo	95	103	2	19.543	ppb	0.24	111,215.74	4.363E-02	Pulse	0.30	3
Ag	107	103	3	20.571	ppb	0.78	1,265,736.30	1.842E-01	Pulse	0.30	3
Cd	111	115	3	20.512	ppb	0.37	282,465.89	3.816E-02	Pulse	0.30	3
Sb	121	115	3	20.267	ppb	1.04	896,979.73	1.212E-01	Pulse	0.30	3
Ba	137	159	3	21.756	ppb	0.11	382,973.18	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.195	ppb	1.04	2,220,975.25	3.656E-01	Analog	0.30	3
Pb	208	209	3	20.515	ppb	1.11	3,057,276.85	5.033E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	0.89	3,083,701.09	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,150.95	0.70	68.8	Analog	0.30	3
2	Sc	45	94,457.47	1.97	83.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,629,070.40	0.08	77.7	Analog	0.30	3
1	Ge	72	89,860.86	0.55	81.4	Pulse	0.30	3
2	Ge	72	73,740.21	1.16	82.8	Pulse	0.30	3
2	Rh	103	2,548,747.22	1.34	82.7	Analog	0.30	3
3	Rh	103	6,872,907.47	0.69	81.9	Analog	0.30	3
3	In	115	7,402,853.78	0.69	83.5	Analog	0.30	3
3	Tb	159	10,413,839.57	0.80	83.0	Analog	0.30	3
3	Bi	209	6,075,389.42	1.07	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219079.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:13
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	277.88	25.55	1.345E-05	Pulse	0.30	3
Na	23	45	2	613.226	ppb	2.73	1,121,387.42	8.566E+00	Analog	0.30	3
Mg	26	45	2	0.151	ppb	57.00	132.23	1.011E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	410.02	3.126E-03	Pulse	0.30	3
K	39	45	2	21.119	ppb	12.50	26,574.28	2.031E-01	Pulse	0.30	3
Ca	44	45	3	0.581	ppb	4.53	23,109.16	4.492E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.866E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,713.48	1.309E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.09	2.331E-03	Pulse	0.30	3
Fe	56	45	2	0.141	ppb	8.91	3,861.46	2.950E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	292.01	37.75	2.893E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	45.53	4.473E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	950.57	9.354E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	592.19	5.824E-03	Pulse	0.30	3
As	75	72	2	0.015	ppb	60.54	33.33	3.275E-04	Pulse	0.75	3
Se	78	72	1	0.030	ppb	16.99	20.00	1.598E-04	Pulse	0.30	3
Mo	95	103	2	0.221	ppb	0.38	1,670.16	5.002E-04	Pulse	0.30	3
Ag	107	103	3	0.445	ppb	11.88	38,956.98	4.406E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-202.28	-2.162E-05	Pulse	0.30	3
Sb	121	115	3	0.050	ppb	3.22	5,445.60	5.821E-04	Pulse	0.30	3
Ba	137	159	3	0.001	ppb	162.04	200.75	1.546E-05	Pulse	0.30	3
Tl	205	209	3	0.071	ppb	1.97	11,203.56	1.505E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	793.77	1.066E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	9.35	951.46	1.279E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,900,416.10	1.02	108.9	Analog	0.30	3
2	Sc	45	130,945.25	1.86	115.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,144,440.82	0.55	110.1	Analog	0.30	3
1	Ge	72	125,081.18	0.74	113.3	Pulse	0.30	3
2	Ge	72	101,654.46	1.11	114.1	Pulse	0.30	3
2	Rh	103	3,339,266.76	0.72	108.4	Analog	0.30	3
3	Rh	103	8,841,507.23	0.10	105.3	Analog	0.30	3
3	In	115	9,354,702.88	0.26	105.6	Analog	0.30	3
3	Tb	159	12,988,170.64	0.35	103.6	Analog	0.30	3
3	Bi	209	7,441,913.50	0.44	101.6	Analog	0.30	3

Quantitation Report

File Name	A0219080.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:18
Sample Name	N022998-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	32.871	ppb	9.86	51,790.29	1.998E-01	Pulse	0.30	3
Na	23	45	2	3719489.471	ppb	0.33	4,160,691,244.67	4.658E+04	Analog	0.30	3
Mg	26	45	2	2787.224	ppb	0.48	285,674.63	3.198E+00	Pulse	0.30	3
Al	27	45	2	192.895	ppb	1.92	35,865.13	4.014E-01	Pulse	0.30	3
K	39	45	2	30574.873	ppb	0.38	10,716,738.04	1.200E+02	Analog	0.30	3
Ca	44	45	3	89691.565	ppb	0.56	141,013,395.68	4.338E+01	Analog	0.30	3
V	51	45	2	11.847	ppb	1.03	68,759.89	7.699E-01	Pulse	0.30	3
Cr	52	45	2	26.159	ppb	1.45	207,462.30	2.323E+00	Pulse	0.30	3
Mn	55	45	2	92.710	ppb	0.61	365,961.65	4.097E+00	Pulse	0.30	3
Fe	56	45	2	26.151	ppb	3.03	173,241.40	1.939E+00	Pulse	0.30	3
Co	59	45	2	6.880	ppb	1.07	106,304.91	1.190E+00	Pulse	0.30	3
Ni	60	72	2	7.500	ppb	0.99	24,274.42	4.567E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-22,395.86	-4.213E-01	Pulse	0.30	3
Zn	66	72	2	62.324	ppb	1.26	72,111.45	1.357E+00	Pulse	0.30	3
As	75	72	2	10.786	ppb	2.20	6,667.26	1.255E-01	Pulse	0.75	3
Se	78	72	1	8.807	ppb	3.27	2,535.87	4.453E-02	Pulse	0.30	3
Mo	95	103	2	224.832	ppb	0.40	747,850.72	5.019E-01	Pulse	0.30	3
Ag	107	103	3	8.528	ppb	0.92	280,548.21	7.661E-02	Pulse	0.30	3
Cd	111	115	3	8.086	ppb	0.69	64,854.89	1.505E-02	Pulse	0.30	3
Sb	121	115	3	9.371	ppb	0.75	242,174.20	5.618E-02	Pulse	0.30	3
Ba	137	159	3	126.901	ppb	0.57	1,377,953.22	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.072	ppb	0.97	510,064.75	1.824E-01	Pulse	0.30	3
Pb	208	209	3	10.800	ppb	0.29	741,116.49	2.651E-01	Pulse	0.30	3
U	238	209	3	14.295	ppb	0.37	1,038,129.88	3.713E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	260,580.16	8.19	14.9	Analog	0.30	3
2	Sc	45	89,326.71	2.57	78.9	Pulse	0.30	3
3	Sc	45	3,250,309.43	0.53	69.5	Analog	0.30	3
1	Ge	72	56,952.33	0.27	51.6	Pulse	0.30	3
2	Ge	72	53,145.13	2.10	59.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,490,092.95	2.90	48.4	Analog	0.30	3
3	Rh	103	3,662,244.08	0.40	43.6	Analog	0.30	3
3	In	115	4,310,495.47	0.06	48.6	Analog	0.30	3
3	Tb	159	6,425,756.09	0.30	51.2	Analog	0.30	3
3	Bi	209	2,795,731.76	0.32	38.2	Analog	0.30	3

Quantitation Report

File Name	A0219081.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:24
Sample Name	N022998-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.144	ppb	1.21	18,594.09	1.304E-02	Pulse	0.30	3
Na	23	45	2	790325.731	ppb	0.24	1,233,039,368.29	9.898E+03	Analog	0.30	3
Mg	26	45	2	606.750	ppb	1.35	86,801.18	6.969E-01	Pulse	0.30	3
Al	27	45	2	40.531	ppb	1.20	10,841.95	8.702E-02	Pulse	0.30	3
K	39	45	2	6260.233	ppb	0.64	3,071,948.98	2.466E+01	Analog	0.30	3
Ca	44	45	3	19164.713	ppb	0.60	45,569,450.99	9.273E+00	Analog	0.30	3
V	51	45	2	2.490	ppb	1.92	20,828.26	1.672E-01	Pulse	0.30	3
Cr	52	45	2	5.688	ppb	1.19	64,376.56	5.168E-01	Pulse	0.30	3
Mn	55	45	2	20.529	ppb	0.52	113,336.93	9.098E-01	Pulse	0.30	3
Fe	56	45	2	7.583	ppb	0.65	71,746.99	5.760E-01	Pulse	0.30	3
Co	59	45	2	1.638	ppb	2.14	35,315.54	2.836E-01	Pulse	0.30	3
Ni	60	72	2	1.635	ppb	4.01	8,577.32	1.019E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,449.36	-1.719E-02	Pulse	0.30	3
Zn	66	72	2	13.708	ppb	1.86	27,129.78	3.224E-01	Pulse	0.30	3
As	75	72	2	2.310	ppb	1.95	2,271.49	2.699E-02	Pulse	0.75	3
Se	78	72	1	1.875	ppb	5.53	898.96	9.489E-03	Pulse	0.30	3
Mo	95	103	2	42.292	ppb	0.33	236,827.16	9.442E-02	Pulse	0.30	3
Ag	107	103	3	1.859	ppb	0.38	112,081.06	1.704E-02	Pulse	0.30	3
Cd	111	115	3	1.894	ppb	1.14	26,157.43	3.529E-03	Pulse	0.30	3
Sb	121	115	3	2.049	ppb	1.20	92,697.60	1.251E-02	Pulse	0.30	3
Ba	137	159	3	27.006	ppb	0.27	492,720.57	4.565E-02	Pulse	0.30	3
Tl	205	209	3	2.190	ppb	0.91	205,471.30	3.984E-02	Pulse	0.30	3
Pb	208	209	3	2.175	ppb	0.25	276,652.63	5.364E-02	Pulse	0.30	3
U	238	209	3	2.746	ppb	1.23	368,049.73	7.137E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,425,448.15	0.72	81.7	Analog	0.30	3
2	Sc	45	124,575.07	1.87	110.1	Pulse	0.30	3
3	Sc	45	4,914,124.82	0.93	105.2	Analog	0.30	3
1	Ge	72	94,731.11	0.24	85.8	Pulse	0.30	3
2	Ge	72	84,170.32	1.49	94.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,508,287.39	2.09	81.4	Analog	0.30	3
3	Rh	103	6,576,598.72	0.23	78.3	Analog	0.30	3
3	In	115	7,412,709.91	0.92	83.6	Analog	0.30	3
3	Tb	159	10,794,039.70	0.43	86.1	Analog	0.30	3
3	Bi	209	5,157,807.98	1.28	70.4	Analog	0.30	3

Quantitation Report

File Name	A0219082.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:29
Sample Name	N022998-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	33.829	ppb	3.86	52,299.32	2.056E-01	Pulse	0.30	3
Na	23	45	2	3773588.878	ppb	0.04	4,404,035,987.71	4.726E+04	Analog	0.30	3
Mg	26	45	2	2821.225	ppb	1.27	301,644.78	3.237E+00	Pulse	0.30	3
Al	27	45	2	206.732	ppb	0.76	40,062.88	4.299E-01	Pulse	0.30	3
K	39	45	2	30963.830	ppb	0.22	11,321,703.16	1.215E+02	Analog	0.30	3
Ca	44	45	3	89626.566	ppb	0.14	144,714,362.29	4.335E+01	Analog	0.30	3
V	51	45	2	11.953	ppb	0.16	72,380.90	7.767E-01	Pulse	0.30	3
Cr	52	45	2	26.143	ppb	1.05	216,326.08	2.322E+00	Pulse	0.30	3
Mn	55	45	2	93.113	ppb	0.14	383,455.54	4.115E+00	Pulse	0.30	3
Fe	56	45	2	25.067	ppb	1.22	173,313.37	1.860E+00	Pulse	0.30	3
Co	59	45	2	6.862	ppb	0.96	110,616.03	1.187E+00	Pulse	0.30	3
Ni	60	72	2	7.652	ppb	3.46	25,825.00	4.659E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-25,082.67	-4.521E-01	Pulse	0.30	3
Zn	66	72	2	61.712	ppb	1.49	74,521.66	1.344E+00	Pulse	0.30	3
As	75	72	2	10.795	ppb	0.25	6,966.03	1.256E-01	Pulse	0.75	3
Se	78	72	1	8.462	ppb	1.72	2,439.18	4.279E-02	Pulse	0.30	3
Mo	95	103	2	221.626	ppb	0.60	770,814.81	4.947E-01	Pulse	0.30	3
Ag	107	103	3	8.522	ppb	0.33	286,669.20	7.655E-02	Pulse	0.30	3
Cd	111	115	3	8.054	ppb	1.24	65,865.14	1.499E-02	Pulse	0.30	3
Sb	121	115	3	9.384	ppb	0.36	247,262.02	5.626E-02	Pulse	0.30	3
Ba	137	159	3	127.696	ppb	1.03	1,407,359.16	2.158E-01	Analog	0.30	3
Tl	205	209	3	10.262	ppb	0.47	524,690.71	1.859E-01	Pulse	0.30	3
Pb	208	209	3	10.815	ppb	0.30	749,328.85	2.655E-01	Pulse	0.30	3
U	238	209	3	14.357	ppb	0.33	1,052,739.37	3.729E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	254,535.39	3.36	14.6	Analog	0.30	3
2	Sc	45	93,192.26	2.21	82.3	Pulse	0.30	3
3	Sc	45	3,338,014.12	0.45	71.4	Analog	0.30	3
1	Ge	72	57,007.28	0.87	51.6	Pulse	0.30	3
2	Ge	72	55,461.99	2.81	62.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,557,953.42	1.73	50.6	Analog	0.30	3
3	Rh	103	3,744,731.99	0.39	44.6	Analog	0.30	3
3	In	115	4,395,016.12	0.10	49.6	Analog	0.30	3
3	Tb	159	6,522,106.85	0.43	52.0	Analog	0.30	3
3	Bi	209	2,822,763.29	0.26	38.5	Analog	0.30	3

Quantitation Report

File Name	A0219083.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:35
Sample Name	N022998-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.078	ppb	1.57	18,072.42	1.264E-02	Pulse	0.30	3
Na	23	45	2	786553.236	ppb	0.33	1,210,172,017.52	9.851E+03	Analog	0.30	3
Mg	26	45	2	604.957	ppb	0.61	85,355.35	6.948E-01	Pulse	0.30	3
Al	27	45	2	41.642	ppb	2.57	10,973.30	8.931E-02	Pulse	0.30	3
K	39	45	2	6298.357	ppb	0.23	3,047,621.76	2.481E+01	Analog	0.30	3
Ca	44	45	3	19125.171	ppb	0.34	45,484,985.99	9.254E+00	Analog	0.30	3
V	51	45	2	2.509	ppb	0.99	20,691.45	1.684E-01	Pulse	0.30	3
Cr	52	45	2	5.733	ppb	2.05	63,984.34	5.209E-01	Pulse	0.30	3
Mn	55	45	2	20.519	ppb	0.40	111,722.89	9.094E-01	Pulse	0.30	3
Fe	56	45	2	7.982	ppb	2.13	74,354.17	6.053E-01	Pulse	0.30	3
Co	59	45	2	1.673	ppb	1.71	35,583.36	2.897E-01	Pulse	0.30	3
Ni	60	72	2	1.723	ppb	2.84	8,949.94	1.072E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	929.71	1.117E-02	Pulse	0.30	3
Zn	66	72	2	13.527	ppb	1.26	26,596.96	3.185E-01	Pulse	0.30	3
As	75	72	2	2.300	ppb	0.85	2,244.38	2.688E-02	Pulse	0.75	3
Se	78	72	1	1.660	ppb	0.52	807.83	8.401E-03	Pulse	0.30	3
Mo	95	103	2	42.196	ppb	1.41	235,053.65	9.420E-02	Pulse	0.30	3
Ag	107	103	3	1.858	ppb	0.41	113,277.21	1.703E-02	Pulse	0.30	3
Cd	111	115	3	1.878	ppb	1.58	26,097.67	3.498E-03	Pulse	0.30	3
Sb	121	115	3	2.039	ppb	0.77	92,841.38	1.245E-02	Pulse	0.30	3
Ba	137	159	3	26.897	ppb	0.48	496,292.21	4.546E-02	Pulse	0.30	3
Tl	205	209	3	2.234	ppb	1.41	211,447.30	4.063E-02	Pulse	0.30	3
Pb	208	209	3	2.184	ppb	0.41	280,241.06	5.384E-02	Pulse	0.30	3
U	238	209	3	2.734	ppb	0.62	369,798.97	7.105E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,429,470.87	1.47	81.9	Analog	0.30	3
2	Sc	45	122,847.94	1.27	108.5	Pulse	0.30	3
3	Sc	45	4,914,997.84	0.29	105.2	Analog	0.30	3
1	Ge	72	96,158.21	0.69	87.1	Pulse	0.30	3
2	Ge	72	83,499.94	1.25	93.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,495,511.74	1.74	81.0	Analog	0.30	3
3	Rh	103	6,651,073.23	0.06	79.2	Analog	0.30	3
3	In	115	7,460,177.76	0.34	84.2	Analog	0.30	3
3	Tb	159	10,916,722.89	0.30	87.0	Analog	0.30	3
3	Bi	209	5,204,738.39	0.65	71.1	Analog	0.30	3

Quantitation Report

File Name	A0219084.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:40
Sample Name	N022998-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.002	ppb	90.60	20.00	2.493E-05	Pulse	0.30	3
	Na	23	45	2	1202234.999	ppb	0.38	1,746,105,733.98	1.506E+04	Analog	0.30	3
	Mg	26	45	2	24785.718	ppb	0.93	3,297,429.95	2.843E+01	Analog	0.30	3
	Al	27	45	2	4.492	ppb	11.56	1,466.87	1.266E-02	Pulse	0.30	3
	K	39	45	2	19679.765	ppb	0.13	8,960,196.25	7.726E+01	Analog	0.30	3
	Ca	44	45	3	419673.039	ppb	0.71	915,692,626.36	2.030E+02	Analog	0.30	3
	V	51	45	2	2.708	ppb	1.55	21,012.87	1.812E-01	Pulse	0.30	3
	Cr	52	45	2	3.964	ppb	2.33	42,294.17	3.648E-01	Pulse	0.30	3
OLR	Mn	55	45	2	342.957	ppb	0.88	1,756,454.19	1.515E+01	Analog	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-110,557.31	-9.534E-01	Pulse	0.30	3
	Co	59	45	2	0.085	ppb	2.48	1,740.47	1.501E-02	Pulse	0.30	3
	Ni	60	72	2	0.603	ppb	4.77	2,836.44	3.939E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-42,832.81	-5.946E-01	Pulse	0.30	3
	Zn	66	72	2	32.590	ppb	0.97	52,161.89	7.242E-01	Pulse	0.30	3
	As	75	72	2	1.396	ppb	5.21	1,179.51	1.638E-02	Pulse	0.75	3
	Se	78	72	1	1.145	ppb	20.60	461.14	5.801E-03	Pulse	0.30	3
	Mo	95	103	2	27.170	ppb	1.10	127,085.02	6.066E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-4,602.23	-8.443E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,626.35	-4.246E-04	Pulse	0.30	3
	Sb	121	115	3	0.072	ppb	3.75	4,416.37	7.140E-04	Pulse	0.30	3
	Ba	137	159	3	133.557	ppb	0.17	2,081,120.80	2.257E-01	Analog	0.30	3
	Tl	205	209	3	0.808	ppb	0.61	61,258.31	1.483E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-56,037.02	-1.357E-02	Pulse	0.30	3
	U	238	209	3	1.678	ppb	0.80	180,143.11	4.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	799,224.96	1.14	45.8	Analog	0.30	3
2	Sc	45	115,977.44	2.28	102.5	Pulse	0.30	3
3	Sc	45	4,511,163.96	0.48	96.5	Analog	0.30	3
1	Ge	72	79,566.49	0.86	72.1	Pulse	0.30	3
2	Ge	72	72,032.56	1.54	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,094,891.65	0.99	68.0	Analog	0.30	3
3	Rh	103	5,445,070.13	0.80	64.9	Analog	0.30	3
3	In	115	6,185,500.12	0.23	69.8	Analog	0.30	3
3	Tb	159	9,221,126.74	0.59	73.5	Analog	0.30	3
3	Bi	209	4,129,853.17	0.20	56.4	Analog	0.30	3

Quantitation Report

File Name	A0219085.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:46
Sample Name	N022998-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.409E-06	Pulse	0.30	3
Na	23	45	2	252024.167	ppb	0.74	406,919,540.61	3.157E+03	Analog	0.30	3
Mg	26	45	2	5392.943	ppb	0.33	797,576.80	6.188E+00	Pulse	0.30	3
Al	27	45	2	0.787	ppb	35.57	647.17	5.021E-03	Pulse	0.30	3
K	39	45	2	4129.928	ppb	1.18	2,102,004.81	1.631E+01	Analog	0.30	3
Ca	44	45	3	91903.795	ppb	1.16	230,507,834.34	4.445E+01	Analog	0.30	3
V	51	45	2	0.515	ppb	3.16	5,151.02	3.995E-02	Pulse	0.30	3
Cr	52	45	2	0.845	ppb	4.15	11,549.89	8.961E-02	Pulse	0.30	3
Mn	55	45	2	76.921	ppb	0.28	438,242.78	3.400E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-21,437.46	-1.663E-01	Pulse	0.30	3
Co	59	45	2	0.026	ppb	9.59	615.02	4.775E-03	Pulse	0.30	3
Ni	60	72	2	0.109	ppb	3.48	868.78	9.498E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-8,792.91	-9.611E-02	Pulse	0.30	3
Zn	66	72	2	7.081	ppb	2.55	16,591.26	1.813E-01	Pulse	0.30	3
As	75	72	2	0.301	ppb	4.84	333.62	3.647E-03	Pulse	0.75	3
Se	78	72	1	0.201	ppb	15.68	110.00	1.026E-03	Pulse	0.30	3
Mo	95	103	2	5.152	ppb	2.05	31,903.85	1.151E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-176.36	-2.353E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-626.19	-7.493E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,687.94	2.020E-04	Pulse	0.30	3
Ba	137	159	3	28.788	ppb	0.20	589,993.13	4.866E-02	Pulse	0.30	3
Tl	205	209	3	0.196	ppb	1.98	22,721.54	3.769E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,849.56	-1.966E-03	Pulse	0.30	3
U	238	209	3	0.317	ppb	0.81	49,806.17	8.262E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,147.62	0.78	90.1	Analog	0.30	3
2	Sc	45	128,904.21	1.39	113.9	Pulse	0.30	3
3	Sc	45	5,185,418.50	0.61	111.0	Analog	0.30	3
1	Ge	72	107,207.47	0.38	97.1	Pulse	0.30	3
2	Ge	72	91,492.93	1.25	102.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,772,073.43	1.08	90.0	Analog	0.30	3
3	Rh	103	7,485,511.48	0.32	89.2	Analog	0.30	3
3	In	115	8,356,847.23	0.32	94.3	Analog	0.30	3
3	Tb	159	12,125,435.65	0.72	96.7	Analog	0.30	3
3	Bi	209	6,028,346.37	0.41	82.3	Analog	0.30	3

Quantitation Report

NOT REPORTED
IS FAILED

File Name	A0219086.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:51
Sample Name	N022998-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.004	ppb	46.93	15.56	3.642E-05	Pulse	0.30	3
	Na	23	45	2	2332493.713	ppb	0.62	2,904,249,663.39	2.921E+04	Analog	0.30	3
	Mg	26	45	2	17018.596	ppb	1.72	1,940,851.27	1.952E+01	Analog	0.30	3
	Al	27	45	2	5.950	ppb	5.55	1,557.71	1.567E-02	Pulse	0.30	3
	K	39	45	2	27205.939	ppb	0.83	10,614,157.20	1.068E+02	Analog	0.30	3
	Ca	44	45	3	319025.833	ppb	0.58	579,782,595.81	1.543E+02	Analog	0.30	3
	V	51	45	2	0.055	ppb	26.52	1,030.08	1.035E-02	Pulse	0.30	3
OLR	Cr	52	45	2	<0.000	ppb	---	-269.81	-2.698E-03	Pulse	0.30	3
	Mn	55	45	2	802.735	ppb	1.22	3,524,013.55	3.545E+01	Analog	0.30	3
	Fe	56	45	2	216.541	ppb	0.67	1,582,909.27	1.592E+01	Analog	0.30	3
	Co	59	45	2	0.676	ppb	2.88	11,659.27	1.172E-01	Pulse	0.30	3
	Ni	60	72	2	0.354	ppb	4.04	1,464.36	2.435E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-69,917.81	-1.162E+00	Pulse	0.30	3
	Zn	66	72	2	44.205	ppb	1.27	58,434.27	9.713E-01	Pulse	0.30	3
	As	75	72	2	3.585	ppb	1.92	2,516.64	4.181E-02	Pulse	0.75	3
	Se	78	72	1	0.032	ppb	49.73	11.11	1.713E-04	Pulse	0.30	3
	Mo	95	103	2	68.992	ppb	0.75	267,195.23	1.540E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-11,106.20	-2.515E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-1,041.92	-2.044E-04	Pulse	0.30	3
	Sb	121	115	3	0.279	ppb	2.38	9,944.64	1.951E-03	Pulse	0.30	3
	Ba	137	159	3	144.936	ppb	0.62	1,853,851.17	2.449E-01	Analog	0.30	3
	Tl	205	209	3	0.101	ppb	2.14	6,715.15	2.050E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-47,272.59	-1.443E-02	Pulse	0.30	3
	U	238	209	3	1.190	ppb	1.41	101,361.32	3.094E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	427,224.38	3.05	24.5	Analog	0.30	3
2	Sc	45	99,435.51	2.73	87.9	Pulse	0.30	3
3	Sc	45	3,757,472.90	0.74	80.4	Analog	0.30	3
1	Ge	72	65,055.92	1.09	58.9	Pulse	0.30	3
2	Ge	72	60,172.70	2.86	67.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,734,696.15	1.50	56.3	Analog	0.30	3
3	Rh	103	4,415,745.25	0.40	52.6	Analog	0.30	3
3	In	115	5,096,988.63	0.22	57.5	Analog	0.30	3
3	Tb	159	7,569,176.62	0.18	60.4	Analog	0.30	3
3	Bi	209	3,275,840.23	0.23	44.7	Analog	0.30	3

Quantitation Report

File Name	A0219087.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:57
Sample Name	N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	7.78	5.401E-06	Pulse	0.30	3
	Na	23	45	2	485305.442	ppb	0.64	763,074,841.96	6.078E+03	Analog	0.30	3
	Mg	26	45	2	3666.068	ppb	0.77	528,074.70	4.206E+00	Pulse	0.30	3
	Al	27	45	2	0.609	ppb	7.16	584.04	4.653E-03	Pulse	0.30	3
	K	39	45	2	5602.179	ppb	1.16	2,771,649.57	2.208E+01	Analog	0.30	3
	Ca	44	45	3	68005.946	ppb	0.20	168,040,111.94	3.290E+01	Analog	0.30	3
	V	51	45	2	<0.000	ppb	---	606.71	4.825E-03	Pulse	0.30	3
	Cr	52	45	2	<0.000	ppb	---	1,430.39	1.140E-02	Pulse	0.30	3
OLR	Mn	55	45	2	182.429	ppb	0.99	1,011,660.45	8.059E+00	Pulse	0.30	3
	Fe	56	45	2	52.461	ppb	1.06	486,000.13	3.871E+00	Pulse	0.30	3
	Co	59	45	2	0.161	ppb	4.57	3,518.03	2.804E-02	Pulse	0.30	3
	Ni	60	72	2	0.083	ppb	22.83	701.24	7.964E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-17,254.03	-1.963E-01	Pulse	0.30	3
	Zn	66	72	2	9.207	ppb	2.94	19,912.48	2.266E-01	Pulse	0.30	3
	As	75	72	2	0.757	ppb	7.59	786.01	8.945E-03	Pulse	0.75	3
	Se	78	72	1	0.017	ppb	63.73	10.00	9.758E-05	Pulse	0.30	3
	Mo	95	103	2	13.049	ppb	0.98	77,282.31	2.914E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-2,929.12	-4.103E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-219.69	-2.754E-05	Pulse	0.30	3
	Sb	121	115	3	0.029	ppb	2.22	3,673.91	4.602E-04	Pulse	0.30	3
	Ba	137	159	3	30.552	ppb	0.87	595,163.53	5.164E-02	Pulse	0.30	3
	Tl	205	209	3	0.046	ppb	1.03	5,844.75	1.047E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-12,104.29	-2.169E-03	Pulse	0.30	3
	U	238	209	3	0.221	ppb	0.91	32,148.01	5.760E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,441,445.99	2.40	82.6	Analog	0.30	3
2	Sc	45	125,549.90	1.93	110.9	Pulse	0.30	3
3	Sc	45	5,108,160.65	0.57	109.3	Analog	0.30	3
1	Ge	72	102,338.47	0.97	92.7	Pulse	0.30	3
2	Ge	72	87,902.12	1.71	98.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,652,097.74	2.08	86.1	Analog	0.30	3
3	Rh	103	7,139,734.20	0.34	85.0	Analog	0.30	3
3	In	115	7,982,793.49	0.89	90.1	Analog	0.30	3
3	Tb	159	11,525,843.16	0.56	91.9	Analog	0.30	3
3	Bi	209	5,580,950.47	0.79	76.2	Analog	0.30	3

Quantitation Report

File Name	A0219088.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:02
Sample Name	N022998-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	38.83	17.78	8.502E-05	Pulse	0.30	3
Na	23	45	2	3040142.188	ppb	0.93	3,580,141,244.43	3.807E+04	Analog	0.30	3
Mg	26	45	2	9191.126	ppb	0.82	991,705.81	1.054E+01	Analog	0.30	3
Al	27	45	2	7.399	ppb	9.67	1,754.62	1.866E-02	Pulse	0.30	3
K	39	45	2	30287.765	ppb	1.01	11,175,644.00	1.188E+02	Analog	0.30	3
Ca	44	45	3	338749.213	ppb	0.16	570,429,253.72	1.638E+02	Analog	0.30	3
V	51	45	2	2.619	ppb	2.38	16,501.05	1.755E-01	Pulse	0.30	3
Cr	52	45	2	108.644	ppb	0.99	902,761.40	9.601E+00	Pulse	0.30	3
Mn	55	45	2	24.142	ppb	1.25	100,551.01	1.069E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-258,701.77	-2.751E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,698.83	-3.934E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-381.83	-6.731E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-67,983.57	-1.197E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,129.90	-1.784E-01	Pulse	0.30	3
As	75	72	2	9.784	ppb	2.59	6,465.98	1.138E-01	Pulse	0.75	3
Se	78	72	1	0.922	ppb	10.16	285.57	4.672E-03	Pulse	0.30	3
Mo	95	103	2	82.742	ppb	0.78	293,804.32	1.847E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,398.20	-3.527E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,045.39	-2.258E-04	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	13.03	2,161.36	4.670E-04	Pulse	0.30	3
Ba	137	159	3	90.639	ppb	0.49	1,056,352.72	1.532E-01	Pulse	0.30	3
Tl	205	209	3	0.446	ppb	1.50	24,224.93	8.280E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,966.67	-1.537E-02	Pulse	0.30	3
U	238	209	3	0.691	ppb	1.35	52,611.18	1.798E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	211,250.95	4.70	12.1	Analog	0.30	3
2	Sc	45	94,041.43	2.16	83.1	Pulse	0.30	3
3	Sc	45	3,481,531.30	0.44	74.5	Analog	0.30	3
1	Ge	72	61,089.44	0.84	55.3	Pulse	0.30	3
2	Ge	72	56,788.60	2.04	63.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,590,565.97	1.94	51.6	Analog	0.30	3
3	Rh	103	3,961,638.00	0.65	47.2	Analog	0.30	3
3	In	115	4,628,658.71	0.88	52.2	Analog	0.30	3
3	Tb	159	6,896,638.44	0.66	55.0	Analog	0.30	3
3	Bi	209	2,925,885.86	0.56	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219089.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:08
Sample Name	N022998-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.004E-05	Pulse	0.30	3
Na	23	45	2	629971.225	ppb	0.41	981,001,229.83	7.890E+03	Analog	0.30	3
Mg	26	45	2	1973.911	ppb	0.80	281,638.52	2.265E+00	Pulse	0.30	3
Al	27	45	2	1.362	ppb	13.16	771.97	6.207E-03	Pulse	0.30	3
K	39	45	2	6159.258	ppb	0.71	3,016,586.38	2.426E+01	Analog	0.30	3
Ca	44	45	3	72699.643	ppb	0.47	176,801,739.59	3.517E+01	Analog	0.30	3
V	51	45	2	0.480	ppb	2.46	4,690.88	3.773E-02	Pulse	0.30	3
Cr	52	45	2	23.646	ppb	1.18	261,243.47	2.101E+00	Pulse	0.30	3
Mn	55	45	2	5.222	ppb	0.37	29,088.60	2.339E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,161.51	-5.321E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,005.81	-8.089E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-31.02	-3.598E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-16,800.95	-1.974E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,141.39	-2.516E-02	Pulse	0.30	3
As	75	72	2	2.112	ppb	1.32	2,102.44	2.470E-02	Pulse	0.75	3
Se	78	72	1	0.228	ppb	26.16	115.56	1.160E-03	Pulse	0.30	3
Mo	95	103	2	15.618	ppb	1.89	88,700.43	3.487E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,759.65	2.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-244.19	-3.155E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,037.86	1.341E-04	Pulse	0.30	3
Ba	137	159	3	18.798	ppb	0.36	355,881.80	3.178E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	0.65	11,675.00	2.192E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-12,120.93	-2.276E-03	Pulse	0.30	3
U	238	209	3	0.129	ppb	0.58	18,070.22	3.393E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,326,012.39	0.94	76.0	Analog	0.30	3
2	Sc	45	124,337.81	1.49	109.9	Pulse	0.30	3
3	Sc	45	5,027,673.01	0.71	107.6	Analog	0.30	3
1	Ge	72	99,598.14	1.39	90.2	Pulse	0.30	3
2	Ge	72	85,104.90	1.58	95.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,543,136.06	1.47	82.6	Analog	0.30	3
3	Rh	103	6,896,656.49	0.80	82.1	Analog	0.30	3
3	In	115	7,739,034.26	0.58	87.3	Analog	0.30	3
3	Tb	159	11,199,594.69	0.56	89.3	Analog	0.30	3
3	Bi	209	5,324,962.01	0.90	72.7	Analog	0.30	3

Quantitation Report

File Name	A0219090.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:13
Sample Name	CCV6,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.559	ppb	0.62	209,216.77	1.189E-01	Pulse	0.30	3
Na	23	45	2	943.453	ppb	3.32	1,716,232.55	1.270E+01	Analog	0.30	3
Mg	26	45	2	200.372	ppb	2.20	31,173.16	2.307E-01	Pulse	0.30	3
Al	27	45	2	22.534	ppb	1.66	6,742.01	4.989E-02	Pulse	0.30	3
K	39	45	2	234.140	ppb	0.61	140,276.07	1.038E+00	Pulse	0.30	3
Ca	44	45	3	211.813	ppb	0.70	565,699.78	1.067E-01	Pulse	0.30	3
V	51	45	2	20.246	ppb	0.40	177,138.88	1.311E+00	Pulse	0.30	3
Cr	52	45	2	20.028	ppb	0.60	240,812.06	1.782E+00	Pulse	0.30	3
Mn	55	45	2	20.184	ppb	0.43	120,887.06	8.946E-01	Pulse	0.30	3
Fe	56	45	2	20.884	ppb	1.33	209,811.06	1.553E+00	Pulse	0.30	3
Co	59	45	2	20.264	ppb	0.96	473,645.13	3.505E+00	Pulse	0.30	3
Ni	60	72	2	19.951	ppb	0.81	127,283.72	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.672	ppb	0.63	357,413.39	3.398E+00	Pulse	0.30	3
Zn	66	72	2	18.768	ppb	0.46	45,232.39	4.300E-01	Pulse	0.30	3
As	75	72	2	20.059	ppb	0.77	24,532.30	2.332E-01	Pulse	0.75	3
Se	78	72	1	19.455	ppb	1.31	12,983.50	9.836E-02	Pulse	0.30	3
Mo	95	103	2	19.914	ppb	1.16	153,464.34	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.916	ppb	0.15	1,630,755.19	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.508	ppb	1.00	370,305.68	3.815E-02	Pulse	0.30	3
Sb	121	115	3	20.191	ppb	0.32	1,171,821.34	1.207E-01	Pulse	0.30	3
Ba	137	159	3	21.834	ppb	0.72	491,454.82	3.691E-02	Pulse	0.30	3
Tl	205	209	3	20.354	ppb	0.51	2,806,686.52	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.614	ppb	0.09	3,851,988.00	5.057E-01	Analog	0.30	3
U	238	209	3	19.474	ppb	0.35	3,853,229.66	5.059E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,759,648.67	0.93	100.8	Analog	0.30	3
2	Sc	45	135,134.03	0.69	119.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,303,879.37	0.17	113.5	Analog	0.30	3
1	Ge	72	132,014.55	1.20	119.6	Pulse	0.30	3
2	Ge	72	105,186.44	0.86	118.1	Pulse	0.30	3
2	Rh	103	3,451,492.34	0.42	112.0	Analog	0.30	3
3	Rh	103	9,145,450.56	0.92	108.9	Analog	0.30	3
3	In	115	9,706,966.34	0.24	109.5	Analog	0.30	3
3	Tb	159	13,316,526.33	1.01	106.2	Analog	0.30	3
3	Bi	209	7,617,189.75	0.33	104.0	Analog	0.30	3

Quantitation Report

File Name	A0219091.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:19
Sample Name	CCB6,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	9.901E-06	Pulse	0.30	3
Na	23	45	2	589.561	ppb	1.97	1,058,029.52	8.270E+00	Mix	0.30	3
Mg	26	45	2	0.247	ppb	62.02	143.34	1.120E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	372.23	2.911E-03	Pulse	0.30	3
K	39	45	2	20.081	ppb	5.84	25,457.94	1.990E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	18,150.59	3.657E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	600.04	4.690E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,246.82	9.754E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.94	2.391E-03	Pulse	0.30	3
Fe	56	45	2	0.160	ppb	20.04	3,949.44	3.086E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	26.70	2.088E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	32.27	3.205E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	810.97	8.067E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	435.70	4.336E-03	Pulse	0.30	3
As	75	72	2	0.016	ppb	40.45	33.78	3.357E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	80.62	14.45	1.144E-04	Pulse	0.30	3
Mo	95	103	2	0.143	ppb	8.88	1,094.53	3.281E-04	Pulse	0.30	3
Ag	107	103	3	0.435	ppb	13.99	37,897.28	4.321E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-164.24	-1.759E-05	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.08	5,211.08	5.580E-04	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	14.02	247.85	1.931E-05	Pulse	0.30	3
Tl	205	209	3	0.023	ppb	2.95	4,630.92	6.253E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	799.68	1.080E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	3.96	869.68	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,289.30	1.12	96.7	Analog	0.30	3
2	Sc	45	127,946.83	0.87	113.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,963,406.90	0.33	106.2	Analog	0.30	3
1	Ge	72	125,895.30	0.71	114.0	Pulse	0.30	3
2	Ge	72	100,507.12	1.07	112.8	Pulse	0.30	3
2	Rh	103	3,333,215.33	1.31	108.2	Analog	0.30	3
3	Rh	103	8,772,235.77	0.39	104.5	Analog	0.30	3
3	In	115	9,339,569.53	0.34	105.4	Analog	0.30	3
3	Tb	159	12,835,062.73	0.65	102.3	Analog	0.30	3
3	Bi	209	7,406,219.33	0.16	101.1	Analog	0.30	3

Quantitation Report

File Name	A0219092.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:24
Sample Name	N023014-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	187.72	15.55	1.320E-05	Pulse	0.30	3
Na	23	45	2	506871.449	ppb	1.03	721,417,402.58	6.348E+03	Analog	0.30	3
Mg	26	45	2	43129.574	ppb	1.11	5,622,928.94	4.948E+01	Analog	0.30	3
Al	27	45	2	7.314	ppb	5.72	2,101.77	1.849E-02	Pulse	0.30	3
K	39	45	2	14521.689	ppb	0.84	6,482,267.47	5.704E+01	Analog	0.30	3
Ca	44	45	3	391355.997	ppb	0.34	866,001,969.32	1.893E+02	Analog	0.30	3
V	51	45	2	5.917	ppb	0.83	44,081.89	3.879E-01	Pulse	0.30	3
OLR Cr	52	45	2	31342.306	ppb	0.95	314,261,027.36	2.765E+03	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-8,492.91	-7.474E-02	Pulse	0.30	3
Fe	56	45	2	4.914	ppb	1.17	43,176.93	3.800E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,162.84	-1.023E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-1,659.61	-2.194E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,277.10	-2.813E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-5,590.29	-7.392E-02	Pulse	0.30	3
As	75	72	2	2.577	ppb	1.81	2,276.67	3.010E-02	Pulse	0.75	3
Se	78	72	1	15.696	ppb	2.64	7,040.71	7.935E-02	Pulse	0.30	3
Mo	95	103	2	52.200	ppb	1.74	262,628.35	1.165E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-10,212.12	-1.709E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,151.44	-3.190E-04	Pulse	0.30	3
Sb	121	115	3	0.017	ppb	4.87	2,619.22	3.884E-04	Pulse	0.30	3
Ba	137	159	3	33.432	ppb	0.03	566,715.38	5.651E-02	Pulse	0.30	3
Tl	205	209	3	0.158	ppb	2.77	14,146.15	3.068E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-49,235.79	-1.068E-02	Pulse	0.30	3
U	238	209	3	1.457	ppb	0.21	174,674.21	3.788E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,179,455.61	1.28	67.6	Analog	0.30	3
2	Sc	45	113,651.30	1.84	100.4	Pulse	0.30	3
3	Sc	45	4,575,024.37	0.31	97.9	Analog	0.30	3
1	Ge	72	88,717.14	0.94	80.3	Pulse	0.30	3
2	Ge	72	75,635.24	1.38	84.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,253,605.66	0.52	73.2	Analog	0.30	3
3	Rh	103	5,974,884.15	0.57	71.2	Analog	0.30	3
3	In	115	6,743,339.47	0.46	76.1	Analog	0.30	3
3	Tb	159	10,029,423.95	0.38	80.0	Analog	0.30	3
3	Bi	209	4,611,359.24	0.64	63.0	Analog	0.30	3

Quantitation Report

File Name	A0219093.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:30
Sample Name	N023014-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	6.67	4.471E-06	Pulse	0.30	3
	Na	23	45	2	108454.258	ppb	0.74	165,717,899.75	1.359E+03	Analog	0.30	3
	Mg	26	45	2	9616.328	ppb	0.29	1,345,378.50	1.103E+01	Analog	0.30	3
	Al	27	45	2	1.078	ppb	20.61	684.78	5.621E-03	Pulse	0.30	3
	K	39	45	2	3102.595	ppb	0.99	1,497,553.69	1.228E+01	Analog	0.30	3
	Ca	44	45	3	86075.374	ppb	0.43	201,934,885.88	4.164E+01	Analog	0.30	3
	V	51	45	2	1.216	ppb	1.83	10,379.24	8.513E-02	Pulse	0.30	3
OLR	Cr	52	45	2	6796.935	ppb	0.34	73,128,570.45	5.997E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,894.41	-1.553E-02	Pulse	0.30	3
	Fe	56	45	2	1.296	ppb	1.83	13,939.17	1.143E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-256.28	-2.103E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-381.71	-4.251E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-4,195.27	-4.671E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-903.16	-1.006E-02	Pulse	0.30	3
	As	75	72	2	0.526	ppb	5.76	562.65	6.262E-03	Pulse	0.75	3
	Se	78	72	1	3.112	ppb	5.81	1,719.06	1.574E-02	Pulse	0.30	3
	Mo	95	103	2	9.895	ppb	1.88	61,776.80	2.210E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,669.34	2.215E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-525.96	-6.298E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,273.44	1.525E-04	Pulse	0.30	3
	Ba	137	159	3	7.136	ppb	0.89	144,873.29	1.207E-02	Pulse	0.30	3
	Tl	205	209	3	0.039	ppb	1.59	5,643.52	9.165E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-7,258.02	-1.179E-03	Pulse	0.30	3
	U	238	209	3	0.273	ppb	0.46	43,862.21	7.123E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,499,277.06	0.95	85.9	Analog	0.30	3
2	Sc	45	121,946.97	1.84	107.7	Pulse	0.30	3
3	Sc	45	4,850,068.40	0.33	103.8	Analog	0.30	3
1	Ge	72	109,229.24	0.25	98.9	Pulse	0.30	3
2	Ge	72	89,823.37	0.95	100.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,795,474.23	0.63	90.8	Analog	0.30	3
3	Rh	103	7,535,085.72	0.12	89.7	Analog	0.30	3
3	In	115	8,351,614.58	0.18	94.2	Analog	0.30	3
3	Tb	159	12,002,685.52	0.65	95.7	Analog	0.30	3
3	Bi	209	6,157,789.84	0.60	84.1	Analog	0.30	3

Quantitation Report

File Name	A0219094.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:36
Sample Name	N023014-001B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.66	3.926E-06	Pulse	0.30	3
Na	23	45	2	2575.222	ppb	1.52	4,276,526.15	3.314E+01	Analog	0.30	3
Mg	26	45	2	203.147	ppb	2.07	30,182.30	2.339E-01	Pulse	0.30	3
Al	27	45	2	1.788	ppb	14.96	913.72	7.086E-03	Pulse	0.30	3
K	39	45	2	77.381	ppb	3.55	54,662.26	4.236E-01	Pulse	0.30	3
Ca	44	45	3	1838.525	ppb	0.31	4,524,378.68	8.934E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	681.15	5.277E-03	Pulse	0.30	3
Cr	52	45	2	149.926	ppb	1.25	1,709,152.44	1.324E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	226.95	1.763E-03	Pulse	0.30	3
Fe	56	45	2	0.320	ppb	5.18	5,502.76	4.263E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	11.12	8.662E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	35.74	3.515E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	890.76	8.752E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	419.80	4.125E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	36.40	31.46	3.094E-04	Pulse	0.75	3
Se	78	72	1	0.061	ppb	40.06	40.00	3.163E-04	Pulse	0.30	3
Mo	95	103	2	0.266	ppb	7.76	1,975.77	6.014E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,683.91	4.147E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,015.87	-1.068E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	835.62	8.784E-05	Pulse	0.30	3
Ba	137	159	3	0.166	ppb	2.04	3,820.81	2.930E-04	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	8.06	2,871.51	3.832E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	535.82	7.148E-05	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.62	995.36	1.329E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,700,049.24	0.40	97.4	Analog	0.30	3
2	Sc	45	129,084.58	2.07	114.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,064,075.20	0.83	108.4	Analog	0.30	3
1	Ge	72	126,690.49	0.84	114.7	Pulse	0.30	3
2	Ge	72	101,769.78	0.62	114.2	Pulse	0.30	3
2	Rh	103	3,283,437.28	1.19	106.6	Analog	0.30	3
3	Rh	103	8,881,628.41	0.48	105.8	Analog	0.30	3
3	In	115	9,513,246.81	0.82	107.3	Analog	0.30	3
3	Tb	159	13,039,422.86	0.70	104.0	Analog	0.30	3
3	Bi	209	7,492,113.64	0.73	102.3	Analog	0.30	3

Quantitation Report

File Name	A0219095.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:41
Sample Name	N023014-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	13.33	1.131E-05	Pulse	0.30	3
	Na	23	45	2	488571.543	ppb	0.58	689,376,665.28	6.119E+03	Analog	0.30	3
	Mg	26	45	2	41548.359	ppb	1.00	5,369,540.96	4.766E+01	Analog	0.30	3
	Al	27	45	2	18.594	ppb	3.99	4,703.31	4.176E-02	Pulse	0.30	3
	K	39	45	2	13965.581	ppb	1.16	6,180,504.77	5.486E+01	Analog	0.30	3
	Ca	44	45	3	380501.970	ppb	0.24	831,878,307.60	1.840E+02	Analog	0.30	3
OLR	V	51	45	2	5.686	ppb	1.15	42,025.41	3.730E-01	Pulse	0.30	3
	Cr	52	45	2	30172.116	ppb	0.76	299,894,758.23	2.662E+03	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-8,279.54	-7.350E-02	Pulse	0.30	3
	Fe	56	45	2	5.589	ppb	4.13	48,389.88	4.296E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,049.29	-9.313E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-825.47	-1.095E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-18,577.81	-2.466E-01	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-5,169.48	-6.863E-02	Pulse	0.30	3
	As	75	72	2	2.426	ppb	4.20	2,134.74	2.835E-02	Pulse	0.75	3
	Se	78	72	1	15.038	ppb	2.52	6,656.11	7.603E-02	Pulse	0.30	3
	Mo	95	103	2	50.738	ppb	0.32	254,557.05	1.133E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-11,198.35	-1.887E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,137.74	-3.159E-04	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,837.97	2.716E-04	Pulse	0.30	3
	Ba	137	159	3	32.721	ppb	0.51	555,302.83	5.530E-02	Pulse	0.30	3
	Tl	205	209	3	0.136	ppb	1.94	12,491.27	2.684E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-46,981.68	-1.009E-02	Pulse	0.30	3
	U	238	209	3	1.409	ppb	0.72	170,515.56	3.663E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,180,360.47	0.48	67.6	Analog	0.30	3
2	Sc	45	112,662.32	1.34	99.5	Pulse	0.30	3
3	Sc	45	4,520,143.55	0.47	96.7	Analog	0.30	3
1	Ge	72	87,552.04	0.82	79.3	Pulse	0.30	3
2	Ge	72	75,326.39	1.41	84.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,247,324.32	0.85	73.0	Analog	0.30	3
3	Rh	103	5,934,612.62	0.45	70.7	Analog	0.30	3
3	In	115	6,766,194.33	0.40	76.3	Analog	0.30	3
3	Tb	159	10,041,123.32	0.40	80.1	Analog	0.30	3
3	Bi	209	4,654,543.78	0.66	63.5	Analog	0.30	3

Quantitation Report

File Name	A0219096.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:47
Sample Name	N023014-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	11.11	7.570E-06	Pulse	0.30	3
	Na	23	45	2	107172.631	ppb	1.18	159,728,238.73	1.343E+03	Analog	0.30	3
	Mg	26	45	2	9379.128	ppb	0.72	1,279,847.35	1.076E+01	Analog	0.30	3
	Al	27	45	2	4.327	ppb	4.19	1,465.84	1.232E-02	Pulse	0.30	3
	K	39	45	2	3074.289	ppb	1.36	1,447,555.36	1.217E+01	Analog	0.30	3
	Ca	44	45	3	85498.034	ppb	0.29	195,257,168.20	4.136E+01	Analog	0.30	3
OLR	V	51	45	2	1.192	ppb	3.49	9,937.92	8.356E-02	Pulse	0.30	3
	Cr	52	45	2	6694.081	ppb	0.43	70,251,092.40	5.906E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,853.00	-1.558E-02	Pulse	0.30	3
	Fe	56	45	2	1.827	ppb	1.13	18,230.95	1.533E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-229.91	-1.932E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-119.76	-1.352E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-3,683.59	-4.174E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-716.31	-8.119E-03	Pulse	0.30	3
	As	75	72	2	0.503	ppb	8.08	529.51	6.002E-03	Pulse	0.75	3
	Se	78	72	1	2.906	ppb	2.80	1,570.15	1.470E-02	Pulse	0.30	3
	Mo	95	103	2	9.722	ppb	1.32	59,824.57	2.171E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-742.14	-1.008E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-436.39	-5.292E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,015.64	1.232E-04	Pulse	0.30	3
	Ba	137	159	3	7.174	ppb	0.66	143,991.96	1.214E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	3.68	4,764.33	7.848E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-8,547.72	-1.408E-03	Pulse	0.30	3
	U	238	209	3	0.269	ppb	1.21	42,528.02	7.005E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,615.66	0.73	84.0	Analog	0.30	3
2	Sc	45	118,949.17	1.68	105.1	Pulse	0.30	3
3	Sc	45	4,721,356.04	0.54	101.0	Analog	0.30	3
1	Ge	72	106,822.75	0.72	96.7	Pulse	0.30	3
2	Ge	72	88,264.98	1.08	99.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,755,769.54	1.25	89.5	Analog	0.30	3
3	Rh	103	7,359,921.07	0.22	87.7	Analog	0.30	3
3	In	115	8,246,325.43	0.11	93.1	Analog	0.30	3
3	Tb	159	11,865,435.38	0.19	94.6	Analog	0.30	3
3	Bi	209	6,070,761.09	0.35	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219097.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:52
Sample Name	N023014-002B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.369E-06	Pulse	0.30	3
Na	23	45	2	2495.838	ppb	1.33	4,047,632.65	3.214E+01	Analog	0.30	3
Mg	26	45	2	199.782	ppb	3.10	28,959.07	2.300E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	381.58	3.031E-03	Pulse	0.30	3
K	39	45	2	75.849	ppb	3.35	52,577.99	4.176E-01	Pulse	0.30	3
Ca	44	45	3	1829.166	ppb	0.23	4,371,852.88	8.889E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	661.16	5.249E-03	Pulse	0.30	3
Cr	52	45	2	147.236	ppb	2.22	1,637,540.92	1.301E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	269.20	2.134E-03	Pulse	0.30	3
Fe	56	45	2	0.367	ppb	3.49	5,806.35	4.611E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	270.57	38.18	3.041E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	42.97	4.329E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	968.74	9.754E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	426.90	4.299E-03	Pulse	0.30	3
As	75	72	2	0.009	ppb	92.14	26.13	2.633E-04	Pulse	0.75	3
Se	78	72	1	0.058	ppb	31.42	37.78	3.020E-04	Pulse	0.30	3
Mo	95	103	2	0.274	ppb	5.91	1,984.66	6.194E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,328.15	2.684E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-940.02	-1.015E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	671.16	7.243E-05	Pulse	0.30	3
Ba	137	159	3	0.135	ppb	1.90	3,080.86	2.419E-04	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	7.51	2,294.72	3.156E-04	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	25.54	2,967.01	4.082E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	7.20	984.94	1.355E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,651,231.94	1.30	94.6	Analog	0.30	3
2	Sc	45	125,956.02	2.53	111.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,918,197.50	0.38	105.2	Analog	0.30	3
1	Ge	72	124,949.01	0.62	113.2	Pulse	0.30	3
2	Ge	72	99,332.40	0.39	111.5	Pulse	0.30	3
2	Rh	103	3,203,868.39	0.35	104.0	Analog	0.30	3
3	Rh	103	8,672,188.97	0.67	103.3	Analog	0.30	3
3	In	115	9,264,049.24	0.41	104.5	Analog	0.30	3
3	Tb	159	12,737,635.78	1.15	101.6	Analog	0.30	3
3	Bi	209	7,271,364.26	1.21	99.3	Analog	0.30	3

Quantitation Report

File Name	A0219098.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:58
Sample Name	N023014-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	10.50	42.22	5.244E-05	Pulse	0.30	3
	Na	23	45	2	1341748.855	ppb	1.26	1,672,927,388.41	1.680E+04	Analog	0.30	3
	Mg	26	45	2	15552.449	ppb	1.09	1,776,483.58	1.784E+01	Analog	0.30	3
	Al	27	45	2	4.937	ppb	3.44	1,352.96	1.358E-02	Pulse	0.30	3
	K	39	45	2	20126.817	ppb	0.97	7,866,711.62	7.901E+01	Analog	0.30	3
	Ca	44	45	3	233437.669	ppb	0.45	461,962,024.23	1.129E+02	Analog	0.30	3
	V	51	45	2	5.350	ppb	0.56	34,999.07	3.514E-01	Pulse	0.30	3
OLR	Cr	52	45	2	479.733	ppb	1.27	4,215,385.26	4.234E+01	Analog	0.30	3
	Mn	55	45	2	4.348	ppb	0.66	19,454.05	1.954E-01	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-119,175.56	-1.197E+00	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,585.06	-1.593E-02	Pulse	0.30	3
	Ni	60	72	2	0.022	ppb	73.08	276.63	4.242E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-11,812.59	-1.814E-01	Pulse	0.30	3
	Zn	66	72	2	0.671	ppb	9.16	2,925.68	4.493E-02	Pulse	0.30	3
	As	75	72	2	2.083	ppb	4.70	1,585.89	2.435E-02	Pulse	0.75	3
	Se	78	72	1	6.075	ppb	5.91	2,319.16	3.072E-02	Pulse	0.30	3
	Mo	95	103	2	33.890	ppb	0.95	144,522.35	7.566E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-8,931.43	-1.751E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-1,043.38	-1.783E-04	Pulse	0.30	3
	Sb	121	115	3	0.019	ppb	4.28	2,329.17	3.982E-04	Pulse	0.30	3
	Ba	137	159	3	32.146	ppb	0.24	472,493.87	5.433E-02	Pulse	0.30	3
	Tl	205	209	3	1.996	ppb	1.17	142,583.76	3.632E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-28,477.02	-7.254E-03	Pulse	0.30	3
	U	238	209	3	5.644	ppb	0.22	575,597.59	1.466E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	804,799.07	0.99	46.1	Analog	0.30	3
2	Sc	45	99,583.62	3.12	88.0	Pulse	0.30	3
3	Sc	45	4,091,539.59	1.33	87.5	Analog	0.30	3
1	Ge	72	75,489.21	0.08	68.4	Pulse	0.30	3
2	Ge	72	65,100.73	1.47	73.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,909,853.96	2.23	62.0	Analog	0.30	3
3	Rh	103	5,099,848.09	0.40	60.7	Analog	0.30	3
3	In	115	5,849,332.26	0.74	66.0	Analog	0.30	3
3	Tb	159	8,696,485.29	0.32	69.3	Analog	0.30	3
3	Bi	209	3,925,638.00	0.38	53.6	Analog	0.30	3

Quantitation Report

File Name	A0219099.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:03
Sample Name	N023014-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	77.03	25.55	1.759E-05	Pulse	0.30	3
Na	23	45	2	290123.328	ppb	0.73	443,223,002.29	3.634E+03	Analog	0.30	3
Mg	26	45	2	3470.851	ppb	0.84	485,714.16	3.983E+00	Pulse	0.30	3
Al	27	45	2	0.429	ppb	89.50	521.60	4.281E-03	Pulse	0.30	3
K	39	45	2	4315.920	ppb	0.02	2,078,136.22	1.704E+01	Analog	0.30	3
Ca	44	45	3	51952.369	ppb	0.13	123,814,909.27	2.513E+01	Analog	0.30	3
V	51	45	2	1.098	ppb	1.29	9,456.41	7.752E-02	Pulse	0.30	3
Cr	52	45	2	109.624	ppb	0.76	1,181,447.50	9.687E+00	Pulse	0.30	3
Mn	55	45	2	0.926	ppb	2.60	5,396.17	4.425E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-28,112.06	-2.305E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-394.45	-3.233E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	220.93	2.501E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,209.11	-1.371E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,579.94	1.795E-02	Pulse	0.30	3
As	75	72	2	0.443	ppb	0.87	466.56	5.297E-03	Pulse	0.75	3
Se	78	72	1	1.329	ppb	14.71	705.61	6.727E-03	Pulse	0.30	3
Mo	95	103	2	6.519	ppb	0.70	39,065.36	1.456E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,152.11	-1.592E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-276.90	-3.421E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,004.52	1.241E-04	Pulse	0.30	3
Ba	137	159	3	6.782	ppb	1.21	133,899.35	1.147E-02	Pulse	0.30	3
Tl	205	209	3	0.415	ppb	0.78	44,456.58	7.718E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,524.37	-9.592E-04	Pulse	0.30	3
U	238	209	3	1.075	ppb	1.10	161,011.22	2.796E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,224.11	0.32	83.2	Analog	0.30	3
2	Sc	45	121,973.90	1.94	107.8	Pulse	0.30	3
3	Sc	45	4,926,648.57	0.44	105.4	Analog	0.30	3
1	Ge	72	104,813.86	0.73	94.9	Pulse	0.30	3
2	Ge	72	88,082.79	2.27	98.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,682,897.60	0.51	87.1	Analog	0.30	3
3	Rh	103	7,236,699.75	0.37	86.2	Analog	0.30	3
3	In	115	8,095,929.85	0.44	91.4	Analog	0.30	3
3	Tb	159	11,671,239.55	0.30	93.1	Analog	0.30	3
3	Bi	209	5,759,924.57	0.91	78.6	Analog	0.30	3

Quantitation Report

File Name	A0219100.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:09
Sample Name	N023014-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	432.94	15.55	1.208E-05	Pulse	0.30	3
Na	23	45	2	466307.779	ppb	0.57	705,129,838.38	5.840E+03	Analog	0.30	3
Mg	26	45	2	30011.227	ppb	1.09	4,156,414.17	3.443E+01	Analog	0.30	3
Al	27	45	2	2.274	ppb	3.04	976.70	8.088E-03	Pulse	0.30	3
K	39	45	2	12252.580	ppb	0.93	5,812,699.91	4.815E+01	Analog	0.30	3
Ca	44	45	3	219164.144	ppb	0.76	534,302,240.93	1.060E+02	Analog	0.30	3
V	51	45	2	1.889	ppb	0.49	15,508.90	1.285E-01	Pulse	0.30	3
Cr	52	45	2	173.939	ppb	1.44	1,854,546.78	1.536E+01	Analog	0.30	3
Mn	55	45	2	111.584	ppb	0.56	595,260.58	4.930E+00	Pulse	0.30	3
Fe	56	45	2	17.831	ppb	0.63	160,401.06	1.329E+00	Pulse	0.30	3
Co	59	45	2	2.790	ppb	0.39	58,282.44	4.828E-01	Pulse	0.30	3
Ni	60	72	2	447.525	ppb	0.85	2,212,853.85	2.708E+01	Analog	0.30	3
Cu	63	72	2	0.739	ppb	4.25	14,830.90	1.815E-01	Pulse	0.30	3
Zn	66	72	2	4.293	ppb	2.36	9,968.98	1.220E-01	Pulse	0.30	3
As	75	72	2	0.596	ppb	6.90	577.77	7.075E-03	Pulse	0.75	3
Se	78	72	1	7.592	ppb	2.77	3,699.48	3.839E-02	Pulse	0.30	3
Mo	95	103	2	32.376	ppb	1.75	175,444.95	7.228E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,573.29	-2.411E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,149.28	-1.554E-04	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.51	4,744.26	6.414E-04	Pulse	0.30	3
Ba	137	159	3	48.101	ppb	0.52	879,796.53	8.129E-02	Pulse	0.30	3
Tl	205	209	3	0.554	ppb	1.02	51,630.82	1.024E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,411.36	-6.033E-03	Pulse	0.30	3
U	238	209	3	7.835	ppb	0.86	1,026,063.95	2.035E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,285,401.22	1.19	73.7	Analog	0.30	3
2	Sc	45	120,735.79	1.91	106.7	Pulse	0.30	3
3	Sc	45	5,040,357.36	0.31	107.9	Analog	0.30	3
1	Ge	72	96,370.53	1.21	87.3	Pulse	0.30	3
2	Ge	72	81,711.30	1.77	91.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,427,167.01	1.51	78.8	Analog	0.30	3
3	Rh	103	6,524,766.78	0.38	77.7	Analog	0.30	3
3	In	115	7,396,487.65	0.26	83.5	Analog	0.30	3
3	Tb	159	10,822,947.61	0.97	86.3	Analog	0.30	3
3	Bi	209	5,041,235.27	1.07	68.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219101.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:14
Sample Name	N023014-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.078E-06	Pulse	0.30	3
Na	23	45	2	99195.581	ppb	0.87	159,022,620.97	1.243E+03	Analog	0.30	3
Mg	26	45	2	6544.700	ppb	0.82	960,556.77	7.509E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	373.12	2.918E-03	Pulse	0.30	3
K	39	45	2	2606.431	ppb	1.67	1,322,207.77	1.034E+01	Analog	0.30	3
Ca	44	45	3	48305.294	ppb	0.59	117,929,081.58	2.337E+01	Analog	0.30	3
V	51	45	2	0.358	ppb	7.31	3,822.83	2.989E-02	Pulse	0.30	3
Cr	52	45	2	38.639	ppb	1.05	438,019.09	3.424E+00	Pulse	0.30	3
Mn	55	45	2	24.132	ppb	1.21	136,744.36	1.069E+00	Pulse	0.30	3
Fe	56	45	2	4.065	ppb	1.61	40,634.66	3.177E-01	Pulse	0.30	3
Co	59	45	2	0.620	ppb	2.32	13,745.25	1.074E-01	Pulse	0.30	3
Ni	60	72	2	97.534	ppb	1.08	560,349.48	5.905E+00	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	4,749.37	5.006E-02	Pulse	0.30	3
Zn	66	72	2	0.269	ppb	21.73	3,451.49	3.638E-02	Pulse	0.30	3
As	75	72	2	0.127	ppb	18.93	154.01	1.625E-03	Pulse	0.75	3
Se	78	72	1	1.507	ppb	7.06	887.84	7.629E-03	Pulse	0.30	3
Mo	95	103	2	6.209	ppb	1.85	40,149.24	1.387E-02	Pulse	0.30	3
Ag	107	103	3	0.183	ppb	8.56	16,125.57	2.071E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-228.93	-2.642E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,485.69	1.715E-04	Pulse	0.30	3
Ba	137	159	3	10.071	ppb	0.37	208,934.97	1.703E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	3.17	13,848.14	2.195E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,236.68	-3.546E-04	Pulse	0.30	3
U	238	209	3	1.488	ppb	0.09	244,055.79	3.869E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,563.69	0.72	90.1	Analog	0.30	3
2	Sc	45	127,934.44	1.53	113.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,046,799.99	0.71	108.0	Analog	0.30	3
1	Ge	72	116,382.30	0.52	105.4	Pulse	0.30	3
2	Ge	72	94,909.89	1.47	106.5	Pulse	0.30	3
2	Rh	103	2,894,829.99	0.90	94.0	Analog	0.30	3
3	Rh	103	7,786,970.03	0.66	92.7	Analog	0.30	3
3	In	115	8,664,184.74	0.31	97.8	Analog	0.30	3
3	Tb	159	12,268,525.10	0.84	97.8	Analog	0.30	3
3	Bi	209	6,308,027.34	0.50	86.1	Analog	0.30	3

Quantitation Report

File Name	A0219102.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:20
Sample Name	CCV7,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.478	ppb	0.84	196,472.55	1.184E-01	Pulse	0.30	3
Na	23	45	2	452.628	ppb	4.63	834,377.27	6.555E+00	Pulse	0.30	3
Mg	26	45	2	201.228	ppb	2.02	29,500.04	2.317E-01	Pulse	0.30	3
Al	27	45	2	22.773	ppb	6.06	6,411.88	5.038E-02	Pulse	0.30	3
K	39	45	2	224.989	ppb	3.38	127,581.25	1.002E+00	Pulse	0.30	3
Ca	44	45	3	213.545	ppb	0.14	527,726.58	1.075E-01	Pulse	0.30	3
V	51	45	2	20.121	ppb	2.62	165,857.39	1.303E+00	Pulse	0.30	3
Cr	52	45	2	20.736	ppb	1.92	234,862.96	1.845E+00	Pulse	0.30	3
Mn	55	45	2	20.196	ppb	2.60	113,961.59	8.951E-01	Pulse	0.30	3
Fe	56	45	2	20.964	ppb	2.87	198,408.73	1.559E+00	Pulse	0.30	3
Co	59	45	2	20.169	ppb	2.21	444,166.05	3.489E+00	Pulse	0.30	3
Ni	60	72	2	19.941	ppb	0.53	119,966.00	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.434	ppb	0.30	333,223.33	3.360E+00	Pulse	0.30	3
Zn	66	72	2	18.715	ppb	0.92	42,539.05	4.289E-01	Pulse	0.30	3
As	75	72	2	19.958	ppb	0.84	23,016.80	2.321E-01	Pulse	0.75	3
Se	78	72	1	18.541	ppb	1.15	11,933.75	9.374E-02	Pulse	0.30	3
Mo	95	103	2	19.809	ppb	2.55	144,135.60	4.423E-02	Pulse	0.30	3
Ag	107	103	3	19.861	ppb	0.61	1,534,716.53	1.778E-01	Analog	0.30	3
Cd	111	115	3	20.488	ppb	0.80	346,856.57	3.811E-02	Pulse	0.30	3
Sb	121	115	3	20.233	ppb	0.29	1,100,951.02	1.210E-01	Pulse	0.30	3
Ba	137	159	3	21.802	ppb	0.26	460,083.67	3.685E-02	Pulse	0.30	3
Tl	205	209	3	20.259	ppb	0.40	2,620,578.95	3.667E-01	Analog	0.30	3
Pb	208	209	3	20.569	ppb	0.81	3,605,611.43	5.046E-01	Analog	0.30	3
U	238	209	3	19.374	ppb	0.57	3,595,979.93	5.032E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,659,315.30	0.86	95.1	Analog	0.30	3
2	Sc	45	127,357.13	2.17	112.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,909,285.90	0.52	105.0	Analog	0.30	3
1	Ge	72	127,308.29	0.20	115.3	Pulse	0.30	3
2	Ge	72	99,182.66	0.36	111.3	Pulse	0.30	3
2	Rh	103	3,259,577.73	1.16	105.8	Analog	0.30	3
3	Rh	103	8,630,667.79	0.31	102.8	Analog	0.30	3
3	In	115	9,101,098.42	0.25	102.7	Analog	0.30	3
3	Tb	159	12,483,892.45	0.15	99.5	Analog	0.30	3
3	Bi	209	7,145,617.53	0.18	97.5	Analog	0.30	3

Quantitation Report

File Name	A0219103.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:25
Sample Name	CCB7,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	82.19	24.44	1.513E-05	Pulse	0.30	3
Na	23	45	2	216.923	ppb	4.23	438,848.81	3.604E+00	Pulse	0.30	3
Mg	26	45	2	0.165	ppb	218.51	125.56	1.026E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	378.90	3.105E-03	Pulse	0.30	3
K	39	45	2	10.748	ppb	15.36	19,780.19	1.624E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,802.47	3.765E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	691.16	5.673E-03	Pulse	0.30	3
Cr	52	45	2	0.664	ppb	13.57	8,962.35	7.366E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	276.93	2.274E-03	Pulse	0.30	3
Fe	56	45	2	0.169	ppb	12.09	3,845.90	3.158E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	183.37	32.88	2.700E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	53.99	5.613E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	905.61	9.446E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	375.23	3.909E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	34.94	28.00	2.917E-04	Pulse	0.75	3
Se	78	72	1	0.013	ppb	100.08	8.89	7.406E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	3.36	882.29	2.797E-04	Pulse	0.30	3
Ag	107	103	3	0.447	ppb	15.12	37,317.99	4.428E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-42.77	-4.791E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.98	4,968.78	5.563E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	20.27	381.20	3.096E-05	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	2.31	2,789.26	3.953E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,133.65	1.607E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	15.01	884.45	1.254E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,613,880.26	0.73	92.5	Analog	0.30	3
2	Sc	45	121,833.74	1.93	107.6	Pulse	0.30	3
3	Sc	45	4,727,838.19	0.64	101.2	Analog	0.30	3
1	Ge	72	120,979.95	1.44	109.6	Pulse	0.30	3
2	Ge	72	95,934.10	1.51	107.7	Pulse	0.30	3
2	Rh	103	3,154,471.80	0.53	102.4	Analog	0.30	3
3	Rh	103	8,430,825.15	0.65	100.4	Analog	0.30	3
3	In	115	8,931,479.90	0.22	100.8	Analog	0.30	3
3	Tb	159	12,309,814.26	0.25	98.2	Analog	0.30	3
3	Bi	209	7,056,532.19	0.15	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219104.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:31
Sample Name	N023014-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.008	ppb	181.19	11.11	5.879E-05	Pulse	0.30	3
Na	23	45	2	3227892.398	ppb	1.24	3,294,084,110.92	4.042E+04	Analog	0.30	3
Mg	26	45	2	5780.483	ppb	1.36	540,438.82	6.632E+00	Pulse	0.30	3
Al	27	45	2	1.087	ppb	21.27	459.46	5.638E-03	Pulse	0.30	3
K	39	45	2	33471.930	ppb	1.34	10,700,973.45	1.313E+02	Analog	0.30	3
Ca	44	45	3	345435.269	ppb	0.42	518,384,076.72	1.671E+02	Analog	0.30	3
V	51	45	2	0.937	ppb	2.82	5,476.70	6.717E-02	Pulse	0.30	3
Cr	52	45	2	0.634	ppb	9.13	5,773.68	7.094E-02	Pulse	0.30	3
Mn	55	45	2	12.955	ppb	1.07	46,890.54	5.754E-01	Pulse	0.30	3
Fe	56	45	2	26.396	ppb	2.43	159,489.35	1.957E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,052.39	-3.748E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,051.76	-4.080E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-76,782.27	-1.527E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-8,733.57	-1.737E-01	Pulse	0.30	3
As	75	72	2	5.879	ppb	3.20	3,443.68	6.847E-02	Pulse	0.75	3
Se	78	72	1	2.162	ppb	9.49	598.93	1.094E-02	Pulse	0.30	3
Mo	95	103	2	66.039	ppb	0.76	205,158.61	1.474E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,918.79	-2.773E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,105.79	-2.631E-04	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	6.37	2,604.77	6.198E-04	Pulse	0.30	3
Ba	137	159	3	42.564	ppb	0.47	452,223.91	7.194E-02	Pulse	0.30	3
Tl	205	209	3	0.032	ppb	9.24	2,120.25	7.924E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,750.80	-1.673E-02	Pulse	0.30	3
U	238	209	3	0.105	ppb	2.28	7,378.26	2.759E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	184,255.08	4.71	10.6	Analog	0.30	3
2	Sc	45	81,511.64	3.39	72.0	Pulse	0.30	3
3	Sc	45	3,102,652.07	1.08	66.4	Analog	0.30	3
1	Ge	72	54,768.40	1.81	49.6	Pulse	0.30	3
2	Ge	72	50,290.53	1.59	56.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,391,496.52	1.49	45.2	Analog	0.30	3
3	Rh	103	3,576,526.75	0.43	42.6	Analog	0.30	3
3	In	115	4,202,316.30	0.47	47.4	Analog	0.30	3
3	Tb	159	6,286,523.38	0.61	50.1	Analog	0.30	3
3	Bi	209	2,674,853.40	0.68	36.5	Analog	0.30	3

Quantitation Report

File Name	A0219105.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:36
Sample Name	N023014-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.064E-05	Pulse	0.30	3
Na	23	45	2	699224.156	ppb	0.45	1,043,565,140.00	8.757E+03	Analog	0.30	3
Mg	26	45	2	1282.017	ppb	0.66	175,360.55	1.472E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	389.21	3.266E-03	Pulse	0.30	3
K	39	45	2	6960.222	ppb	0.49	3,265,476.24	2.740E+01	Analog	0.30	3
Ca	44	45	3	75923.225	ppb	0.57	175,617,275.16	3.673E+01	Analog	0.30	3
V	51	45	2	0.157	ppb	6.03	2,013.55	1.690E-02	Pulse	0.30	3
Cr	52	45	2	0.387	ppb	13.64	5,853.70	4.917E-02	Pulse	0.30	3
Mn	55	45	2	2.845	ppb	1.98	15,367.45	1.290E-01	Pulse	0.30	3
Fe	56	45	2	6.656	ppb	1.66	60,523.59	5.079E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-945.25	-7.932E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-550.25	-6.725E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-23,253.25	-2.843E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,524.66	-1.864E-02	Pulse	0.30	3
As	75	72	2	1.274	ppb	4.10	1,223.10	1.496E-02	Pulse	0.75	3
Se	78	72	1	0.481	ppb	8.46	230.01	2.440E-03	Pulse	0.30	3
Mo	95	103	2	12.358	ppb	2.28	66,625.40	2.760E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,765.79	-5.775E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-367.91	-4.980E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,312.33	1.776E-04	Pulse	0.30	3
Ba	137	159	3	8.931	ppb	1.31	160,105.92	1.510E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	3.30	1,669.06	3.342E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,958.88	-2.795E-03	Pulse	0.30	3
U	238	209	3	0.020	ppb	1.65	2,702.13	5.411E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,252,647.56	0.69	71.8	Analog	0.30	3
2	Sc	45	119,172.02	1.78	105.3	Pulse	0.30	3
3	Sc	45	4,781,971.70	0.63	102.3	Analog	0.30	3
1	Ge	72	94,334.17	1.00	85.4	Pulse	0.30	3
2	Ge	72	81,794.16	0.73	91.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,414,291.34	0.51	78.4	Analog	0.30	3
3	Rh	103	6,520,649.00	0.13	77.7	Analog	0.30	3
3	In	115	7,389,427.28	0.27	83.4	Analog	0.30	3
3	Tb	159	10,600,549.84	0.31	84.5	Analog	0.30	3
3	Bi	209	4,994,216.00	0.21	68.2	Analog	0.30	3

Quantitation Report

File Name	A0219106.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:42
Sample Name	N023014-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	25.19	27.78	4.027E-05	Pulse	0.30	3
Na	23	45	2	1614842.095	ppb	1.48	2,145,665,870.25	2.022E+04	Analog	0.30	3
Mg	26	45	2	31768.329	ppb	1.29	3,866,795.25	3.644E+01	Analog	0.30	3
Al	27	45	2	4.309	ppb	9.76	1,303.41	1.229E-02	Pulse	0.30	3
K	39	45	2	14960.434	ppb	0.81	6,235,405.74	5.876E+01	Analog	0.30	3
Ca	44	45	3	394622.878	ppb	0.23	787,228,246.04	1.909E+02	Analog	0.30	3
V	51	45	2	1.435	ppb	1.71	10,533.79	9.926E-02	Pulse	0.30	3
Cr	52	45	2	29.181	ppb	1.73	274,751.93	2.590E+00	Pulse	0.30	3
Mn	55	45	2	1.724	ppb	1.06	8,436.07	7.949E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-167,097.99	-1.575E+00	Pulse	0.30	3
Co	59	45	2	0.072	ppb	12.77	1,347.85	1.267E-02	Pulse	0.30	3
Ni	60	72	2	0.185	ppb	16.93	899.12	1.414E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-40,466.02	-6.356E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-972.68	-1.525E-02	Pulse	0.30	3
As	75	72	2	1.612	ppb	0.49	1,202.25	1.888E-02	Pulse	0.75	3
Se	78	72	1	3.641	ppb	4.64	1,325.67	1.842E-02	Pulse	0.30	3
Mo	95	103	2	26.230	ppb	1.56	110,281.24	5.856E-02	Pulse	0.30	3
Ag	107	103	3	0.022	ppb	40.71	3,054.43	6.290E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,955.70	-3.477E-04	Pulse	0.30	3
Sb	121	115	3	0.127	ppb	0.55	5,876.88	1.045E-03	Pulse	0.30	3
Ba	137	159	3	133.784	ppb	0.30	1,874,250.81	2.261E-01	Analog	0.30	3
Tl	205	209	3	0.210	ppb	1.84	14,439.82	4.006E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-43,786.72	-1.215E-02	Pulse	0.30	3
U	238	209	3	2.529	ppb	0.49	236,825.64	6.571E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,877.13	2.88	39.5	Analog	0.30	3
2	Sc	45	106,122.10	2.51	93.8	Pulse	0.30	3
3	Sc	45	4,124,458.10	0.57	88.3	Analog	0.30	3
1	Ge	72	71,992.86	0.77	65.2	Pulse	0.30	3
2	Ge	72	63,668.20	1.71	71.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,883,239.43	1.32	61.1	Analog	0.30	3
3	Rh	103	4,856,122.98	0.29	57.8	Analog	0.30	3
3	In	115	5,625,429.60	0.08	63.5	Analog	0.30	3
3	Tb	159	8,290,372.24	0.25	66.1	Analog	0.30	3
3	Bi	209	3,604,031.23	0.46	49.2	Analog	0.30	3

Quantitation Report

File Name	A0219107.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:47
Sample Name	N023014-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.849E-06	Pulse	0.30	3
Na	23	45	2	346363.949	ppb	1.20	548,409,569.61	4.338E+03	Analog	0.30	3
Mg	26	45	2	7131.799	ppb	1.14	1,034,315.93	8.182E+00	Pulse	0.30	3
Al	27	45	2	0.152	ppb	23.85	469.11	3.710E-03	Pulse	0.30	3
K	39	45	2	3189.927	ppb	1.24	1,595,859.85	1.262E+01	Analog	0.30	3
Ca	44	45	3	88724.012	ppb	1.22	216,430,787.88	4.292E+01	Analog	0.30	3
V	51	45	2	0.291	ppb	0.77	3,229.34	2.554E-02	Pulse	0.30	3
Cr	52	45	2	6.737	ppb	1.65	77,037.28	6.094E-01	Pulse	0.30	3
Mn	55	45	2	0.375	ppb	5.18	2,520.67	1.995E-02	Pulse	0.30	3
Fe	56	45	2	11.773	ppb	0.28	111,711.30	8.836E-01	Pulse	0.30	3
Co	59	45	2	0.022	ppb	33.55	517.78	4.109E-03	Pulse	0.30	3
Ni	60	72	2	0.010	ppb	203.14	311.33	3.534E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-9,140.99	-1.036E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	461.53	5.229E-03	Pulse	0.30	3
As	75	72	2	0.334	ppb	7.96	356.46	4.040E-03	Pulse	0.75	3
Se	78	72	1	0.865	ppb	10.72	461.14	4.383E-03	Pulse	0.30	3
Mo	95	103	2	5.045	ppb	2.18	29,967.89	1.127E-02	Pulse	0.30	3
Ag	107	103	3	0.040	ppb	4.93	5,707.07	7.943E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-451.23	-5.603E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,253.60	2.799E-04	Pulse	0.30	3
Ba	137	159	3	29.083	ppb	0.40	566,725.90	4.916E-02	Pulse	0.30	3
Tl	205	209	3	0.038	ppb	3.84	5,041.08	9.057E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,266.64	-1.126E-03	Pulse	0.30	3
U	238	209	3	0.485	ppb	1.16	70,309.60	1.263E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,413,743.64	1.52	81.0	Analog	0.30	3
2	Sc	45	126,426.61	1.89	111.7	Pulse	0.30	3
3	Sc	45	5,043,411.59	0.94	107.9	Analog	0.30	3
1	Ge	72	105,256.89	0.73	95.3	Pulse	0.30	3
2	Ge	72	88,193.88	0.70	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,659,160.39	0.55	86.3	Analog	0.30	3
3	Rh	103	7,185,744.96	0.32	85.6	Analog	0.30	3
3	In	115	8,051,105.41	0.90	90.8	Analog	0.30	3
3	Tb	159	11,528,907.88	0.22	91.9	Analog	0.30	3
3	Bi	209	5,566,675.19	0.56	76.0	Analog	0.30	3

Quantitation Report

File Name	A0219108.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:53
Sample Name	N023014-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.011	ppb	53.02	22.22	7.563E-05	Pulse	0.30	3
Na	23	45	2	2892056.926	ppb	0.65	3,268,205,889.08	3.622E+04	Analog	0.30	3
Mg	26	45	2	2875.486	ppb	0.58	297,744.74	3.300E+00	Pulse	0.30	3
Al	27	45	2	9.955	ppb	3.34	2,160.55	2.393E-02	Pulse	0.30	3
K	39	45	2	28923.234	ppb	0.62	10,242,224.01	1.135E+02	Analog	0.30	3
Ca	44	45	3	250940.447	ppb	0.51	411,343,198.31	1.214E+02	Analog	0.30	3
V	51	45	2	2.476	ppb	0.43	15,008.46	1.663E-01	Pulse	0.30	3
Cr	52	45	2	6.658	ppb	1.23	54,370.68	6.025E-01	Pulse	0.30	3
Mn	55	45	2	8.992	ppb	0.77	36,132.10	4.004E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-256,032.19	-2.837E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,555.44	-3.940E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,092.66	-5.515E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-77,196.04	-1.377E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,013.97	-1.786E-01	Pulse	0.30	3
As	75	72	2	13.523	ppb	1.84	8,818.50	1.573E-01	Pulse	0.75	3
Se	78	72	1	0.200	ppb	14.95	63.34	1.021E-03	Pulse	0.30	3
Mo	95	103	2	84.148	ppb	1.03	292,843.14	1.879E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,195.65	-2.328E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-688.64	-1.498E-04	Pulse	0.30	3
Sb	121	115	3	0.090	ppb	6.29	3,767.27	8.194E-04	Pulse	0.30	3
Ba	137	159	3	35.501	ppb	0.68	410,405.64	6.000E-02	Pulse	0.30	3
Tl	205	209	3	0.886	ppb	0.88	47,441.23	1.625E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-40,232.16	-1.378E-02	Pulse	0.30	3
U	238	209	3	0.097	ppb	2.68	7,410.80	2.539E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	295,611.35	5.47	16.9	Analog	0.30	3
2	Sc	45	90,246.18	2.45	79.7	Pulse	0.30	3
3	Sc	45	3,389,115.33	0.95	72.5	Analog	0.30	3
1	Ge	72	62,073.30	0.96	56.2	Pulse	0.30	3
2	Ge	72	56,077.30	2.54	62.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,558,976.87	1.88	50.6	Analog	0.30	3
3	Rh	103	3,949,366.92	0.16	47.0	Analog	0.30	3
3	In	115	4,597,737.30	0.26	51.9	Analog	0.30	3
3	Tb	159	6,840,109.76	0.57	54.5	Analog	0.30	3
3	Bi	209	2,919,651.24	0.85	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219109.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:58
Sample Name	N023014-007B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.653E-06	Pulse	0.30	3
Na	23	45	2	613797.360	ppb	0.67	940,111,265.99	7.687E+03	Analog	0.30	3
Mg	26	45	2	622.938	ppb	1.09	87,498.54	7.155E-01	Pulse	0.30	3
Al	27	45	2	1.436	ppb	19.43	776.88	6.359E-03	Pulse	0.30	3
K	39	45	2	5961.690	ppb	0.67	2,872,687.18	2.349E+01	Analog	0.30	3
Ca	44	45	3	54515.605	ppb	0.04	129,708,830.29	2.637E+01	Analog	0.30	3
V	51	45	2	0.486	ppb	2.44	4,661.98	3.813E-02	Pulse	0.30	3
Cr	52	45	2	1.661	ppb	2.37	19,757.56	1.616E-01	Pulse	0.30	3
Mn	55	45	2	1.959	ppb	2.47	10,993.64	8.988E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,406.28	-5.431E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,004.33	-8.213E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-842.51	-9.923E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,316.66	-2.512E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,404.65	-2.834E-02	Pulse	0.30	3
As	75	72	2	2.901	ppb	3.77	2,873.82	3.386E-02	Pulse	0.75	3
Se	78	72	1	0.069	ppb	30.99	35.56	3.600E-04	Pulse	0.30	3
Mo	95	103	2	15.882	ppb	1.55	89,988.74	3.546E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,965.84	-4.317E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-126.00	-1.629E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,501.25	1.941E-04	Pulse	0.30	3
Ba	137	159	3	7.459	ppb	0.64	139,929.90	1.262E-02	Pulse	0.30	3
Tl	205	209	3	0.201	ppb	2.09	20,174.41	3.848E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,978.31	-2.094E-03	Pulse	0.30	3
U	238	209	3	0.019	ppb	1.36	2,708.99	5.167E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,284,644.87	0.45	73.6	Analog	0.30	3
2	Sc	45	122,301.83	1.87	108.1	Pulse	0.30	3
3	Sc	45	4,918,538.12	0.69	105.2	Analog	0.30	3
1	Ge	72	98,779.20	0.90	89.5	Pulse	0.30	3
2	Ge	72	84,868.21	1.39	95.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,537,415.34	1.06	82.4	Analog	0.30	3
3	Rh	103	6,869,704.00	0.63	81.8	Analog	0.30	3
3	In	115	7,736,148.10	0.25	87.3	Analog	0.30	3
3	Tb	159	11,090,674.84	0.50	88.4	Analog	0.30	3
3	Bi	209	5,242,717.42	0.63	71.6	Analog	0.30	3

Quantitation Report

File Name	A0219110.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:04
Sample Name	N023014-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	62.01	18.89	2.734E-05	Pulse	0.30	3
Na	23	45	2	1763170.463	ppb	0.81	2,335,980,302.97	2.208E+04	Analog	0.30	3
Mg	26	45	2	6355.799	ppb	1.27	771,408.90	7.292E+00	Pulse	0.30	3
Al	27	45	2	3.110	ppb	9.42	1,037.60	9.812E-03	Pulse	0.30	3
K	39	45	2	20335.529	ppb	1.01	8,445,090.43	7.983E+01	Analog	0.30	3
Ca	44	45	3	137294.209	ppb	0.19	273,456,709.26	6.641E+01	Analog	0.30	3
V	51	45	2	0.050	ppb	20.10	1,057.86	1.001E-02	Pulse	0.30	3
Cr	52	45	2	0.323	ppb	14.91	4,597.24	4.352E-02	Pulse	0.30	3
Mn	55	45	2	97.054	ppb	1.17	453,691.80	4.289E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-100,900.18	-9.538E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,146.07	-2.029E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-659.43	-9.485E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-52,781.00	-7.576E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-6,276.99	-9.011E-02	Pulse	0.30	3
As	75	72	2	7.151	ppb	0.96	5,800.59	8.325E-02	Pulse	0.75	3
Se	78	72	1	0.045	ppb	38.78	18.89	2.391E-04	Pulse	0.30	3
Mo	95	103	2	50.936	ppb	0.78	218,732.41	1.137E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,319.55	-1.845E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-283.47	-4.876E-05	Pulse	0.30	3
Sb	121	115	3	0.078	ppb	8.33	4,368.57	7.514E-04	Pulse	0.30	3
Ba	137	159	3	35.915	ppb	0.10	515,433.16	6.070E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	4.88	1,469.03	3.938E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,523.28	-8.182E-03	Pulse	0.30	3
U	238	209	3	0.807	ppb	1.36	78,318.81	2.100E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,828.66	0.93	39.5	Analog	0.30	3
2	Sc	45	105,806.16	2.65	93.5	Pulse	0.30	3
3	Sc	45	4,117,790.04	0.51	88.1	Analog	0.30	3
1	Ge	72	79,070.46	0.45	71.6	Pulse	0.30	3
2	Ge	72	69,672.78	1.73	78.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,923,421.10	1.43	62.4	Analog	0.30	3
3	Rh	103	5,050,540.24	0.74	60.2	Analog	0.30	3
3	In	115	5,814,812.67	0.62	65.6	Analog	0.30	3
3	Tb	159	8,491,478.28	0.50	67.7	Analog	0.30	3
3	Bi	209	3,730,482.51	0.78	50.9	Analog	0.30	3

Quantitation Report

File Name	A0219111.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:09
Sample Name	N023014-008B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	186.61	21.11	1.512E-05	Pulse	0.30	3
Na	23	45	2	371214.083	ppb	0.97	588,450,777.90	4.650E+03	Analog	0.30	3
Mg	26	45	2	1358.967	ppb	0.80	197,413.97	1.560E+00	Pulse	0.30	3
Al	27	45	2	0.758	ppb	29.43	628.13	4.960E-03	Pulse	0.30	3
K	39	45	2	4232.244	ppb	1.37	2,114,714.71	1.671E+01	Analog	0.30	3
Ca	44	45	3	29698.248	ppb	0.13	72,403,884.48	1.437E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	584.48	4.617E-03	Pulse	0.30	3
Cr	52	45	2	0.204	ppb	14.82	4,179.70	3.304E-02	Pulse	0.30	3
Mn	55	45	2	21.446	ppb	0.94	120,274.48	9.503E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-10,807.36	-8.539E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-539.79	-4.264E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-136.00	-1.525E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,298.19	-1.380E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-988.16	-1.110E-02	Pulse	0.30	3
As	75	72	2	1.623	ppb	3.90	1,694.64	1.902E-02	Pulse	0.75	3
Se	78	72	1	0.012	ppb	125.17	7.78	7.210E-05	Pulse	0.30	3
Mo	95	103	2	9.628	ppb	1.88	58,382.83	2.150E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,918.66	-2.613E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-61.67	-7.473E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,584.59	1.922E-04	Pulse	0.30	3
Ba	137	159	3	7.571	ppb	0.58	149,450.27	1.281E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	27.28	1,395.68	2.461E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,657.21	2.922E-04	Pulse	0.30	3
U	238	209	3	0.154	ppb	1.28	22,791.28	4.019E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,396,847.13	1.04	80.0	Analog	0.30	3
2	Sc	45	126,570.00	1.31	111.8	Pulse	0.30	3
3	Sc	45	5,039,171.28	0.24	107.8	Analog	0.30	3
1	Ge	72	108,137.28	0.36	97.9	Pulse	0.30	3
2	Ge	72	89,110.64	2.12	100.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,715,346.59	0.86	88.1	Analog	0.30	3
3	Rh	103	7,343,753.09	0.25	87.5	Analog	0.30	3
3	In	115	8,242,228.70	0.67	93.0	Analog	0.30	3
3	Tb	159	11,670,752.74	0.69	93.1	Analog	0.30	3
3	Bi	209	5,670,735.89	0.51	77.4	Analog	0.30	3

Quantitation Report

File Name	A0219112.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:15
Sample Name	N023028-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	153.14	22.23	1.587E-05	Pulse	0.30	3
Na	23	45	2	401589.121	ppb	0.38	632,393,341.69	5.030E+03	Analog	0.30	3
Mg	26	45	2	28216.689	ppb	0.58	4,069,981.92	3.237E+01	Analog	0.30	3
Al	27	45	2	2.185	ppb	13.65	993.10	7.904E-03	Pulse	0.30	3
K	39	45	2	9679.882	ppb	0.75	4,785,476.56	3.806E+01	Analog	0.30	3
Ca	44	45	3	104027.434	ppb	0.43	263,332,391.63	5.032E+01	Analog	0.30	3
V	51	45	2	13.379	ppb	0.47	109,200.31	8.685E-01	Pulse	0.30	3
Cr	52	45	2	151.734	ppb	0.51	1,684,985.33	1.340E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-4,351.30	-3.462E-02	Pulse	0.30	3
Fe	56	45	2	0.118	ppb	32.10	3,489.04	2.778E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-271.48	-2.164E-03	Pulse	0.30	3
Ni	60	72	2	2.934	ppb	2.44	15,690.65	1.805E-01	Pulse	0.30	3
Cu	63	72	2	0.165	ppb	6.33	7,735.41	8.895E-02	Pulse	0.30	3
Zn	66	72	2	3.059	ppb	4.68	8,324.79	9.576E-02	Pulse	0.30	3
As	75	72	2	1.694	ppb	2.08	1,725.25	1.984E-02	Pulse	0.75	3
Se	78	72	1	4.563	ppb	3.75	2,368.06	2.307E-02	Pulse	0.30	3
Mo	95	103	2	3.883	ppb	2.23	22,495.49	8.676E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,500.33	-9.314E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-678.77	-8.579E-05	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	58.77	2,482.53	3.137E-04	Pulse	0.30	3
Ba	137	159	3	51.910	ppb	0.46	991,696.85	8.773E-02	Pulse	0.30	3
Tl	205	209	3	0.060	ppb	3.91	6,971.95	1.308E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,404.12	-1.952E-03	Pulse	0.30	3
U	238	209	3	2.744	ppb	0.18	379,947.99	7.129E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,399,349.92	0.49	80.2	Analog	0.30	3
2	Sc	45	125,727.18	1.53	111.1	Pulse	0.30	3
3	Sc	45	5,233,399.40	0.70	112.0	Analog	0.30	3
1	Ge	72	102,608.28	0.72	92.9	Pulse	0.30	3
2	Ge	72	86,953.39	1.40	97.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,592,480.40	1.40	84.2	Analog	0.30	3
3	Rh	103	6,979,270.17	0.33	83.1	Analog	0.30	3
3	In	115	7,912,349.83	0.38	89.3	Analog	0.30	3
3	Tb	159	11,304,411.36	0.86	90.1	Analog	0.30	3
3	Bi	209	5,329,466.03	0.76	72.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219113.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:20
Sample Name	N023028-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	5.039E-06	Pulse	0.30	3
Na	23	45	2	83954.391	ppb	0.74	135,758,765.75	1.052E+03	Analog	0.30	3
Mg	26	45	2	6047.734	ppb	1.34	895,142.63	6.939E+00	Pulse	0.30	3
Al	27	45	2	0.278	ppb	78.18	511.87	3.970E-03	Pulse	0.30	3
K	39	45	2	2120.102	ppb	1.10	1,087,626.47	8.431E+00	Pulse	0.30	3
Ca	44	45	3	22554.528	ppb	0.38	55,383,530.28	1.091E+01	Analog	0.30	3
V	51	45	2	2.765	ppb	2.52	23,856.87	1.849E-01	Pulse	0.30	3
Cr	52	45	2	33.045	ppb	1.05	378,078.26	2.931E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-646.83	-5.012E-03	Pulse	0.30	3
Fe	56	45	2	0.453	ppb	3.78	6,763.25	5.242E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-59.07	-4.527E-04	Pulse	0.30	3
Ni	60	72	2	0.592	ppb	3.03	3,713.06	3.875E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,011.93	3.143E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,687.52	2.806E-02	Pulse	0.30	3
As	75	72	2	0.337	ppb	9.11	389.77	4.066E-03	Pulse	0.75	3
Se	78	72	1	1.096	ppb	8.31	672.27	5.553E-03	Pulse	0.30	3
Mo	95	103	2	0.751	ppb	1.17	5,005.44	1.684E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-196.77	-2.444E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-104.41	-1.176E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	943.40	1.062E-04	Pulse	0.30	3
Ba	137	159	3	10.719	ppb	0.86	226,105.63	1.813E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	8.94	2,542.54	3.929E-04	Pulse	0.30	3
Pb	208	209	3	0.051	ppb	3.10	10,005.83	1.546E-03	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.96	86,784.15	1.341E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,542,502.03	0.13	88.4	Analog	0.30	3
2	Sc	45	129,027.17	1.75	114.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,074,952.49	0.44	108.6	Analog	0.30	3
1	Ge	72	121,131.73	0.94	109.7	Pulse	0.30	3
2	Ge	72	95,809.43	0.82	107.5	Pulse	0.30	3
2	Rh	103	2,972,250.44	2.01	96.5	Analog	0.30	3
3	Rh	103	8,053,164.95	0.53	95.9	Analog	0.30	3
3	In	115	8,882,169.90	0.73	100.2	Analog	0.30	3
3	Tb	159	12,474,863.70	0.92	99.5	Analog	0.30	3
3	Bi	209	6,472,215.88	0.95	88.4	Analog	0.30	3

Quantitation Report

File Name	A0219114.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:26
Sample Name	CCV8,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.741	ppb	0.96	187,946.23	1.200E-01	Pulse	0.30	3
Na	23	45	2	564.972	ppb	3.59	1,025,810.35	7.962E+00	Pulse	0.30	3
Mg	26	45	2	199.841	ppb	1.16	29,650.18	2.301E-01	Pulse	0.30	3
Al	27	45	2	22.149	ppb	1.65	6,326.29	4.909E-02	Pulse	0.30	3
K	39	45	2	226.815	ppb	3.01	130,044.74	1.009E+00	Pulse	0.30	3
Ca	44	45	3	212.353	ppb	0.30	527,394.23	1.069E-01	Pulse	0.30	3
V	51	45	2	20.078	ppb	1.25	167,517.74	1.300E+00	Pulse	0.30	3
Cr	52	45	2	19.985	ppb	1.11	229,149.77	1.778E+00	Pulse	0.30	3
Mn	55	45	2	20.105	ppb	1.93	114,819.82	8.911E-01	Pulse	0.30	3
Fe	56	45	2	20.857	ppb	0.28	199,853.18	1.551E+00	Pulse	0.30	3
Co	59	45	2	20.057	ppb	1.24	447,057.12	3.469E+00	Pulse	0.30	3
Ni	60	72	2	19.333	ppb	0.90	119,678.53	1.173E+00	Pulse	0.30	3
Cu	63	72	2	19.889	ppb	1.27	333,859.17	3.272E+00	Pulse	0.30	3
Zn	66	72	2	18.426	ppb	0.79	43,143.25	4.228E-01	Pulse	0.30	3
As	75	72	2	19.636	ppb	1.40	23,298.55	2.283E-01	Pulse	0.75	3
Se	78	72	1	18.769	ppb	2.33	12,192.86	9.489E-02	Pulse	0.30	3
Mo	95	103	2	19.884	ppb	0.53	145,414.09	4.440E-02	Pulse	0.30	3
Ag	107	103	3	19.599	ppb	1.68	1,526,826.62	1.755E-01	Analog	0.30	3
Cd	111	115	3	20.337	ppb	1.14	348,796.22	3.783E-02	Pulse	0.30	3
Sb	121	115	3	20.076	ppb	1.28	1,106,673.03	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.075	ppb	0.33	467,978.24	3.731E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.27	2,634,397.32	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.598	ppb	0.26	3,628,985.79	5.053E-01	Analog	0.30	3
U	238	209	3	19.194	ppb	0.31	3,580,603.05	4.986E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,566,261.89	1.34	89.7	Analog	0.30	3
2	Sc	45	128,876.49	1.54	113.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,932,690.83	0.08	105.5	Analog	0.30	3
1	Ge	72	128,507.40	0.59	116.4	Pulse	0.30	3
2	Ge	72	102,061.14	2.16	114.6	Pulse	0.30	3
2	Rh	103	3,275,355.30	0.71	106.3	Analog	0.30	3
3	Rh	103	8,700,448.90	0.09	103.6	Analog	0.30	3
3	In	115	9,220,431.27	1.02	104.0	Analog	0.30	3
3	Tb	159	12,541,595.78	0.17	100.0	Analog	0.30	3
3	Bi	209	7,181,777.74	0.22	98.0	Analog	0.30	3

Quantitation Report

File Name	A0219115.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:31
Sample Name	CCB8,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	115.10	30.00	1.983E-05	Pulse	0.30	3
Na	23	45	2	328.081	ppb	4.69	608,400.43	4.996E+00	Pulse	0.30	3
Mg	26	45	2	0.068	ppb	321.68	111.12	9.150E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	360.01	2.956E-03	Pulse	0.30	3
K	39	45	2	13.301	ppb	17.27	20,996.30	1.724E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,957.13	3.616E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	672.27	5.522E-03	Pulse	0.30	3
Cr	52	45	2	0.169	ppb	13.71	3,645.50	2.994E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	250.95	2.062E-03	Pulse	0.30	3
Fe	56	45	2	0.172	ppb	9.09	3,867.48	3.175E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	128.36	46.04	3.799E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	44.93	4.647E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	658.26	6.791E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	393.64	4.060E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	54.19	29.33	3.035E-04	Pulse	0.75	3
Se	78	72	1	0.012	ppb	164.84	8.89	7.135E-05	Pulse	0.30	3
Mo	95	103	2	0.111	ppb	3.69	820.06	2.567E-04	Pulse	0.30	3
Ag	107	103	3	0.441	ppb	14.82	37,022.16	4.372E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-70.36	-7.843E-06	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	5.39	5,124.39	5.712E-04	Pulse	0.30	3
Ba	137	159	3	0.005	ppb	37.96	276.88	2.240E-05	Pulse	0.30	3
Tl	205	209	3	0.004	ppb	13.46	2,001.33	2.838E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	911.39	1.294E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	6.54	860.93	1.221E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,516,802.55	1.05	86.9	Analog	0.30	3
2	Sc	45	121,847.03	1.86	107.7	Pulse	0.30	3
3	Sc	45	4,689,828.44	0.90	100.4	Analog	0.30	3
1	Ge	72	123,467.14	1.09	111.8	Pulse	0.30	3
2	Ge	72	96,874.49	1.52	108.7	Pulse	0.30	3
2	Rh	103	3,195,317.66	0.57	103.7	Analog	0.30	3
3	Rh	103	8,471,889.18	0.54	100.9	Analog	0.30	3
3	In	115	8,970,901.86	0.49	101.2	Analog	0.30	3
3	Tb	159	12,356,158.57	0.43	98.5	Analog	0.30	3
3	Bi	209	7,052,494.69	1.03	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219116.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:37
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.484	ppb	4.35	4,907.58	2.952E-03	Pulse	0.30	3
Na	23	45	2	234.890	ppb	7.28	516,660.84	3.829E+00	Pulse	0.30	3
Mg	26	45	2	3.603	ppb	22.20	671.15	4.971E-03	Pulse	0.30	3
Al	27	45	2	12.341	ppb	6.05	3,895.00	2.886E-02	Pulse	0.30	3
K	39	45	2	11.393	ppb	16.16	22,264.67	1.649E-01	Pulse	0.30	3
Ca	44	45	3	7.832	ppb	2.96	40,997.02	7.999E-03	Pulse	0.30	3
V	51	45	2	0.951	ppb	2.38	9,189.58	6.805E-02	Pulse	0.30	3
Cr	52	45	2	1.131	ppb	3.31	15,498.39	1.148E-01	Pulse	0.30	3
Mn	55	45	2	0.538	ppb	10.16	3,659.73	2.713E-02	Pulse	0.30	3
Fe	56	45	2	11.097	ppb	2.90	112,610.10	8.340E-01	Pulse	0.30	3
Co	59	45	2	0.477	ppb	1.91	11,176.96	8.275E-02	Pulse	0.30	3
Ni	60	72	2	0.936	ppb	4.77	6,299.74	5.956E-02	Pulse	0.30	3
Cu	63	72	2	0.740	ppb	0.22	19,235.24	1.818E-01	Pulse	0.30	3
Zn	66	72	2	8.678	ppb	1.11	22,784.73	2.153E-01	Pulse	0.30	3
As	75	72	2	0.103	ppb	23.85	142.23	1.347E-03	Pulse	0.75	3
Se	78	72	1	0.474	ppb	7.60	327.80	2.404E-03	Pulse	0.30	3
Mo	95	103	2	0.547	ppb	4.31	4,317.45	1.228E-03	Pulse	0.30	3
Ag	107	103	3	0.450	ppb	1.40	41,746.34	4.454E-03	Pulse	0.30	3
Cd	111	115	3	0.504	ppb	1.49	9,384.90	9.441E-04	Pulse	0.30	3
Sb	121	115	3	0.508	ppb	1.27	32,966.50	3.317E-03	Pulse	0.30	3
Ba	137	159	3	1.207	ppb	0.94	28,262.20	2.052E-03	Pulse	0.30	3
Tl	205	209	3	0.474	ppb	0.87	68,702.17	8.794E-03	Pulse	0.30	3
Pb	208	209	3	1.033	ppb	0.75	200,161.67	2.562E-02	Pulse	0.30	3
U	238	209	3	0.498	ppb	1.22	101,245.89	1.296E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,662,026.18	0.67	95.2	Analog	0.30	3
2	Sc	45	135,093.53	2.84	119.4	Pulse	0.30	3
3	Sc	45	5,125,353.71	0.93	109.7	Analog	0.30	3
1	Ge	72	136,373.75	0.56	123.5	Pulse	0.30	3
2	Ge	72	105,814.22	1.62	118.8	Pulse	0.30	3
2	Rh	103	3,515,155.57	1.04	114.1	Analog	0.30	3
3	Rh	103	9,373,627.01	0.47	111.6	Analog	0.30	3
3	In	115	9,940,187.47	0.40	112.2	Analog	0.30	3
3	Tb	159	13,771,201.18	0.41	109.8	Analog	0.30	3
3	Bi	209	7,812,185.78	0.41	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219117.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:42
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	64.19	37.78	2.443E-05	Pulse	0.30	3
Na	23	45	2	91492.489	ppb	1.29	152,917,538.83	1.147E+03	Analog	0.30	3
Mg	26	45	2	89925.157	ppb	1.25	13,757,935.07	1.032E+02	Analog	0.30	3
Al	27	45	2	0.799	ppb	78.82	674.76	5.046E-03	Pulse	0.30	3
K	39	45	2	99061.880	ppb	0.85	51,803,852.01	3.884E+02	Analog	0.30	3
Ca	44	45	3	97176.367	ppb	0.56	252,512,122.90	4.700E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.775E-03	Pulse	0.30	3
Cr	52	45	2	0.286	ppb	9.03	5,370.26	4.027E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-13,304.13	-9.975E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,660.87	-2.747E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	83.22	73.37	5.471E-04	Pulse	0.30	3
Ni	60	72	2	0.356	ppb	2.60	2,352.43	2.446E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,367.70	-2.459E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,297.02	-1.349E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-0.38	-4.220E-06	Pulse	0.75	3
Se	78	72	1	0.011	ppb	29.05	7.78	6.611E-05	Pulse	0.30	3
Mo	95	103	2	0.056	ppb	13.68	383.36	1.320E-04	Pulse	0.30	3
Ag	107	103	3	0.077	ppb	11.56	9,041.20	1.124E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-539.43	-6.105E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,611.27	1.824E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-22,620.56	-1.816E-03	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	6.76	2,154.70	3.647E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,787.93	-3.027E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	41.96	327.21	5.544E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,915.50	1.02	88.8	Analog	0.30	3
2	Sc	45	133,390.42	2.62	117.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,372,314.88	1.51	115.0	Analog	0.30	3
1	Ge	72	117,667.98	0.44	106.6	Pulse	0.30	3
2	Ge	72	96,164.67	1.28	107.9	Pulse	0.30	3
2	Rh	103	2,899,354.16	1.56	94.1	Analog	0.30	3
3	Rh	103	8,043,522.52	0.74	95.8	Analog	0.30	3
3	In	115	8,833,900.06	0.59	99.7	Analog	0.30	3
3	Tb	159	12,457,496.34	0.57	99.3	Analog	0.30	3
3	Bi	209	5,907,875.82	0.72	80.7	Analog	0.30	3

Quantitation Report

File Name	A0219118.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:45
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.538	ppb	0.40	171,834.60	1.188E-01	Pulse	0.30	3
Na	23	45	2	90502.545	ppb	0.53	136,587,116.85	1.134E+03	Analog	0.30	3
Mg	26	45	2	89935.079	ppb	0.50	12,424,179.12	1.032E+02	Analog	0.30	3
Al	27	45	2	20.755	ppb	2.39	5,565.90	4.622E-02	Pulse	0.30	3
K	39	45	2	95057.269	ppb	0.51	44,886,463.77	3.727E+02	Analog	0.30	3
Ca	44	45	3	95944.403	ppb	0.77	235,239,052.05	4.641E+01	Analog	0.30	3
V	51	45	2	20.264	ppb	0.24	158,004.73	1.312E+00	Pulse	0.30	3
Cr	52	45	2	19.326	ppb	0.26	207,169.69	1.720E+00	Pulse	0.30	3
Mn	55	45	2	16.455	ppb	0.30	87,907.90	7.299E-01	Pulse	0.30	3
Fe	56	45	2	20.277	ppb	0.72	181,602.31	1.508E+00	Pulse	0.30	3
Co	59	45	2	18.391	ppb	0.60	383,069.47	3.181E+00	Pulse	0.30	3
Ni	60	72	2	19.860	ppb	0.85	101,780.59	1.205E+00	Pulse	0.30	3
Cu	63	72	2	19.323	ppb	1.06	268,694.46	3.180E+00	Pulse	0.30	3
Zn	66	72	2	17.383	ppb	0.42	33,846.69	4.006E-01	Pulse	0.30	3
As	75	72	2	19.519	ppb	0.36	19,178.25	2.270E-01	Pulse	0.75	3
Se	78	72	1	16.788	ppb	3.33	8,117.93	8.488E-02	Pulse	0.30	3
Mo	95	103	2	23.302	ppb	0.55	136,114.44	5.202E-02	Pulse	0.30	3
Ag	107	103	3	19.168	ppb	1.81	1,295,380.23	1.716E-01	Mix	0.30	3
Cd	111	115	3	19.162	ppb	0.60	295,460.63	3.565E-02	Pulse	0.30	3
Sb	121	115	3	21.120	ppb	0.54	1,046,507.57	1.263E-01	Pulse	0.30	3
Ba	137	159	3	24.624	ppb	0.52	496,512.08	4.162E-02	Pulse	0.30	3
Tl	205	209	3	22.381	ppb	0.96	2,310,706.86	4.051E-01	Analog	0.30	3
Pb	208	209	3	22.204	ppb	0.21	3,106,742.54	5.447E-01	Analog	0.30	3
U	238	209	3	22.570	ppb	0.61	3,343,945.50	5.863E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,446,746.35	0.85	82.9	Analog	0.30	3
2	Sc	45	120,431.94	2.82	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,069,210.37	1.54	108.5	Analog	0.30	3
1	Ge	72	95,685.19	2.61	86.7	Pulse	0.30	3
2	Ge	72	84,497.29	3.29	94.8	Pulse	0.30	3
2	Rh	103	2,616,310.26	2.80	84.9	Analog	0.30	3
3	Rh	103	7,547,390.37	0.56	89.9	Analog	0.30	3
3	In	115	8,288,957.74	0.97	93.5	Analog	0.30	3
3	Tb	159	11,929,437.74	1.33	95.1	Analog	0.30	3
3	Bi	209	5,703,728.04	0.51	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219119.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:51
Sample Name	N023028-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	60.72	38.89	3.298E-05	Pulse	0.30	3
Na	23	45	2	251754.599	ppb	1.25	339,904,674.93	3.154E+03	Analog	0.30	3
Mg	26	45	2	18339.489	ppb	0.96	2,267,833.86	2.104E+01	Analog	0.30	3
Al	27	45	2	3.869	ppb	16.63	1,226.17	1.138E-02	Pulse	0.30	3
K	39	45	2	7327.301	ppb	1.97	3,108,226.80	2.884E+01	Analog	0.30	3
Ca	44	45	3	108212.092	ppb	0.82	230,855,545.45	5.234E+01	Analog	0.30	3
V	51	45	2	8.854	ppb	1.52	62,215.00	5.771E-01	Pulse	0.30	3
Cr	52	45	2	59.510	ppb	1.10	567,540.06	5.266E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,844.71	-2.640E-02	Pulse	0.30	3
Fe	56	45	2	0.285	ppb	21.96	4,323.02	4.007E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-318.85	-2.954E-03	Pulse	0.30	3
Ni	60	72	2	0.385	ppb	3.84	2,069.07	2.620E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,903.81	2.411E-02	Pulse	0.30	3
Zn	66	72	2	0.588	ppb	10.79	3,409.48	4.317E-02	Pulse	0.30	3
As	75	72	2	1.408	ppb	4.66	1,304.83	1.651E-02	Pulse	0.75	3
Se	78	72	1	4.069	ppb	2.67	2,061.33	2.058E-02	Pulse	0.30	3
Mo	95	103	2	6.122	ppb	2.20	32,500.74	1.367E-02	Pulse	0.30	3
Ag	107	103	3	0.267	ppb	5.88	18,101.86	2.822E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-577.38	-7.912E-05	Pulse	0.30	3
Sb	121	115	3	0.084	ppb	4.00	5,727.96	7.848E-04	Pulse	0.30	3
Ba	137	159	3	45.693	ppb	0.18	816,209.21	7.722E-02	Pulse	0.30	3
Tl	205	209	3	0.075	ppb	0.40	8,178.15	1.571E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,788.50	-1.688E-03	Pulse	0.30	3
U	238	209	3	0.767	ppb	0.58	103,921.53	1.996E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,176,484.16	1.26	67.4	Analog	0.30	3
2	Sc	45	107,802.85	2.33	95.3	Pulse	0.30	3
3	Sc	45	4,410,721.29	1.02	94.4	Analog	0.30	3
1	Ge	72	100,173.11	0.20	90.7	Pulse	0.30	3
2	Ge	72	78,989.24	1.28	88.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,633.89	0.85	77.2	Analog	0.30	3
3	Rh	103	6,414,411.22	0.23	76.4	Analog	0.30	3
3	In	115	7,299,317.54	0.52	82.4	Analog	0.30	3
3	Tb	159	10,569,395.88	0.39	84.3	Analog	0.30	3
3	Bi	209	5,205,623.08	0.84	71.1	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219120.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:59
Sample Name	N023028-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	269.18	20.00	1.369E-05	Pulse	0.30	3
Na	23	45	2	54485.114	ppb	0.68	81,735,534.34	6.832E+02	Analog	0.30	3
Mg	26	45	2	4052.593	ppb	0.79	556,291.69	4.650E+00	Pulse	0.30	3
Al	27	45	2	0.146	ppb	113.62	442.33	3.698E-03	Pulse	0.30	3
K	39	45	2	1626.032	ppb	0.39	776,933.39	6.494E+00	Pulse	0.30	3
Ca	44	45	3	23619.723	ppb	1.23	53,394,839.76	1.143E+01	Analog	0.30	3
V	51	45	2	1.814	ppb	1.57	14,790.52	1.236E-01	Pulse	0.30	3
Cr	52	45	2	12.806	ppb	0.72	136,972.11	1.145E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-299.06	-2.499E-03	Pulse	0.30	3
Fe	56	45	2	0.377	ppb	7.63	5,601.01	4.681E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-72.29	-6.035E-04	Pulse	0.30	3
Ni	60	72	2	0.046	ppb	5.52	525.93	5.690E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,444.03	1.562E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,301.72	1.408E-02	Pulse	0.30	3
As	75	72	2	0.298	ppb	2.71	334.78	3.622E-03	Pulse	0.75	3
Se	78	72	1	0.843	ppb	8.72	496.70	4.273E-03	Pulse	0.30	3
Mo	95	103	2	1.151	ppb	5.57	7,432.03	2.578E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,889.70	3.749E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,753.30	-2.324E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	831.17	9.779E-05	Pulse	0.30	3
Ba	137	159	3	8.364	ppb	1.31	170,809.74	1.415E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	12.19	2,488.11	3.885E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-36,009.54	-5.622E-03	Pulse	0.30	3
U	238	209	3	0.145	ppb	1.48	24,267.82	3.789E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,464,198.83	0.75	83.9	Analog	0.30	3
2	Sc	45	119,639.90	0.80	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,672,455.63	0.70	100.0	Analog	0.30	3
1	Ge	72	116,210.17	0.40	105.2	Pulse	0.30	3
2	Ge	72	92,438.88	1.08	103.8	Pulse	0.30	3
2	Rh	103	2,882,119.02	0.75	93.6	Analog	0.30	3
3	Rh	103	7,708,244.19	0.11	91.8	Analog	0.30	3
3	In	115	8,499,661.34	0.08	95.9	Analog	0.30	3
3	Tb	159	12,075,336.76	0.92	96.3	Analog	0.30	3
3	Bi	209	6,404,642.54	0.31	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219121.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:04
Sample Name	N023028-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	98.13	26.67	2.100E-05	Pulse	0.30	3
Na	23	45	2	355637.411	ppb	1.32	506,904,654.67	4.455E+03	Analog	0.30	3
Mg	26	45	2	18171.945	ppb	1.04	2,372,426.51	2.085E+01	Analog	0.30	3
Al	27	45	2	5.370	ppb	13.85	1,644.73	1.448E-02	Pulse	0.30	3
K	39	45	2	9474.039	ppb	1.25	4,239,726.43	3.726E+01	Analog	0.30	3
Ca	44	45	3	111344.528	ppb	0.84	254,148,727.32	5.386E+01	Analog	0.30	3
V	51	45	2	16.854	ppb	1.41	124,305.88	1.092E+00	Pulse	0.30	3
Cr	52	45	2	152.724	ppb	0.74	1,535,193.70	1.349E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-861.99	-7.598E-03	Pulse	0.30	3
Fe	56	45	2	2.478	ppb	6.42	22,866.40	2.011E-01	Pulse	0.30	3
Co	59	45	2	0.469	ppb	3.01	9,251.43	8.131E-02	Pulse	0.30	3
Ni	60	72	2	1.546	ppb	4.86	7,735.69	9.649E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,825.13	-4.771E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,417.68	3.016E-02	Pulse	0.30	3
As	75	72	2	2.643	ppb	2.95	2,474.01	3.086E-02	Pulse	0.75	3
Se	78	72	1	5.402	ppb	3.00	2,692.55	2.732E-02	Pulse	0.30	3
Mo	95	103	2	22.393	ppb	1.10	120,631.63	5.000E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-5,502.91	-8.395E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-486.15	-6.532E-05	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	11.31	4,265.21	5.731E-04	Pulse	0.30	3
Ba	137	159	3	49.417	ppb	0.18	901,528.54	8.352E-02	Pulse	0.30	3
Tl	205	209	3	0.052	ppb	2.42	5,961.48	1.157E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,417.52	-2.216E-03	Pulse	0.30	3
U	238	209	3	0.887	ppb	0.44	118,927.01	2.308E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,268,925.46	0.36	72.7	Analog	0.30	3
2	Sc	45	113,818.60	2.45	100.6	Pulse	0.30	3
3	Sc	45	4,718,931.35	0.53	101.0	Analog	0.30	3
1	Ge	72	98,596.81	1.36	89.3	Pulse	0.30	3
2	Ge	72	80,173.65	2.00	90.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,412,679.01	1.13	78.3	Analog	0.30	3
3	Rh	103	6,555,189.83	0.54	78.1	Analog	0.30	3
3	In	115	7,441,813.81	0.43	84.0	Analog	0.30	3
3	Tb	159	10,794,708.31	0.58	86.1	Analog	0.30	3
3	Bi	209	5,152,465.79	0.73	70.3	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219122.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:10
Sample Name	N023028-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.125E-06	Pulse	0.30	3
Na	23	45	2	76132.719	ppb	1.41	113,612,202.75	9.543E+02	Analog	0.30	3
Mg	26	45	2	3941.378	ppb	1.81	538,365.31	4.522E+00	Pulse	0.30	3
Al	27	45	2	0.494	ppb	27.05	525.23	4.415E-03	Pulse	0.30	3
K	39	45	2	2105.719	ppb	1.61	996,940.60	8.374E+00	Pulse	0.30	3
Ca	44	45	3	24696.623	ppb	0.28	55,299,806.95	1.195E+01	Analog	0.30	3
V	51	45	2	3.534	ppb	1.69	27,912.26	2.345E-01	Pulse	0.30	3
Cr	52	45	2	33.659	ppb	1.32	355,347.29	2.985E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-25.22	-2.038E-04	Pulse	0.30	3
Fe	56	45	2	0.509	ppb	10.71	6,724.76	5.651E-02	Pulse	0.30	3
Co	59	45	2	0.103	ppb	2.60	2,142.83	1.800E-02	Pulse	0.30	3
Ni	60	72	2	0.282	ppb	4.44	1,806.11	2.000E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-63.11	-6.929E-04	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	914.99	1.014E-02	Pulse	0.30	3
As	75	72	2	0.563	ppb	1.32	604.63	6.695E-03	Pulse	0.75	3
Se	78	72	1	1.183	ppb	9.92	676.71	5.989E-03	Pulse	0.30	3
Mo	95	103	2	4.256	ppb	1.15	26,861.22	9.508E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,087.05	2.769E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-57.45	-6.856E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,350.12	1.611E-04	Pulse	0.30	3
Ba	137	159	3	10.200	ppb	0.34	203,891.77	1.725E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	18.78	2,082.45	3.356E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,345.45	-2.168E-04	Pulse	0.30	3
U	238	209	3	0.168	ppb	1.34	27,311.22	4.401E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,453,250.81	0.22	83.3	Analog	0.30	3
2	Sc	45	119,079.94	2.37	105.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,627,986.29	0.42	99.0	Analog	0.30	3
1	Ge	72	112,973.86	0.38	102.3	Pulse	0.30	3
2	Ge	72	90,324.85	1.36	101.4	Pulse	0.30	3
2	Rh	103	2,825,190.13	1.23	91.7	Analog	0.30	3
3	Rh	103	7,536,101.55	0.41	89.8	Analog	0.30	3
3	In	115	8,379,560.23	0.45	94.6	Analog	0.30	3
3	Tb	159	11,820,955.52	0.42	94.3	Analog	0.30	3
3	Bi	209	6,205,194.42	0.71	84.7	Analog	0.30	3

Quantitation Report

File Name	A0219123.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:15
Sample Name	N023029-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	85.97	31.11	3.410E-05	Pulse	0.30	3
Na	23	45	2	1101147.648	ppb	1.26	1,451,554,733.92	1.379E+04	Analog	0.30	3
Mg	26	45	2	18629.195	ppb	1.57	2,249,386.88	2.137E+01	Analog	0.30	3
Al	27	45	2	3.835	ppb	12.34	1,191.33	1.131E-02	Pulse	0.30	3
K	39	45	2	13745.990	ppb	0.63	5,684,733.73	5.400E+01	Analog	0.30	3
Ca	44	45	3	170747.591	ppb	0.62	348,026,212.59	8.259E+01	Analog	0.30	3
V	51	45	2	0.734	ppb	3.26	5,693.44	5.411E-02	Pulse	0.30	3
Cr	52	45	2	1.673	ppb	1.27	17,125.20	1.627E-01	Pulse	0.30	3
Mn	55	45	2	1.451	ppb	2.00	7,099.67	6.743E-02	Pulse	0.30	3
Fe	56	45	2	5.661	ppb	14.76	45,749.44	4.348E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,194.50	-1.135E-02	Pulse	0.30	3
Ni	60	72	2	1.112	ppb	3.97	4,826.59	7.019E-02	Pulse	0.30	3
Cu	63	72	2	1.801	ppb	0.43	24,279.88	3.529E-01	Pulse	0.30	3
Zn	66	72	2	8.993	ppb	1.14	15,272.77	2.220E-01	Pulse	0.30	3
As	75	72	2	1.365	ppb	5.06	1,101.76	1.602E-02	Pulse	0.75	3
Se	78	72	1	0.766	ppb	5.22	314.46	3.885E-03	Pulse	0.30	3
Mo	95	103	2	19.652	ppb	1.02	89,075.30	4.388E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-4,994.64	-9.118E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-645.92	-1.029E-04	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	2.02	2,604.77	4.148E-04	Pulse	0.30	3
Ba	137	159	3	30.618	ppb	0.18	473,501.87	5.175E-02	Pulse	0.30	3
Tl	205	209	3	0.430	ppb	2.43	32,320.58	8.003E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,992.61	-3.465E-03	Pulse	0.30	3
U	238	209	3	7.152	ppb	0.02	750,317.17	1.858E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	919,661.92	2.13	52.7	Analog	0.30	3
2	Sc	45	105,283.51	3.09	93.0	Pulse	0.30	3
3	Sc	45	4,214,091.54	0.87	90.2	Analog	0.30	3
1	Ge	72	80,948.57	0.14	73.3	Pulse	0.30	3
2	Ge	72	68,798.92	2.52	77.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,030,032.30	1.08	65.9	Analog	0.30	3
3	Rh	103	5,477,689.08	0.35	65.2	Analog	0.30	3
3	In	115	6,279,343.66	0.35	70.9	Analog	0.30	3
3	Tb	159	9,149,644.72	0.21	73.0	Analog	0.30	3
3	Bi	209	4,038,479.42	0.32	55.1	Analog	0.30	3

Quantitation Report

File Name	A0219124.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:21
Sample Name	N023029-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.228E-06	Pulse	0.30	3
Na	23	45	2	235213.335	ppb	0.93	358,395,910.22	2.946E+03	Analog	0.30	3
Mg	26	45	2	4166.701	ppb	0.56	581,532.88	4.781E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	388.70	3.193E-03	Pulse	0.30	3
K	39	45	2	2916.213	ppb	0.74	1,405,039.08	1.155E+01	Analog	0.30	3
Ca	44	45	3	37165.260	ppb	0.19	86,174,067.61	1.798E+01	Analog	0.30	3
V	51	45	2	0.133	ppb	9.26	1,871.30	1.539E-02	Pulse	0.30	3
Cr	52	45	2	0.391	ppb	1.40	6,029.18	4.957E-02	Pulse	0.30	3
Mn	55	45	2	0.205	ppb	9.29	1,509.89	1.242E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-16,887.74	-1.389E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-273.25	-2.243E-03	Pulse	0.30	3
Ni	60	72	2	0.211	ppb	5.96	1,387.08	1.572E-02	Pulse	0.30	3
Cu	63	72	2	0.205	ppb	7.77	8,419.75	9.546E-02	Pulse	0.30	3
Zn	66	72	2	1.357	ppb	6.28	5,251.77	5.954E-02	Pulse	0.30	3
As	75	72	2	0.271	ppb	5.20	291.15	3.300E-03	Pulse	0.75	3
Se	78	72	1	0.180	ppb	27.71	102.23	9.191E-04	Pulse	0.30	3
Mo	95	103	2	3.769	ppb	1.30	22,768.13	8.421E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,834.62	2.505E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-121.13	-1.479E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	974.52	1.189E-04	Pulse	0.30	3
Ba	137	159	3	6.378	ppb	0.37	125,269.01	1.079E-02	Pulse	0.30	3
Tl	205	209	3	0.077	ppb	2.25	9,188.80	1.611E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,636.49	-2.869E-04	Pulse	0.30	3
U	238	209	3	1.340	ppb	0.08	198,790.97	3.484E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,384,499.19	0.93	79.3	Analog	0.30	3
2	Sc	45	121,643.44	1.09	107.5	Pulse	0.30	3
3	Sc	45	4,792,868.99	0.37	102.6	Analog	0.30	3
1	Ge	72	111,184.06	0.86	100.7	Pulse	0.30	3
2	Ge	72	88,207.21	0.98	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,703,645.52	0.87	87.8	Analog	0.30	3
3	Rh	103	7,324,808.43	0.42	87.2	Analog	0.30	3
3	In	115	8,196,349.78	0.45	92.5	Analog	0.30	3
3	Tb	159	11,609,373.58	0.83	92.6	Analog	0.30	3
3	Bi	209	5,705,297.21	0.29	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219125.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:27
Sample Name	N023029-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.005	ppb	65.74	36.67	3.946E-05	Pulse	0.30	3
	Na	23	45	2	971379.398	ppb	0.52	1,338,769,446.72	1.217E+04	Analog	0.30	3
	Mg	26	45	2	23742.485	ppb	0.76	2,997,520.76	2.724E+01	Analog	0.30	3
	Al	27	45	2	6.303	ppb	8.92	1,804.61	1.640E-02	Pulse	0.30	3
	K	39	45	2	16071.034	ppb	0.56	6,945,741.56	6.311E+01	Analog	0.30	3
	Ca	44	45	3	195087.655	ppb	0.62	419,080,313.75	9.436E+01	Analog	0.30	3
	V	51	45	2	1.056	ppb	3.78	8,235.76	7.484E-02	Pulse	0.30	3
OLR	Cr	52	45	2	508.626	ppb	0.77	4,940,107.88	4.489E+01	Analog	0.30	3
	Mn	55	45	2	0.584	ppb	10.14	3,209.58	2.917E-02	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-65,700.48	-5.970E-01	Pulse	0.30	3
	Co	59	45	2	0.215	ppb	5.92	4,125.12	3.749E-02	Pulse	0.30	3
	Ni	60	72	2	2.826	ppb	1.18	12,755.91	1.739E-01	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	3,890.53	5.309E-02	Pulse	0.30	3
	Zn	66	72	2	16.878	ppb	1.72	28,597.92	3.898E-01	Pulse	0.30	3
	As	75	72	2	1.272	ppb	3.07	1,095.51	1.493E-02	Pulse	0.75	3
	Se	78	72	1	3.636	ppb	9.83	1,605.70	1.839E-02	Pulse	0.30	3
	Mo	95	103	2	13.785	ppb	0.38	65,366.02	3.078E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-7,615.14	-1.328E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-596.27	-9.082E-05	Pulse	0.30	3
	Sb	121	115	3	0.031	ppb	6.97	3,088.21	4.704E-04	Pulse	0.30	3
	Ba	137	159	3	36.467	ppb	1.00	587,844.70	6.163E-02	Pulse	0.30	3
	Tl	205	209	3	0.029	ppb	5.85	3,187.17	7.393E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-29,738.23	-6.897E-03	Pulse	0.30	3
	U	238	209	3	5.340	ppb	0.81	598,079.41	1.387E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	925,644.96	1.32	53.0	Analog	0.30	3
2	Sc	45	110,047.31	0.83	97.2	Pulse	0.30	3
3	Sc	45	4,441,439.31	1.31	95.0	Analog	0.30	3
1	Ge	72	87,329.96	0.47	79.1	Pulse	0.30	3
2	Ge	72	73,351.69	1.39	82.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,123,620.92	1.51	68.9	Analog	0.30	3
3	Rh	103	5,731,907.55	0.76	68.3	Analog	0.30	3
3	In	115	6,565,351.74	0.33	74.1	Analog	0.30	3
3	Tb	159	9,538,062.71	0.50	76.1	Analog	0.30	3
3	Bi	209	4,311,691.67	1.13	58.9	Analog	0.30	3

Quantitation Report

File Name	A0219126.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:32
Sample Name	N023029-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	294.91	18.89	1.341E-05	Pulse	0.30	3
Na	23	45	2	208009.439	ppb	1.56	325,096,455.16	2.606E+03	Analog	0.30	3
Mg	26	45	2	5244.480	ppb	0.94	750,787.70	6.017E+00	Pulse	0.30	3
Al	27	45	2	0.813	ppb	33.33	632.95	5.073E-03	Pulse	0.30	3
K	39	45	2	3413.496	ppb	0.90	1,684,420.01	1.350E+01	Analog	0.30	3
Ca	44	45	3	42886.400	ppb	0.32	101,623,728.49	2.075E+01	Analog	0.30	3
V	51	45	2	0.192	ppb	8.30	2,388.06	1.915E-02	Pulse	0.30	3
Cr	52	45	2	112.120	ppb	1.25	1,236,072.84	9.907E+00	Analog	0.30	3
Mn	55	45	2	0.085	ppb	15.40	887.60	7.119E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-6,911.84	-5.545E-02	Pulse	0.30	3
Co	59	45	2	0.050	ppb	6.17	1,104.54	8.855E-03	Pulse	0.30	3
Ni	60	72	2	0.591	ppb	2.40	3,521.20	3.870E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,699.96	2.967E-02	Pulse	0.30	3
Zn	66	72	2	3.066	ppb	4.93	8,721.29	9.590E-02	Pulse	0.30	3
As	75	72	2	0.289	ppb	9.31	319.98	3.518E-03	Pulse	0.75	3
Se	78	72	1	0.742	ppb	9.09	425.58	3.761E-03	Pulse	0.30	3
Mo	95	103	2	2.676	ppb	2.68	16,455.68	5.981E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	245.27	3.301E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-66.33	-7.975E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,274.55	1.533E-04	Pulse	0.30	3
Ba	137	159	3	7.657	ppb	0.23	152,239.73	1.295E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	57.16	1,403.45	2.397E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,251.43	-8.971E-04	Pulse	0.30	3
U	238	209	3	1.016	ppb	1.23	154,707.50	2.643E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,404,559.08	1.07	80.5	Analog	0.30	3
2	Sc	45	124,781.85	1.73	110.3	Pulse	0.30	3
3	Sc	45	4,898,323.02	0.52	104.8	Analog	0.30	3
1	Ge	72	113,187.71	0.44	102.5	Pulse	0.30	3
2	Ge	72	90,966.55	1.08	102.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,751,614.30	0.78	89.3	Analog	0.30	3
3	Rh	103	7,430,870.58	0.07	88.5	Analog	0.30	3
3	In	115	8,312,694.19	0.19	93.8	Analog	0.30	3
3	Tb	159	11,754,432.88	0.48	93.7	Analog	0.30	3
3	Bi	209	5,854,281.37	0.38	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219127.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:38
Sample Name	N023029-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	58.94	56.67	4.717E-05	Pulse	0.30	3
Na	23	45	2	533303.574	ppb	1.04	786,768,663.83	6.679E+03	Analog	0.30	3
Mg	26	45	2	15261.790	ppb	1.66	2,062,155.44	1.751E+01	Analog	0.30	3
Al	27	45	2	3.472	ppb	7.18	1,244.47	1.056E-02	Pulse	0.30	3
K	39	45	2	9888.898	ppb	0.70	4,580,343.09	3.888E+01	Analog	0.30	3
Ca	44	45	3	145501.290	ppb	0.18	343,249,212.66	7.038E+01	Analog	0.30	3
V	51	45	2	5.026	ppb	1.06	38,937.80	3.305E-01	Pulse	0.30	3
Cr	52	45	2	164.624	ppb	1.19	1,712,712.82	1.454E+01	Analog	0.30	3
Mn	55	45	2	0.963	ppb	1.00	5,408.60	4.591E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-24,796.75	-2.105E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-427.48	-3.627E-03	Pulse	0.30	3
Ni	60	72	2	0.606	ppb	5.40	3,169.14	3.959E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,727.27	3.405E-02	Pulse	0.30	3
Zn	66	72	2	0.070	ppb	244.47	2,575.65	3.216E-02	Pulse	0.30	3
As	75	72	2	2.153	ppb	2.20	2,014.42	2.517E-02	Pulse	0.75	3
Se	78	72	1	12.319	ppb	2.03	5,958.01	6.229E-02	Pulse	0.30	3
Mo	95	103	2	75.338	ppb	0.81	399,377.73	1.682E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,767.64	-1.046E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.25	-9.694E-07	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,826.85	2.486E-04	Pulse	0.30	3
Ba	137	159	3	27.631	ppb	0.38	491,926.05	4.670E-02	Pulse	0.30	3
Tl	205	209	3	0.137	ppb	2.39	12,995.12	2.692E-03	Pulse	0.30	3
Pb	208	209	3	0.030	ppb	6.61	5,079.58	1.052E-03	Pulse	0.30	3
U	238	209	3	7.712	ppb	0.93	967,268.37	2.003E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,594.04	0.95	68.9	Analog	0.30	3
2	Sc	45	117,802.95	1.97	104.1	Pulse	0.30	3
3	Sc	45	4,877,213.57	0.38	104.4	Analog	0.30	3
1	Ge	72	95,657.32	0.69	86.6	Pulse	0.30	3
2	Ge	72	79,999.65	2.05	89.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,374,490.36	1.39	77.1	Analog	0.30	3
3	Rh	103	6,471,892.61	0.85	77.1	Analog	0.30	3
3	In	115	7,348,295.81	0.37	82.9	Analog	0.30	3
3	Tb	159	10,532,939.01	0.23	84.0	Analog	0.30	3
3	Bi	209	4,827,949.55	0.75	65.9	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219128.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:43
Sample Name	N023029-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	67.14	24.44	1.681E-05	Pulse	0.30	3
Na	23	45	2	112703.845	ppb	1.46	176,992,959.58	1.412E+03	Analog	0.30	3
Mg	26	45	2	3208.298	ppb	1.00	461,389.08	3.681E+00	Pulse	0.30	3
Al	27	45	2	0.053	ppb	276.81	439.57	3.507E-03	Pulse	0.30	3
K	39	45	2	2154.280	ppb	1.38	1,073,351.21	8.564E+00	Pulse	0.30	3
Ca	44	45	3	31702.671	ppb	0.47	75,157,484.99	1.534E+01	Analog	0.30	3
V	51	45	2	1.018	ppb	1.59	9,067.30	7.235E-02	Pulse	0.30	3
Cr	52	45	2	36.081	ppb	0.99	400,872.18	3.198E+00	Pulse	0.30	3
Mn	55	45	2	0.197	ppb	5.35	1,515.37	1.209E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	750.45	6.013E-03	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-93.37	-7.463E-04	Pulse	0.30	3
Ni	60	72	2	0.145	ppb	5.93	1,111.22	1.173E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,681.85	2.833E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	993.96	1.050E-02	Pulse	0.30	3
As	75	72	2	0.433	ppb	2.46	491.97	5.191E-03	Pulse	0.75	3
Se	78	72	1	2.519	ppb	5.83	1,506.80	1.274E-02	Pulse	0.30	3
Mo	95	103	2	14.232	ppb	1.67	91,471.52	3.178E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	491.47	6.369E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.11	1.301E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	766.72	8.992E-05	Pulse	0.30	3
Ba	137	159	3	5.661	ppb	0.77	114,751.84	9.579E-03	Pulse	0.30	3
Tl	205	209	3	0.022	ppb	2.18	3,770.63	6.170E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,325.02	-3.807E-04	Pulse	0.30	3
U	238	209	3	1.428	ppb	0.51	226,807.31	3.712E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,455,513.36	0.72	83.4	Analog	0.30	3
2	Sc	45	125,346.52	1.83	110.8	Pulse	0.30	3
3	Sc	45	4,900,259.86	0.63	104.9	Analog	0.30	3
1	Ge	72	118,315.81	1.32	107.2	Pulse	0.30	3
2	Ge	72	94,758.81	1.47	106.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,878,459.68	0.78	93.4	Analog	0.30	3
3	Rh	103	7,710,232.73	0.32	91.8	Analog	0.30	3
3	In	115	8,528,079.49	0.31	96.2	Analog	0.30	3
3	Tb	159	11,980,439.40	0.98	95.5	Analog	0.30	3
3	Bi	209	6,110,457.82	1.20	83.4	Analog	0.30	3

Quantitation Report

File Name	A0219129.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:49
Sample Name	CCV9,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.619	ppb	0.47	184,896.98	1.193E-01	Pulse	0.30	3
Na	23	45	2	421.406	ppb	4.13	771,077.25	6.164E+00	Pulse	0.30	3
Mg	26	45	2	198.238	ppb	2.72	28,555.13	2.283E-01	Pulse	0.30	3
Al	27	45	2	21.395	ppb	0.74	5,949.58	4.754E-02	Pulse	0.30	3
K	39	45	2	228.308	ppb	2.36	127,014.07	1.015E+00	Pulse	0.30	3
Ca	44	45	3	213.725	ppb	0.32	516,491.33	1.076E-01	Pulse	0.30	3
V	51	45	2	20.151	ppb	1.57	163,253.75	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.136	ppb	1.64	224,170.89	1.792E+00	Pulse	0.30	3
Mn	55	45	2	20.275	ppb	1.58	112,439.54	8.986E-01	Pulse	0.30	3
Fe	56	45	2	20.898	ppb	1.29	194,414.08	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.083	ppb	1.99	434,632.49	3.474E+00	Pulse	0.30	3
Ni	60	72	2	19.430	ppb	1.20	116,583.90	1.179E+00	Pulse	0.30	3
Cu	63	72	2	20.242	ppb	0.92	329,258.45	3.329E+00	Pulse	0.30	3
Zn	66	72	2	18.500	ppb	1.42	41,975.69	4.243E-01	Pulse	0.30	3
As	75	72	2	19.844	ppb	1.00	22,824.54	2.307E-01	Pulse	0.75	3
Se	78	72	1	19.031	ppb	1.05	12,215.06	9.622E-02	Pulse	0.30	3
Mo	95	103	2	20.057	ppb	1.19	142,601.66	4.478E-02	Pulse	0.30	3
Ag	107	103	3	19.798	ppb	1.01	1,513,893.35	1.773E-01	Analog	0.30	3
Cd	111	115	3	20.284	ppb	0.82	344,585.10	3.773E-02	Pulse	0.30	3
Sb	121	115	3	19.943	ppb	0.41	1,088,942.21	1.192E-01	Pulse	0.30	3
Ba	137	159	3	22.121	ppb	0.83	460,387.76	3.739E-02	Pulse	0.30	3
Tl	205	209	3	20.314	ppb	0.45	2,588,625.45	3.677E-01	Analog	0.30	3
Pb	208	209	3	20.507	ppb	0.69	3,541,296.43	5.031E-01	Analog	0.30	3
U	238	209	3	19.073	ppb	0.55	3,487,421.75	4.954E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,550,335.31	1.08	88.8	Analog	0.30	3
2	Sc	45	125,149.04	2.05	110.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,800,901.29	0.13	102.7	Analog	0.30	3
1	Ge	72	126,961.29	0.92	115.0	Pulse	0.30	3
2	Ge	72	98,921.40	1.11	111.0	Pulse	0.30	3
2	Rh	103	3,184,420.58	0.96	103.4	Analog	0.30	3
3	Rh	103	8,540,545.22	0.54	101.7	Analog	0.30	3
3	In	115	9,132,531.14	0.26	103.1	Analog	0.30	3
3	Tb	159	12,312,521.76	0.12	98.2	Analog	0.30	3
3	Bi	209	7,039,289.06	0.04	96.1	Analog	0.30	3

Quantitation Report

File Name	A0219130.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:54
Sample Name	CCB9,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	5.871E-06	Pulse	0.30	3
Na	23	45	2	195.030	ppb	5.92	395,064.68	3.329E+00	Pulse	0.30	3
Mg	26	45	2	0.172	ppb	191.47	123.34	1.034E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	330.01	2.783E-03	Pulse	0.30	3
K	39	45	2	12.387	ppb	12.65	20,037.23	1.688E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,736.89	3.637E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	668.93	5.635E-03	Pulse	0.30	3
Cr	52	45	2	0.077	ppb	7.30	2,591.03	2.183E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	262.33	2.214E-03	Pulse	0.30	3
Fe	56	45	2	0.176	ppb	5.46	3,806.29	3.206E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	47.44	52.92	4.451E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	56.25	5.873E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	589.91	6.181E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	305.33	3.201E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	49.24	28.00	2.929E-04	Pulse	0.75	3
Se	78	72	1	0.005	ppb	59.80	4.44	3.678E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	8.90	867.84	2.791E-04	Pulse	0.30	3
Ag	107	103	3	0.468	ppb	12.58	38,359.09	4.613E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-36.14	-4.089E-06	Pulse	0.30	3
Sb	121	115	3	0.047	ppb	8.17	4,989.88	5.647E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	58.02	298.83	2.463E-05	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	17.08	1,811.30	2.634E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,010.55	1.470E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.28	924.65	1.345E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,514,115.14	1.29	86.8	Analog	0.30	3
2	Sc	45	118,731.78	2.06	104.9	Pulse	0.30	3
3	Sc	45	4,601,726.01	0.37	98.5	Analog	0.30	3
1	Ge	72	120,860.13	0.33	109.5	Pulse	0.30	3
2	Ge	72	95,396.60	1.44	107.1	Pulse	0.30	3
2	Rh	103	3,107,962.00	1.11	100.9	Analog	0.30	3
3	Rh	103	8,315,913.42	0.22	99.0	Analog	0.30	3
3	In	115	8,836,257.13	0.63	99.7	Analog	0.30	3
3	Tb	159	12,137,000.79	0.68	96.8	Analog	0.30	3
3	Bi	209	6,876,463.02	0.40	93.9	Analog	0.30	3

Quantitation Report

File Name	A0219131.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:00
Sample Name	N023029-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	145.79	18.89	1.407E-05	Pulse	0.30	3
Na	23	45	2	263840.212	ppb	0.99	391,900,856.38	3.305E+03	Analog	0.30	3
Mg	26	45	2	4169.413	ppb	1.36	567,250.93	4.784E+00	Pulse	0.30	3
Al	27	45	2	5.148	ppb	4.94	1,663.59	1.402E-02	Pulse	0.30	3
K	39	45	2	4277.316	ppb	1.48	2,002,212.56	1.689E+01	Analog	0.30	3
Ca	44	45	3	21192.795	ppb	0.88	49,354,934.27	1.025E+01	Analog	0.30	3
V	51	45	2	13.034	ppb	0.88	100,361.13	8.463E-01	Pulse	0.30	3
Cr	52	45	2	0.823	ppb	1.60	10,391.69	8.764E-02	Pulse	0.30	3
Mn	55	45	2	119.745	ppb	1.10	627,356.78	5.291E+00	Pulse	0.30	3
Fe	56	45	2	4.064	ppb	1.90	37,656.44	3.175E-01	Pulse	0.30	3
Co	59	45	2	0.300	ppb	2.95	6,185.72	5.213E-02	Pulse	0.30	3
Ni	60	72	2	0.679	ppb	2.30	3,804.94	4.401E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,454.37	1.681E-02	Pulse	0.30	3
Zn	66	72	2	2.232	ppb	4.43	6,756.60	7.817E-02	Pulse	0.30	3
As	75	72	2	8.593	ppb	4.17	8,644.72	1.000E-01	Pulse	0.75	3
Se	78	72	1	0.856	ppb	3.06	455.58	4.339E-03	Pulse	0.30	3
Mo	95	103	2	45.285	ppb	1.12	265,033.04	1.011E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,768.63	-2.480E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	8.87	511.87	6.382E-05	Pulse	0.30	3
Sb	121	115	3	0.081	ppb	9.01	6,144.78	7.662E-04	Pulse	0.30	3
Ba	137	159	3	36.471	ppb	0.41	703,088.89	6.164E-02	Pulse	0.30	3
Tl	205	209	3	0.087	ppb	0.49	9,893.65	1.783E-03	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	21.14	2,267.97	4.086E-04	Pulse	0.30	3
U	238	209	3	2.069	ppb	0.19	298,452.97	5.377E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,344,050.85	0.93	77.0	Analog	0.30	3
2	Sc	45	118,602.16	2.83	104.8	Pulse	0.30	3
3	Sc	45	4,813,416.84	1.57	103.0	Analog	0.30	3
1	Ge	72	105,005.02	0.69	95.1	Pulse	0.30	3
2	Ge	72	86,454.51	0.94	97.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,621,428.95	1.78	85.1	Analog	0.30	3
3	Rh	103	7,131,635.52	0.61	84.9	Analog	0.30	3
3	In	115	8,020,463.51	0.34	90.5	Analog	0.30	3
3	Tb	159	11,406,179.41	0.74	90.9	Analog	0.30	3
3	Bi	209	5,550,297.49	0.91	75.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219132.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:05
Sample Name	N023029-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.544E-06	Pulse	0.30	3
Na	23	45	2	56689.251	ppb	0.34	85,944,958.72	7.108E+02	Analog	0.30	3
Mg	26	45	2	909.077	ppb	1.54	126,182.31	1.044E+00	Pulse	0.30	3
Al	27	45	2	0.705	ppb	21.38	586.34	4.852E-03	Pulse	0.30	3
K	39	45	2	952.007	ppb	1.05	465,708.06	3.852E+00	Pulse	0.30	3
Ca	44	45	3	4569.598	ppb	0.32	10,473,836.09	2.214E+00	Analog	0.30	3
V	51	45	2	2.725	ppb	1.18	22,046.65	1.823E-01	Pulse	0.30	3
Cr	52	45	2	0.205	ppb	3.19	4,006.88	3.314E-02	Pulse	0.30	3
Mn	55	45	2	25.999	ppb	1.58	139,193.07	1.151E+00	Pulse	0.30	3
Fe	56	45	2	1.084	ppb	13.83	11,928.64	9.877E-02	Pulse	0.30	3
Co	59	45	2	0.068	ppb	4.31	1,460.95	1.209E-02	Pulse	0.30	3
Ni	60	72	2	0.103	ppb	12.88	865.20	9.155E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	722.95	7.645E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,057.77	2.177E-02	Pulse	0.30	3
As	75	72	2	1.818	ppb	4.23	2,011.78	2.128E-02	Pulse	0.75	3
Se	78	72	1	0.175	ppb	7.59	106.67	8.953E-04	Pulse	0.30	3
Mo	95	103	2	8.599	ppb	1.38	56,460.31	1.920E-02	Pulse	0.30	3
Ag	107	103	3	0.023	ppb	25.88	5,092.49	6.435E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-20,448.99	-2.361E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,937.99	2.237E-04	Pulse	0.30	3
Ba	137	159	3	6.391	ppb	0.73	131,111.49	1.081E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	7.84	2,875.96	4.455E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-37,534.28	-5.816E-03	Pulse	0.30	3
U	238	209	3	0.392	ppb	0.64	65,941.03	1.022E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,467,606.69	0.38	84.1	Analog	0.30	3
2	Sc	45	120,916.71	1.63	106.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,729,980.49	0.58	101.2	Analog	0.30	3
1	Ge	72	119,095.37	1.00	107.9	Pulse	0.30	3
2	Ge	72	94,547.78	1.10	106.1	Pulse	0.30	3
2	Rh	103	2,939,954.51	0.76	95.4	Analog	0.30	3
3	Rh	103	7,914,194.67	0.11	94.3	Analog	0.30	3
3	In	115	8,662,203.43	0.69	97.7	Analog	0.30	3
3	Tb	159	12,126,910.38	0.73	96.7	Analog	0.30	3
3	Bi	209	6,453,789.00	0.84	88.1	Analog	0.30	3

Quantitation Report

File Name	A0219133.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:11
Sample Name	N023029-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.575E-06	Pulse	0.30	3
Na	23	45	2	243502.096	ppb	0.59	346,701,110.39	3.050E+03	Analog	0.30	3
Mg	26	45	2	3778.112	ppb	0.91	492,738.55	4.335E+00	Pulse	0.30	3
Al	27	45	2	5.361	ppb	3.11	1,643.25	1.446E-02	Pulse	0.30	3
K	39	45	2	3936.906	ppb	0.54	1,767,731.50	1.555E+01	Analog	0.30	3
Ca	44	45	3	19020.898	ppb	0.17	42,362,231.59	9.204E+00	Analog	0.30	3
V	51	45	2	10.562	ppb	0.96	78,093.02	6.871E-01	Pulse	0.30	3
Cr	52	45	2	3.617	ppb	0.41	37,982.74	3.342E-01	Pulse	0.30	3
Mn	55	45	2	114.942	ppb	0.38	577,255.48	5.079E+00	Pulse	0.30	3
Fe	56	45	2	4.781	ppb	1.09	42,079.80	3.702E-01	Pulse	0.30	3
Co	59	45	2	0.125	ppb	9.24	2,483.13	2.186E-02	Pulse	0.30	3
Ni	60	72	2	0.119	ppb	18.74	827.30	1.015E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,154.56	-6.335E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,551.39	1.906E-02	Pulse	0.30	3
As	75	72	2	8.448	ppb	2.76	7,998.39	9.831E-02	Pulse	0.75	3
Se	78	72	1	0.541	ppb	4.94	276.68	2.747E-03	Pulse	0.30	3
Mo	95	103	2	46.458	ppb	0.82	262,845.17	1.037E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,849.27	-2.696E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	14.81	488.07	6.343E-05	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	4.02	4,156.28	5.404E-04	Pulse	0.30	3
Ba	137	159	3	33.228	ppb	0.31	614,251.48	5.616E-02	Pulse	0.30	3
Tl	205	209	3	0.067	ppb	2.42	7,583.38	1.430E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-163.51	-3.092E-05	Pulse	0.30	3
U	238	209	3	2.528	ppb	1.45	348,290.89	6.569E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,301,756.33	1.19	74.6	Analog	0.30	3
2	Sc	45	113,665.89	1.35	100.4	Pulse	0.30	3
3	Sc	45	4,602,661.18	0.81	98.5	Analog	0.30	3
1	Ge	72	100,713.22	0.40	91.2	Pulse	0.30	3
2	Ge	72	81,379.35	1.91	91.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,534,183.29	0.86	82.3	Analog	0.30	3
3	Rh	103	6,859,699.34	0.18	81.7	Analog	0.30	3
3	In	115	7,690,858.18	0.58	86.8	Analog	0.30	3
3	Tb	159	10,937,514.14	0.24	87.2	Analog	0.30	3
3	Bi	209	5,302,572.39	0.61	72.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219134.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:16
Sample Name	N023029-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.825E-06	Pulse	0.30	3
Na	23	45	2	49535.252	ppb	2.31	75,163,043.88	6.212E+02	Analog	0.30	3
Mg	26	45	2	771.339	ppb	1.23	107,189.09	8.857E-01	Pulse	0.30	3
Al	27	45	2	0.845	ppb	37.70	622.68	5.141E-03	Pulse	0.30	3
K	39	45	2	835.016	ppb	1.92	410,602.52	3.393E+00	Pulse	0.30	3
Ca	44	45	3	3963.874	ppb	0.41	8,927,714.03	1.921E+00	Analog	0.30	3
V	51	45	2	2.097	ppb	1.16	17,169.56	1.419E-01	Pulse	0.30	3
Cr	52	45	2	0.750	ppb	6.05	9,822.80	8.122E-02	Pulse	0.30	3
Mn	55	45	2	23.443	ppb	2.30	125,654.29	1.039E+00	Pulse	0.30	3
Fe	56	45	2	1.344	ppb	2.64	14,258.91	1.178E-01	Pulse	0.30	3
Co	59	45	2	0.028	ppb	11.50	606.53	5.004E-03	Pulse	0.30	3
Ni	60	72	2	0.004	ppb	313.50	296.41	3.180E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-417.50	-4.471E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	693.24	7.424E-03	Pulse	0.30	3
As	75	72	2	1.656	ppb	4.82	1,810.48	1.939E-02	Pulse	0.75	3
Se	78	72	1	0.096	ppb	33.54	58.89	4.965E-04	Pulse	0.30	3
Mo	95	103	2	8.657	ppb	1.19	56,559.64	1.933E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,192.99	4.093E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,866.32	-2.093E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,532.37	1.795E-04	Pulse	0.30	3
Ba	137	159	3	5.657	ppb	1.21	113,932.73	9.572E-03	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	11.76	2,204.70	3.460E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,279.06	-4.595E-03	Pulse	0.30	3
U	238	209	3	0.455	ppb	0.73	75,545.38	1.186E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,887.20	0.18	83.2	Analog	0.30	3
2	Sc	45	121,044.24	2.76	107.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,646,537.36	0.50	99.4	Analog	0.30	3
1	Ge	72	118,321.30	1.43	107.2	Pulse	0.30	3
2	Ge	72	93,340.32	0.92	104.8	Pulse	0.30	3
2	Rh	103	2,925,532.67	0.31	95.0	Analog	0.30	3
3	Rh	103	7,798,408.57	0.62	92.9	Analog	0.30	3
3	In	115	8,534,959.87	0.25	96.3	Analog	0.30	3
3	Tb	159	11,902,968.85	0.41	94.9	Analog	0.30	3
3	Bi	209	6,371,840.53	0.44	87.0	Analog	0.30	3

Quantitation Report

File Name	A0219135.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:22
Sample Name	CCV10,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.449	ppb	1.01	175,531.24	1.182E-01	Pulse	0.30	3
Na	23	45	2	334.027	ppb	3.27	610,297.83	5.070E+00	Pulse	0.30	3
Mg	26	45	2	195.959	ppb	1.93	27,162.81	2.256E-01	Pulse	0.30	3
Al	27	45	2	21.263	ppb	2.61	5,689.61	4.726E-02	Pulse	0.30	3
K	39	45	2	221.919	ppb	1.76	119,201.03	9.901E-01	Pulse	0.30	3
Ca	44	45	3	212.628	ppb	1.14	490,638.08	1.071E-01	Pulse	0.30	3
V	51	45	2	20.193	ppb	0.97	157,407.25	1.307E+00	Pulse	0.30	3
Cr	52	45	2	19.914	ppb	0.65	213,350.13	1.772E+00	Pulse	0.30	3
Mn	55	45	2	20.248	ppb	1.70	108,035.62	8.974E-01	Pulse	0.30	3
Fe	56	45	2	20.831	ppb	1.45	186,453.87	1.549E+00	Pulse	0.30	3
Co	59	45	2	20.048	ppb	1.06	417,484.03	3.468E+00	Pulse	0.30	3
Ni	60	72	2	19.425	ppb	1.14	112,305.47	1.178E+00	Pulse	0.30	3
Cu	63	72	2	20.097	ppb	0.73	315,038.72	3.305E+00	Pulse	0.30	3
Zn	66	72	2	18.622	ppb	1.50	40,694.39	4.269E-01	Pulse	0.30	3
As	75	72	2	19.977	ppb	0.99	22,140.05	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.809	ppb	0.34	11,663.56	9.509E-02	Pulse	0.30	3
Mo	95	103	2	20.080	ppb	1.11	139,789.50	4.483E-02	Pulse	0.30	3
Ag	107	103	3	19.915	ppb	0.12	1,471,455.91	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.392	ppb	0.32	335,103.89	3.793E-02	Pulse	0.30	3
Sb	121	115	3	20.069	ppb	0.52	1,060,011.52	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.157	ppb	0.28	448,415.57	3.745E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.73	2,525,334.01	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.504	ppb	0.42	3,462,871.04	5.030E-01	Analog	0.30	3
U	238	209	3	19.108	ppb	0.18	3,417,069.84	4.963E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,484,656.67	0.40	85.1	Analog	0.30	3
2	Sc	45	120,403.88	1.44	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,583,282.43	0.29	98.1	Analog	0.30	3
1	Ge	72	122,655.79	1.06	111.1	Pulse	0.30	3
2	Ge	72	95,316.16	0.90	107.0	Pulse	0.30	3
2	Rh	103	3,118,021.97	0.12	101.2	Analog	0.30	3
3	Rh	103	8,252,382.80	0.42	98.3	Analog	0.30	3
3	In	115	8,834,186.70	0.17	99.7	Analog	0.30	3
3	Tb	159	11,972,495.79	0.14	95.5	Analog	0.30	3
3	Bi	209	6,884,641.63	0.23	94.0	Analog	0.30	3

Quantitation Report

File Name	A0219136.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:27
Sample Name	CCB10,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	31.74	32.22	2.218E-05	Pulse	0.30	3
Na	23	45	2	128.739	ppb	6.02	286,743.52	2.499E+00	Pulse	0.30	3
Mg	26	45	2	0.038	ppb	493.42	101.11	8.800E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	317.79	2.766E-03	Pulse	0.30	3
K	39	45	2	11.060	ppb	14.37	18,775.71	1.636E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,439.95	3.727E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	573.37	4.997E-03	Pulse	0.30	3
Cr	52	45	2	0.061	ppb	16.07	2,341.08	2.039E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.08	2.294E-03	Pulse	0.30	3
Fe	56	45	2	0.163	ppb	9.95	3,568.20	3.110E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	80.02	43.03	3.757E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	48.58	5.289E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	749.15	8.171E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	312.31	3.401E-03	Pulse	0.30	3
As	75	72	2	0.018	ppb	19.83	33.33	3.636E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	162.08	7.78	6.518E-05	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	7.00	841.17	2.757E-04	Pulse	0.30	3
Ag	107	103	3	0.446	ppb	14.92	35,748.23	4.417E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21.75	-2.528E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	7.48	4,816.50	5.599E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	32.53	374.77	3.164E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	21.49	1,641.27	2.444E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,120.01	1.668E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	5.12	919.62	1.369E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,162.11	0.52	83.2	Analog	0.30	3
2	Sc	45	114,769.78	1.19	101.4	Pulse	0.30	3
3	Sc	45	4,411,184.62	0.36	94.4	Analog	0.30	3
1	Ge	72	118,692.16	0.91	107.5	Pulse	0.30	3
2	Ge	72	91,727.15	0.80	103.0	Pulse	0.30	3
2	Rh	103	3,051,295.47	0.53	99.1	Analog	0.30	3
3	Rh	103	8,096,550.85	0.54	96.4	Analog	0.30	3
3	In	115	8,602,761.25	0.16	97.1	Analog	0.30	3
3	Tb	159	11,841,870.10	0.43	94.4	Analog	0.30	3
3	Bi	209	6,715,519.00	0.78	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219137.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:33
Sample Name	LLCCV3,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.475	ppb	1.90	4,523.02	2.899E-03	Pulse	0.30	3
Na	23	45	2	86.916	ppb	10.25	249,977.90	1.975E+00	Pulse	0.30	3
Mg	26	45	2	3.807	ppb	17.40	657.82	5.204E-03	Pulse	0.30	3
Al	27	45	2	12.118	ppb	6.09	3,594.93	2.840E-02	Pulse	0.30	3
K	39	45	2	9.015	ppb	17.37	19,701.18	1.556E-01	Pulse	0.30	3
Ca	44	45	3	8.292	ppb	2.13	39,533.60	8.221E-03	Pulse	0.30	3
V	51	45	2	0.978	ppb	1.57	8,841.61	6.981E-02	Pulse	0.30	3
Cr	52	45	2	1.044	ppb	1.09	13,574.65	1.071E-01	Pulse	0.30	3
Mn	55	45	2	0.531	ppb	1.79	3,396.44	2.681E-02	Pulse	0.30	3
Fe	56	45	2	11.175	ppb	2.65	106,320.95	8.397E-01	Pulse	0.30	3
Co	59	45	2	0.484	ppb	2.47	10,630.24	8.395E-02	Pulse	0.30	3
Ni	60	72	2	0.928	ppb	1.92	5,987.61	5.909E-02	Pulse	0.30	3
Cu	63	72	2	0.717	ppb	1.98	18,036.78	1.780E-01	Pulse	0.30	3
Zn	66	72	2	8.468	ppb	0.80	21,366.83	2.109E-01	Pulse	0.30	3
As	75	72	2	0.123	ppb	8.13	160.00	1.579E-03	Pulse	0.75	3
Se	78	72	1	0.498	ppb	25.64	332.24	2.527E-03	Pulse	0.30	3
Mo	95	103	2	0.528	ppb	5.22	3,959.54	1.187E-03	Pulse	0.30	3
Ag	107	103	3	0.451	ppb	2.48	39,425.28	4.465E-03	Pulse	0.30	3
Cd	111	115	3	0.510	ppb	1.76	8,984.28	9.553E-04	Pulse	0.30	3
Sb	121	115	3	0.514	ppb	1.57	31,484.73	3.348E-03	Pulse	0.30	3
Ba	137	159	3	1.208	ppb	1.27	26,693.05	2.055E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.21	64,534.66	8.743E-03	Pulse	0.30	3
Pb	208	209	3	1.038	ppb	1.11	190,132.50	2.576E-02	Pulse	0.30	3
U	238	209	3	0.496	ppb	0.89	95,343.12	1.292E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,560,219.25	1.07	89.4	Analog	0.30	3
2	Sc	45	126,677.50	2.85	111.9	Pulse	0.30	3
3	Sc	45	4,808,535.76	0.67	102.9	Analog	0.30	3
1	Ge	72	131,425.07	0.74	119.0	Pulse	0.30	3

2	Ge	72	101,333.27	0.81	113.7	Pulse	0.30	3
2	Rh	103	3,334,095.40	0.80	108.2	Analog	0.30	3
3	Rh	103	8,828,599.59	0.55	105.2	Analog	0.30	3
3	In	115	9,405,032.15	0.43	106.1	Analog	0.30	3
3	Tb	159	12,989,240.22	0.43	103.6	Analog	0.30	3
3	Bi	209	7,381,330.23	0.66	100.8	Analog	0.30	3

Quantitation Report

File Name	A0219138.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:38
Sample Name	ICSA4,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	43.41	30.00	2.046E-05	Pulse	0.30	3
Na	23	45	2	90294.415	ppb	1.27	144,442,735.63	1.132E+03	Analog	0.30	3
Mg	26	45	2	89564.640	ppb	0.87	13,115,646.89	1.027E+02	Analog	0.30	3
Al	27	45	2	0.636	ppb	68.64	601.02	4.708E-03	Pulse	0.30	3
K	39	45	2	100024.117	ppb	0.69	50,065,768.14	3.922E+02	Analog	0.30	3
Ca	44	45	3	96884.226	ppb	0.35	239,884,394.20	4.686E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	620.04	4.851E-03	Pulse	0.30	3
Cr	52	45	2	0.223	ppb	4.08	4,435.35	3.475E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,578.01	-9.852E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-2,992.67	-2.344E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	39.16	77.91	6.094E-04	Pulse	0.30	3
Ni	60	72	2	0.336	ppb	4.65	2,147.59	2.324E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,413.52	-2.611E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,259.17	-1.365E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.67	-5.141E-05	Pulse	0.75	3
Se	78	72	1	0.013	ppb	89.38	8.89	7.741E-05	Pulse	0.30	3
Mo	95	103	2	0.059	ppb	9.72	390.02	1.392E-04	Pulse	0.30	3
Ag	107	103	3	0.080	ppb	17.04	8,924.18	1.152E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-517.23	-6.110E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,585.71	1.873E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,907.62	-1.735E-03	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	15.88	1,746.85	3.086E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,695.51	-2.994E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	324.53	5.738E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,208.18	0.31	84.0	Analog	0.30	3
2	Sc	45	127,664.11	2.27	112.8	Pulse	0.30	3
3	Sc	45	5,118,899.89	1.14	109.5	Analog	0.30	3
1	Ge	72	114,636.66	0.51	103.8	Pulse	0.30	3
2	Ge	72	92,473.74	3.05	103.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,803,239.16	1.23	91.0	Analog	0.30	3
3	Rh	103	7,754,783.56	1.26	92.4	Analog	0.30	3
3	In	115	8,465,249.80	0.75	95.5	Analog	0.30	3
3	Tb	159	12,050,089.26	0.63	96.1	Analog	0.30	3
3	Bi	209	5,658,665.05	1.25	77.2	Analog	0.30	3

Quantitation Report

File Name	A0219139.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:45
Sample Name	ICSAB4,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.213	ppb	0.40	175,944.89	1.168E-01	Pulse	0.30	3
Na	23	45	2	91946.778	ppb	0.18	140,542,459.01	1.152E+03	Analog	0.30	3
Mg	26	45	2	91187.920	ppb	1.03	12,756,973.00	1.046E+02	Analog	0.30	3
Al	27	45	2	21.020	ppb	3.76	5,701.67	4.676E-02	Pulse	0.30	3
K	39	45	2	96106.649	ppb	0.40	45,959,730.43	3.768E+02	Analog	0.30	3
Ca	44	45	3	96392.206	ppb	0.16	240,609,789.75	4.663E+01	Analog	0.30	3
V	51	45	2	20.491	ppb	0.63	161,803.52	1.327E+00	Pulse	0.30	3
Cr	52	45	2	19.339	ppb	1.39	209,902.35	1.721E+00	Pulse	0.30	3
Mn	55	45	2	16.568	ppb	1.13	89,642.04	7.349E-01	Pulse	0.30	3
Fe	56	45	2	20.317	ppb	1.60	184,251.47	1.511E+00	Pulse	0.30	3
Co	59	45	2	18.511	ppb	0.55	390,506.34	3.202E+00	Pulse	0.30	3
Ni	60	72	2	20.065	ppb	1.54	102,857.70	1.217E+00	Pulse	0.30	3
Cu	63	72	2	19.432	ppb	0.65	270,322.87	3.198E+00	Pulse	0.30	3
Zn	66	72	2	17.489	ppb	0.73	34,057.95	4.028E-01	Pulse	0.30	3
As	75	72	2	19.414	ppb	0.77	19,081.16	2.257E-01	Pulse	0.75	3
Se	78	72	1	16.673	ppb	3.18	8,368.08	8.430E-02	Pulse	0.30	3
Mo	95	103	2	22.979	ppb	2.00	135,822.92	5.130E-02	Pulse	0.30	3
Ag	107	103	3	19.334	ppb	0.32	1,325,589.61	1.731E-01	Pulse	0.30	3
Cd	111	115	3	19.064	ppb	0.11	298,923.16	3.546E-02	Pulse	0.30	3
Sb	121	115	3	20.638	ppb	0.44	1,040,052.53	1.234E-01	Pulse	0.30	3
Ba	137	159	3	24.730	ppb	0.53	502,731.63	4.180E-02	Pulse	0.30	3
Tl	205	209	3	22.537	ppb	0.78	2,329,064.51	4.080E-01	Analog	0.30	3
Pb	208	209	3	22.375	ppb	0.67	3,133,526.71	5.489E-01	Analog	0.30	3
U	238	209	3	22.784	ppb	0.36	3,378,945.65	5.918E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,374.79	0.45	86.3	Analog	0.30	3
2	Sc	45	121,966.73	2.29	107.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,160,483.47	0.68	110.4	Analog	0.30	3
1	Ge	72	99,274.20	1.34	89.9	Pulse	0.30	3
2	Ge	72	84,537.82	2.68	94.9	Pulse	0.30	3
2	Rh	103	2,647,253.97	1.36	85.9	Analog	0.30	3
3	Rh	103	7,657,026.00	0.53	91.2	Analog	0.30	3
3	In	115	8,429,339.12	0.59	95.1	Analog	0.30	3
3	Tb	159	12,026,964.54	0.73	95.9	Analog	0.30	3
3	Bi	209	5,709,311.86	0.86	77.9	Analog	0.30	3

STANDARDS LOG

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-121025B	7500 Series PA Tuning 1	2.5, 5.0, 10, 50 ppm	Agilent	19-64VYY2	10/28/12	11/1/12	12/31/2013		MI
C	7500 Series PA Tuning 2	5, 10 ppm	↓	19-62VYY2	↓	11/1/12	↓		↓
D	Germanium	1000 ppm	High Purity Stds	1215310	10/25/12	11/6/12	4/15/2014		MI
2MSST-130301A	ICPMS major cations	50 ppm	ERA	750412	3/1/13	8/7/13	6/2015		MI
B	ICPMS Trace Metals	10 ppm	↓	740412	↓	8/7/13	10/2014		↓
C	ICPMS IS 1	10 ppm	High Purity Std	1211618	3/1/13	4/25/13	1/14/14		MI
2MSST-130329A	ICPMS Tuning Solution	10 ppm	ERA	140309	3/29/13	3/29/13	4/2014		MI
↓	ICPMS IS 1	10 ppm	High Purity Std	1301405	↓	5/26/13	3/20/14		↓
2MSST-130603A	ICPMS IS 1	10 ppm	High Purity Std	1301405	6/3/13	8/7/13	5/29/14		WS
2MSST-130910C ~~2MSST-130910A~~ MC 2/14/14	Hg - STD (1°) mercury	1000 ppm	High Purity Std	1316504	9/10/13	9/11/13	3/4/15		MC
2MSST-130910A	ICPMS Trace Metals	10 ppm	ERA	740412	9/10/13	1/7/14	10/2014		HSG
2MSST-130910B	ICPMS Major Cations	50 ppm	↓	750412	9/10/13	↓	6/2015		HSG
2MSST-130913A	ICPMS IS 1	10 ppm	High Purity Std	1301405	9/13/13	↓	9/9/14		HSC
2MSST-131220A	7500 Series PA Tuning 1	Multi concentration of Analytes	Agilent	20-47VYY2	12/20/13	1/2/14	02/28/15		MI
B	7500 Series PA Tuning 2	↓	↓	20-45VYY2	↓	1/2/14	02/28/15		MI
2MSST-140113A	Hg 2° Standard Mercury	1000 ppm	Ultra Scientific	P00139	MC 3/4/14 ~~14~~ 01/13/14	MC 3/4/14 ~~R~~ 2/10/14	3/31/19		MC
2MSST-140217B	ICPMS IS 1	10 ppm	High Purity Stds	1333708	2/17/14	4/15/14	2/10/15	→ exp: 3/18/15 MI 3/18/14	PLN
2MSST ~~2MSST~~ - 140317A MI 3/17/14	Uranium	1000 ppm	High Purity Stds	1326239	3/17/14	3/18/14	9/11/15		MI
2MSST-140404A	Germanium	1000 ppm	High Purity Stds	1309919	4/4/14	4/15/14 ~~9/28/15~~ MI 4/4/14	9/28/15		MI

Advanced Technology Laboratories-Las Vegas
Logbool #1

3/6/14 9/24/13 3/28/13 9/29

ICP Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
6/21/13	Magnesium	MSST-130621C	10,000 ppm	High Purity Standards	1301003	6/21/13	7/25/13	12/14/14	WES
7/31/13	Yttrium	MSST-130731A	1000 ppm	High Purity standards	1305206	7/31/13	8/1/13	1/25/15	AM
7/31/13	Scandium	MSST-130731B	1000 ppm	High Purity standards	1231735	7/31/13	8/1/13	1/25/15	AM
9/13/13	Boron 1°	MSST-130913A	5000 ppm	High Purity Standards	1221604	9/13/13	9/16/13	3/9/15	AM
↓	Molybdenum 1°	MSST-130913B	1000 ppm	↓	1222707	9/13/13	9/16/13	↓	↓
↓	Chromium 1°	MSST-130913C	1000 ppm	↓	1230012	9/13/13	9/16/13	↓	↓
↓	Aluminum 1°	MSST-130913D	10000 ppm	↓	1318241	9/13/13	~~9/16/13~~ rec 9/17/13	↓	↓
9/13/13	Antimony 2°	MSST-130913E	1000 ppm	Ultra Scientific	L012826	9/13/13		12/31/17	MI
11/26/13	Aluminum 2°	MSST-131126A	10000 ppm	Ultra Scientific	M002666B	11/26/13		4/30/17	AM
12/9/13	Yttrium	MSST-131209A	1000 ppm	High Purity Standards	1222829	12/9/13	3/24/14	3/24/14 ~~5/27/15~~ MI	AM
12/9/13	Scandium	MSST-131209B	1000 ppm	High Purity Standards	1309122	12/9/13	3/24/14	3/24/14 ~~5/27/15~~ 3/24/14	AM
12/23/13	Calcium 1°	MSST-131223A	10,000 ppm	High Purity Standards	1320711	12/23/13	1/6/14	6/13/15	AM
12/23/13	Magnesium 1°	MSST-131223B	↓	↓	1330907	↓	1/6/14	↓	AM
12/23/13	Manganese 1°	MSST-131223C	↓	↓	1331633	↓	1/6/14	↓	AM
AM 1/10/14	Aluminum 1°	MSST-140110A	10000 ppm	High Purity Standards	1334617	1/10/14	~~7/7/15~~ AM 1/10/14	7/7/15	AM
1/20/14	Nickel 2° AM 1/21/14	MSST-140120A	1000 ppm	~~High Purity Standards~~ Ultra Scientific	M00866	1/20/14		9/30/18	AM
↓	Sodium 2°	MSST-140120B	10000 ppm	AM 1/21/14 ↓	R01257	↓		12/31/20	↓
↓	Beryllium 2°	MSST-140120C	100 ppm	↓	R00202	↓		4/30/20	↓
1/21/14	Strontium 2°	MSST-140121A	1000 ppm	CPI International	14A095	1/21/14	1/21/14	7/16/2015	MI

ICP Stock Standard Logbook

G 3/25/14

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/21/14	Tin 2°	MSST-140121B	1000 ppm	CPI International	1340860	1/21/14	1/21/14	7/16/2015	MI
↓	Titanium 2°	MSST-140121C	1000 ppm	CPI International	126230	1/21/14	1/21/14	7/16/2015	MI
2/18/14	Wave Cal Solution	MSST-140218A	1/20/100 ppm	Perkin Elmer Pure	10-133-YPX1	2/18/14		3/30/2015	MI
	Optima Family Multi-Element Standard	B	1/10/50 ppm		10-134YPX1			6/30/2015	
	VIS Wavecal Solution	C	1/10/50 ppm		10-71YPT1			6/30/2015	
	Instrument Calibration Standard 4	D	50/100 ppm		10-117YPY1			6/30/2015	
↓	Solution - Optimal Blank	E	—	Perkin Elmer Pure Plus	1-76KFX1			6/30/2015	↓
4/4/14	Magnesium 2°	MSST-140404A	10,000 ppm	Ultra Scientific	R00244	4/4/14	4/4/14	4/30/2020	MI
STF 5/28/14 4/5/28/14	Bismuth 1000ppm (1°)	MSST-140528A	1000ppm	High Purity Standards	1404513	5/28/14	5/28/14	11/27/2015	STF
5/28/14	Lithium 1000ppm (1°)	MSST-140528B	1000ppm		1231934	5/28/14	5/28/14	11/27/2015	STF
5/30/14	Calcium (Ca) 1°	MSST-140530A	10000 ppm	High Purity Standards	1404943	5/30/14	6/13/14	11/23/15	STF
	Iron (Fe) 1°	B	10000ppm		1324617		6/16/14	11/23/15	STF
	Magnesium (Mg) 1°	C	10,000ppm		1409813		6/13/14	11/23/15	STF
	Strontium (Sr) 1°	D	1000ppm		1401301		6/13/14	11/23/15	STF
6/3/14	Magnesium (Mg) 2°	MSST-140603A	10,000ppm	Ultra Scientific	R00244	6/3/14	STF 6/13/14	4/30/2020	STF
6/11/14	Copper	MSST-140611A	1000ppm	High Purity Standards	1403501	6/11/14	6/12/14	12-5-15	MC
	Cobalt	B	1000ppm		1303712				
	Barium	C			1323402				
	Silver	D			1401302				

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/15/15	Strontium 1°	MSST-150115D	1000 ppm	High Purity Stds	1412501	1/15/15	2/10/15	6/10/16	MEJ
↓	Scandium	↓ E	1000 ppm m 1/15/15	↓	1414317	↓	1/20/15	↓	↓
↓	Yttrium	↓ F	↓	↓	1423204	↓	1/20/15	↓	↓
1/12/15	Arsenic 2°	MISS-150112A	1000 ppm	Ultra Scientific	R005993	1/12/15		9/30/2020	MEJ
↓	Copper 2°	↓ B	↓	↓	BH02515 ~~RF058487~~ m 1/14/15	↓		6/30/2021	↓
↓	Antimony 2°	↓ C	↓	↓	RM058187	↓		9/30/2021	↓
↓	Chromium 2°	↓ D	↓	↓	BH013V5	↓	1/30/15	12/31/2019	↓
↓	Molybdenum 2°	↓ E	↓	↓	RM07695	↓	1/30/15	1/31/2022	↓
↓	Thallium 2°	↓ F	↓	↓	BH02110	↓	1/30/15	7/31/2020	↓
3/9/15	Chromium 1°	MSST-150309A	1000 ppm	High Purity Standards	1320011	3/9/15	3/9/15	9/3/16	MEJ
↓	Molybdenum 1°	↓ B	↓	↓	1420609	↓	↓	↓	↓
↓	Boron 1°	↓ C	5000	↓	1421703	↓	↓	↓	↓
3/10/15	Mercury 1°	MSST-150310A	1000 ppm	High Purity Standards	14343	3/10/15	4/5/15	9/10/16	[illegible]
5/14/15	Cadmium 2°	MSST-150514A	1000 ppm	Ultra Scientific	CL-2608	5/14/15		8/31/21	[illegible]
5/14/15	Zinc 2°	MSST-150514B	1000 ppm	Ultra Scientific	TU0108	5/14/15		2/28/21	[illegible]
5/18/15	Manganese 1°	MSST-150518A	10000 ppm	High Purity Standards	1413613	5/18/15	6/1/15	11/8/16	[illegible]
6/15/15	Barium 2°	MSST-150615A	1000 ppm	Ultra Scientific	CM-2389	6/15/15	6/15/15	6/30/22	MJ
↓	Lead 2°	↓ B	↓	↓	CL-4072	↓	↓	11/30/21 ~~10/16/22~~ m 6/16/15	↓
↓	Silicon 2°	↓ C	10000	↓	CL-2940	↓	↓	8/31/2021	↓

Advanced Technology Laboratories-Las Vegas 3151-3153 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax 702-307-2691

ICP Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
6/15/15	tin 2°	MSST-150615D	1000 ppm	CPI	13H086	6/15/15		12/15/16	MI
	Titanium 2°	↓ E	↓	↓	14K176	↓		↓	↓
7/2/15	Aluminum	MSST-150702A	10000 ppm	High Purity Standards	1516016	7/2/15	11/23/15	12/25/16	HSG
	Calcium	↓ B	↓	↓	1511140	↓	↓	↓	↓
	Magnesium	↓ C	↓	↓	1510445	↓	↓	↓	↓
7/17/15	Strontium 2°	MSST-150717A	1000	CPI	15F052	7/17/15	9/10/15	01/14/17	HSG
9/9/15	Selenium 2°	MSST-150909A	1000 ppm	Ultra Scientific	R00180	9/9/15	9/10/15	4/30/20	AA
9/23/15	Scandium primary	MSST-150923A	1000 ppm	High Purity Standards	1506438	9/23/15	9/28/15	3/17/17	AM
9/23/15	Yttrium primary	MSST-150923B	1000 ppm	High Purity Standards	1507112	9/23/15	9/28/15	3/17/17	AM
9/28/15	Lead secondary	MSST-150928A	1000 ppm	Ultra Scientific	CM-3389	9/28/15		7/3/22	AM
10/29/15	Calcium	MSST-151029A	10000 ppm	Ultra Scientific	CM-4634	10/29/15 ~~9/30/22~~	11/2/15	9/30/22	Am
10/29/15	Manganese	MSST-151029B	1000 ppm	Ultra Scientific	CM-2432	10/29/15	10/29/15	6/30/22	Am
10/29/15	Thallium	MSST-151029C	1000	Ultra Scientific	CM-1100	10/29/15		4/30/22	Am
11/10/15	Iron	MSST-151102A	10000 ppm	High Purity Standards	1524703	11/2/15	11/23/15	4/28/17	Am
11/10/15	Strontium	MSST-151102B	1000 ppm	High Purity Standards	1429002	11/2/15	↓	4/28/17	Am
11/10/15	Bismuth	MSST-151102C	1000 ppm	High Purity Standards	1404513	11/2/15	11/23/15	4/28/17	Am
11/10/15	Lithium	MSST-151102D	1000 ppm	High Purity Standards	1516729	11/2/15	↓	↓	
12/11/15	Titanium	MSST-151207A	1000 ppm	High purity standards	1510001	12/7/15	6/15/16	6/1/17	Am
12/11/15	Cadmium	MSST-151207B	1000 ppm	High purity standards	1512903	12/7/15	↓	6/1/17	Am

Advanced Technology Laboratories-Las Vegas 3151-3153 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax 702-307-2691

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
12/11/15	Arsenic	MSST-151207C	1000 ppm	High Purity Standards	1500712	12/7/15	12/15/15	6/1/18	Am
	Cobalt	MSST-151207D	1000 ppm		1425215	12/7/15		6/1/18	
	Zinc	MSST-151207E			1403401			6/1/17	
	Beryllium	MSST-151207F			1412111				
	Nickel	MSST-151207G			1512402				
	Barium	MSST-151207H			1431507				
	Antimony	-151207I			1520412				
	Copper	-151207J			1403501				
	Selenium	151207K			1427632				
	Silver	151207L			~~1527709~~ 1527902 Am 12/8/15				
	Tin	151207M			1516806				
	lead	151207N			1513919				
	Vanadium	151207O			1420604				
	Thallium	151207P			1523215				
	Silicon	151208Q			1528501				
	Potassium	151207R	10000 ppm		1512614				
	Sodium	151207S			1526616				
	Aluminum	151207T			1526032				
	Calcium	151207U			1527523				

Advanced Technology Laboratories-Las Vegas 3151-3153 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax 702-307-2691

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact	Initials
2/11/15	Magnesium	MSST-1512076	10000 ppm	High Purity Standards	1510445	12/7/15	6/5/15	6/1/17	Am
1/29/16	Boron (2°)	MSST-160129A	10000 ppm	Ultra Scientific ~~Ultra Grade~~ MI 1/29/16	[illegible]124A	1/29/16	2/1/16	12/31/21	MI
↓	Vanadium (2°)	MSST-160129B	10000 ppm	Ultra Scientific	[illegible]	1/29/16	2/1/16 ~~11/30/22~~ MI 2/1/16	11/30/22	MI
3/23/16	Boron (1°)	MSST-160323A	5000 ppm	High Purity Standards	15[illegible]	3/23/16	6/6/16	9/16/17	MI
↓	Scandium (1°)	↓ B	1000 ppm	↓	1604311	↓	3/23/16	↓	↓
↓	Yttrium (1°)	↓ C	↓	↓	1524022	↓	↓	↓	↓
4/20/16	Calcium (1°)	MSST-160420A	10000 ppm	High Purity Standards	1606907	4/20/16	5/23/16	10/18/17	MO
↓	Magnesium (1°)	↓ B	↓	↓	1531412	↓	5/3/16	↓	↓
↓	Aluminum (1°)	↓ C	↓	↓	1605734	↓	5/23/16	↓	↓
↓	Cadmium (1°)	↓ D	1000 ppm	↓	1582227	↓	6/6/16	↓	↓
↓	Boron (1°)	↓ E	5000 ppm	↓	1524418	↓		↓	↓
4/25/16	Magnesium (2°)	MSST-160425A	10000 ppm	Ultra Scientific	CM-4445	4/25/16	5/30/16	7/30/22	MO
↓	Chromium (2°)	↓ B	1000 ppm	↓	RO1377	4/25/16	↓	1/31/21	↓
5/30/16	Molybdenum (2°)	MSST-160530A MI 5/30/16	1000 ppm	Ultra Scientific	RM07695	5/30/16 ~~4/21/23~~ MO 5/30/16	5/30/16	1/31/23	MO
↓	Zinc (2°)	MSST-160530B	1000	↓	RM07777	↓	↓	8/31/22	↓
↓	Arsenic (2°)	MSST-160530C	1000	↓	CM-3990	↓	↓	8/31/22	↓
↓	Cadmium (2°)	MSST-160530D	↓	↓	RM-07888	↓	↓	8/31/21	↓
↓	Copper (2°)	MSST-160530E	↓	↓	CP-1013	↓	↓	4/30/23	↓
↓	Silver (2°)	MSST-160530F	↓	↓	CM-1594	↓	↓	5/31/22	↓

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
8/16	Tellurium (1°)	MSST-160608A	1000ppm	High Purity Standards	1528101	6/8/16	6/8/16	12/7/17	Am
8/16	Tellurium (2°)	MSST-160608B	1000ppm	CPI International	16D110	6/8/16	6/8/16	12/6/17	Am
29/16	Cobalt (2°)	MSST-160629A	1000 ppm	Ultra Scientific	T00692	6/29/16	7/1/16	7/31/21	MET
1/16	Gallium (2°)	MSST-160701A	1000 ppm	Ultra Scientific	CM-6089	7/1/16		12/31/22	MET
↓	Scandium (2°)	↓ B	↓	↓	CL-3201	7/1/16		9/30/2021	↓
5/16	Scandium (1°)	MSST-160705A	1000 ppm	High Purity Standards	16133333	7/5/16		12/28/17	MET
	Gallium (1°)	MSST-160705B	↓	↓	1517715	↓		12/28/17	↓
6/16	Molybdenum	MSST-160906A	1000ppm	High Purity Standards	1609722	9/6/16	9/6/16 MG 9/6/16	~~2/28/18~~ 2/28/18 MG 9/6/16	MG
	Chromium	MSST-160906B	1000ppm		1530127			2/28/18	
	Silver	MSST-160906C			1621829			2/28/18	
	Scandium	MSST-160906D			1613333			2/28/18	
	Yttrium	MSST-160906E			1620524			2/28/18	
	Magnesium	MSST-160906F	10,000ppm		1510445		12/6/16	2/28/18	
	Iron	MSST-160906G			1618214			2/28/18	
	Aluminum	MSST-160906H			1619320			2/28/18	
	Calcium	MSST-160906I			1620901			2/28/18	
9/30/16	Calcium	MSST-160930A	10000 ppm	Ultra Scientific	CP 4462	9/30/16	12/1/16	9/30/2023	MI
9/30/16 ↓	Bismuth	MSST-160931B	1000 ppm	↓	CP 4838	↓		10/31/2023	↓
20/16	~~Terms IS~~ Manganese	MSST-161020A	10000 ppm	High Purity Stds	1614132	10/20/16	11/09/16	4/19/18	MET

MA 10/20/16

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-140530A	Cerium - 10 ppm	10 ppm	High Purity Stds	1321107	5/3/14	11/4/14	5/23/2015		mi
2MSST-140530B	ICP-MS Internal Standard 1	10 ppm	↓	1333708	5/30/14	6/13/14	5/23/2015		mi
2MSST-140630A	ICP-MS Major Cations	50 ppm	ERA	111013	6/30/14	11/1/14	4/2016	~~Exp 11/1/16~~ 6/30/14	mi
2MSST ~~2MSS~~ mi 9/9/14 -140801A	ICP-MS Internal Standard 1	10 ppm	High Purity Stds	1333708	8/18/14	11/6/14	7/29/15		mi
2MSST-141025A	ICP-MS trace metals	10 ppm	ERA	170913	10/23/14	11/1/14	3/2016	~~Exp 11/1/15~~ 10/25/14	mi
2MSST-150310A	Mercury	1000 ppm	High Purity Stds	1434315	3/10/15	4/15/15	9/10/16		mi
2MSST-150413A	Tune Solution A tuning 1	multi-element analyte	Agilent	121-1047/1/2	4/13/15	4/13/15	7/31/16		mi
↓ B	↓ 2	↓	↓	↓	↓	↓	↓		↓
2MSST-150601A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	6/1/15	6/1/15	5/20/16		mi
2MSST-150907A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	9/7/15	9/7/15	9/29/16		mi
↓ B	Europium	1000 ppm	High Purity Std	1506202	↓	↓	1/7/17		↓
2MSST-151019A	Uranium - 1000 ppm	1000 ppm	High Purity Std	1410530	10/~~20~~ 19/15 mi 10/19/15	10/19/15	4/16/17		mi
2MSST-151207A	ICP-MS Internal Standard 1	10 ppm	High Purity Std.	1509020	12/7/15	4/1/16	12/1/16		Am
2MSST-151207B	Cerium	10 ppm	High Purity Std	1504927	12/7/15	5/3/16	7/7/16		mei
2MSST-151207C	ICP-MS Major Cations	50 ppm	ERA	140714	12/7/15	4/1/16	1/2017		mei
↓ D	ICP-MS Trace Metals	10 ppm	↓	351214	↓	↓	7/2017		↓
2MSST-160420A	ICPMS Internal Standard 1	10 ppm	High Purity Stds	19 1509020 mei 4/20/16	4/20/16	4/20/16	4/18/17		mei
2MSST-160906A	ICPMS Major Cations	50 ppm	ERA	140714	9/6/16	12/6/16	8/2017		MG
2MSST-160906B	ICPMS Trace Metals	10 ppm	ERA	201215	9/6/16	12/6/16	7/2018		MG

Advanced Technology Laboratories-Las Vegas
Logbook #1

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-160906C	Mercury	1000 ppm	High Purity Standard	1612621	9/6/16	9/12/16	2/28/16		MG
2MSST-161020A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	10/20/16	12/14/16	10/19/17		MG
2MSST-170103A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	1/3/17	1/7/17	12/27/17		MG
2MSST-170103B	Germanium	1000 ppm	High Purity Stds	1623822	1/3/17	1/7/17	6/27/18		MG

Advanced Technology Laboratories-Las Vegas
Logbool #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
9/6/16	LLICV / LLCCV Solution A	2MWST - 160906C	MSST - 151207N (Pb)	1000 ppm	1.0 ml
↓	↓	↓	2MSST - 151019A (U)	↓	0.5 ml
↓	↓	↓	* MSST - 150578A (Mn)	10000 ppm	0.05 ml
↓	↓	↓	MSST - 151207O (V)	1000 ppm	1.0 ml
↓	↓	↓	↓ E (Zn)	↓	10. ml
↓	↓	↓	MSST - 160420C (Al)	10000 ppm	1 ml
↓	↓	↓	MSST - 151102A (Fe)	↓↓	↓
↓	LLICV / LLCCV Working Solution	2MWST - 160906D	2MWST - 160906C	0.1/0.5/1.0/10 ppm	1 ml
↓	↓	↓	2MWST - 160801B	1/50 ppm	↓
↓	↓	↓	2MWST - 160606A	10 ppm	5 ml
9/12/16	Hg 500 ppb (1°)	2MWST - 160912A	2MSST - 160906C	1000 ppm	0.05 ml
↓	Hg 500 ppb (2°)	2MWST - 160912B	2MSST - 140113A	↓	↓
10/1/16	ICSA (100 ppm NaKCaMg)	2MWST - 161001A	2MWST - 160606A	1000 ppm	5 ml
10/1/16	ICSA (100 ppm NaKCaMg)	↓	MSST - 160420A/B (Cd)	10000 ppm	10 ml
↓	↓	↓	MSST - 151207R/S Na/K	↓	↓
10/12/16	Hg 500 ppb (1°)	2MWST - 161012A	2MSST - 160906C	1000 ppm	0.05 ml
↓	Hg 500 ppb (2°)	2MWST - 161012B	2MSST - 140113A	↓	↓
11/08/16	Hg 500 ppb (1°)	2MWST - 161108A	2MSST - 160906C	1000 ppm	0.05 ml
↓	Hg 500 ppb (2°)	↓ B	2MSST - 140113A	↓	↓
12/11/9/16	ICV / LCS / MS / MSD / LCSD Solution A	2MWST - 161109A	MSST - 160420D (Cd)	1000 ppm	~~100~~ 1.0 ml

MCT 11/9/16 MCT 11/9/16

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1 ppm	2.5% HNO_3	Omnitrace	55259	11/8/16	6/1/17		MET
↓	0.5 ppm	↓	↓	↓	↓	4/16/17		↓
↓	↓	↓	↓	↓	↓	11/8/16		↓
↓	1 ppm	↓	↓	↓	↓	6/1/17		↓
↓	10 ppm	↓	↓	↓	↓	↓		↓
↓	↓	↓	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	4/28/17		↓
1000 ml	0.1/0.5/1.0/10/50 ppb	1% HNO_3 0.5% HCl	Omnitrace	55259/55006	11/8/16	11/8/16		↓
↓	↓	↓	↓	↓	↓	2/1/17		↓
↓	50 ppb	↓	↓	↓	↓	12/6/16		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS ~~Baker~~ MT 9/16/16	56032/56120	10/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
1000 ml	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	55259/55006	12/6/16	12/6/16		MET
↓	100 ppm	1% HNO_3 0.5% HCl	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	10/1/17		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS	56032/56120	11/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
MT 11/8/16 100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS		12/08/16	2/28/18		MET
↓	↓	↓	↓		↓	3/31/19		↓
1000 ml	1/10 ppb	1% HNO_3, 0.5% HCl	Omnitrace	55259/55006	4/28/18 ~~11/8/16~~ ~~5/9/17~~ MET 11/9/16	10/18/17		MET

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc.
3731 W. Post Rd. Las Vegas NV 89118 Tel 702 307 2659 Fax 702 307 2691
83 of 101
Logbook #2
ICPMS &Hg WK Std Log
782

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	10V/LS/LSD/MS/MSD Solution A	2MSST-161109A	MSST-151207C (Ts)	1000 ppm	1 mL
			D (Co)		
			E (Zn)		
			F (Be)		
			G (Ni)		
			H (Ba)		
			J (Cu)		
			K (Se)		
			P (Th)		
			N (Pb)		
			O (V)		
			I (Sb)		
			MSST-160907A (Cr)		
			B (Mo)		
			MSST-160420A (Mn)	10000 ppm	
			MSST-151207B (Na)		
			I (K)		
			MSST-160420C (Al)		
			MSST-160420A (Ca)		
			MSST-160420B (Mg)		

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1/10 ppm	1% HNO_3 0.5% HCl	Omnitrace	55259/55000	4/28/17 ~~6/9/17~~ 11/9/16	10/18/17		MT
						6/1/17		
						10/28/18		
						4/19/18		
						6/1/17		
						10/18/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Logbook #2
ICPMS &Hg WK Std Log

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	ICV/LCS/MS/MSD/LCSD Solution A	2MUST-161109A	MSST-151102A (Fe)	10000 ppm	1 ml
	ICV 10/100 ppb	2MUST-161109B	2MUST-161109A	1/10 ppm	5 ml
			2MUST-160606D	1	
			F	1	
			2MUST-160501A	10/100	10 ml
			2MUST-~~1602~~ 160606A	10 ppm	5 ml
	LLICV/LLCW Solution A	2MUST-161109C	MOT 11/9/16 MSST-151207C (As)	1000 ppm	0.10 ml
			F (Be)		0.50 ml
			O (Co)		
			K (Se)		
			MSST-160906A (Mo)		
			MSST-151207L (Ag)		
			MSST-160420D (Cd)		
			MSST-151207I (Sb)		
			P (Tl)		
			MSST-160906B (Cr)		1.0 ml
			MSST-~~1~~151207G (Ni)		
			MOT 11/9/16 H (Ba)		
			J (Cu)		
			MSST-151207N (Pb)		

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1/10 ppm	1% HNO3 0.5% HCl	Omnitrace	55259/55000	4/28/17	4/28/17		MEJ
500 ml ~~ppm~~ MEJ 11/9/16	10/100 ppb				12/6/16	4/28/17		
						12/6/16		
						2/1/17		
	50 ppb	~~0.1 ppm~~ MEJ 11/9/16				12/6/16		
1000	0.1 ppm	~~0.1 ppm~~			4/16/17 ~~4/28/17~~ MEJ 11/9/16	6/1/~~17~~ 17 MEJ 11/9/16		
	0.5 ppm							
						2/28/18		
						6/1/17		
						10/18/17		
						6/1/17		
	1.0 ppm					2/28/18		
						6/1/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

1. Act | 2. InAct

INDEX

8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID
8558	NITRIC ACID
8557	HYDROGEN PER
8556	Silica Gel Cartrid
8555	Silica Gel Cartrid
8554	Silica Gel Cartrid
8553	Silica Gel Cartrid
8552	
8551	BOILING STONE
8543	NITRIC ACID
8542	NITRIC ACID
8541	Potassium Persu
8540	SAND
8539	SAND
8535	STANNOUS CHL

3487 Records

Bottle #: 8570 Chemical: HYDROCHLORIC ACID ☑ Active

Received:	8/15/2016	Expires:	12/6/2018
Synonyms:	MURIATIC ACID	Status:	New
Formula:	HCL	CAS #:	7647-01-0
Location:	Inorganics	Formula Wt:	36.46
8 Vendor:	OmniTrace	Lot #:	52250
		Catalog #	HX0607-4
		Conc/Purity:	34-37%
		Amount:	2.5
		Units:	L
		Notes:	

1 of 1. RECEIVED ON 8/15/16

Merck Index:

Add to Reagents database

1. Act | 2. InAct

INDEX

8736	NITRIC ACID
8735	Sodium Sulfate, A
8734	DICHLOROMETH
8733	DICHLOROMETH
8732	DICHLOROMETH
8731	DICHLOROMETH
8730	DICHLOROMETH
8729	DICHLOROMETH
8728	DICHLOROMETH
8727	DICHLOROMETH
8726	DICHLOROMETH
8725	DICHLOROMETH
8724	DICHLOROMETH
8723	DICHLOROMETH
8722	SODIUM HYDRO
8721	DICHLOROMETH
8720	DICHLOROMETH
8719	DICHLOROMETH
8718	DICHLOROMETH
8717	DICHLOROMETH
8716	DICHLOROMETH
8715	DICHLOROMETH
8714	DICHLOROMETH
8713	DICHLOROMETH
8712	DICHLOROMETH
8711	DICHLOROMETH

3487 Records

Bottle #: 8736 Chemical: NITRIC ACID ☑ Active

Received:	11/23/2016	Expires:	12/6/2018
Synonyms:		Status:	New
Formula:	HNO3	CAS #:	7697-37-2
Location:	Inorganics	Formula Wt:	63.01
8 Vendor:	Emd	Lot #:	56176
		Catalog #	NX0407-02
		Conc/Purity:	68.0-70.0%
		Amount:	2.5
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

1 of 2, Opened:12/6/16

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
/16	LLICV / LLCCV Solution A	2MUST-161109C	2MSST-151079A (U)	1000 ppm	0.5 ml
			MSST-161020A (Mn)	10000 ppm	0.05 ml
			MSST-151201Q (V)	1000 ppm	1.0 ml
			↓ E (Zn)	↓	10 ml
			MSST-160420C (Al)	10000 ppm	1.0 ml
	↓	↓	MSST-151102A (Fe)	↓	↓ ml
	LLICV / LLCCV Working Solution	2MUST-161109D	2MUST-161104C	0.1/0.5/1.0/10 ppm	1 ml
	LLICV / LLCCV Working Solution		2MUST-160801B	1/50 ppm	↓
↓	↓	↓	2MUST-160606A	10 ppm	5 ml
/16 MC 11/9/16	~~ICSAB~~ 11/9/16				
/16	MIX Internal Standard A	2MUST-161206A	2MSST-161020A	10000 ppb	500 ml
	↓	↓	↓	1000 ppm	5
	50 ppb IS in 2000 ml 1/20	2MUST-161206B	2MUST-161206A	~10 ppm	12.5
	ICAL (Si Sn Ti Sr B)	2MUST-161206C	MSST-151207Q	10000 ppm	10
			M		
			A		
			MSST-151102B	↓	↓
	↓	↓	MSST-160723A MC 12/6/16	5000	20
	ICAL (200/2000 ppb)	2MUST-161206D	2MSST-160906A/B	50/10 ppm	40/20
↓	↓	↓	2MUST-161206C	10/100	20 ml

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	0.5 ppm	1% H_2SO_3, 0.5% HCl ~~Omnitrace~~ MEJ 11/9/16	Omnitrace	53259/53009/6 MEJ 11/9/16	4/16/17	4/16/17		MEJ
						4/19/18		
	1 ppm					6/1/17		
	10 ppm							
						10/18/17		
						4/28/17		
1000 ml	0.1/1.0/0.5 10/50 ppb				12/6/16	4/16/17		
						2/1/17		
						12/6/16		
500 ml	~ 10 ppm				1/7/17	10/19/17		MEJ
						1/7/17		
2000	50 ppb	1% H_2SO_3 / 0.5% HCl	Omnitrace	53250/56176	MEJ 12/6/16 1/7/17	1/7/17		
1000	100				4/28/17	6/1/17		
	10							
						4/28/17		
						9/16/17		
1000	200/2000				1/7/17	7/2018, 8/2017		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/6/16	ICAL (200/2000 ppb)	2MWST-161206D	2MWST-161206A	10 ppm	5 ml
	ICV/LCS/LCSD/MS/MSD Solution C	2MWST-161206E	~~2~~ MSST-151207L (A) MT 12/6/16	10000 MT 12/6/16	1.0
	ICV/LCS/LCSD/MS/MSD Solution D	2MWST-161206F	2MSST-151019A (U)	↓	↓
	ICV	2MWST-161206G	2MWST-161109A	1/10 ppm	5 ml
	↓	↓	2MWST-160801A	↓	10
			2MWST-161206E		5
			↓ F	↓	↓
	↓	↓	2MWST-161206A	10 ppm	↓
	LLICV/LLCV Working Solution	2MWST-161206H	2MWST-161109C	0.1/0.5/1.0/10 ppm	1 ml
	↓	↓	2MWST-160801B	1/50 ppm	
	↓	↓	2MWST-161206A	10 ppm	5 ml
	ICSA	2MWST-161206I	MSST-160906F/~~G/H~~/I MT 12/6/16	10,000	10
	↓	↓	MSST-151207R/S		
	↓	↓	2MWST-161206A	10 ppm	5
	ICSAB	2MWST-161206J	MSST-160906F/I	10,000	10
	↓	↓	MSST-151207R/S	↓	↓
			2MWST-161206A	10	5
			2MSST-160906B	10/100	2 ml
↓	↓	↓	2MWST-161206C	↓	↓

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	52250/56174	1/7/17	1/7/17		MET
1000	1 ppm				6/6/17	6/1/17		
1000	1 ppm				4/16/17	4/16/17		
500	10/100				1/7/17	4/28/17		
						2/1/17		
						6/1/17		
						4/16/17		
	50					1/7/17		
1000	0.1/0.5/1.0 10/50 ppb				1/7/17	4/16/17		
						2/1/17		
	50 ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
	20/200					7/2018		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/5/16	Hg 500 ppb (2°)	2MWST-161203B	2MSST 140113A	1000 ppm	0.25 mL
1/7/17	Mix Internal Standard A	2MWST-170107A	2MSST-170103A	10000 ppm	500 mL
↓	↓	↓	↓ B	1000 ppm	5 mL
	50 ppb IS in 2000 mL H_2O	2MWST-170107B	2MWST-170107A	10 ppm	12.5 mL
	ICAL (200/2000 ppb)	2MWST-170107C	2MSST-160906A/B	50/10 ppm	40/20
	↓	↓	2MWST-161206C	10/100	20
	↓	↓	2MWST-170107A	10 ppm	5 mL
	ICV/LCS/LCSD/MS/MSD Solution B	2MWST-170107D	MSST-151207M (Sn)	1000 ppm	10 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	↓
	↓	↓	MSST-160129A (B)	10000	↓
	LLICV/LLCCV Solution B	2MWST-170107E	MSST-151207M (Sn)	1000 ppm	1 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	5 mL
	↓	↓	MSST-160129A (B)	10000	↓
	ICV (10/100 ppb)	2MWST-170107F	2MWST-161109A	1/10 100 ppm	5 mL
	↓	↓	2MWST-170107D	↓	10 mL
	↓	↓	2MWST-161206E	↓	5 mL
	↓	↓	2MWST-161206F	↓	
↓	↓	↓	~~2MSST~~ 2MWST-170107A	10 ppm	

MEI 1/7/17

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
100 ml	500 ppb	2% HNO_3 4% HCl	GR ACS	56032/56120	1/8/17	3/31/19		MEM
500 ml	~ 10 ppm				7/7/17	12/27/17		MEM
↓	↓					6/27/18		
2000 ml	50 ppb	~~2%~~ 0.5% HNO_3 ~~4%~~ HCl MEM 1/7/17	~~GR ACS~~ Omnitrace 1/7/17 MEM	56032/56120	7/7/17	7/7/17		
1000	200/2000				4/28/17	7/2018 / 8/2017		
	↓					4/28/17		
	50 ppb					7/7/17		
1000	10/100 ppm	2.5% HNO_3			6/1/17	6/1/17		
						12/31/21		
1000	1 ppm	2.5% HNO_3			6/1/17	6/1/17		
	50 ppm					12/31/21		
500	10/100 ppb	1% HNO_3, 0.5% HCl			4/16/17	4/28/17		
						6/1/17		
						6/6/17		
						4/16/17		
						7/7/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
1/7/17	LLCV/ LLCCV Working Solution	2MWST-170107 G	2MWST-1601109C MET 1/7/17	0.1/0.5/1/10 ppm	1 ml
↓	↓	↓	2MWST-170107 E	1/50	↓
↓	↓	↓	2MWST-170107 A	10	5 ml
↓	ICSA	2MWST-170107 H	MSST-160906 F/I	10000 ppm	10
↓	↓	↓	MSST-151207 R/S		↓
↓	↓	↓	2MWST-170107 A	10 ppm	5
↓	ICSAB	2MWST-170107 I	MSST-~~170107A~~ 160906 F/I	10000 ppm	10
↓	↓	↓	MET 1/7/17 MSST-151207 R/S		↓
↓	↓	↓	2MWST-170107 H	10 ppm	5
↓	↓	↓	2MSST-160906 B	10/100	2 ml
↓	↓	↓	2MWST-161206 C	↓	↓

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
1000	0.1/0.5/1.0 10/50ppb	0.5% HCl, 1% HNO3	Omnitrace	5C032/5C120	4/16/17	4/16/17		MEI
↓	↓	↓	↓	↓	↓	6/1/17		↓
↓	↓	↓	↓	↓	↓	7/7/17		↓
1000	100 ppm	↓	↓	↓	6/1/17	2/28/18		↓
↓	↓	↓	↓	↓	↓	6/1/17		↓
↓	50 ppb	↓	↓	↓	↓	7/7/17		↓
1000	100 ppm	↓	↓	↓	4/28/17	2/28/18		↓
↓	↓	↓	↓	↓	↓	6/1/17		↓
↓	50 ppm	↓	↓	↓	↓	7/7/17		↓
↓	20/200	↓	↓	↓	↓	7/20/8		↓
↓	↓	↓	↓	↓	↓	4/28/17		↓

* Working std expiration date must not exceed the manufacturer's expiration date.

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022998

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022998

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N022998-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for all samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022998
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022998-001A	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-001B	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-001C	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-002A	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-002B	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-002C	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-003A	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-003B	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-003C	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-004A	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-004B	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-004C	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-005A	MW-702-Q117	Groundwater	2/7/2017 3:15:00 PM	2/7/2017	2/21/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	21	0.33	1.0		µg/L	5	2/11/2017 09:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	2/19/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	4.3	0.066	0.20		µg/L	1	2/11/2017 10:22 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	4.0	0.019	1.0		µg/L	1	2/19/2017 10:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170211A** QC Batch: **R113447**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	2/11/2017 12:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/19/2017 10:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	120	1.3	4.0		µg/L	20	2/11/2017 11:53 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	110	0.019	1.0		µg/L	1	2/19/2017 11:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170211A**	QC Batch: **R113447**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/11/2017 10:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113447** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **PBW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113447** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **LCSW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID **N022998-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.076	1.0	25.00	20.55	98.1	90	110				

Sample ID **N022998-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.094	1.0	25.00	20.55	98.2	90	110	45.08	0.0399	20	

Sample ID **N022998-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.404	0.20						4.345	1.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022998-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.366	0.20	5.000	4.345	100	90	110				

Sample ID **N022998-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.076	4.0	100.0	120.1	95.0	90	110				

Sample ID **N022998-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Sample ID **N022998-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023002-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023002-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID **N023014-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60469.000	1000	25000	35490	99.9	90	110				

Sample ID **N023014-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60829.500	1000	25000	35850	99.9	90	110				

Sample ID **N023014-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	274.040	4.0	100.0	173.9	100	90	110				

Sample ID **N023014-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.470	20	500.0	533.6	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61257	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	PBW	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-61257	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	LCSW	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID	N022998-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID	N022998-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.89	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Molybdenum	200	0.19	2.5		µg/L	5	2/19/2017 09:44 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 09:44 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	2/19/2017 10:40 PM
Manganese	380	0.28	2.5		µg/L	5	2/19/2017 10:46 PM
Molybdenum	26	0.19	2.5		µg/L	5	2/19/2017 10:46 PM
Selenium	1.2	0.028	0.50		µg/L	1	2/21/2017 04:05 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	3.8	0.12	0.50		µg/L	5	2/19/2017 10:57 PM
Manganese	1000	1.4	12		µg/L	25	2/20/2017 01:42 PM
Molybdenum	65	0.19	2.5		µg/L	5	2/19/2017 10:57 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 10:57 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	11	0.12	0.50		µg/L	5	2/19/2017 11:08 PM
Manganese	24	0.056	0.50		µg/L	1	2/19/2017 11:02 PM
Molybdenum	78	0.19	2.5		µg/L	5	2/19/2017 11:08 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 11:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us:
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P 702.307.2659 F 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P 562.219.7435 F 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Blaes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville CA 95661	Email to: mblaes@[illegible]x.com	P.O. #
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: / Date: 2/7/17	Sampled By: Alexis McIntyre		
I hereby authorize ASSET Labs to perform the tests listed below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: / Date: 2/8/17		
Project Number: RC000753.801A			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number		
Global ID		Regulatory		6. Method of Cooling: ICE		
		Specify State: CA		Sample Temp: 2.1°C		

Courier: LAB
Tracking No:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF), As, HNO3 500 mL poly	Metals Dissolved (6020AFF), Mo, HNO3 500 mL poly	Metals Dissolved (6020AFF), Se, HNO3 500 mL poly	Metals Dissolved (6020AFF), Cr, HNO3 500 mL poly	Metals Dissolved (6020AFF), Mn, HNO3 500 mL poly	Nitrate/Nitrite (SM4500NO3), Nitrate, H2SO4 125 mL poly	Calcium, Dissolved (EPA 200.7), HNO3 500 mL poly	IRON, Dissolved (EPA 200.7), HNO3 500 mL poly	Sodium, Dissolved (EPA 200.7) HNO3 500 mL poly	Boron, Dissolved (EPA 200.7), HNO3 500 mL poly	Magnesium, Dissolved (EPA 200.7), HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, (SM2320B), Total as CaCO3 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Specific conductance 120.1 1000 mL poly	pH (SM4500-HB) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022998 - 01	MW-46-175-Q117	02/07/17	0941		X			X	X	X		X														E	3	P	BNS	
2	- 02	MW-58BR-Q117	02/07/17	1127		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-64BR-Q117	02/07/17	1300		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-72-080-Q117	02/07/17	1440		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-702-Q117	02/07/17	1515		X																					E	1	P	BNS	
6																															
7																															
8																															
9																															
10																															
11																															
12																															
13																															
14																															

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Jordan Crow	2/7/17 1015	[illegible]	2/7/17 1615
[illegible]	2/7/17 2350	[illegible]	2/7/17 2350
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for** Title 22 metals.Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na.

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis: Less than 24 Hrs=200%, Next Day=100%, 2 Workdays=50%, 3 Workdays=35%, 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total invoice amount
5. Trip Blanks and Equipment Blanks are billable (unless)
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analyses, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2017	Workorder:	N022998
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/9/2017

Reviewed By: 2/15/17

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022998

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022998-001A	MW-46-175-Q117	2/7/2017 9:41:00 AM	2/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-001B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-001C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-002A	MW-58BR-Q117	2/7/2017 11:27:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-002B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-002C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-003A	MW-64BR-Q117	2/7/2017 1:00:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-003B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-003C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-004A	MW-72-080-Q117	2/7/2017 2:40:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-004B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-004C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-005A	MW-702-Q117	2/7/2017 3:15:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022998

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022998-006A	FOLDER	2/21/2017	2/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.801A

ASSET Laboratories Work Order:
N022998

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS
RAW DATA

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022998

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-25
Sample Receiving Items	26-30
List of Analysts	31
Raw Data	
EPA 218.6	32-192
SM 4500-NO3F	193-218
EPA 6020_Dissolved	219-666

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022998

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022998

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N022998-003 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for all samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N022998
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022998-001A	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-001B	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-001C	MW-46-175-Q117	Groundwater	2/7/2017 9:41:00 AM	2/7/2017	2/21/2017
N022998-002A	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-002B	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-002C	MW-58BR-Q117	Groundwater	2/7/2017 11:27:00 AM	2/7/2017	2/21/2017
N022998-003A	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-003B	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-003C	MW-64BR-Q117	Groundwater	2/7/2017 1:00:00 PM	2/7/2017	2/21/2017
N022998-004A	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-004B	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-004C	MW-72-080-Q117	Groundwater	2/7/2017 2:40:00 PM	2/7/2017	2/21/2017
N022998-005A	MW-702-Q117	Groundwater	2/7/2017 3:15:00 PM	2/7/2017	2/21/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	21	0.33	1.0		µg/L	5	2/11/2017 09:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	18	0.019	1.0		µg/L	1	2/19/2017 09:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	4.3	0.066	0.20		µg/L	1	2/11/2017 10:22 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	4.0	0.019	1.0		µg/L	1	2/19/2017 10:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	2/11/2017 12:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/19/2017 10:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate Analyst: **RAB**							
Hexavalent Chromium	120	1.3	4.0		µg/L	20	2/11/2017 11:53 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017** Analyst: **CEI**							
Chromium	110	0.019	1.0		µg/L	1	2/19/2017 11:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/11/2017 10:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113447** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **PBW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113447** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **LCSW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID **N022998-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.076	1.0	25.00	20.55	98.1	90	110				

Sample ID **N022998-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.094	1.0	25.00	20.55	98.2	90	110	45.08	0.0399	20	

Sample ID **N022998-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.404	0.20						4.345	1.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022998-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.366	0.20	5.000	4.345	100	90	110				

Sample ID **N022998-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.076	4.0	100.0	120.1	95.0	90	110				

Sample ID **N022998-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Sample ID **N022998-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023002-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023002-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID **N023014-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60469.000	1000	25000	35490	99.9	90	110				

Sample ID **N023014-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60829.500	1000	25000	35850	99.9	90	110				

Sample ID **N023014-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	274.040	4.0	100.0	173.9	100	90	110				

Sample ID **N023014-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.470	20	500.0	533.6	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.89	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Molybdenum	200	0.19	2.5		µg/L	5	2/19/2017 09:44 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 09:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	2/19/2017 10:40 PM
Manganese	380	0.28	2.5		µg/L	5	2/19/2017 10:46 PM
Molybdenum	26	0.19	2.5		µg/L	5	2/19/2017 10:46 PM
Selenium	1.2	0.028	0.50		µg/L	1	2/21/2017 04:05 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	3.8	0.12	0.50		µg/L	5	2/19/2017 10:57 PM
Manganese	1000	1.4	12		µg/L	25	2/20/2017 01:42 PM
Molybdenum	65	0.19	2.5		µg/L	5	2/19/2017 10:57 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 10:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q117
Lab Order:	N022998	**Collection Date:**	2/7/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022998-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	11	0.12	0.50		µg/L	5	2/19/2017 11:08 PM
Manganese	24	0.056	0.50		µg/L	1	2/19/2017 11:02 PM
Molybdenum	78	0.19	2.5		µg/L	5	2/19/2017 11:08 PM
Selenium	ND	0.14	2.5		µg/L	5	2/19/2017 11:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

Contact us:
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P 702.307.2659 F 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P 562.219.7435 F 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client	Arcadis
Address	1410 Rocky Ridge Dr # 330
Address	Roseville CA 95661
Phone	916-786-3302
Fax	
Submitted By	Alexis McIntyre
Title	Geologist 1
Signature	
Date	2/7/17
Project Name	PG&E Topock - GMP
Project Number	RC000753.801A

I hereby authorize ASSET Labs to perform the tests listed below.

Report to	Dan Bush
Company	Arcadis
Email	dan.bush@arcadis-us.com; Alexis.McIntyre@arcadis.com
Address	1410 Rocky Ridge Dr # 330 Roseville CA 95661
Phone	916-786-3302
Fax	
Sampled By	Alexis McIntyre
Signature	
Date	2/8/17

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Bill to	Marty Blides
Address	
Address	
Email to	mblides@quanox.com
Phone	949-727-1400, ext 200
P O #	
Fax	

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify	RWQCB
Global ID	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State	CA

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling	ICE	
Sample Temp	2.1°C	
Courier	LAB	
Tracking No		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4 OH	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4 OH	Metals Dissolved (6020AFF), As, HNO3	Metals Dissolved (6020AFF), Mo, HNO3	Metals Dissolved (6020AFF), Se, HNO3	Metals Dissolved (6020AFF), Cr, HNO3	Metals Dissolved (6020AFF), Mn, HNO3	Nitrate/Nitrite (SM4500NO3), Nitrate, H2SO4	Calcium, Dissolved (EPA 200.7), HNO3	IRON, Dissolved (EPA 200.7), HNO3	Sodium, Dissolved (EPA 200.7) HNO3	Boron, Dissolved (EPA 200.7), HNO3	Magnesium, Dissolved (EPA 200.7), HNO3	Chloride, E300	Alkalinity, (SM2320B), Total as CaCO3	TDS, SM2540C	Bromide, E300	Sulfate, E300	Specific conductance 120.1	pH (SM4500-HB)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	2 X 250 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	125 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly							
1	N022998 - 01	MW-46-175-Q117	02/07/17	0941		X			X	X	X		X															E	3	P	BNS	
2	- 02	MW-58BR-Q117	02/07/17	1127		X		X	X	X	X	X	X															E	3	P	BNS	
3	- 03	MW-64BR-Q117	02/07/17	1300		X		X	X	X	X	X	X															E	3	P	BNS	
4	- 04	MW-72-080-Q117	02/07/17	1440		X		X	X	X	X	X	X															E	3	P	BNS	
5	- 05	MW-702-Q117	02/07/17	1515		X																						E	1	P	BNS	
6																																
7																																
8																																
9																																
10																																
11																																
12																																
13																																
14																																

Relinquished by (Signature and Printed Name)	Date/Time
Sorrun Crow	2/7/17 1015
Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/7/17 2350
Relinquished by (Signature and Printed Name)	Date/Time

Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/7/17 1615
Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/7/17 2350
Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:

Run analysis for** Title 22 metals.Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na.

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs=200% Next Day=100% 2 Workdays=50% 3 Workdays=35% 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total invoice amount
5. Trip Blanks and Equipment Blanks are billable (unless)
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analyses, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	$(NH_4)_2SO_4/NH_4OH$	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2017	Workorder:	N022998
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/9/2017

Reviewed By: 2/15/17

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022998

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022998-001A	MW-46-175-Q117	2/7/2017 9:41:00 AM	2/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-001B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-001C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-002A	MW-58BR-Q117	2/7/2017 11:27:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-002B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-002C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-003A	MW-64BR-Q117	2/7/2017 1:00:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-003B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-003C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-004A	MW-72-080-Q117	2/7/2017 2:40:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022998-004B			2/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022998-004C			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022998-005A	MW-702-Q117	2/7/2017 3:15:00 PM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022998

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022998-006A	FOLDER	2/21/2017	2/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022998**

NAME	TEST METHOD
Claire Ignacio	EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113447
ASSET #: N022998

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/14/2017

2nd Level Reviewer 2/20/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N022998-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 4.1108 * 5$$

$$Cr^{+6}, \mu g/L = 20.55$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 21}$$

rba **2/14/2017**

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:32 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:43 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/11/17 8:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/11/17 9:02 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/11/17 9:11 AM	Reported
15	MB-R113447	MBLK	1	Hexavalent Chromium	02/11/17 9:21 AM	Reported
16	LCS-R113447	LCS	1	Hexavalent Chromium	02/11/17 9:30 AM	Reported
17	N022998-001A	SAMP	5	Hexavalent Chromium	02/11/17 9:52 AM	Reported
18	N022998-001AMS	MS	5	Hexavalent Chromium	02/11/17 10:03 AM	Reported
19	N022998-001AMSD	MSD	5	Hexavalent Chromium	02/11/17 10:12 AM	Reported
20	N022998-002A	SAMP	1	Hexavalent Chromium	02/11/17 10:22 AM	Reported
21	N022998-002ADUP	DUP	1	Hexavalent Chromium	02/11/17 10:31 AM	Reported
22	N022998-002AMS	MS	1	Hexavalent Chromium	02/11/17 10:40 AM	Reported
23	N022998-005A	SAMP	1	Hexavalent Chromium	02/11/17 10:50 AM	Reported
24	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 10:59 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/11/17 11:09 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:18 AM	Not Reported
27	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:42 AM	Reported
28	N022998-004A	SAMP	20	Hexavalent Chromium	02/11/17 11:53 AM	Reported
29	N022998-004AMS	MS	20	Hexavalent Chromium	02/11/17 12:02 PM	Reported
30	N022998-003A	SAMP	1	Hexavalent Chromium	02/11/17 12:11 PM	Not Reported
31	N022998-003AMS	MS	1	Hexavalent Chromium	02/11/17 12:21 PM	Not Reported
32	N022998-003A	SAMP	5	Hexavalent Chromium	02/11/17 12:30 PM	Reported
33	N022998-003AMS	MS	5	Hexavalent Chromium	02/11/17 12:40 PM	Reported
34	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:08 PM	Reported
35	N023002-005A	SAMP	1	Hexavalent Chromium	02/11/17 1:24 PM	Reported
36	N023002-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:35 PM	Reported
37	N023002-006A	SAMP	1	Hexavalent Chromium	02/11/17 1:44 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/11/17 1:54 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/11/17 2:04 PM	Reported
40	N023002-006AMS	MS	1	Hexavalent Chromium	02/11/17 2:13 PM	Reported
41	N023014-001A	SAMP	5000	Hexavalent Chromium	02/11/17 2:22 PM	Reported
42	N023014-001AMS	MS	5000	Hexavalent Chromium	02/11/17 2:32 PM	Reported
43	N023014-002A	SAMP	5000	Hexavalent Chromium	02/11/17 2:41 PM	Reported
44	N023014-002AMS	MS	5000	Hexavalent Chromium	02/11/17 2:51 PM	Reported
45	N023014-003A	SAMP	20	Hexavalent Chromium	02/11/17 3:00 PM	Not Reported
46	N023014-003AMS	MS	20	Hexavalent Chromium	02/11/17 3:10 PM	Not Reported
47	N023014-004A	SAMP	20	Hexavalent Chromium	02/11/17 3:19 PM	Reported
48	N023014-004AMS	MS	20	Hexavalent Chromium	02/11/17 3:29 PM	Reported
49	N023030-001A	SAMP	10	Hexavalent Chromium	02/11/17 3:45 PM	Not Reported

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCV-4	CCV1	1	Hexavalent Chromium	02/11/17 3:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/11/17 4:06 PM	Reported
52	N023014-003A	SAMP	100	Hexavalent Chromium	02/11/17 4:15 PM	Reported
53	N023014-003AMS	MS	100	Hexavalent Chromium	02/11/17 4:25 PM	Reported
54	N023030-001A	SAMP	1	Hexavalent Chromium	02/11/17 4:34 PM	Reported
55	N023062-002A	SAMP	10	Hexavalent Chromium	02/11/17 4:48 PM	Not Reported
56	N023030-001A	SAMP	5	Hexavalent Chromium	02/11/17 5:06 PM	Not Reported
57	N023062-002A	SAMP	1	Hexavalent Chromium	02/11/17 5:24 PM	Reported
58	N023063-001A	SAMP	1	Hexavalent Chromium	02/11/17 5:36 PM	Not Reported
59	N023030-001AMS	MS	5	Hexavalent Chromium	02/11/17 5:45 PM	Not Reported
60	N023030-001AMS	MS	1	Hexavalent Chromium	02/11/17 5:58 PM	Reported
61	N023063-001A	SAMP	50	Hexavalent Chromium	02/11/17 6:09 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/11/17 6:18 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:28 PM	Not Reported
64	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Feb/17 19:22:17**
No. of Injections:	**67**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/11/2017 08:32	Finished	
11	BLANK	2	1000	Unknown		02/11/2017 08:43	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/11/2017 08:53	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/11/2017 09:02	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/11/2017 09:11	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/11/2017 09:21	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/11/2017 09:30	Finished	LCS, IWST-161114D
17	N022998-001A,SAMF	9	1000	Unknown		02/11/2017 09:52	Finished	SAMP, 2>10mL
18	N022998-001AMS,MS	10	1000	Unknown		02/11/2017 10:03	Finished	MS (5ppb), IWST-161114D,2>
19	N022998-001AMSD,M	11	1000	Unknown		02/11/2017 10:12	Finished	MSD (5ppb), IWST-161114D,2
20	N022998-002A,SAMF	12	1000	Unknown		02/11/2017 10:22	Finished	SAMP, 10mL
21	N022998-002ADUP,D	13	1000	Unknown		02/11/2017 10:31	Finished	DUP, 10mL
22	N022998-002AMS,MS	14	1000	Unknown		02/11/2017 10:40	Finished	MS (5ppb), IWST-161114D,10
23	N022998-005A,SAMF	15	1000	Unknown		02/11/2017 10:50	Finished	SAMP, 10mL
24	N022998-005AMS,MS	16	1000	Unknown		02/11/2017 10:59	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/11/2017 11:09	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:18	Finished	CCB R170123B
27	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:42	Finished	CCB R170123B
28	N022998-004A,SAMF	19	1000	Unknown		02/11/2017 11:53	Finished	SAMP, 0.5>10mL
29	N022998-004AMS,MS	20	1000	Unknown		02/11/2017 12:02	Finished	MS (5ppb), IWST-161114D,0.5
30	N022998-003A,SAMF	21	1000	Unknown		02/11/2017 12:11	Finished	SAMP, 10mL
31	N022998-003AMS,MS	22	1000	Unknown		02/11/2017 12:21	Finished	MS (1ppb), IWST-161114D,10
32	N022998-003A,SAMF	23	1000	Unknown		02/11/2017 12:30	Finished	SAMP, 2>10mL
33	N022998-003AMS,MS	24	1000	Unknown		02/11/2017 12:40	Finished	MS (1ppb), IWST-161114D,2>
34	N022998-005AMS,MS	26	1000	Unknown		02/11/2017 13:08	Finished	MS (1ppb), IWST-161114D,10
35	N023002-005A,SAMF	28	1000	Unknown		02/11/2017 13:24	Finished	SAMP, 10mL
36	N023002-005AMS,MS	29	1000	Unknown		02/11/2017 13:35	Finished	MS (1ppb), IWST-161114D,10
37	N023002-006A,SAMF	30	1000	Unknown		02/11/2017 13:44	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/11/2017 13:54	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/11/2017 14:04	Finished	CCB R170112D
40	N023002-006AMS,MS	33	1000	Unknown		02/11/2017 14:13	Finished	MS (1ppb), IWST-161114D,10
41	N023014-001A,SAMF	34	1000	Unknown		02/11/2017 14:22	Finished	SAMP, 0.002>10mL
42	N023014-001AMS,MS	35	1000	Unknown		02/11/2017 14:32	Finished	MS (5ppb), IWST-161114D,0.0
43	N023014-002A,SAMF	36	1000	Unknown		02/11/2017 14:41	Finished	SAMP, 0.002>10mL
44	N023014-002AMS,MS	37	1000	Unknown		02/11/2017 14:51	Finished	MS (5ppb), IWST-161114D,0.0
45	N023014-003A,SAMF	38	1000	Unknown		02/11/2017 15:00	Finished	SAMP, 0.5>10mL
46	N023014-003AMS,MS	39	1000	Unknown		02/11/2017 15:10	Finished	MS (5ppb), IWST-161114D,0.5
47	N023014-004A,SAMF	40	1000	Unknown		02/11/2017 15:19	Finished	SAMP, 0.5>10mL
48	N023014-004AMS,MS	41	1000	Unknown		02/11/2017 15:29	Finished	MS (5ppb), IWST-161114D,0.5
49	N023030-001A,SAMF	43	1000	Unknown		02/11/2017 15:45	Finished	SAMP, 1>10mL
50	CCV-4,CCV1,1,	44	1000	Unknown		02/11/2017 15:56	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	45	1000	Unknown		02/11/2017 16:06	Finished	CCB R170112D
52	N023014-003A,SAMF	46	1000	Unknown		02/11/2017 16:15	Finished	SAMP,0.1>10mL
53	N023014-003AMS,MS	47	1000	Unknown		02/11/2017 16:25	Finished	MS (5ppb), IWST-161114D,0.1
54	N023030-001A,SAMF	48	1000	Unknown		02/11/2017 16:34	Finished	SAMP, 10mL
55	N023062-002A,SAMF	50	1000	Unknown		02/11/2017 16:48	Interrupted	SAMP, 1>10mL
56	N023030-001A,SAMF	1	1000	Unknown		02/11/2017 17:06	Finished	SAMP, 2>10mL
57	N023062-002A,SAMF	4	1000	Unknown		02/11/2017 17:24	Finished	SAMP, 10mL
58	N023063-001A,SAMF	5	1000	Unknown		02/11/2017 17:36	Finished	SAMP, 10mL
59	N023030-001AMS,MS	6	1000	Unknown		02/11/2017 17:45	Finished	MS (5ppb), IWST-161114D,2>
60	N023030-001AMS,MS	7	1000	Unknown		02/11/2017 17:58	Finished	MS (5ppb), IWST-161114D,10

61	N023063-001A,SAMP	8	1000	Unknown		02/11/2017 18:09	Finished	SAMP,0.2>10mL
62	CCV-5,CCV,1,	9	1000	Unknown		02/11/2017 18:18	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	10	1000	Unknown		02/11/2017 18:28	Finished	CCB R170123B
64	CCB-5,CCB,1,	12	1000	Unknown		02/11/2017 18:42	Finished	CCB R170123B
65	SHUTDOWN	24	1000	Unknown		02/11/2017 18:59	Finished	
66	Eluent: R170209B	25	1000	Unknown		n.a.	Finished	Eluent
67	PCR: R170209C	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/7/17
Time Prepared: 0820H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLW-161012A
NH4OH + NH4SO4 eluent: M170207A
NH4OH + NH4SO4 buffer: R0123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M23003-021D	8.15	9.29			0.2ml (10ml PV)	sample
2)							
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/8/17
Time Prepared: 0941H
Prepared By: NBA

slope: 97.8%
pH 4: 4.00 @22.1°C
7: 7.00 @22.1°C
10: 10.03 @22.2°C
LLS: 7.00 @22.2°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLW-161012A
NH4OH + NH4SO4 eluent: R170209B
NH4OH + NH4SO4 buffer: M170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M022998-001A	9.56	–	250mL	~250mL		M170123B
2)	2A	9.61	–				
3)	3A	9.58	–				
4)	4A	9.62	–				
5)	5A	9.69	–				
6)	M022999-1A	9.46	–				
7)	2A	9.48	–				
8)	3A	9.52	–				
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

nba 2/14/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ICV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.058	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.088	0.20	5.000	0	102	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.241	0.20	10.00	0	102	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ICB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.215	
CCV-3	4.206	
CCV-4	4.206	
CCV-5	4.206	
Average	4.208	
Actual RT Window	4.128 - 4.288	
Applied RT Window	4.008 - 4.408	
MB-R113447	N.A.	N.A.
LCS-R113447	4.206	PASS
N022998-001A	4.148	PASS
N022998-001AMS	4.156	PASS
N022998-001AMSD	4.148	PASS
N022998-002A	4.065	PASS
N022998-002ADUP	4.065	PASS
N022998-002AMS	4.065	PASS
N022998-005A	N.A.	N.A.
N022998-005AMS	4.215	PASS
N022998-004A	4.198	PASS
N022998-004AMS	4.198	PASS
N022998-003A	N.A.	N.A.
N022998-003AMS	3.915	FAIL
N022998-003A	N.A.	N.A.
N022998-003AMS	4.165	PASS
N022998-005AMS	4.206	PASS
N023002-005A	N.A.	N.A.
N023002-005AMS	4.215	PASS
N023002-006A	N.A.	N.A.
N023002-006AMS	4.206	PASS
N023014-001A	4.206	PASS
N023014-001AMS	4.206	PASS
N023014-002A	4.206	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.215	
CCV-3	4.206	
CCV-4	4.206	
CCV-5	4.206	
Average	4.208	
Actual RT Window	4.128 - 4.288	
Applied RT Window	4.008 - 4.408	
N023014-002AMS	4.206	PASS
N023014-003A	4.206	PASS
N023014-003AMS	4.206	PASS
N023014-004A	4.206	PASS
N023014-004AMS	4.206	PASS
N023030-001A	4.323	PASS
N023014-003A	4.206	PASS
N023014-003AMS	4.206	PASS
N023030-001A	4.190	PASS
N023062-002A	4.123	PASS
N023030-001A	4.681	FAIL
N023062-002A	4.198	PASS
N023063-001A	4.190	PASS
N023030-001AMS	4.206	PASS
N023030-001AMS	4.198	PASS
N023063-001A	4.198	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

IC7 RBA 2/6/2017 3:25 PM

Nancy 2/14/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

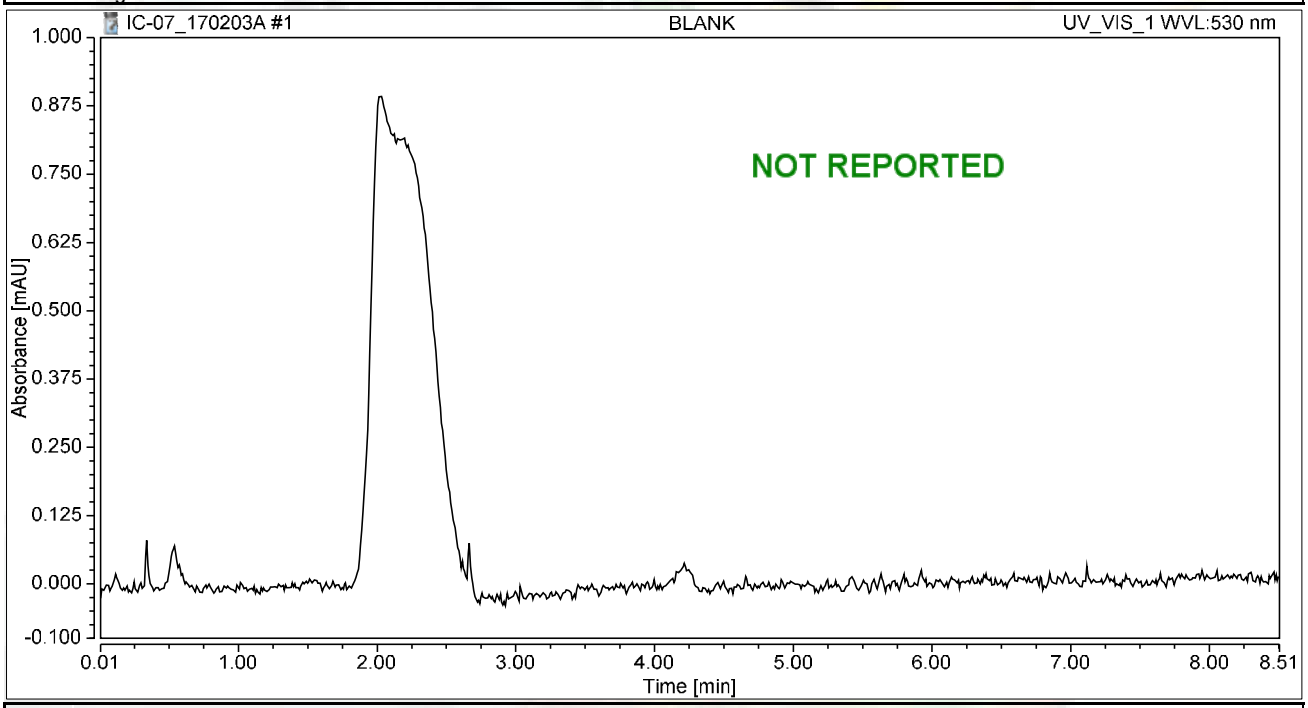
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

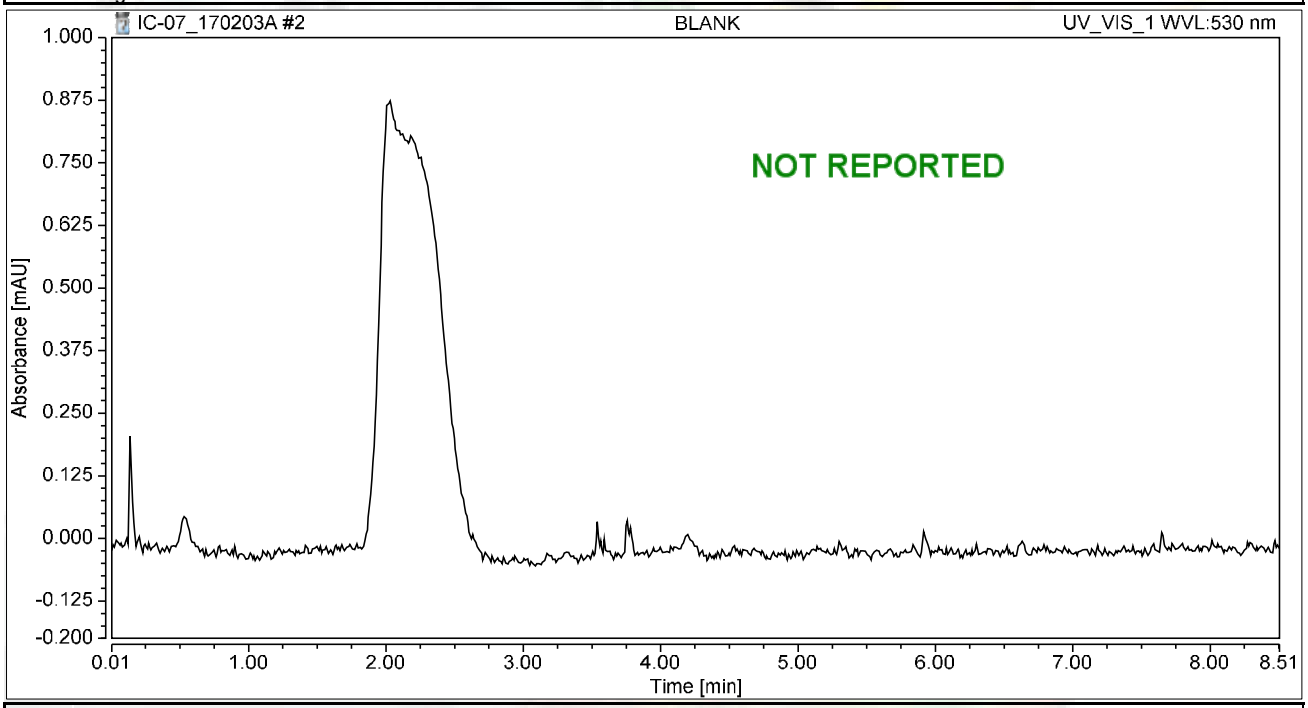
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

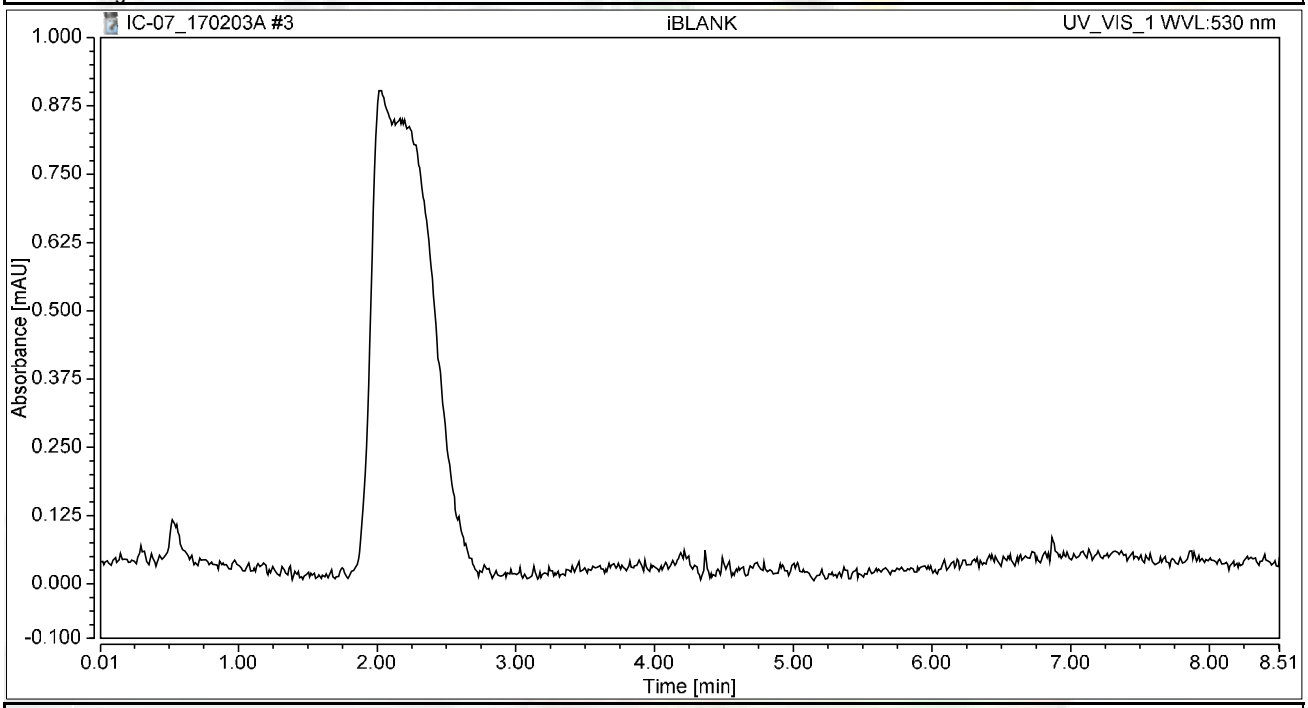
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

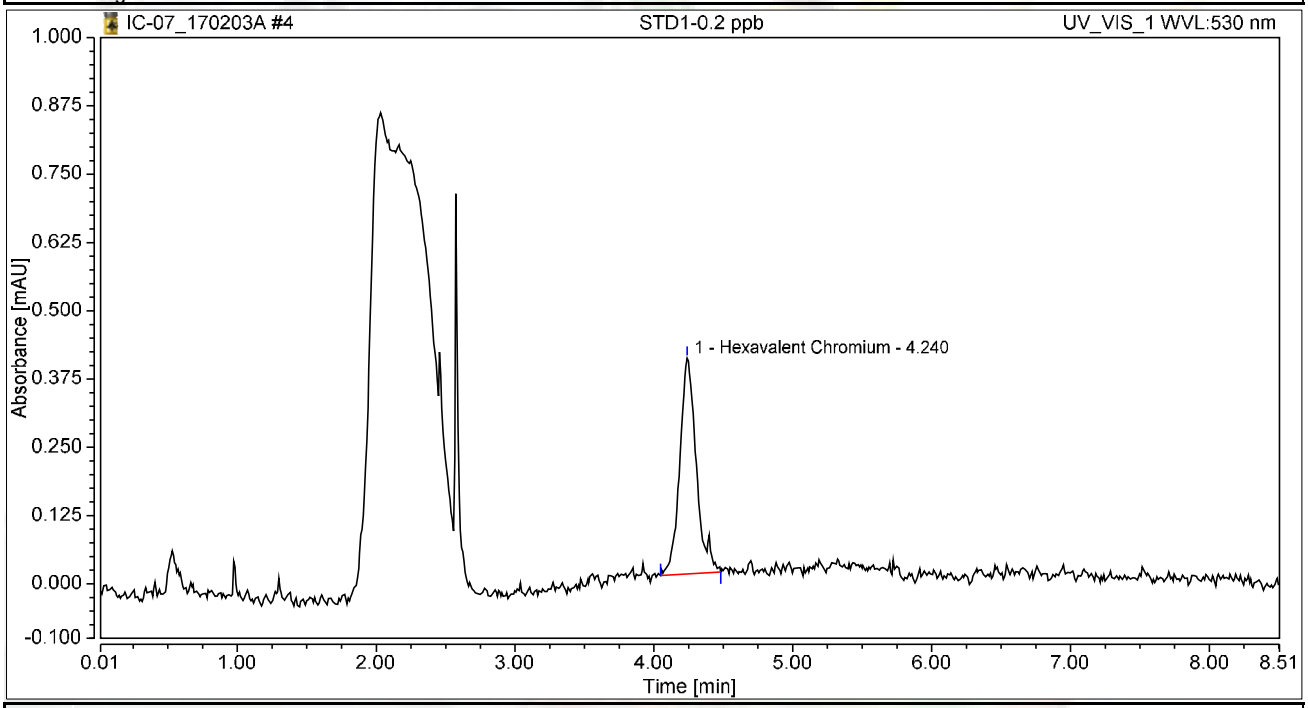
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

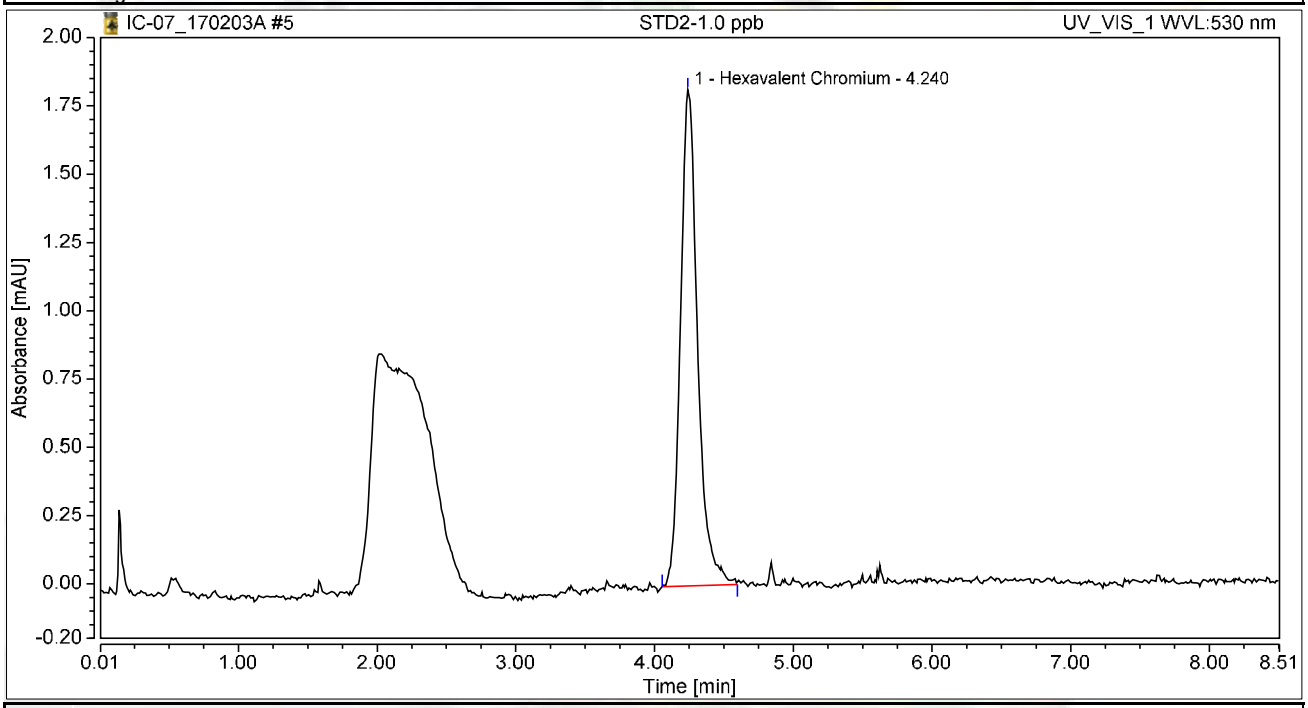
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

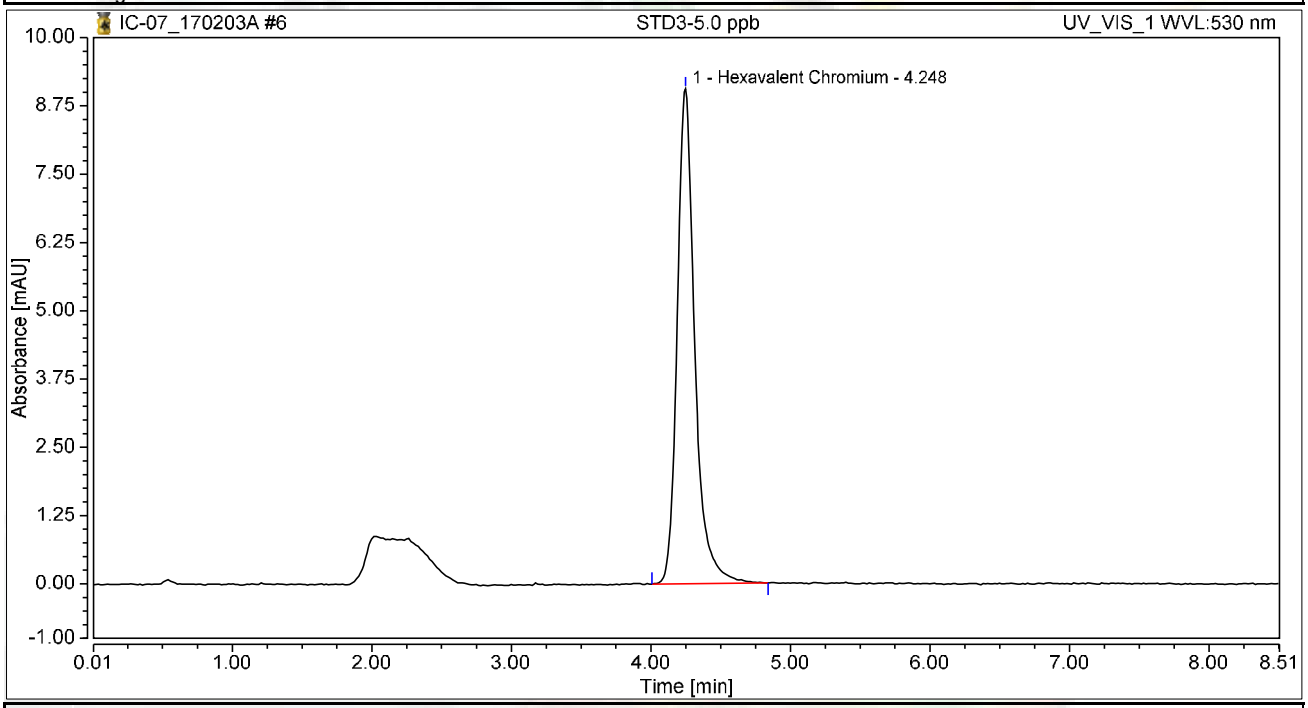
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

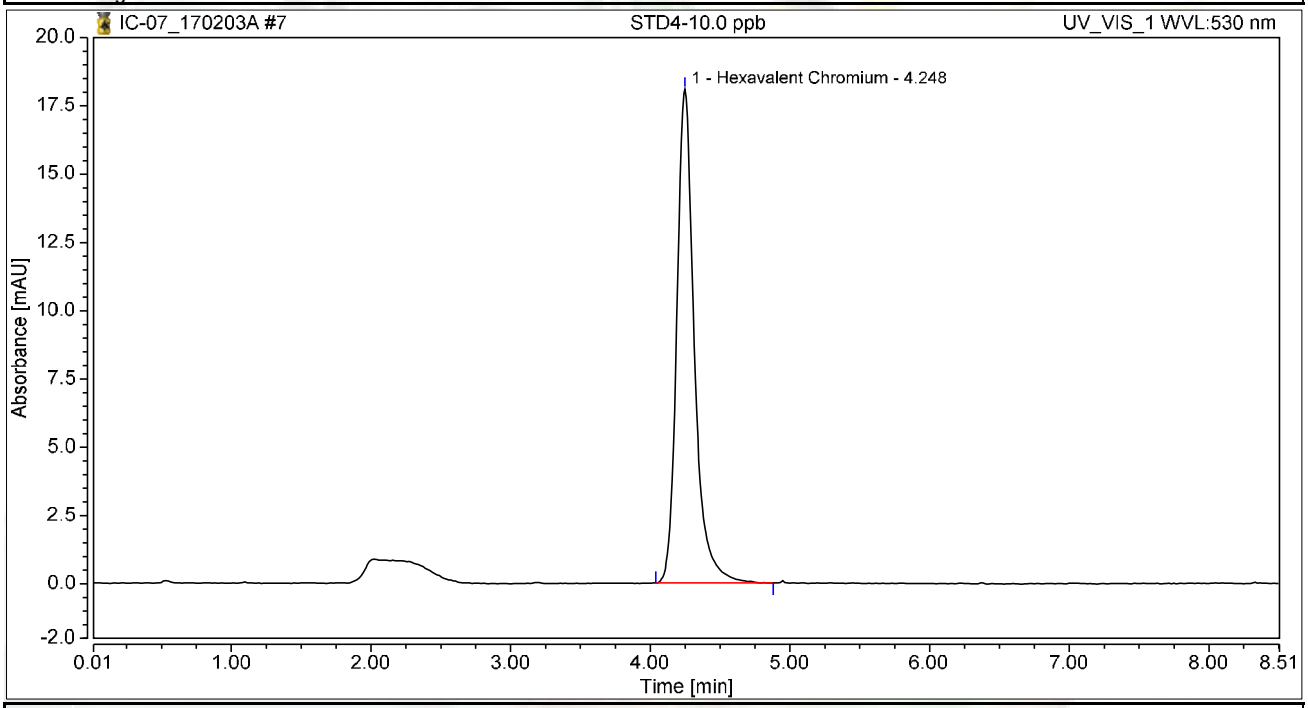
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

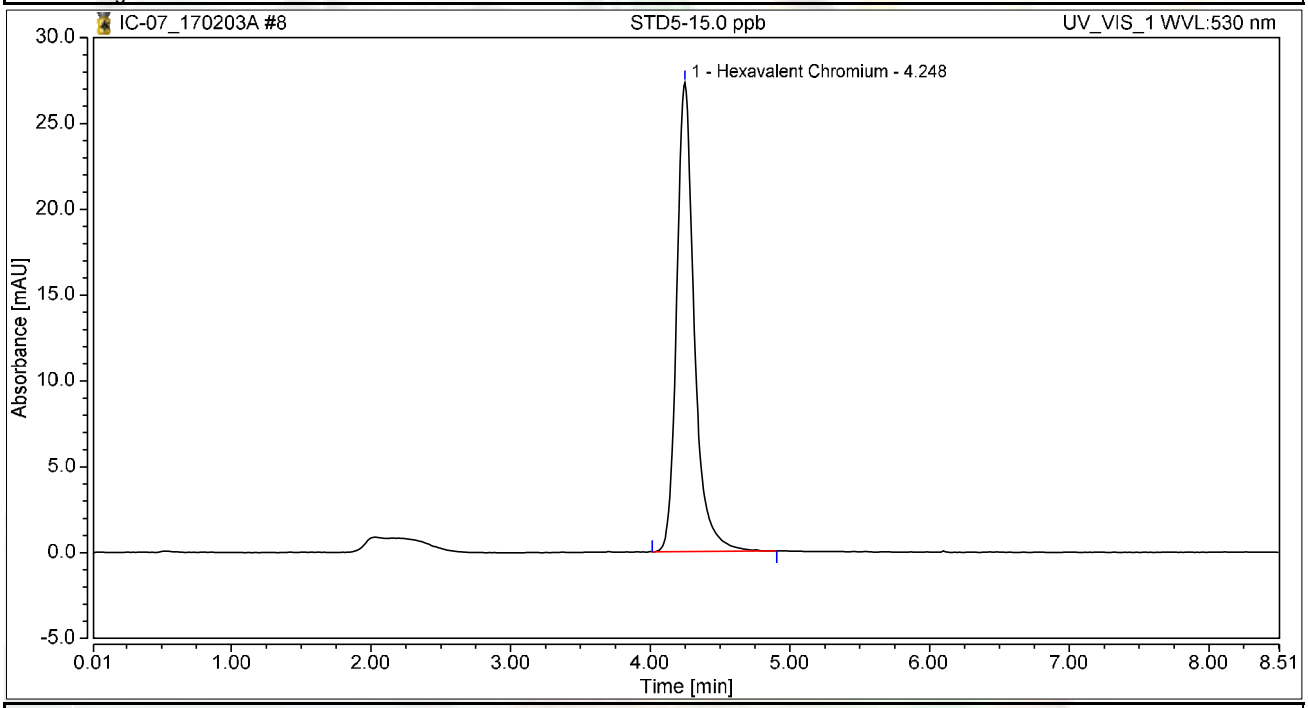
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

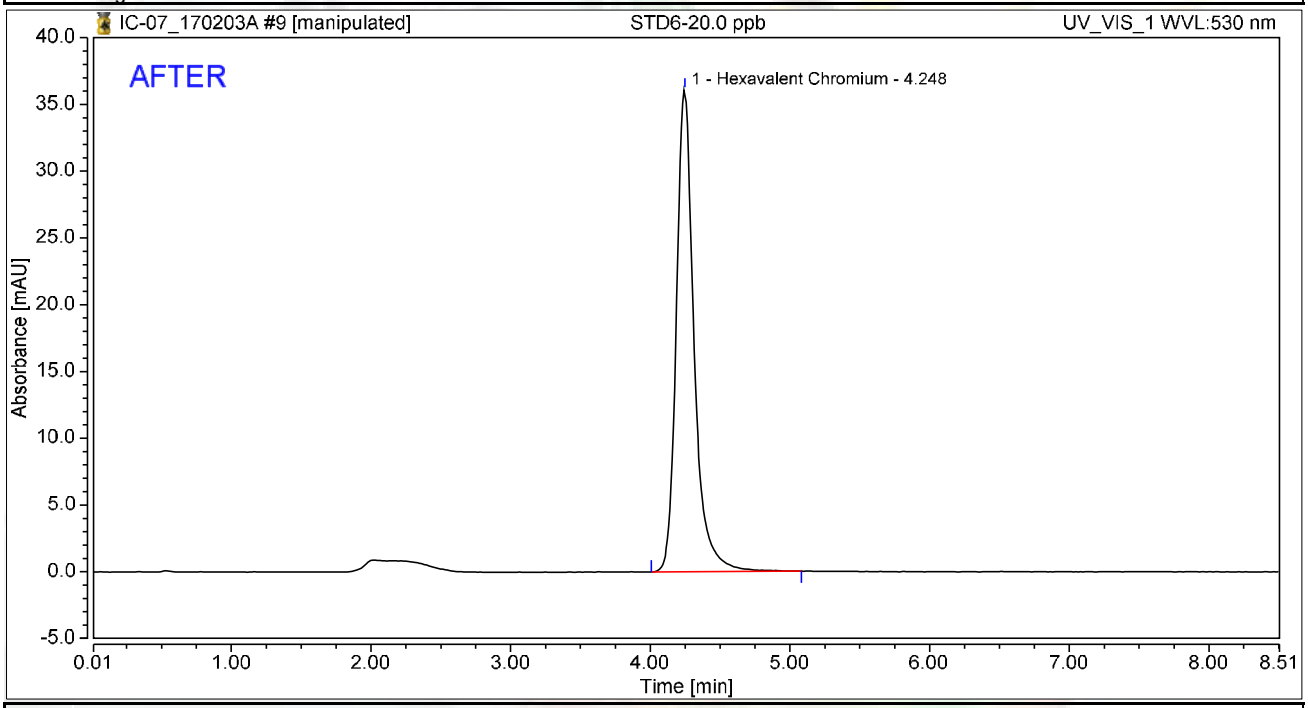
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

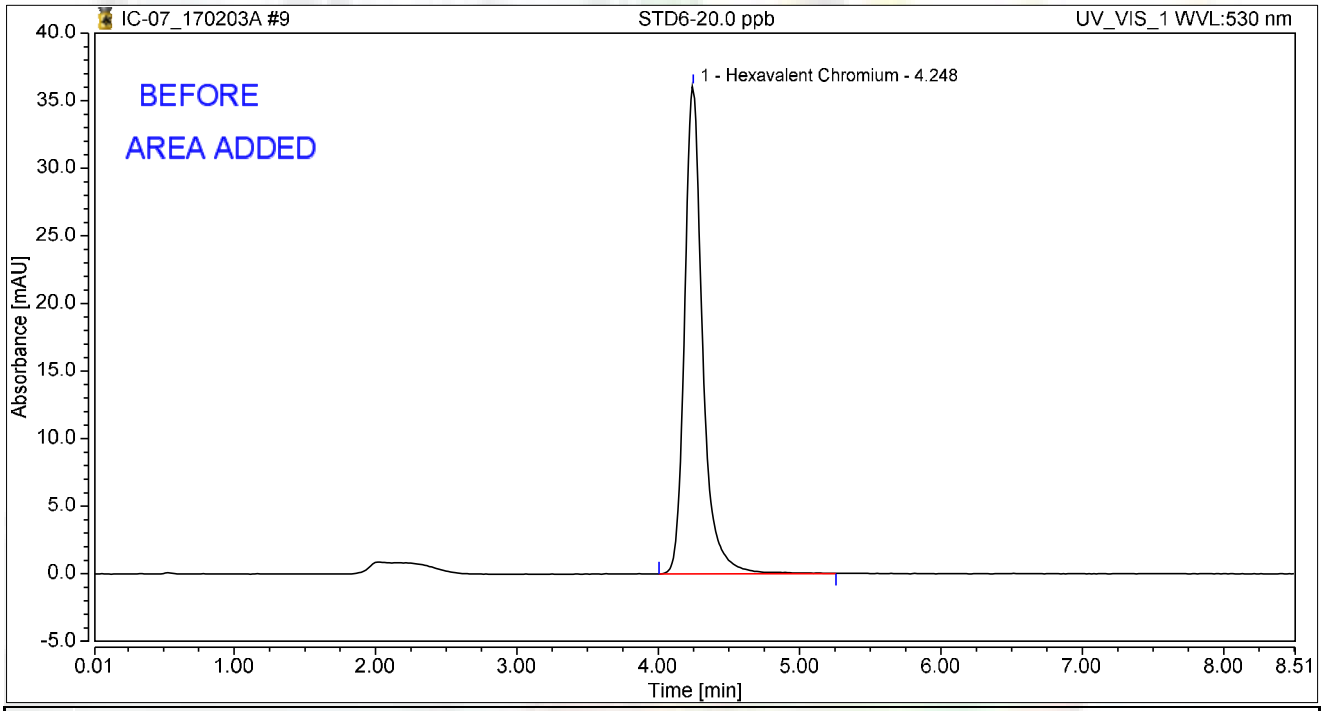
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

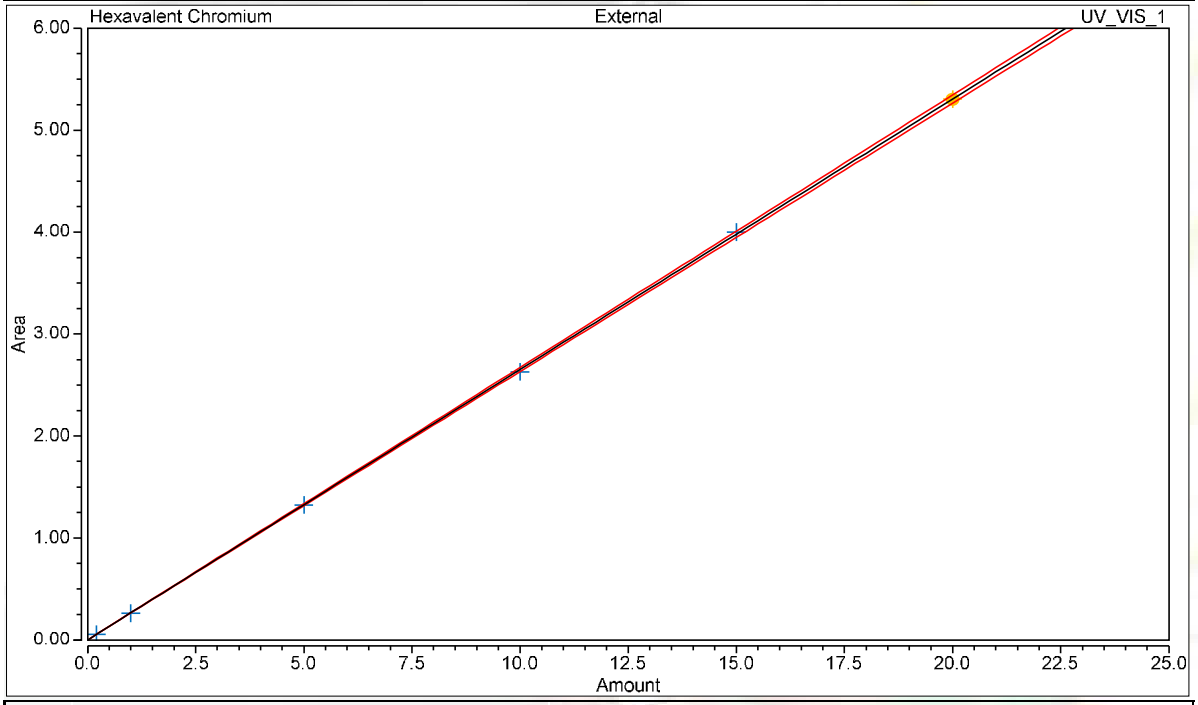
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

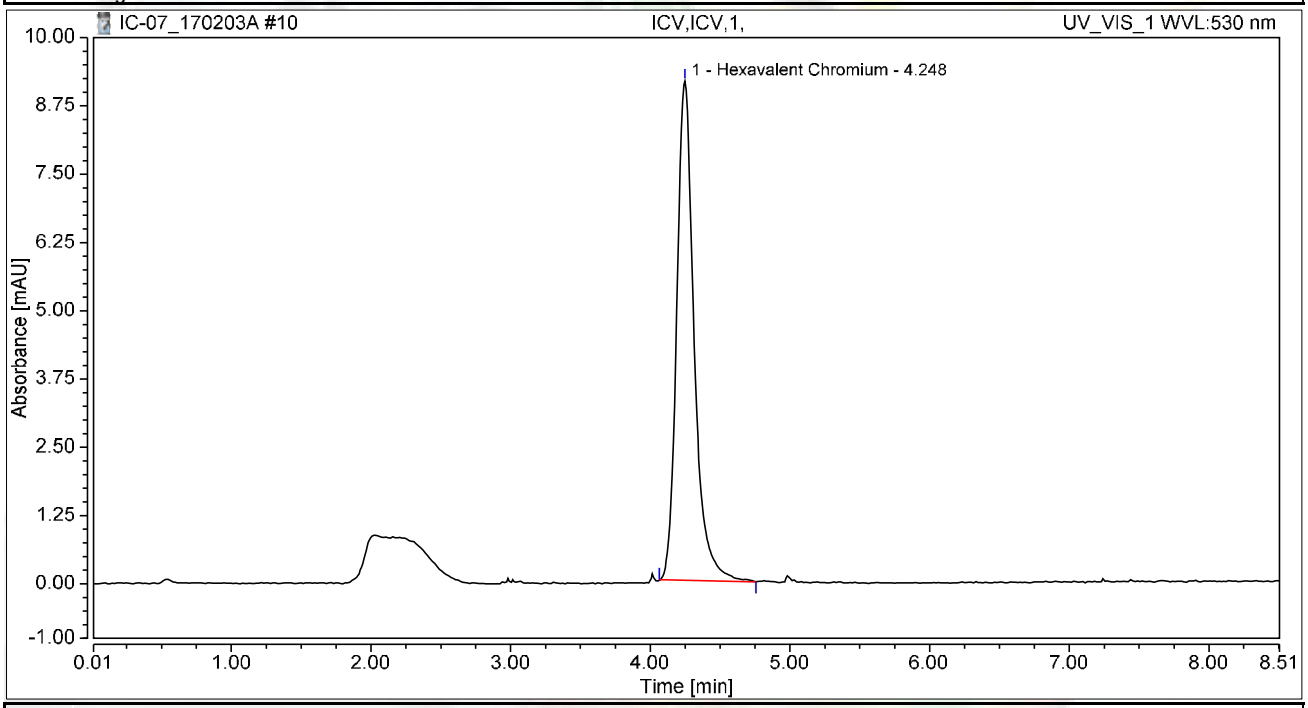
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

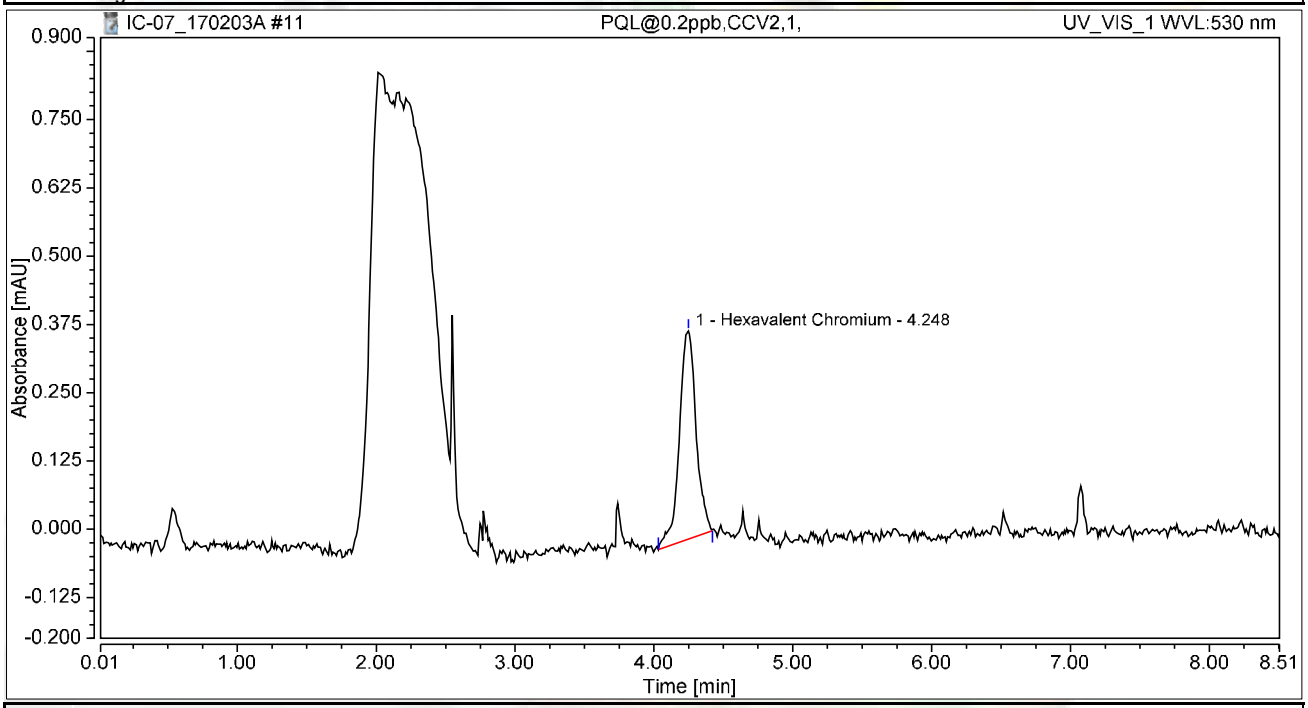
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

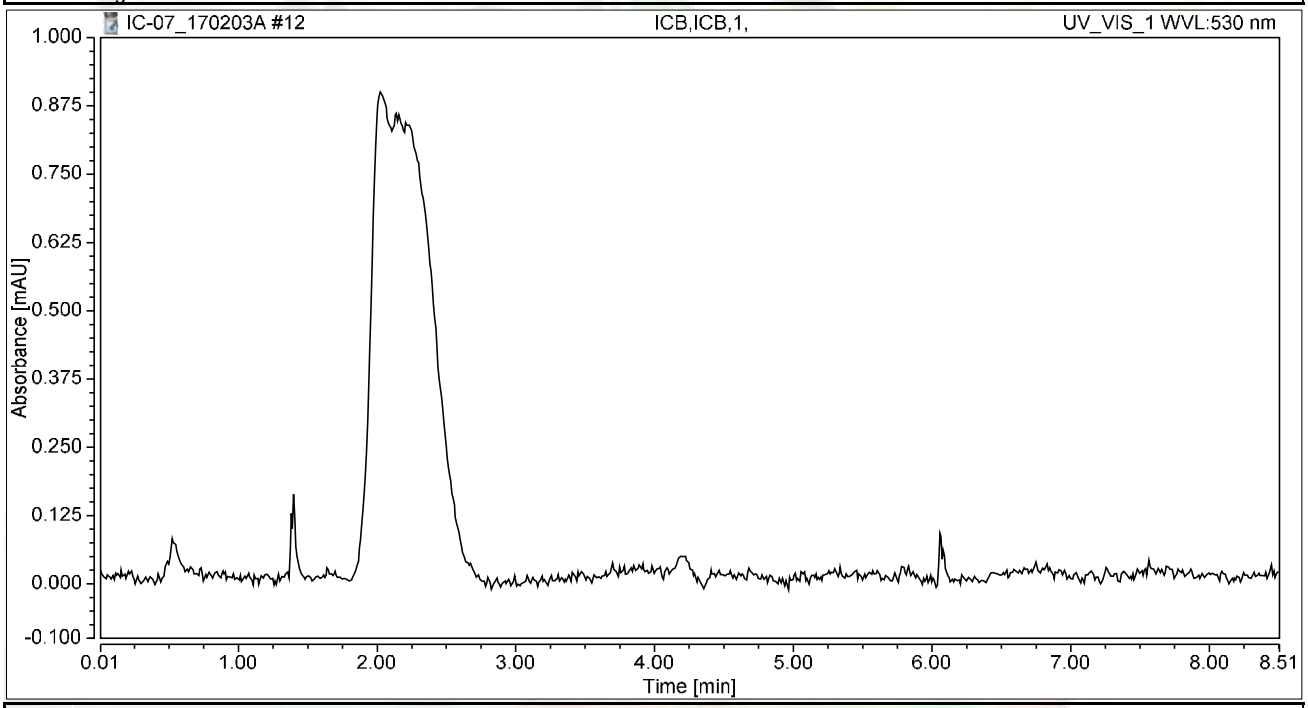
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:32 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:43 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/11/17 8:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/11/17 9:02 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/11/17 9:11 AM	Reported
15	MB-R113447	MBLK	1	Hexavalent Chromium	02/11/17 9:21 AM	Reported
16	LCS-R113447	LCS	1	Hexavalent Chromium	02/11/17 9:30 AM	Reported
17	N022998-001A	SAMP	5	Hexavalent Chromium	02/11/17 9:52 AM	Reported
18	N022998-001AMS	MS	5	Hexavalent Chromium	02/11/17 10:03 AM	Reported
19	N022998-001AMSD	MSD	5	Hexavalent Chromium	02/11/17 10:12 AM	Reported
20	N022998-002A	SAMP	1	Hexavalent Chromium	02/11/17 10:22 AM	Reported
21	N022998-002ADUP	DUP	1	Hexavalent Chromium	02/11/17 10:31 AM	Reported
22	N022998-002AMS	MS	1	Hexavalent Chromium	02/11/17 10:40 AM	Reported
23	N022998-005A	SAMP	1	Hexavalent Chromium	02/11/17 10:50 AM	Reported
24	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 10:59 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/11/17 11:09 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:18 AM	Not Reported
27	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:42 AM	Reported
28	N022998-004A	SAMP	20	Hexavalent Chromium	02/11/17 11:53 AM	Reported
29	N022998-004AMS	MS	20	Hexavalent Chromium	02/11/17 12:02 PM	Reported
30	N022998-003A	SAMP	1	Hexavalent Chromium	02/11/17 12:11 PM	Not Reported
31	N022998-003AMS	MS	1	Hexavalent Chromium	02/11/17 12:21 PM	Not Reported
32	N022998-003A	SAMP	5	Hexavalent Chromium	02/11/17 12:30 PM	Reported
33	N022998-003AMS	MS	5	Hexavalent Chromium	02/11/17 12:40 PM	Reported
34	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:08 PM	Reported
35	N023002-005A	SAMP	1	Hexavalent Chromium	02/11/17 1:24 PM	Reported
36	N023002-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:35 PM	Reported
37	N023002-006A	SAMP	1	Hexavalent Chromium	02/11/17 1:44 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/11/17 1:54 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/11/17 2:04 PM	Reported
40	N023002-006AMS	MS	1	Hexavalent Chromium	02/11/17 2:13 PM	Reported
41	N023014-001A	SAMP	5000	Hexavalent Chromium	02/11/17 2:22 PM	Reported
42	N023014-001AMS	MS	5000	Hexavalent Chromium	02/11/17 2:32 PM	Reported
43	N023014-002A	SAMP	5000	Hexavalent Chromium	02/11/17 2:41 PM	Reported
44	N023014-002AMS	MS	5000	Hexavalent Chromium	02/11/17 2:51 PM	Reported
45	N023014-003A	SAMP	20	Hexavalent Chromium	02/11/17 3:00 PM	Not Reported
46	N023014-003AMS	MS	20	Hexavalent Chromium	02/11/17 3:10 PM	Not Reported
47	N023014-004A	SAMP	20	Hexavalent Chromium	02/11/17 3:19 PM	Reported
48	N023014-004AMS	MS	20	Hexavalent Chromium	02/11/17 3:29 PM	Reported
49	N023030-001A	SAMP	10	Hexavalent Chromium	02/11/17 3:45 PM	Not Reported

rba 2/14/2017

Nancy 2/20/2017

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCV-4	CCV1	1	Hexavalent Chromium	02/11/17 3:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/11/17 4:06 PM	Reported
52	N023014-003A	SAMP	100	Hexavalent Chromium	02/11/17 4:15 PM	Reported
53	N023014-003AMS	MS	100	Hexavalent Chromium	02/11/17 4:25 PM	Reported
54	N023030-001A	SAMP	1	Hexavalent Chromium	02/11/17 4:34 PM	Reported
55	N023062-002A	SAMP	10	Hexavalent Chromium	02/11/17 4:48 PM	Not Reported
56	N023030-001A	SAMP	5	Hexavalent Chromium	02/11/17 5:06 PM	Not Reported
57	N023062-002A	SAMP	1	Hexavalent Chromium	02/11/17 5:24 PM	Reported
58	N023063-001A	SAMP	1	Hexavalent Chromium	02/11/17 5:36 PM	Not Reported
59	N023030-001AMS	MS	5	Hexavalent Chromium	02/11/17 5:45 PM	Not Reported
60	N023030-001AMS	MS	1	Hexavalent Chromium	02/11/17 5:58 PM	Reported
61	N023063-001A	SAMP	50	Hexavalent Chromium	02/11/17 6:09 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/11/17 6:18 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:28 PM	Not Reported
64	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Feb/17 19:22:17**
No. of Injections:	**67**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/11/2017 08:32	Finished	
11	BLANK	2	1000	Unknown		02/11/2017 08:43	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/11/2017 08:53	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/11/2017 09:02	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/11/2017 09:11	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/11/2017 09:21	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/11/2017 09:30	Finished	LCS, IWST-161114D
17	N022998-001A,SAMF	9	1000	Unknown		02/11/2017 09:52	Finished	SAMP, 2>10mL
18	N022998-001AMS,MS	10	1000	Unknown		02/11/2017 10:03	Finished	MS (5ppb), IWST-161114D,2>1
19	N022998-001AMSD,M	11	1000	Unknown		02/11/2017 10:12	Finished	MSD (5ppb), IWST-161114D,2
20	N022998-002A,SAMF	12	1000	Unknown		02/11/2017 10:22	Finished	SAMP, 10mL
21	N022998-002ADUP,D	13	1000	Unknown		02/11/2017 10:31	Finished	DUP, 10mL
22	N022998-002AMS,MS	14	1000	Unknown		02/11/2017 10:40	Finished	MS (5ppb), IWST-161114D,10
23	N022998-005A,SAMF	15	1000	Unknown		02/11/2017 10:50	Finished	SAMP, 10mL
24	N022998-005AMS,MS	16	1000	Unknown		02/11/2017 10:59	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/11/2017 11:09	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:18	Finished	CCB R170123B
27	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:42	Finished	CCB R170123B
28	N022998-004A,SAMF	19	1000	Unknown		02/11/2017 11:53	Finished	SAMP, 0.5>10mL
29	N022998-004AMS,MS	20	1000	Unknown		02/11/2017 12:02	Finished	MS (5ppb), IWST-161114D,0.5
30	N022998-003A,SAMF	21	1000	Unknown		02/11/2017 12:11	Finished	SAMP, 10mL
31	N022998-003AMS,MS	22	1000	Unknown		02/11/2017 12:21	Finished	MS (1ppb), IWST-161114D,10
32	N022998-003A,SAMF	23	1000	Unknown		02/11/2017 12:30	Finished	SAMP, 2>10mL
33	N022998-003AMS,MS	24	1000	Unknown		02/11/2017 12:40	Finished	MS (1ppb), IWST-161114D,2>1
34	N022998-005AMS,MS	26	1000	Unknown		02/11/2017 13:08	Finished	MS (1ppb), IWST-161114D,10
35	N023002-005A,SAMF	28	1000	Unknown		02/11/2017 13:24	Finished	SAMP, 10mL
36	N023002-005AMS,MS	29	1000	Unknown		02/11/2017 13:35	Finished	MS (1ppb), IWST-161114D,10
37	N023002-006A,SAMF	30	1000	Unknown		02/11/2017 13:44	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/11/2017 13:54	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/11/2017 14:04	Finished	CCB R170112D
40	N023002-006AMS,MS	33	1000	Unknown		02/11/2017 14:13	Finished	MS (1ppb), IWST-161114D,10
41	N023014-001A,SAMF	34	1000	Unknown		02/11/2017 14:22	Finished	SAMP, 0.002>10mL
42	N023014-001AMS,MS	35	1000	Unknown		02/11/2017 14:32	Finished	MS (5ppb), IWST-161114D,0.0
43	N023014-002A,SAMF	36	1000	Unknown		02/11/2017 14:41	Finished	SAMP, 0.002>10mL
44	N023014-002AMS,MS	37	1000	Unknown		02/11/2017 14:51	Finished	MS (5ppb), IWST-161114D,0.0
45	N023014-003A,SAMF	38	1000	Unknown		02/11/2017 15:00	Finished	SAMP, 0.5>10mL
46	N023014-003AMS,MS	39	1000	Unknown		02/11/2017 15:10	Finished	MS (5ppb), IWST-161114D,0.5
47	N023014-004A,SAMF	40	1000	Unknown		02/11/2017 15:19	Finished	SAMP, 0.5>10mL
48	N023014-004AMS,MS	41	1000	Unknown		02/11/2017 15:29	Finished	MS (5ppb), IWST-161114D,0.5
49	N023030-001A,SAMF	43	1000	Unknown		02/11/2017 15:45	Finished	SAMP, 1>10mL
50	CCV-4,CCV1,1,	44	1000	Unknown		02/11/2017 15:56	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	45	1000	Unknown		02/11/2017 16:06	Finished	CCB R170112D
52	N023014-003A,SAMF	46	1000	Unknown		02/11/2017 16:15	Finished	SAMP,0.1>10mL
53	N023014-003AMS,MS	47	1000	Unknown		02/11/2017 16:25	Finished	MS (5ppb), IWST-161114D,0.1
54	N023030-001A,SAMF	48	1000	Unknown		02/11/2017 16:34	Finished	SAMP, 10mL
55	N023062-002A,SAMF	50	1000	Unknown		02/11/2017 16:48	Interrupted	SAMP, 1>10mL
56	N023030-001A,SAMF	1	1000	Unknown		02/11/2017 17:06	Finished	SAMP, 2>10mL
57	N023062-002A,SAMF	4	1000	Unknown		02/11/2017 17:24	Finished	SAMP, 10mL
58	N023063-001A,SAMF	5	1000	Unknown		02/11/2017 17:36	Finished	SAMP, 10mL
59	N023030-001AMS,MS	6	1000	Unknown		02/11/2017 17:45	Finished	MS (5ppb), IWST-161114D,2>1
60	N023030-001AMS,MS	7	1000	Unknown		02/11/2017 17:58	Finished	MS (5ppb), IWST-161114D,10

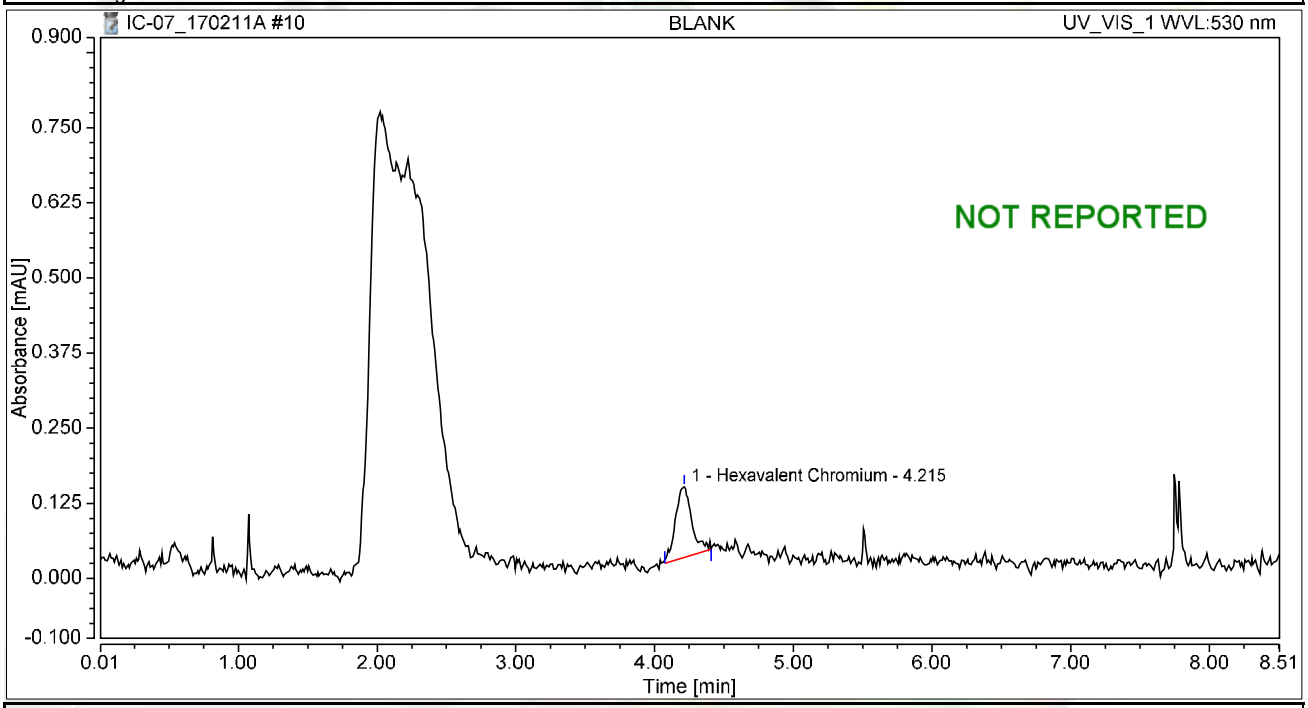
61	N023063-001A,SAMP	8	1000	Unknown		02/11/2017 18:09	Finished	SAMP,0.2>10mL
62	CCV-5,CCV,1,	9	1000	Unknown		02/11/2017 18:18	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	10	1000	Unknown		02/11/2017 18:28	Finished	CCB R170123B
64	CCB-5,CCB,1,	12	1000	Unknown		02/11/2017 18:42	Finished	CCB R170123B
65	SHUTDOWN	24	1000	Unknown		02/11/2017 18:59	Finished	
66	Eluent: R170209B	25	1000	Unknown		n.a.	Finished	Eluent
67	PCR: R170209C	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

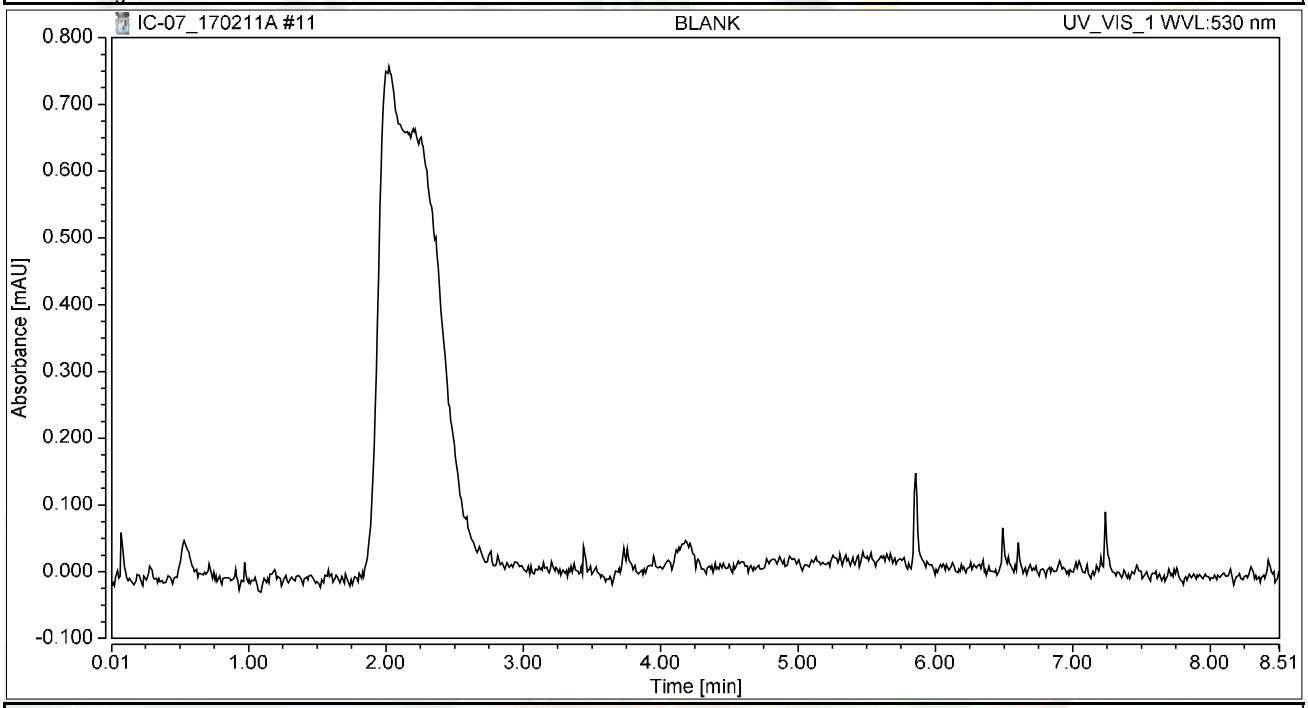
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.016	0.117	100.00	100.00	0.0603
Total:			**0.016**	**0.117**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

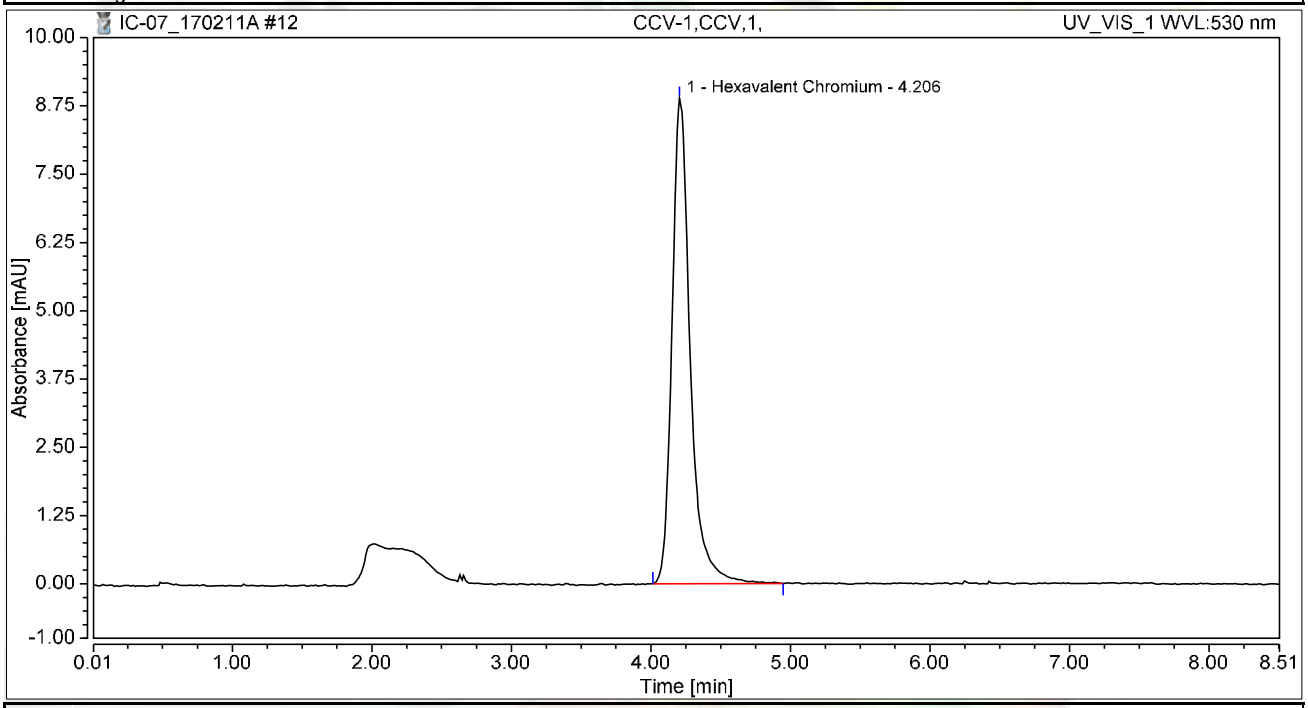
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

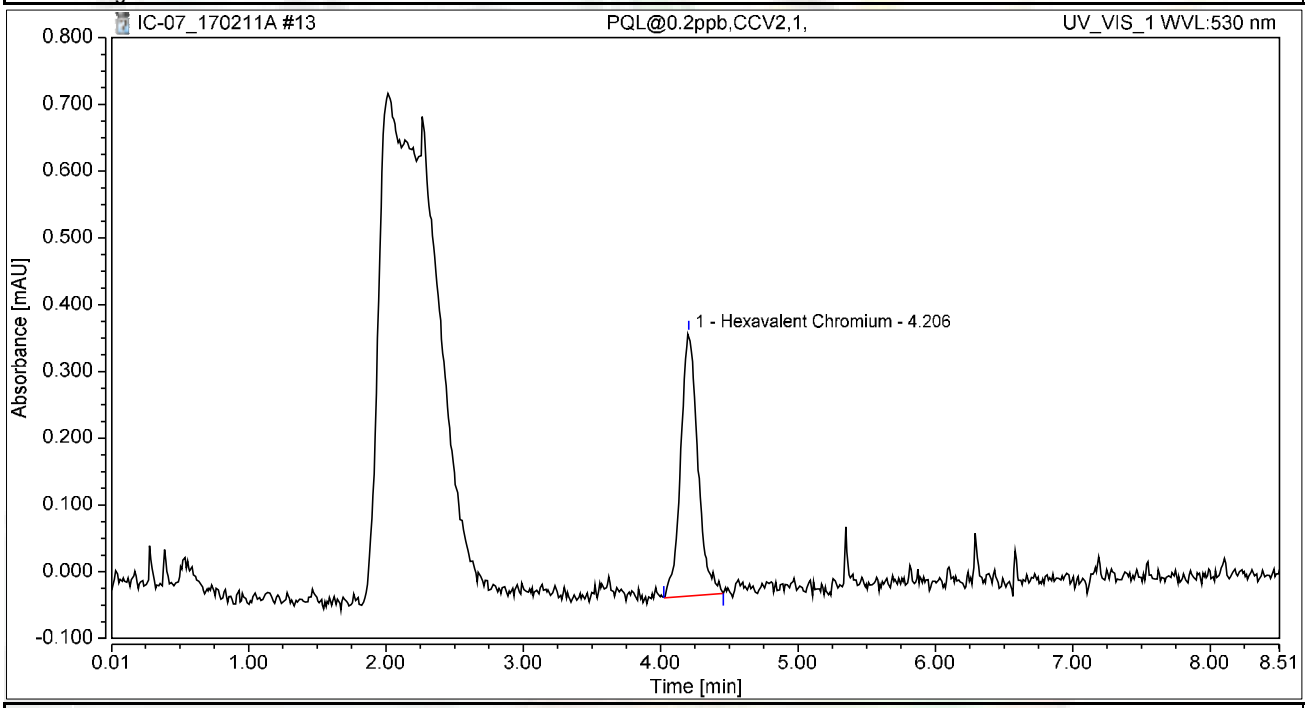
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.347	8.888	100.00	100.00	5.0775
Total:			**1.347**	**8.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

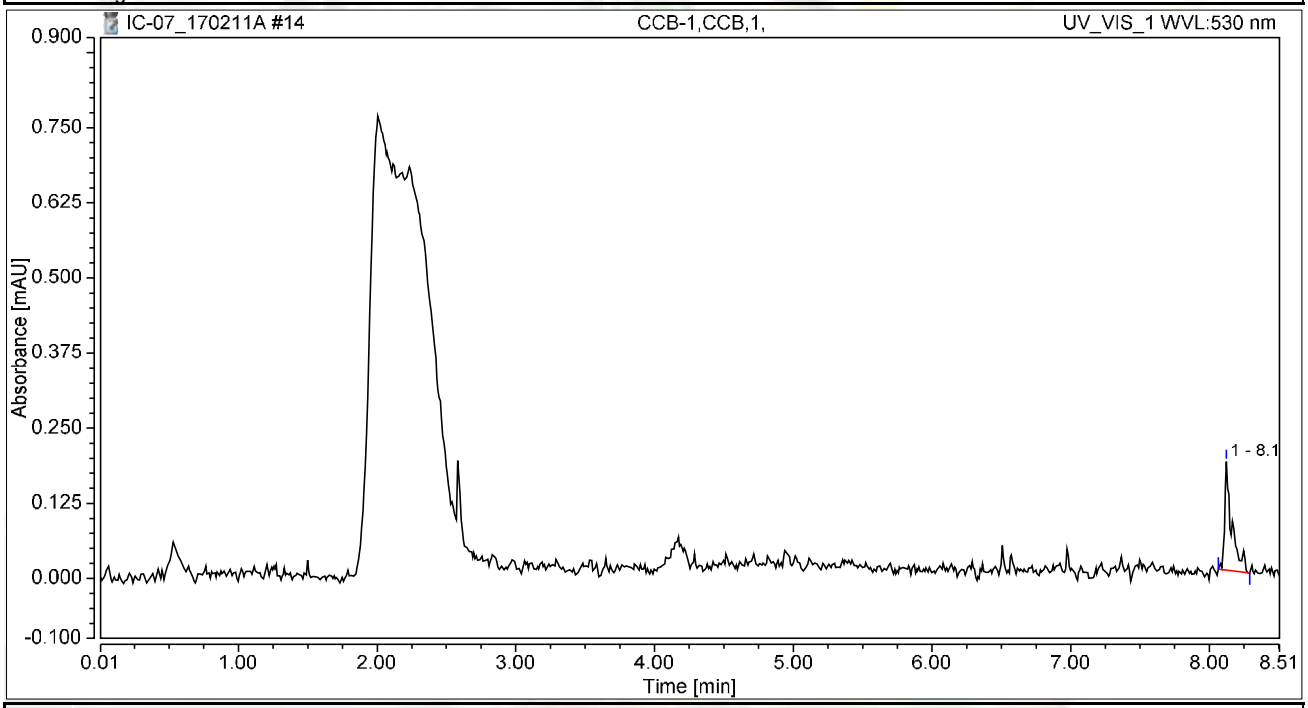
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.057	0.395	100.00	100.00	0.2151
Total:			**0.057**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

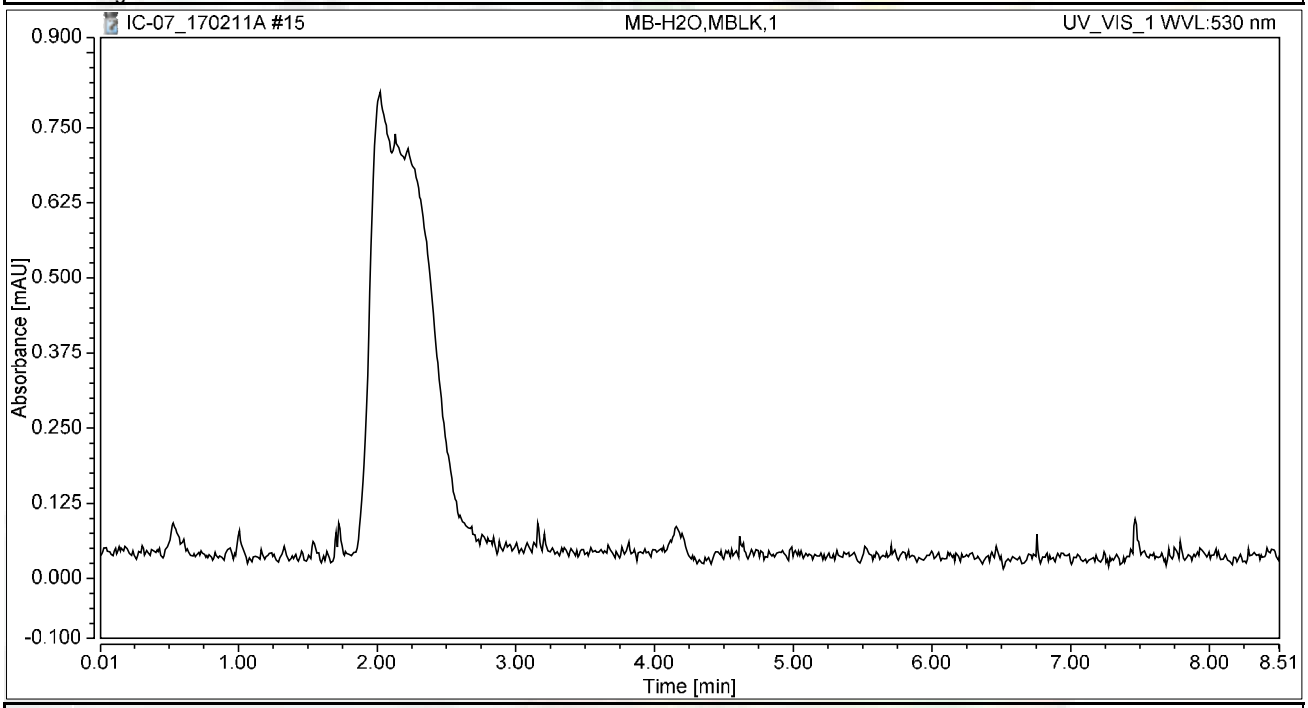
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.123	0.011	0.181	100.00	100.00	n.a.
Total:			**0.011**	**0.181**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

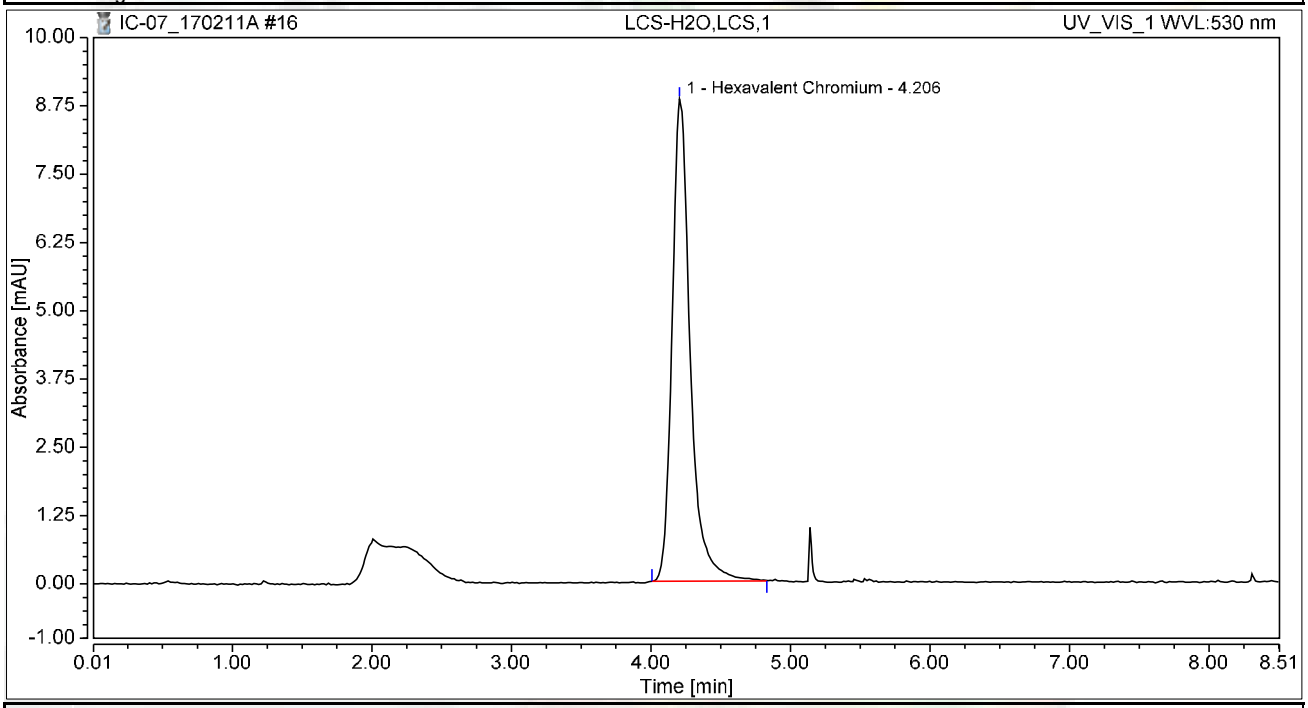
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

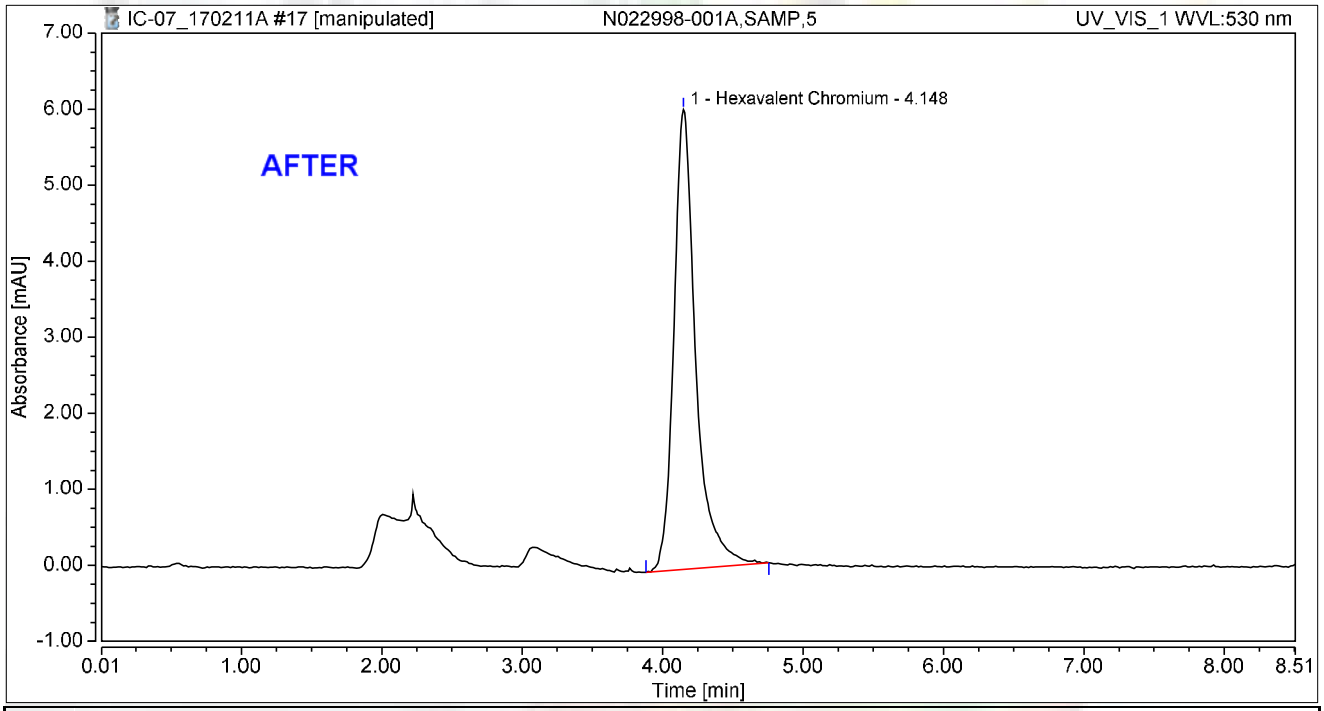
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.329	8.827	100.00	100.00	5.0122
Total:			**1.329**	**8.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.090	6.045	100.00	100.00	4.1108
Total:			**1.090**	**6.045**	**100.00**	**100.00**	

rba 2/14/2017

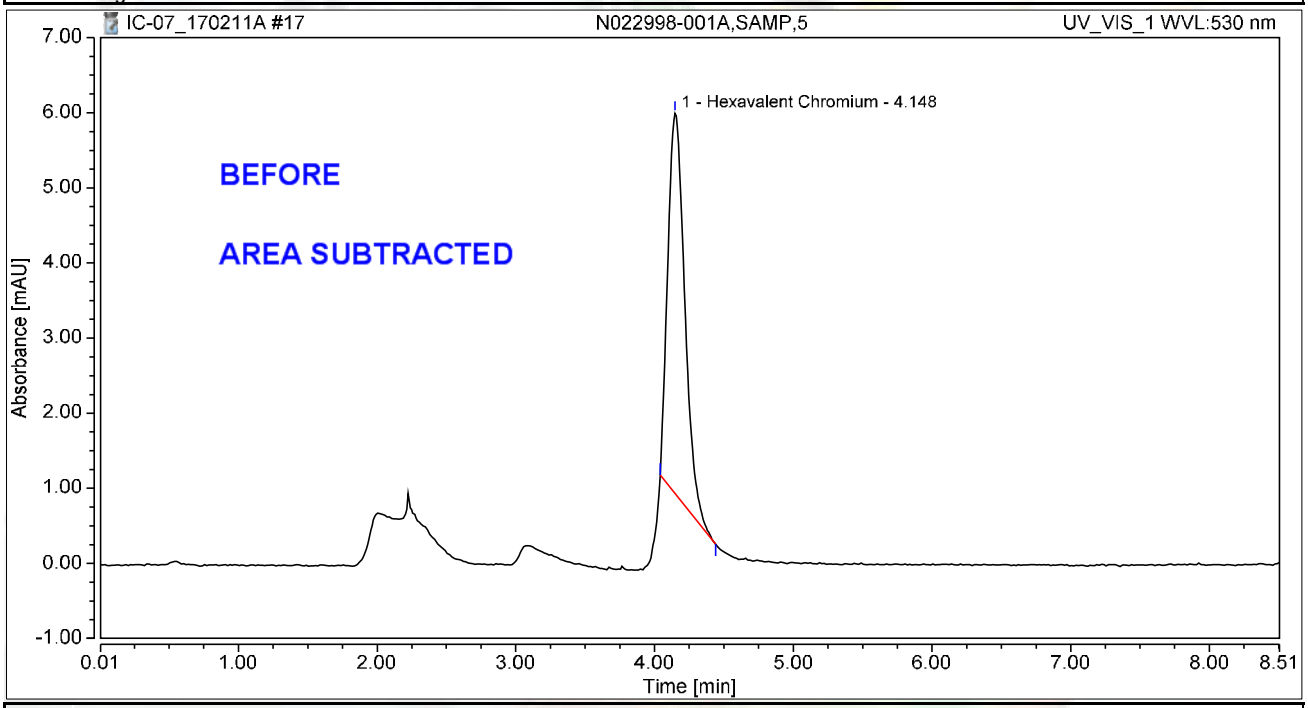
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.721	5.065	100.00	100.00	2.7172
Total:			**0.721**	**5.065**	**100.00**	**100.00**	

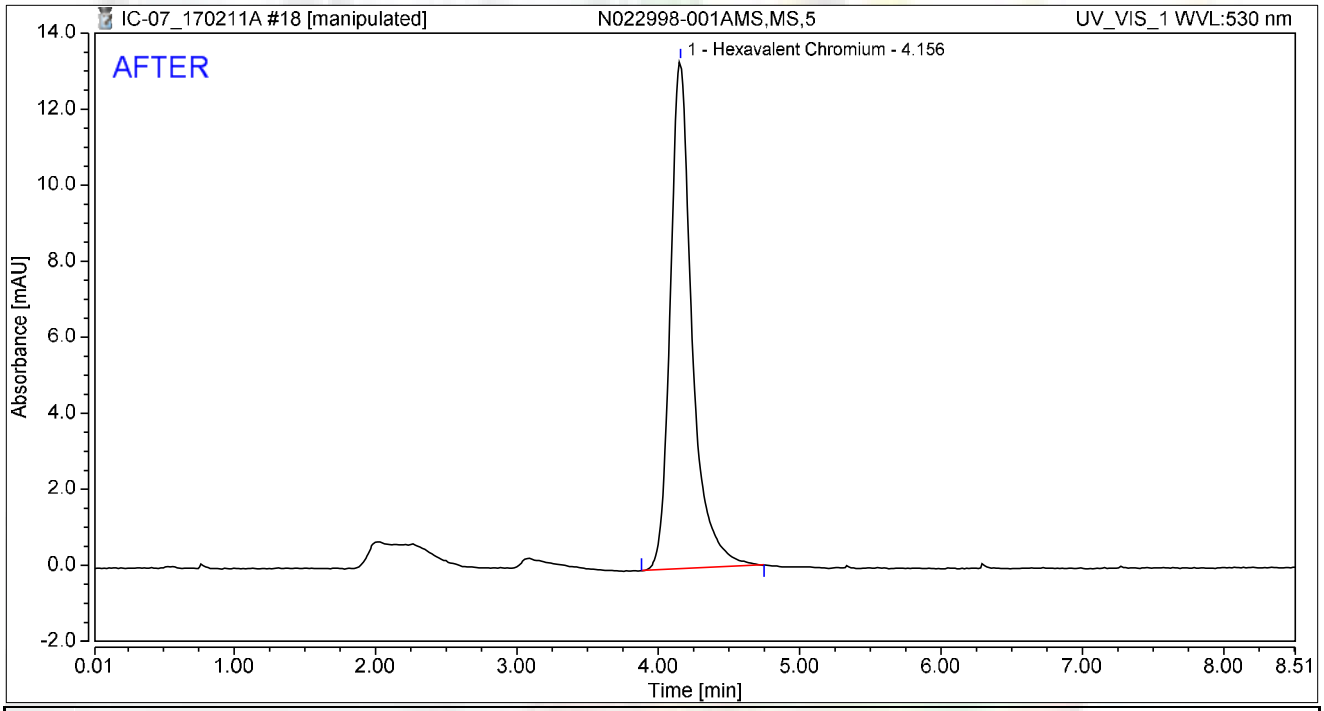
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.391	13.355	100.00	100.00	9.0151
Total:			**2.391**	**13.355**	**100.00**	**100.00**	

rba 2/14/2017

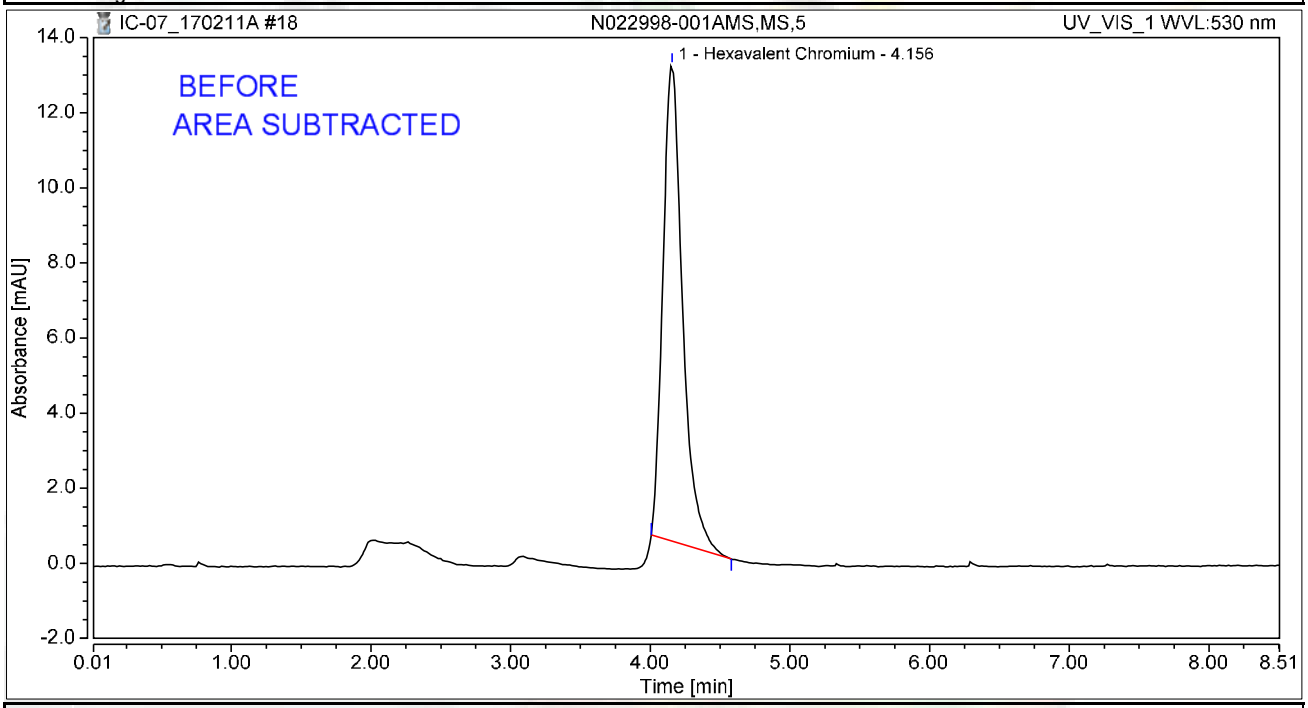
Reviewed by: Dionex 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.072	12.677	100.00	100.00	7.8118
Total:			**2.072**	**12.677**	**100.00**	**100.00**	

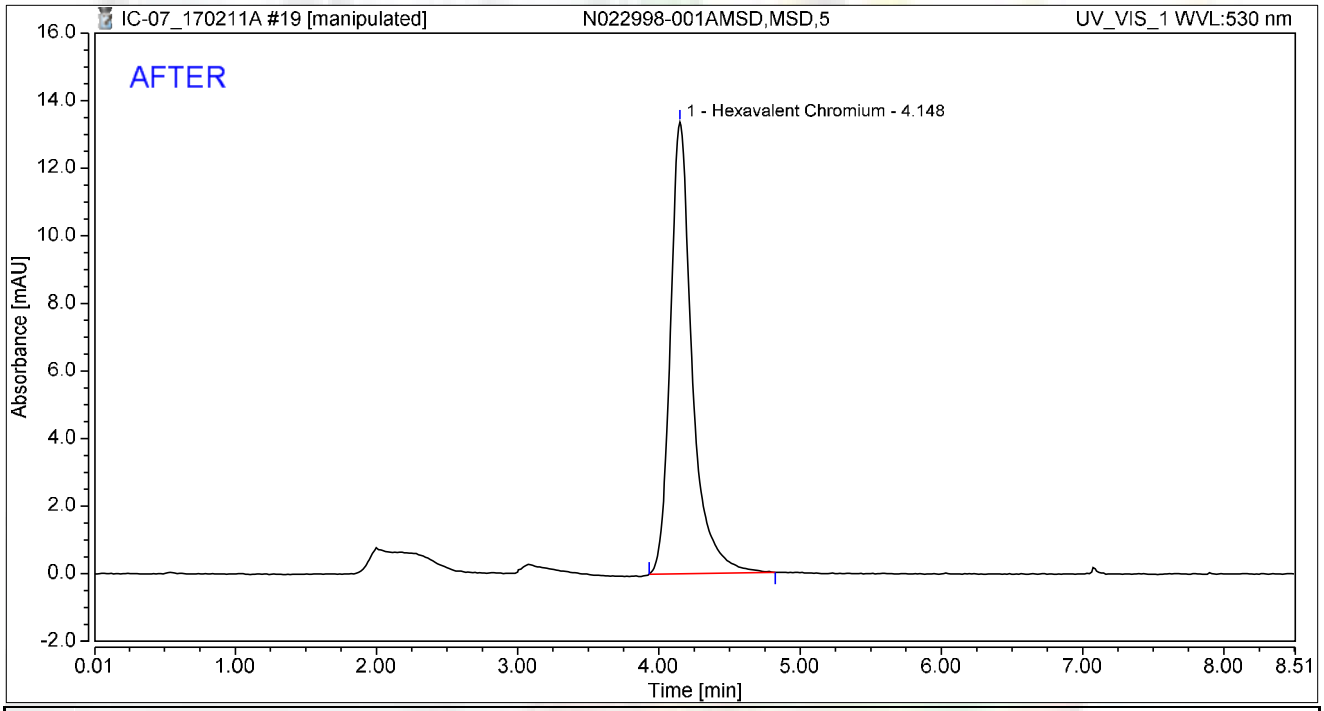
rba **2/14/2017**

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.392	13.362	100.00	100.00	9.0187
Total:			**2.392**	**13.362**	**100.00**	**100.00**	

rba 2/14/2017

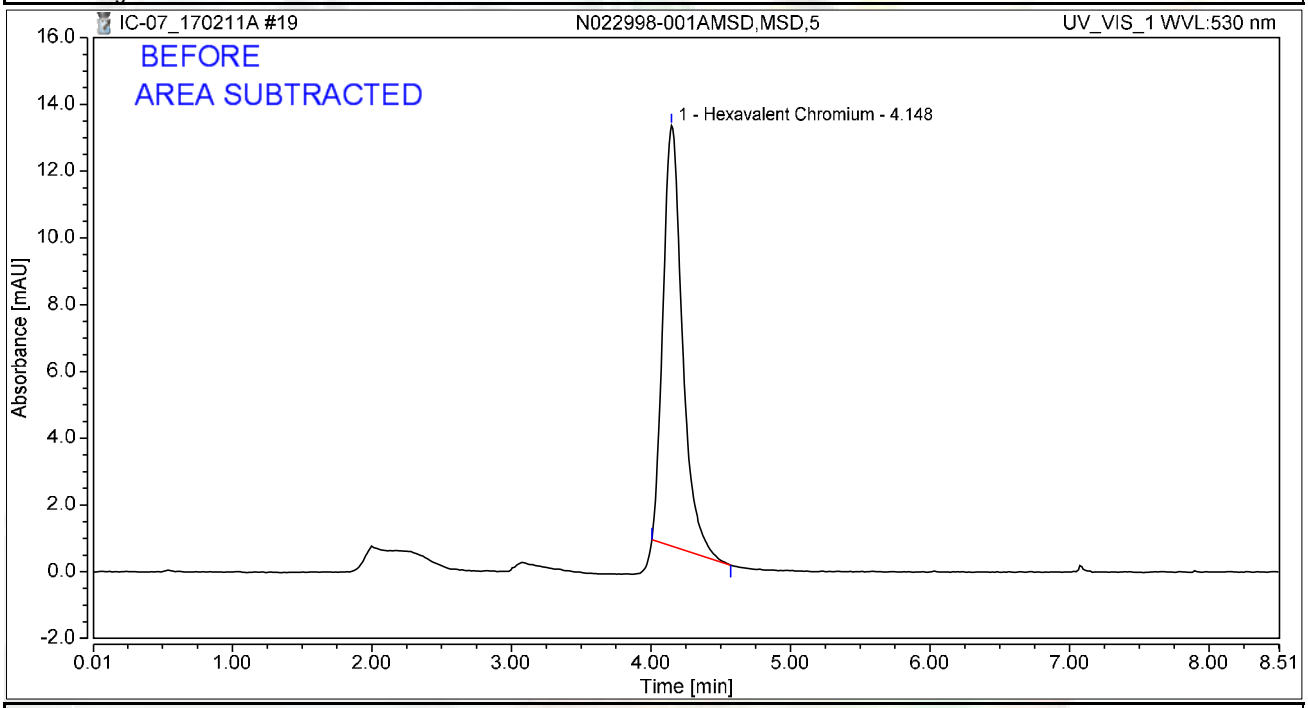
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.034	12.598	100.00	100.00	7.6691
Total:			**2.034**	**12.598**	**100.00**	**100.00**	

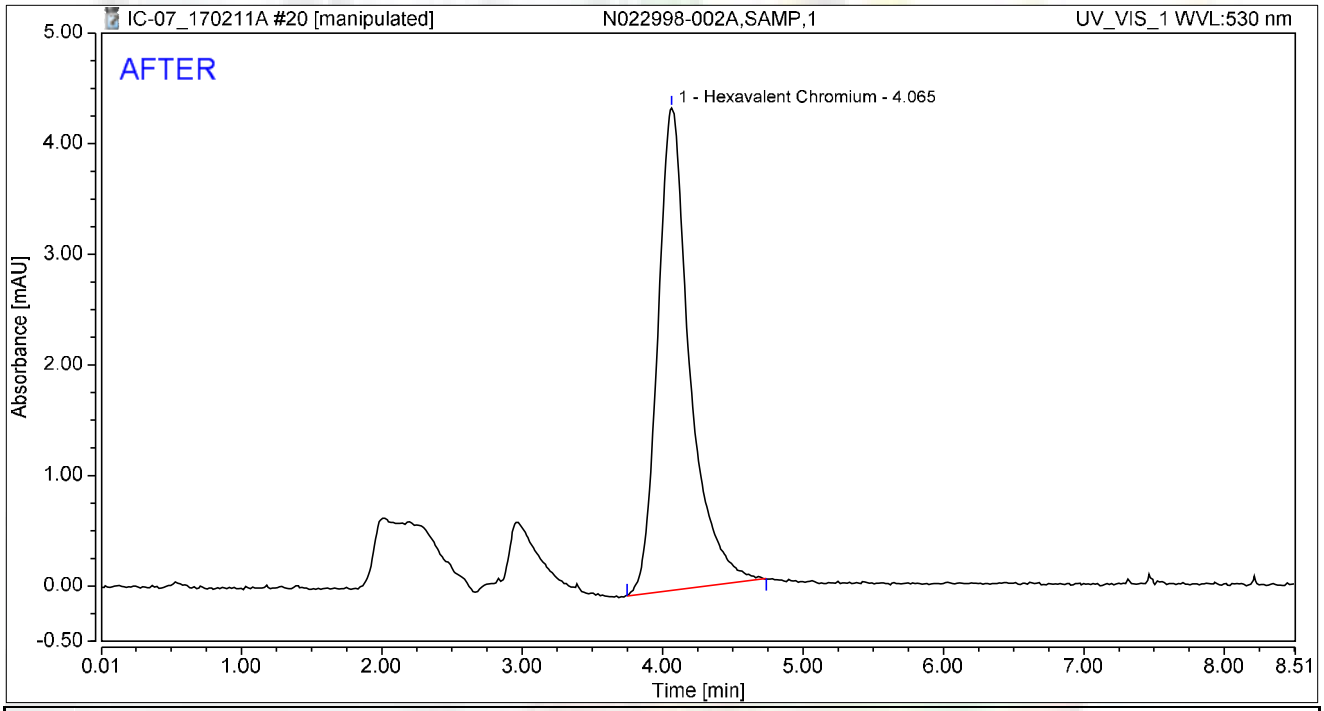
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	1.153	4.362	100.00	100.00	4.3453
Total:			**1.153**	**4.362**	**100.00**	**100.00**	

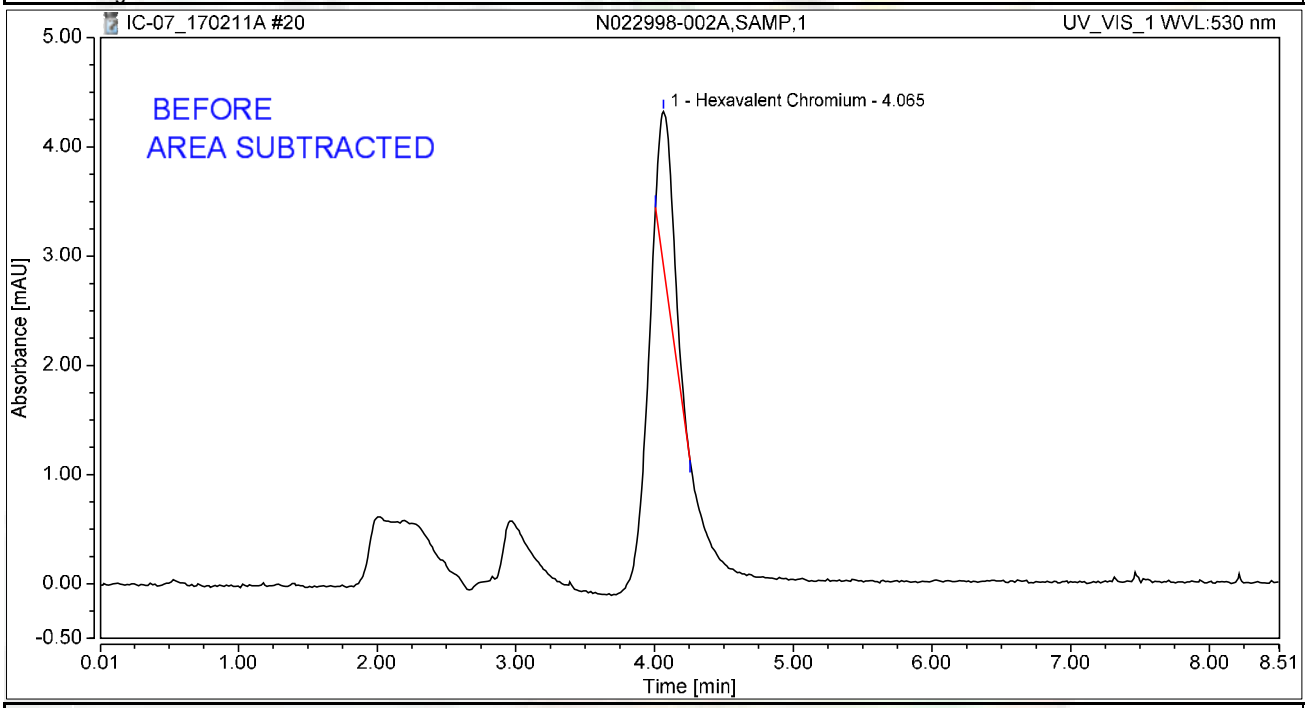
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.184	1.417	100.00	100.00	0.6918
Total:			**0.184**	**1.417**	**100.00**	**100.00**	

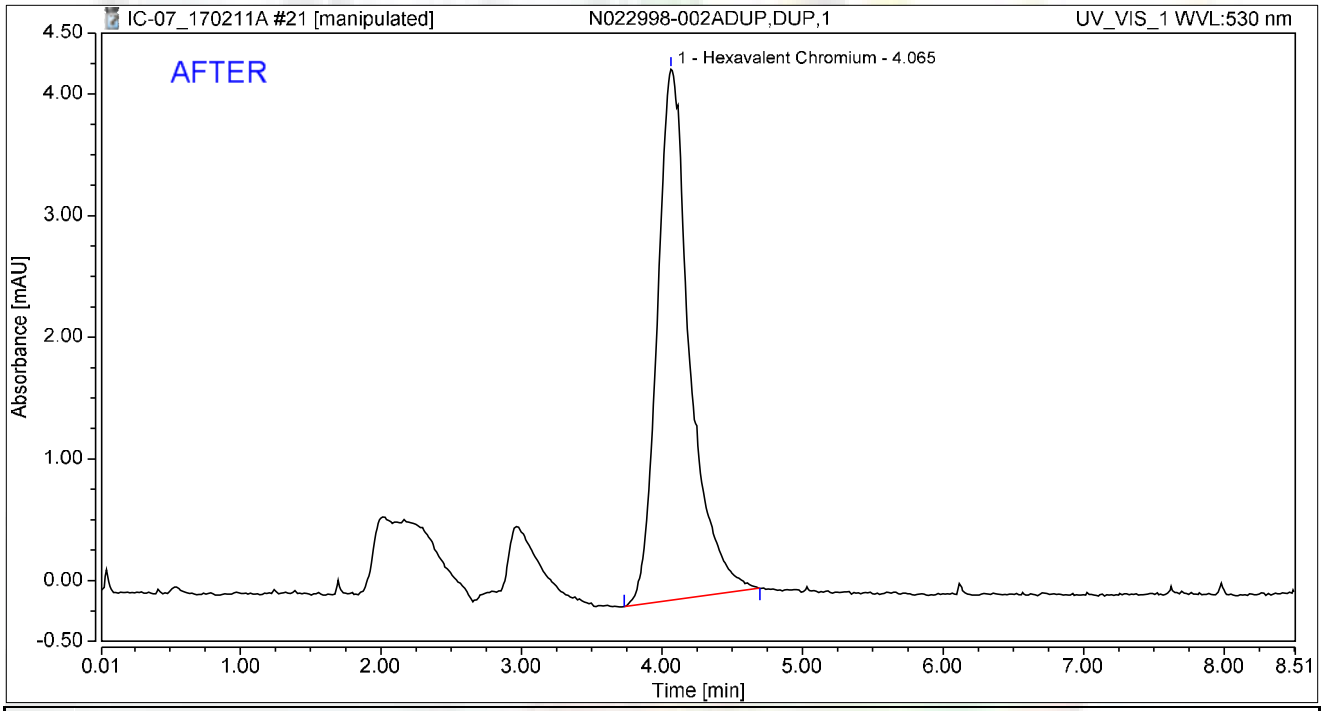
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	1.168	4.367	100.00	100.00	4.4039
Total:			**1.168**	**4.367**	**100.00**	**100.00**	

rba 2/14/2017

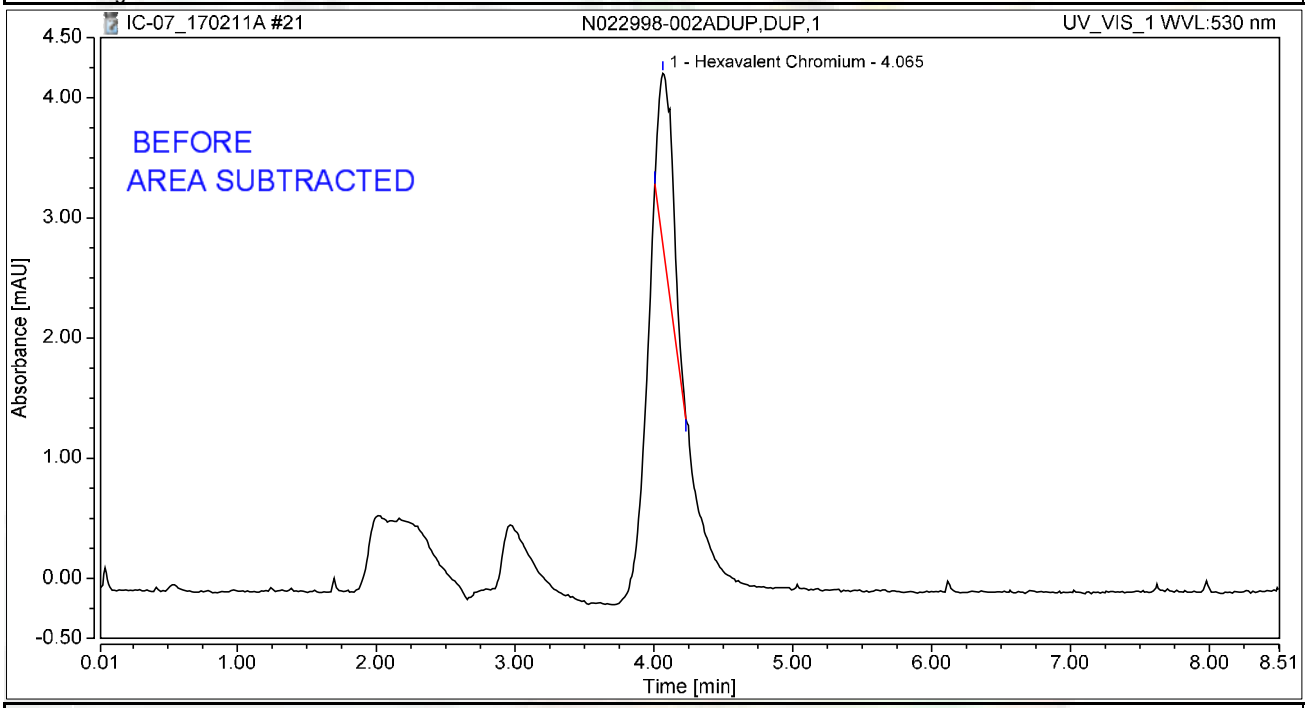
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.190	1.427	100.00	100.00	0.7156
Total:			**0.190**	**1.427**	**100.00**	**100.00**	

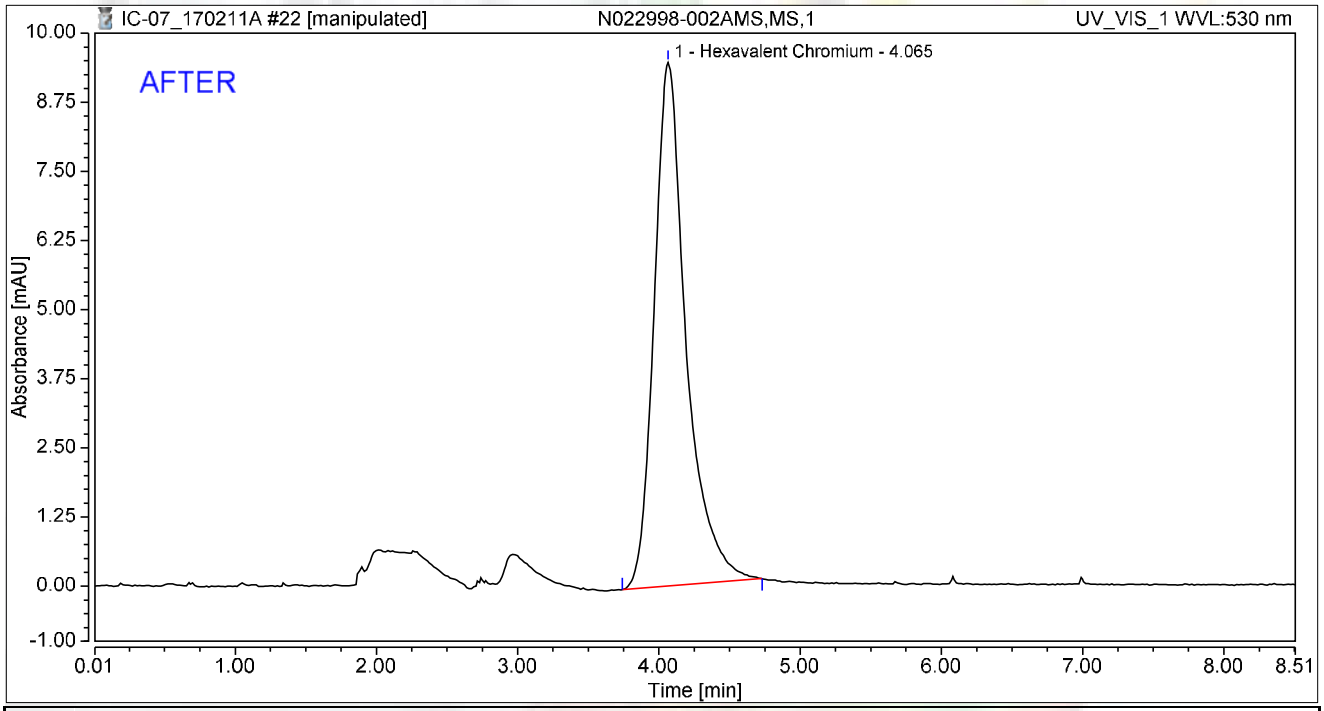
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	2.484	9.472	100.00	100.00	9.3657
Total:			**2.484**	**9.472**	**100.00**	**100.00**	

rba 2/14/2017

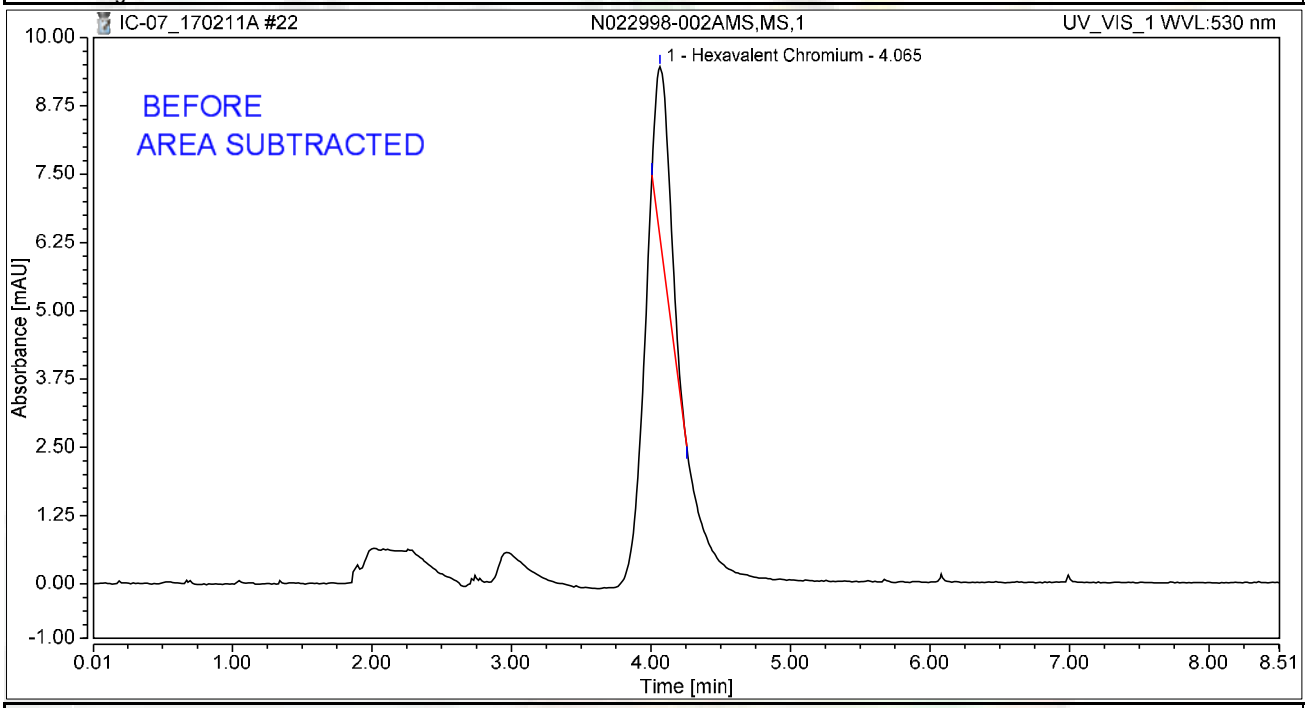
Reviewed by: Dianey 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.410	3.145	100.00	100.00	1.5439
Total:			**0.410**	**3.145**	**100.00**	**100.00**	

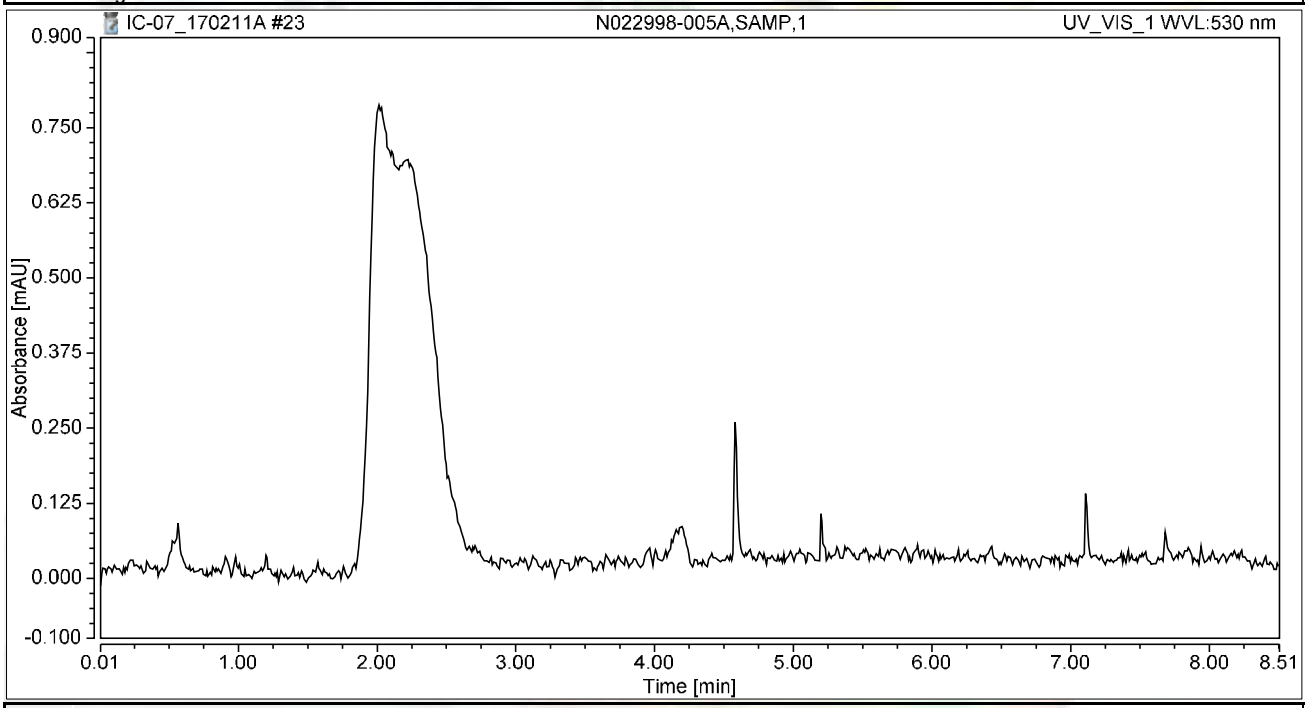
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

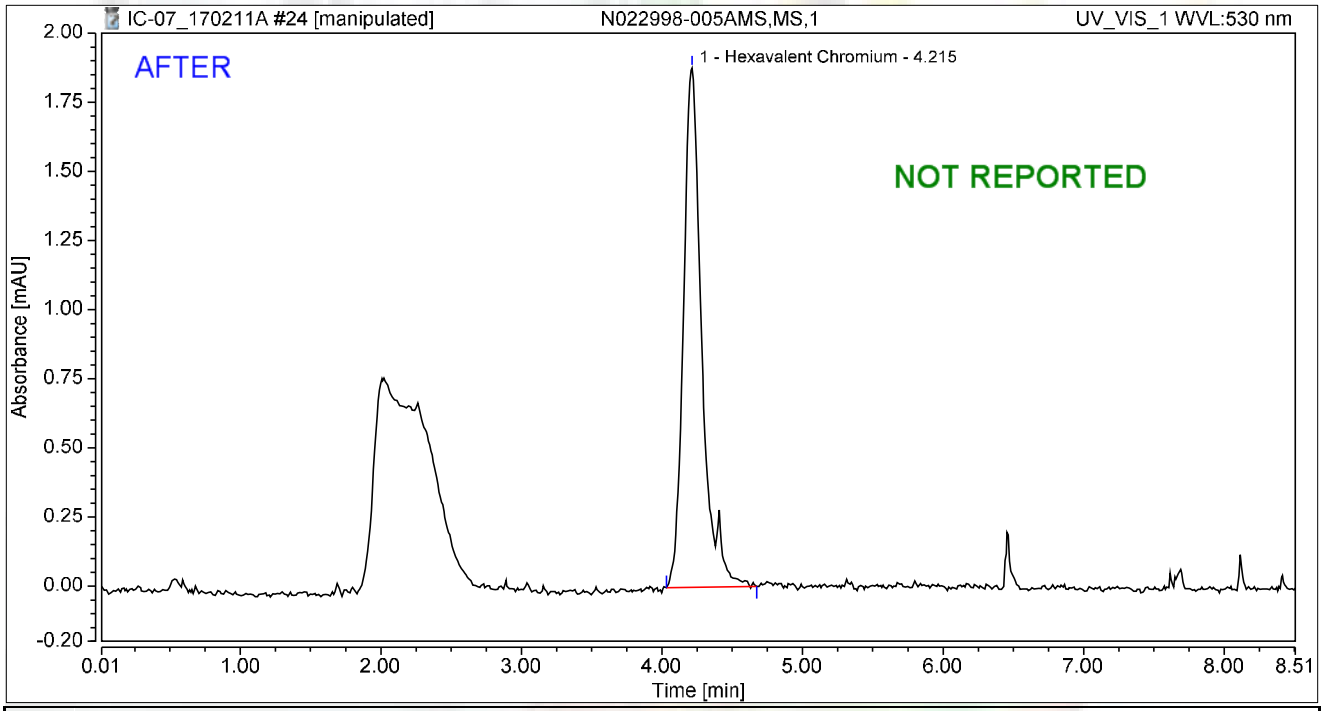
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.285	1.878	100.00	100.00	1.0734
Total:			**0.285**	**1.878**	**100.00**	**100.00**	

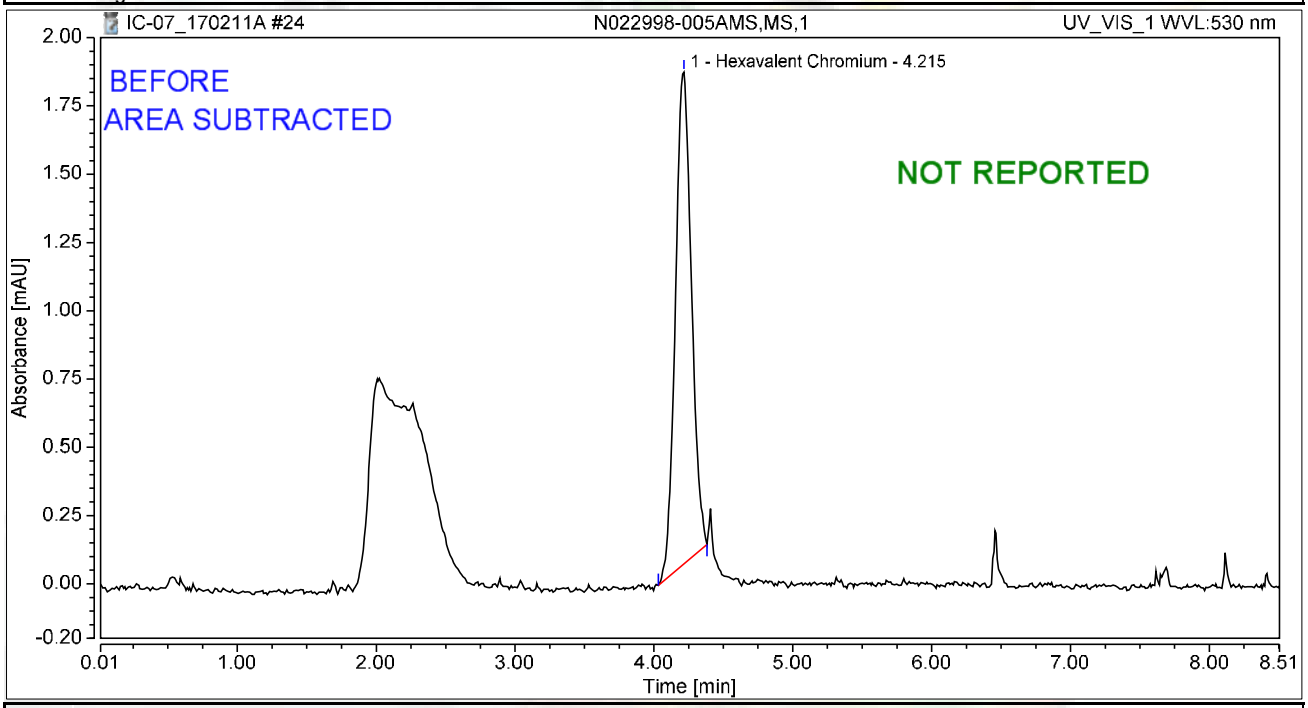
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.242	1.801	100.00	100.00	0.9105
Total:			**0.242**	**1.801**	**100.00**	**100.00**	

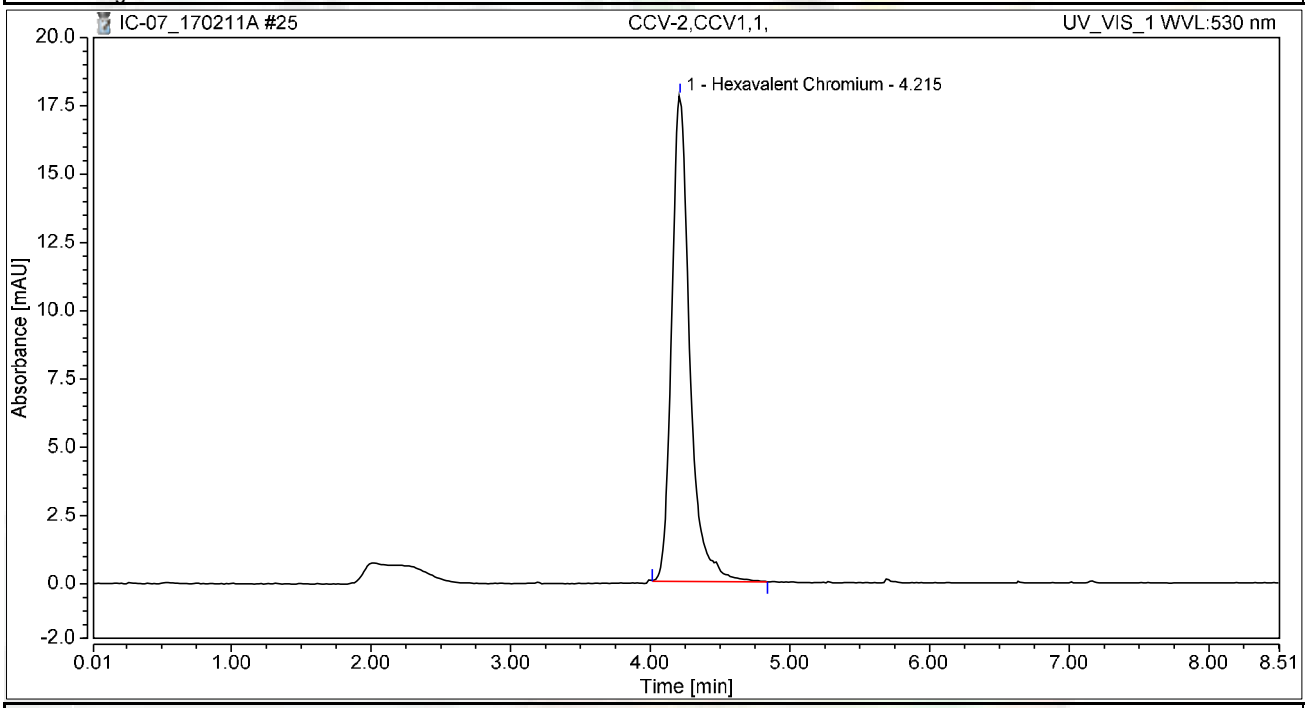
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

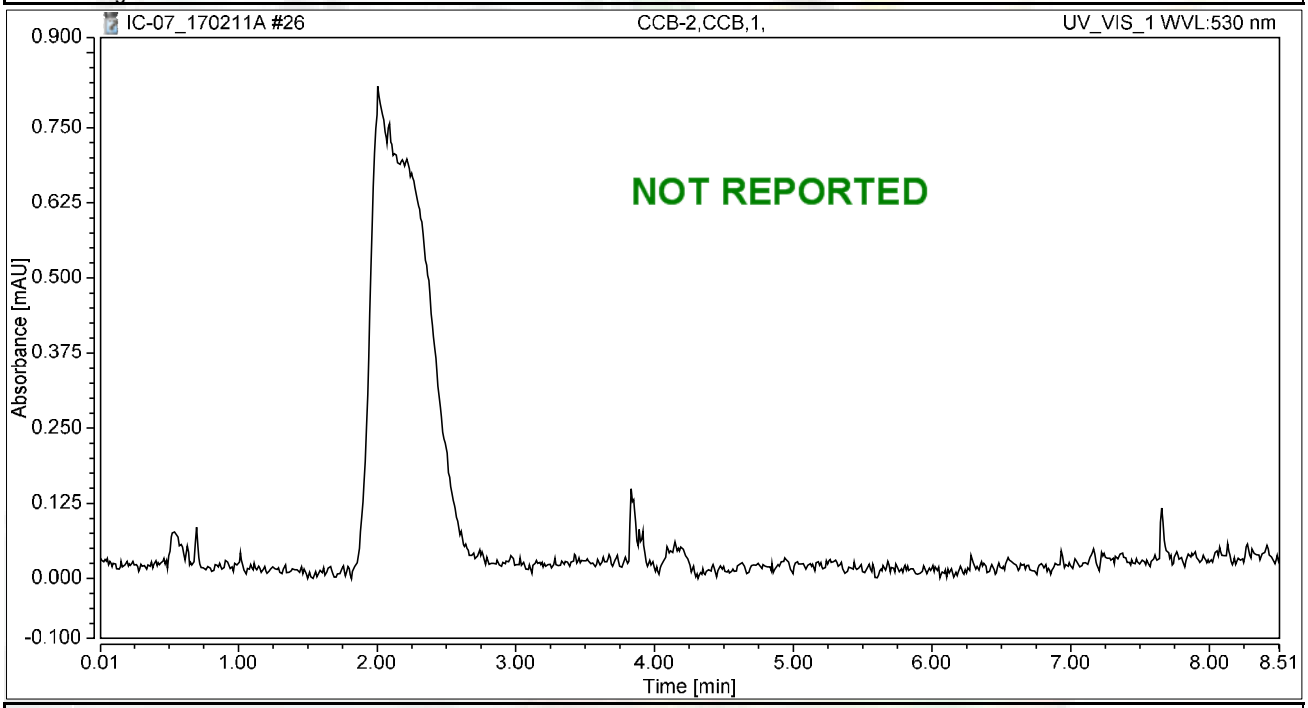
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.668	17.786	100.00	100.00	10.0579
Total:			**2.668**	**17.786**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

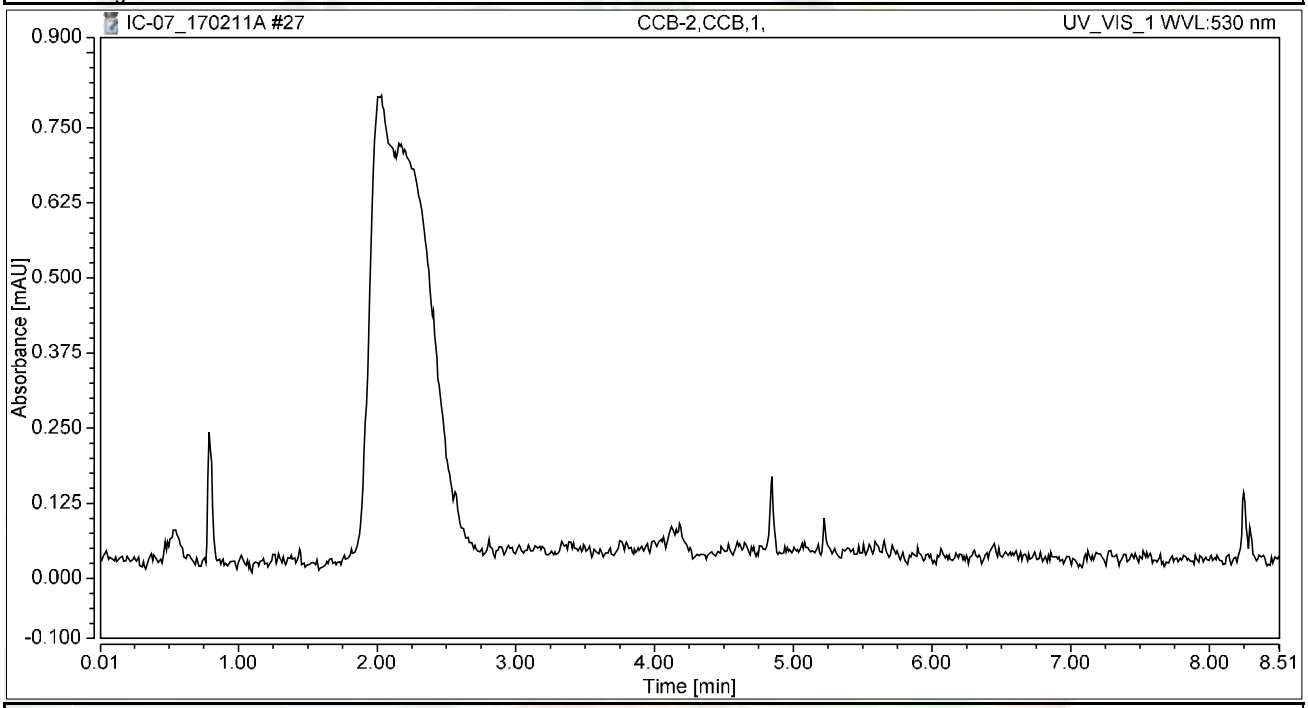
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

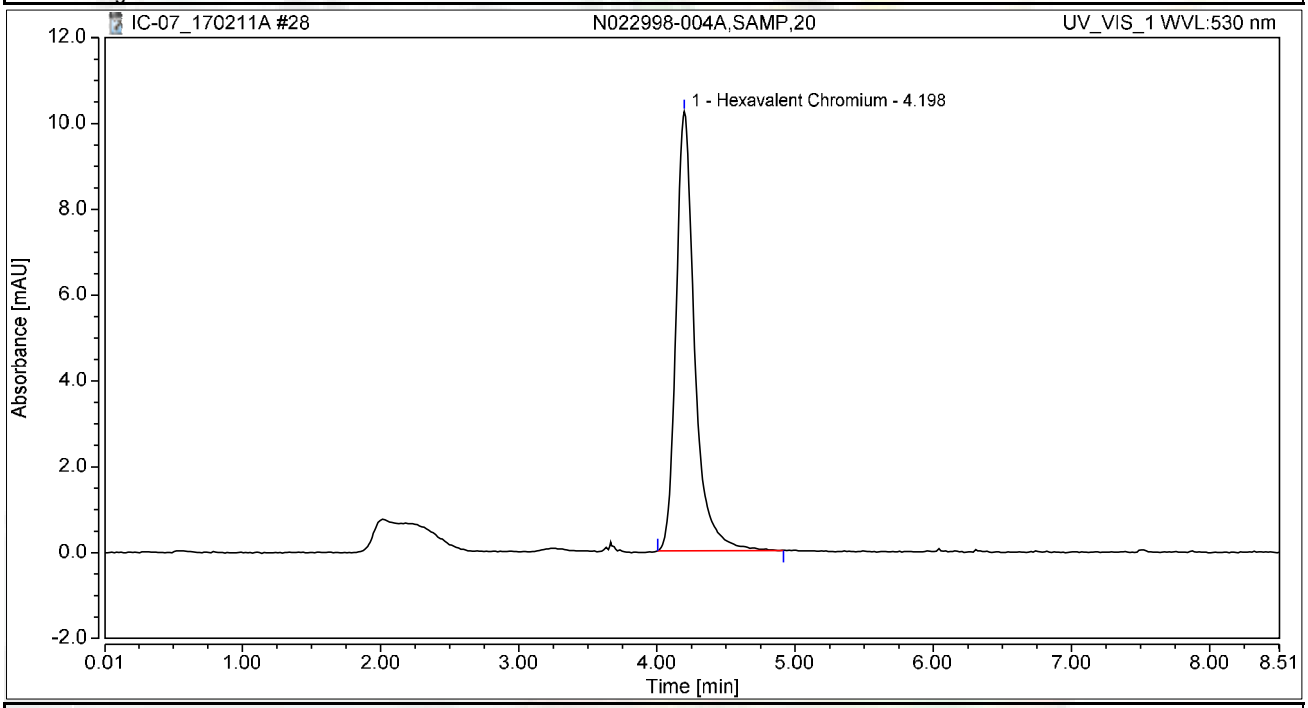
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-004A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

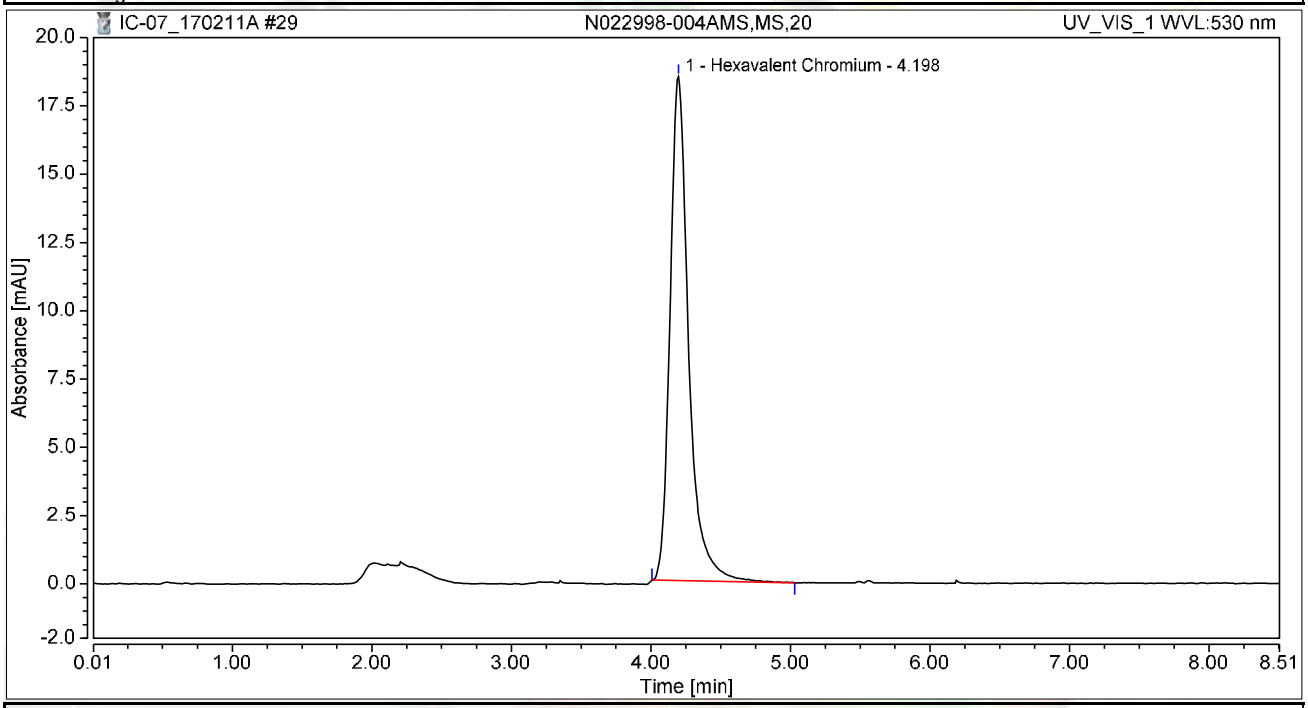
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.593	10.230	100.00	100.00	6.0052
Total:			**1.593**	**10.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-004AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

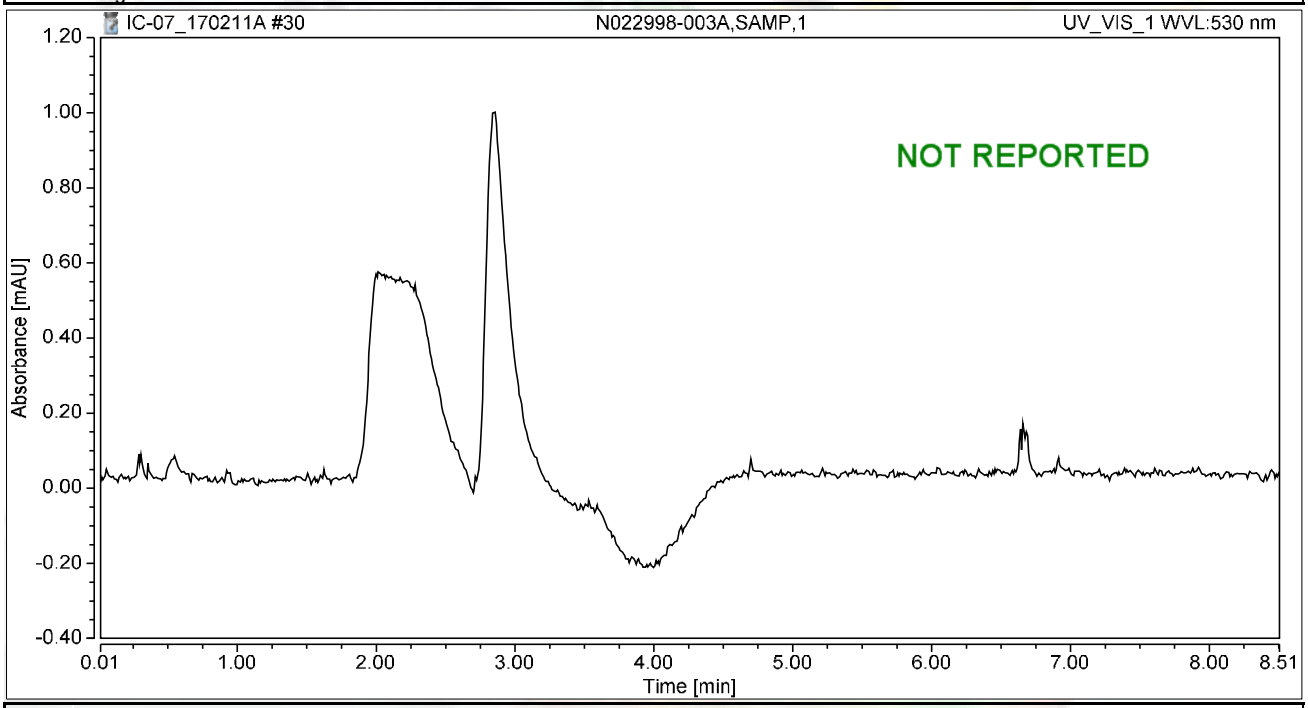
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.852	18.461	100.00	100.00	10.7538
Total:			**2.852**	**18.461**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

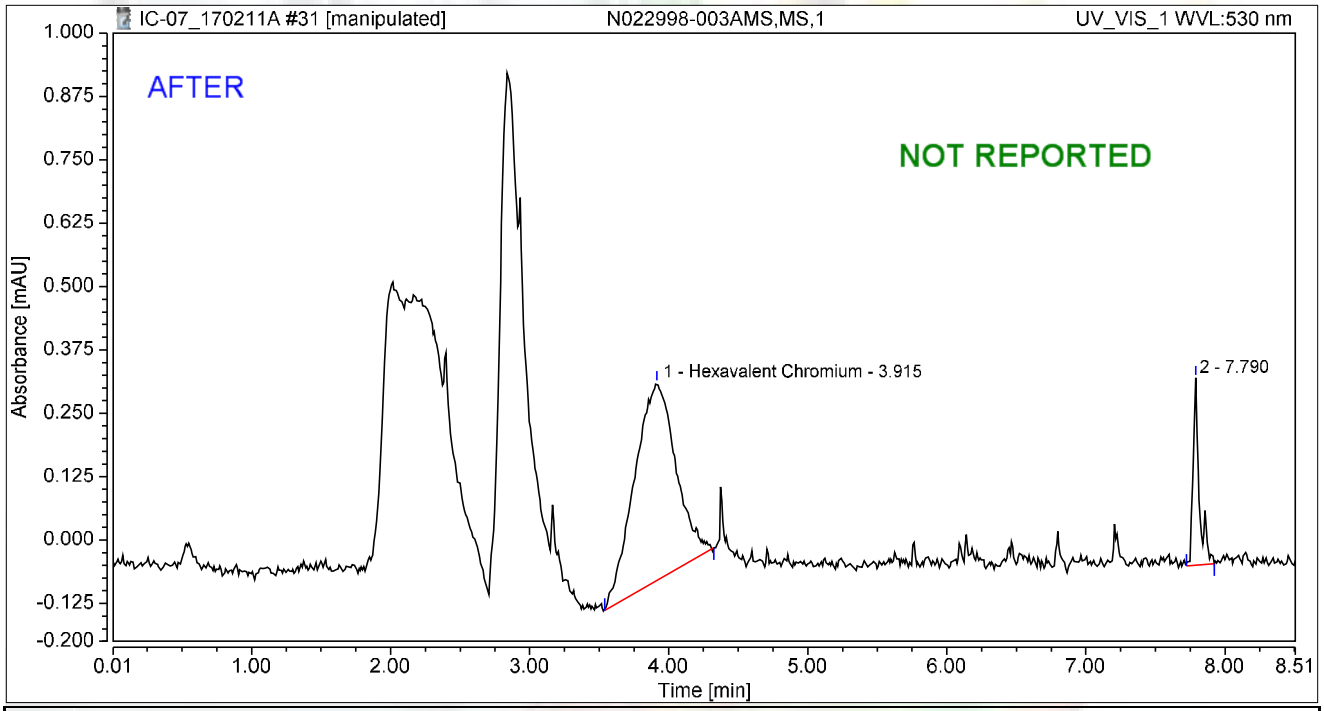
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.915	0.135	0.389	87.66	51.30	0.5080
2		7.790	0.019	0.370	12.34	48.70	n.a.
Total:			**0.154**	**0.759**	**100.00**	**100.00**	

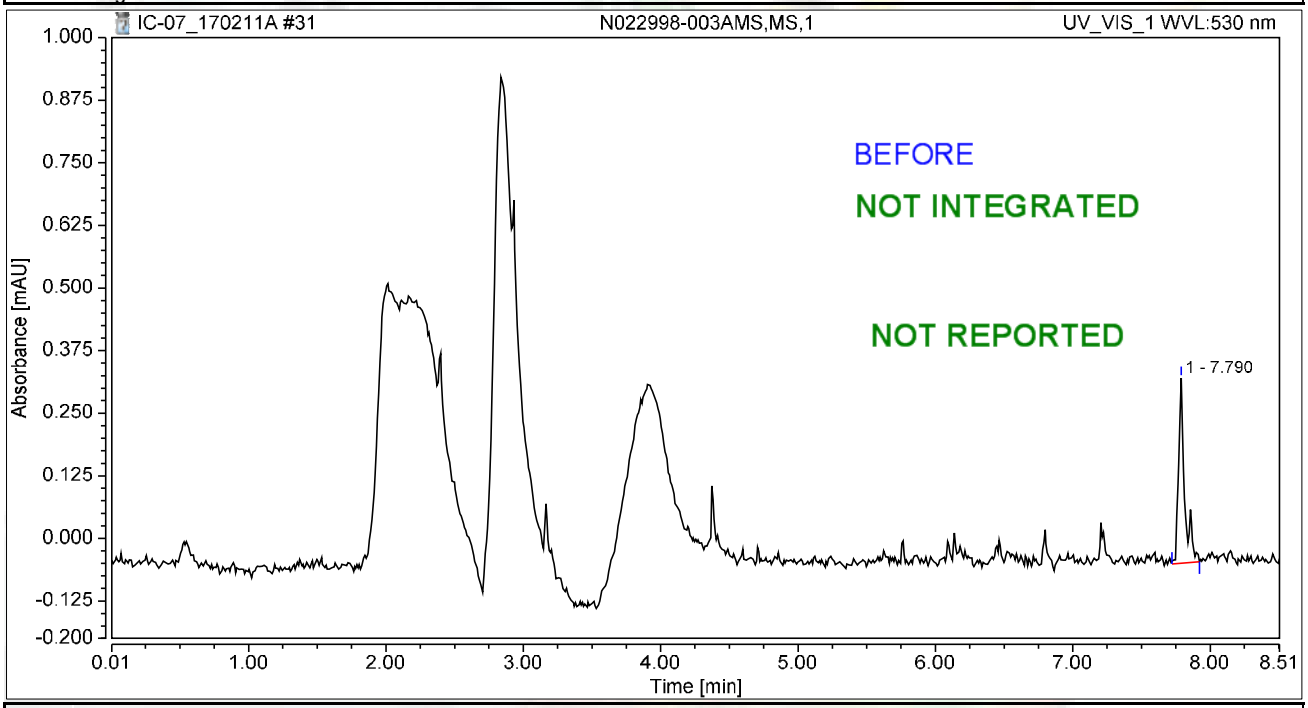
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.790	0.019	0.370	100.00	100.00	n.a.
Total:			**0.019**	**0.370**	**100.00**	**100.00**	

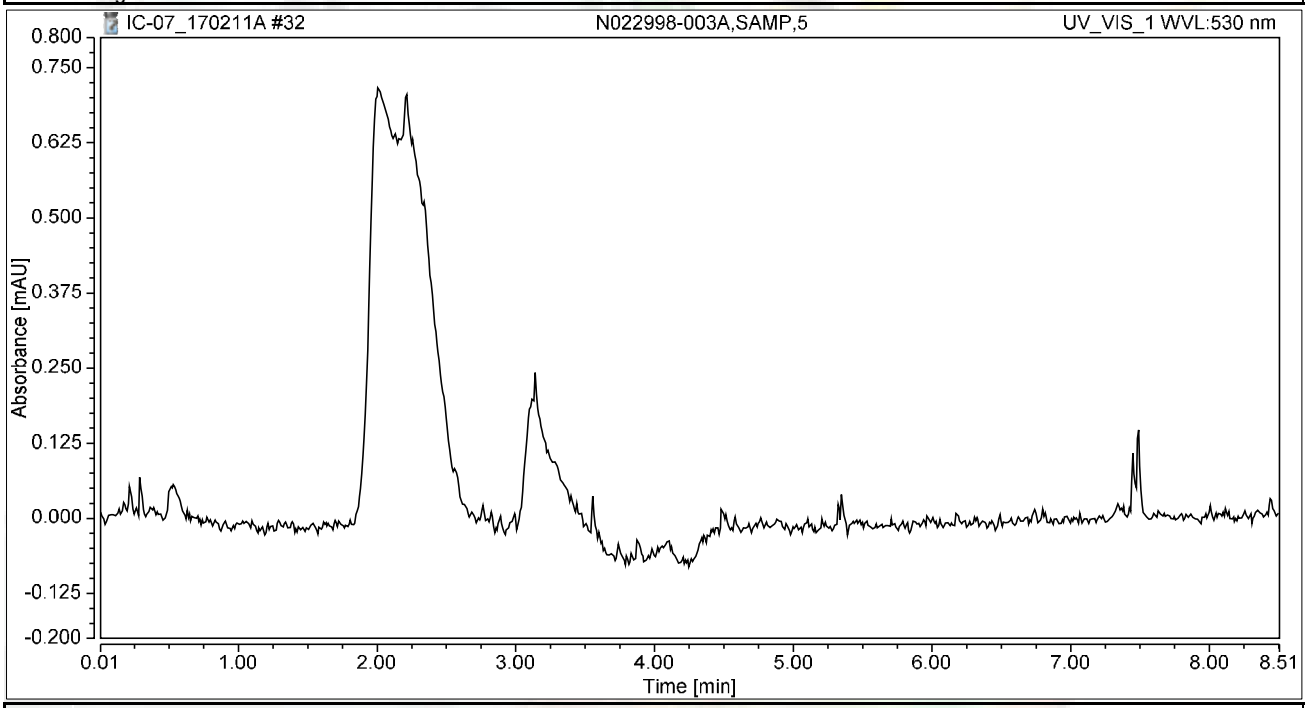
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

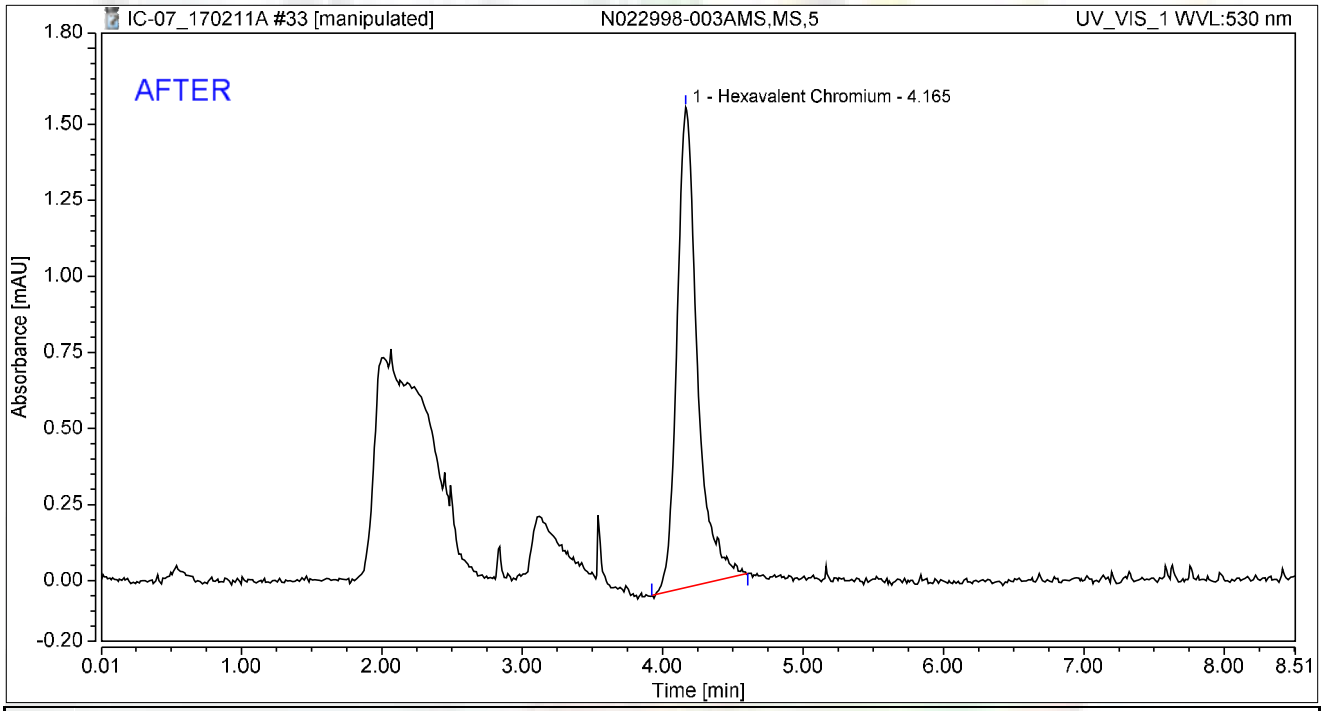
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	1.579	100.00	100.00	1.0008
Total:			**0.265**	**1.579**	**100.00**	**100.00**	

rba 2/14/2017

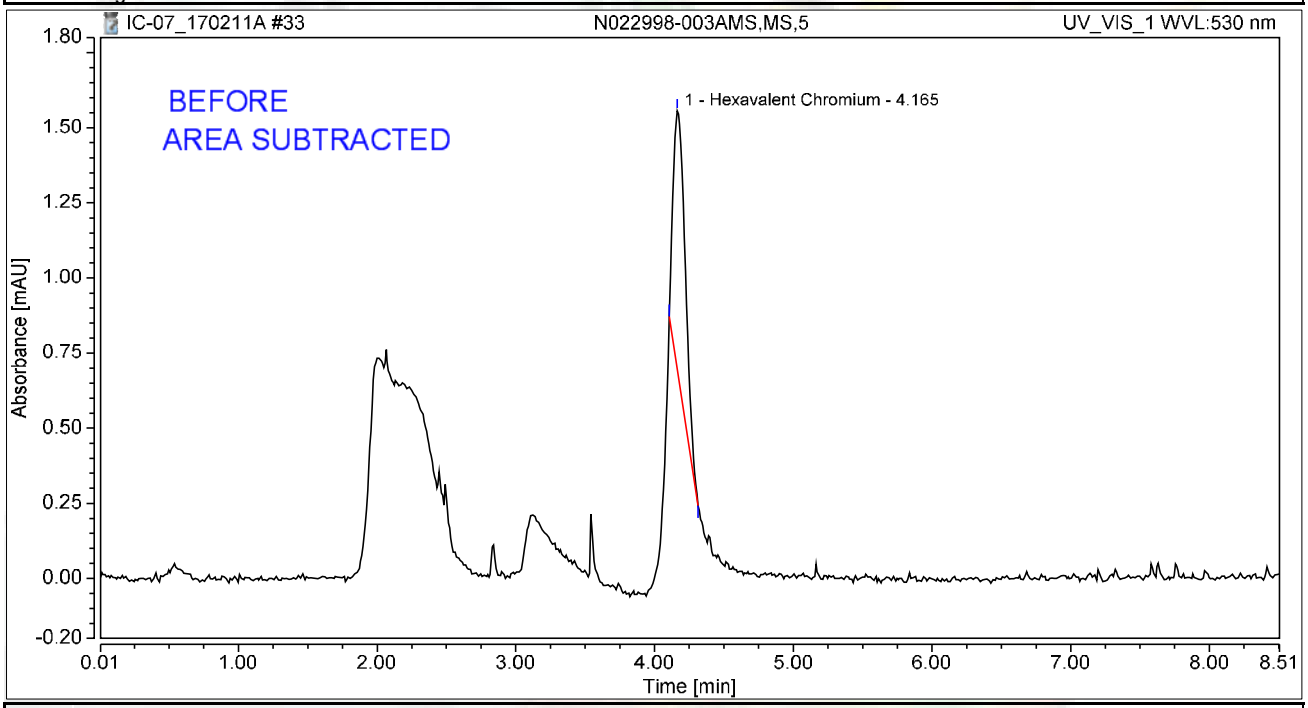
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.088	0.860	100.00	100.00	0.3334
Total:			**0.088**	**0.860**	**100.00**	**100.00**	

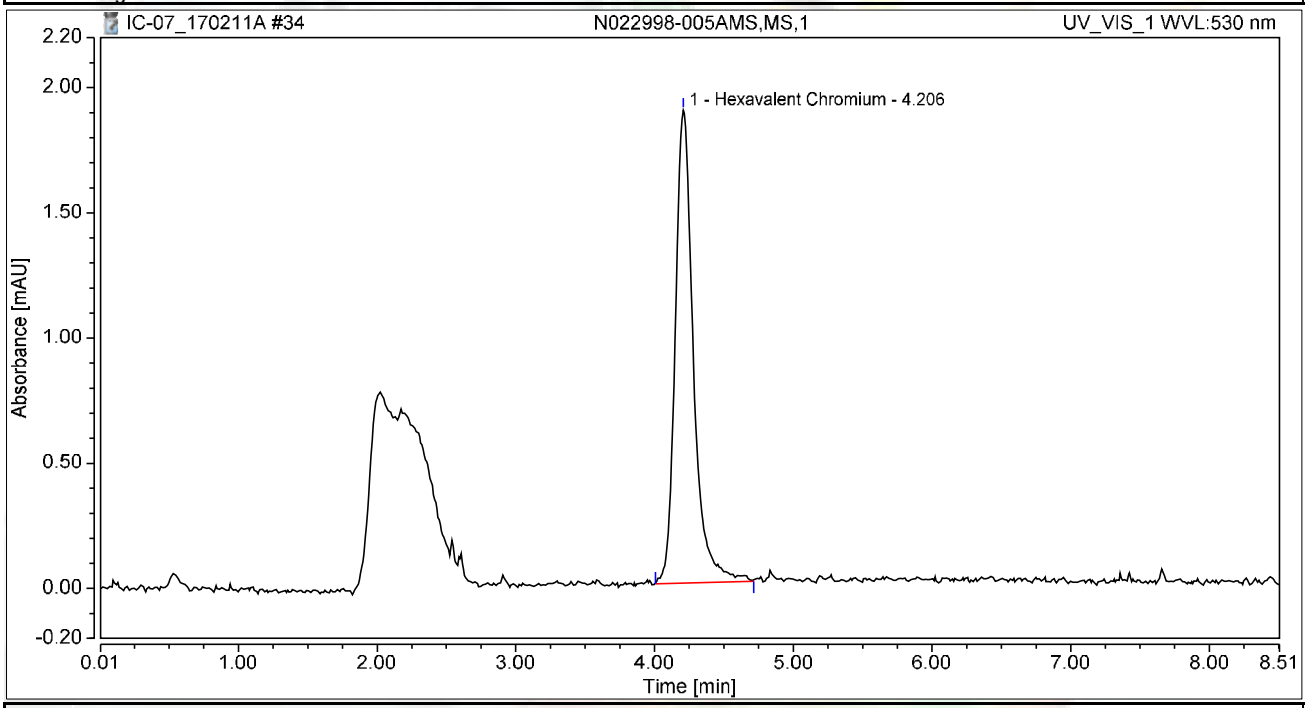
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

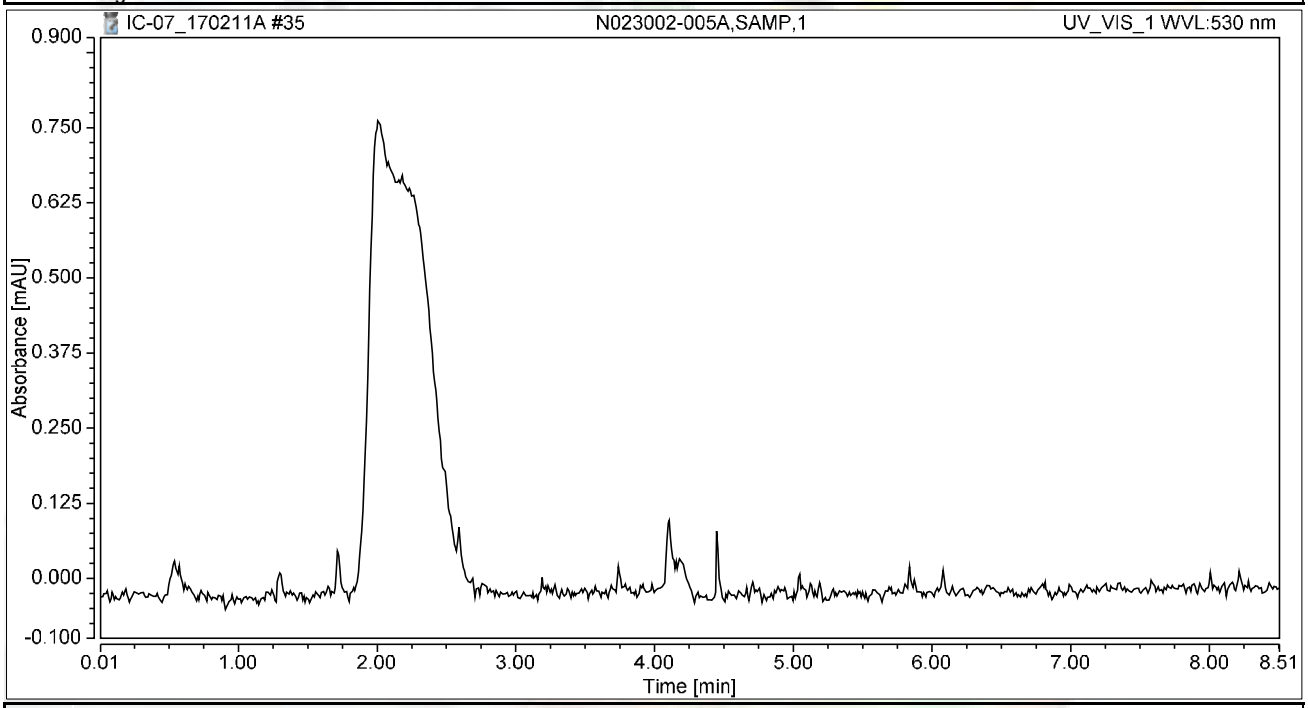
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.287	1.890	100.00	100.00	1.0825
Total:			**0.287**	**1.890**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

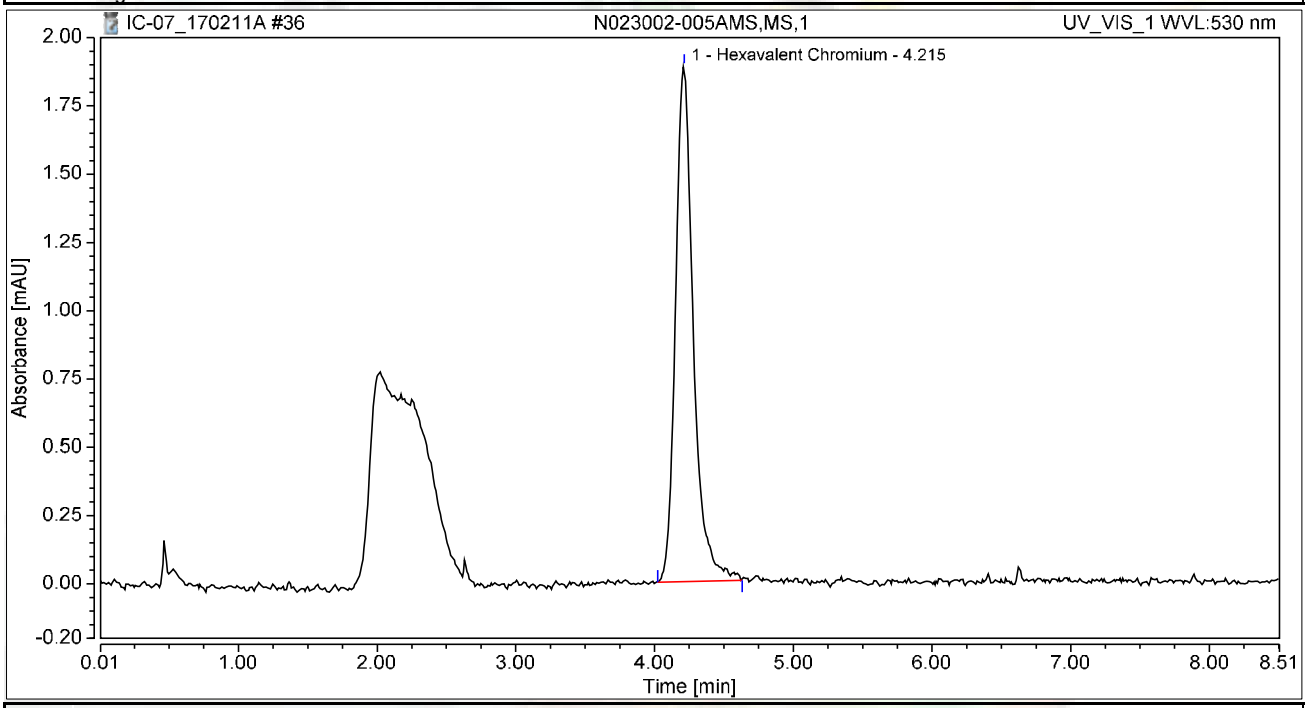
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

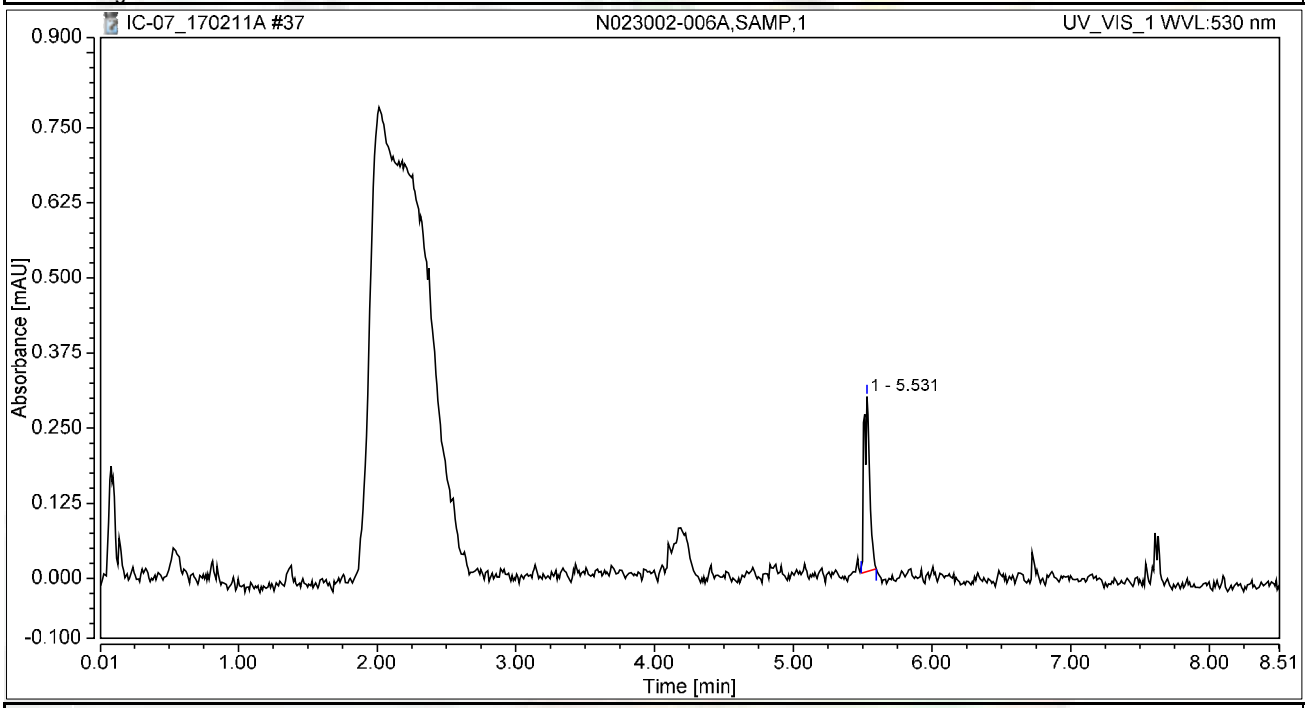
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.281	1.888	100.00	100.00	1.0591
Total:			**0.281**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

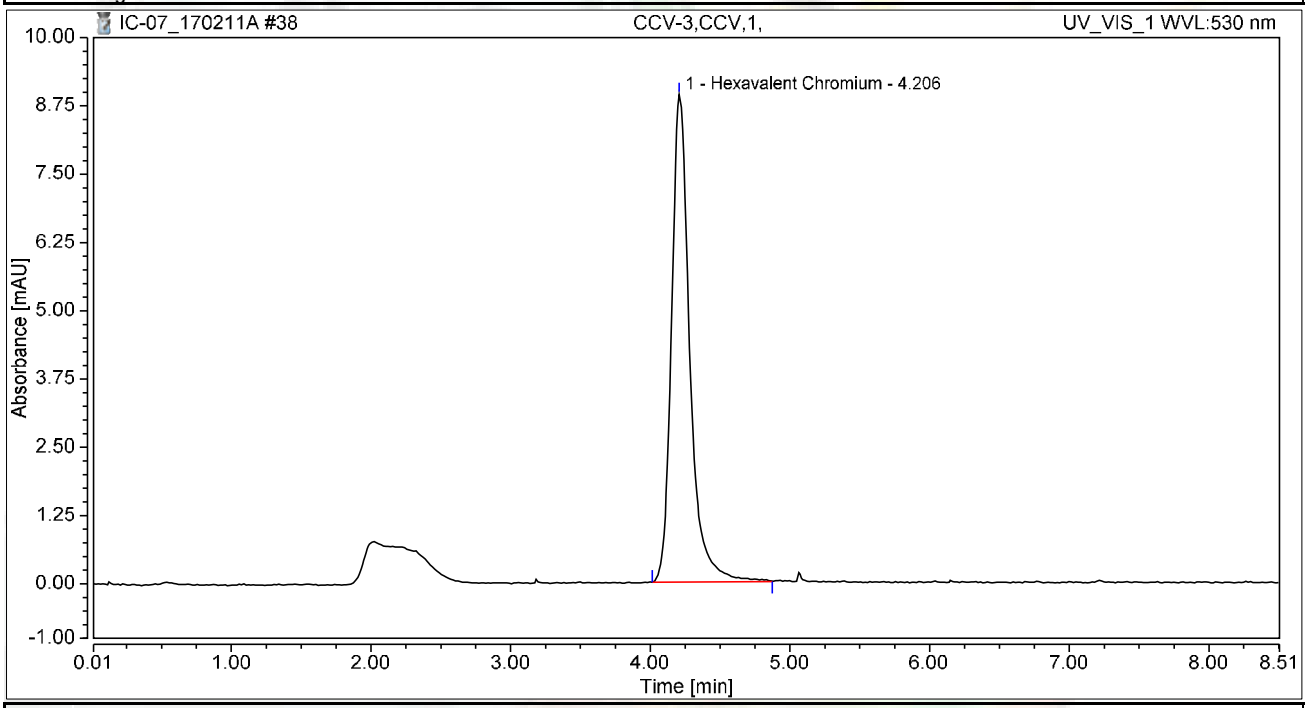
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.531	0.014	0.291	100.00	100.00	n.a.
Total:			**0.014**	**0.291**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

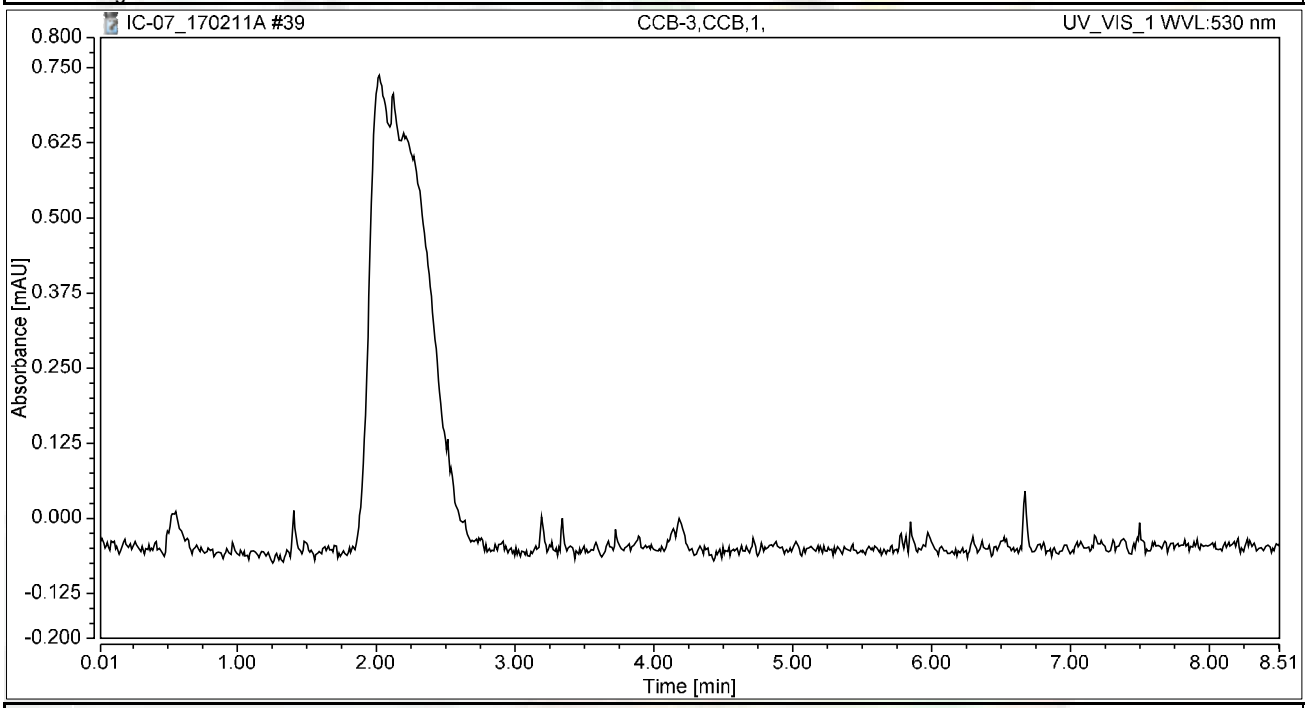
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.350	8.924	100.00	100.00	5.0881
Total:			**1.350**	**8.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

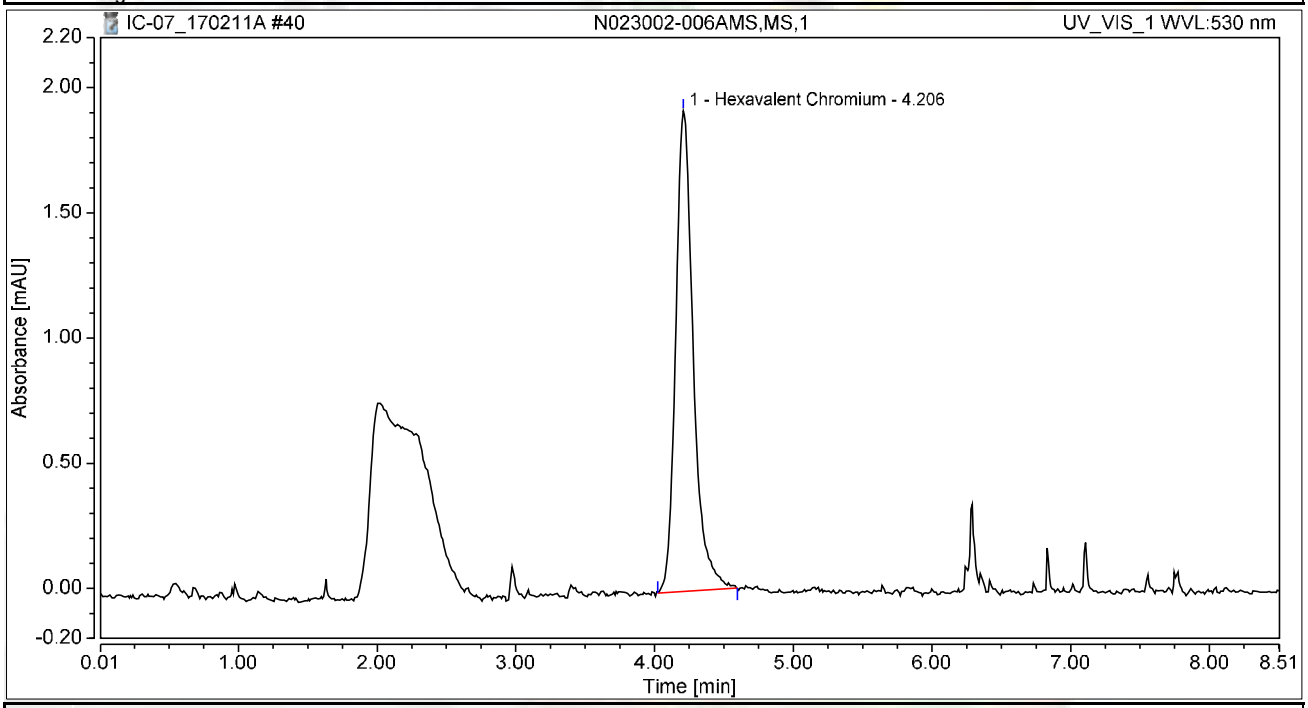
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

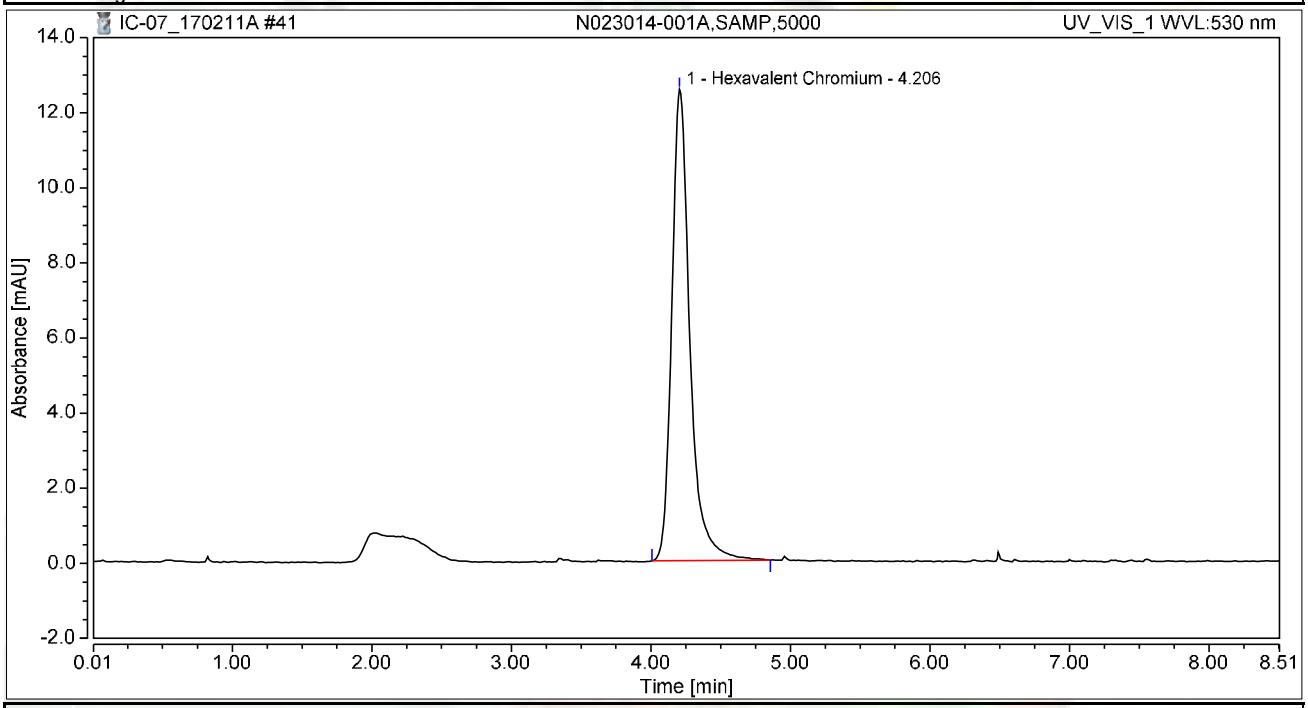
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.282	1.920	100.00	100.00	1.0628
Total:			**0.282**	**1.920**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-001A,SAMP,5000**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

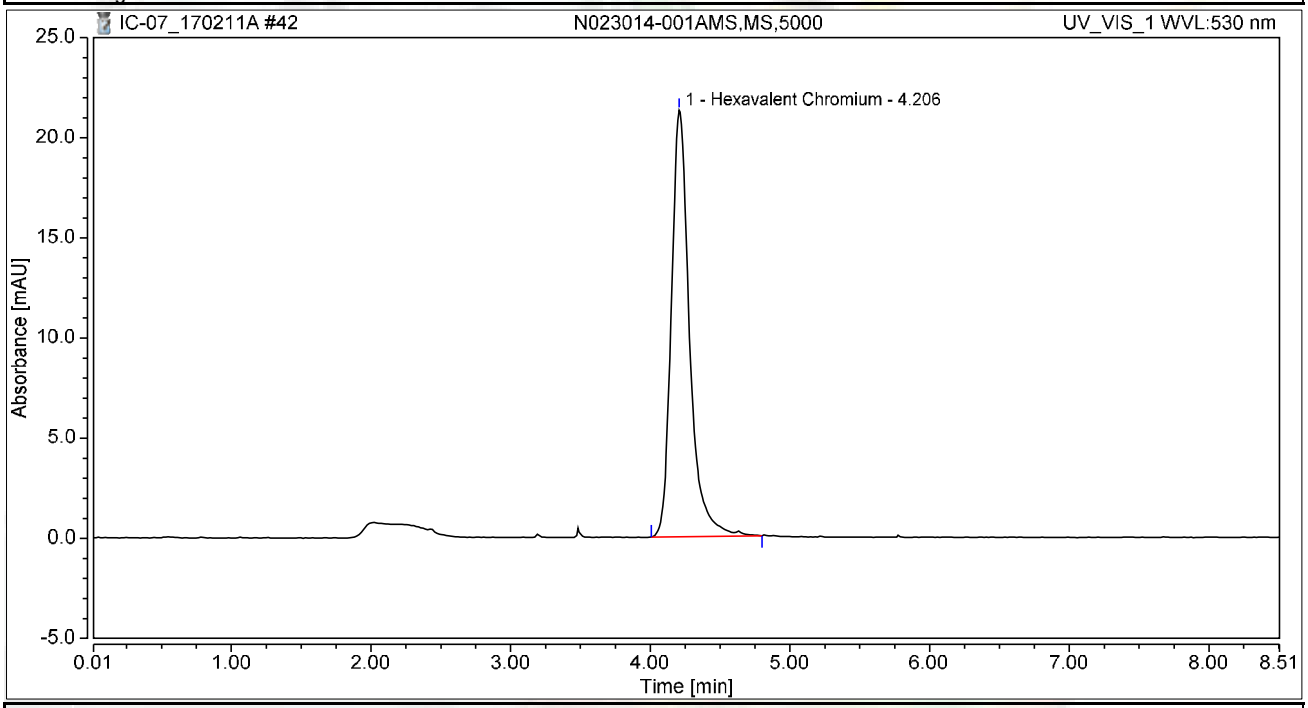
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.883	12.546	100.00	100.00	7.0983
Total:			**1.883**	**12.546**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-001AMS,MS,5000**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

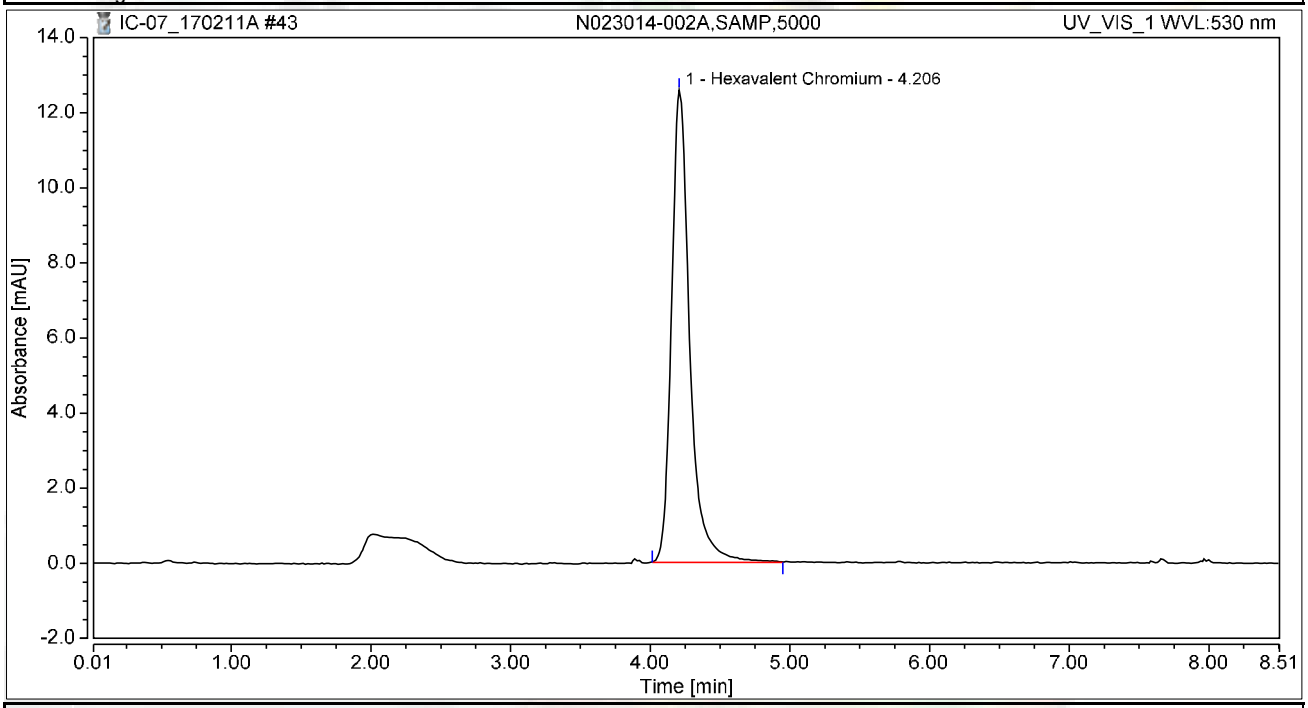
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.208	21.284	100.00	100.00	12.0938
Total:			**3.208**	**21.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-002A,SAMP,5000**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

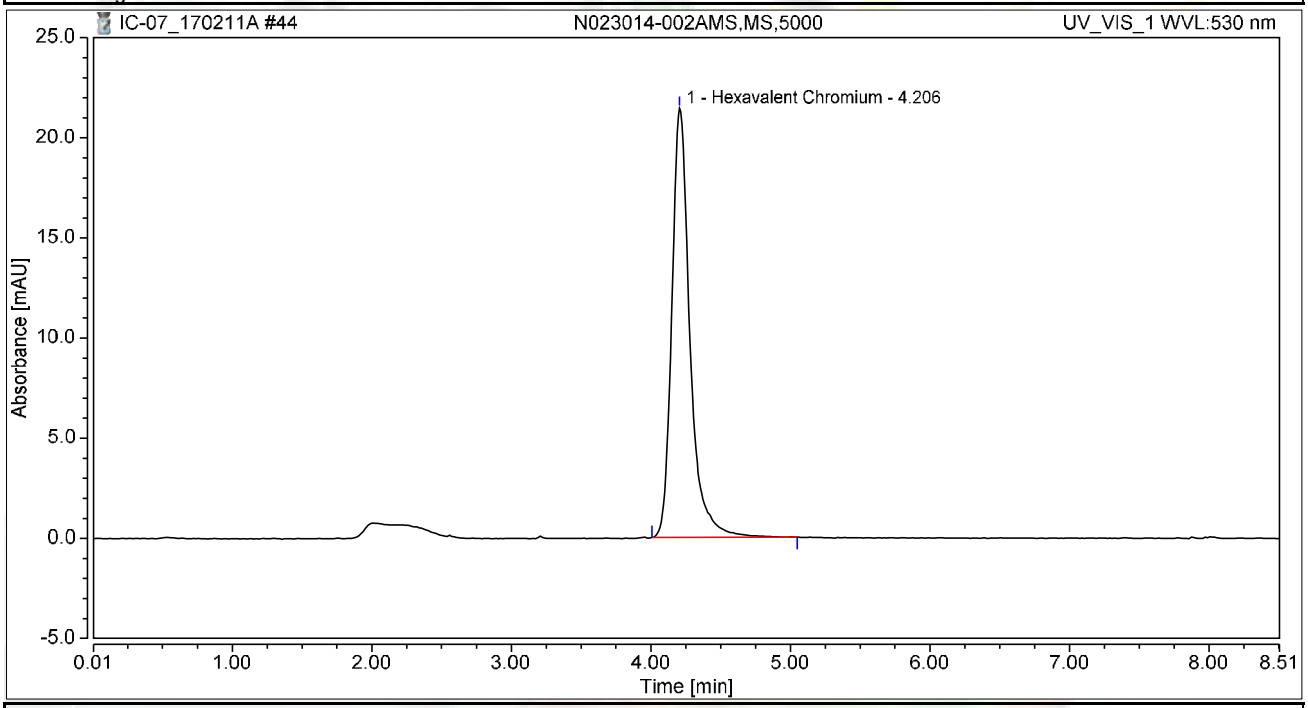
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.902	12.579	100.00	100.00	7.1705
Total:			**1.902**	**12.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-002AMS,MS,5000**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

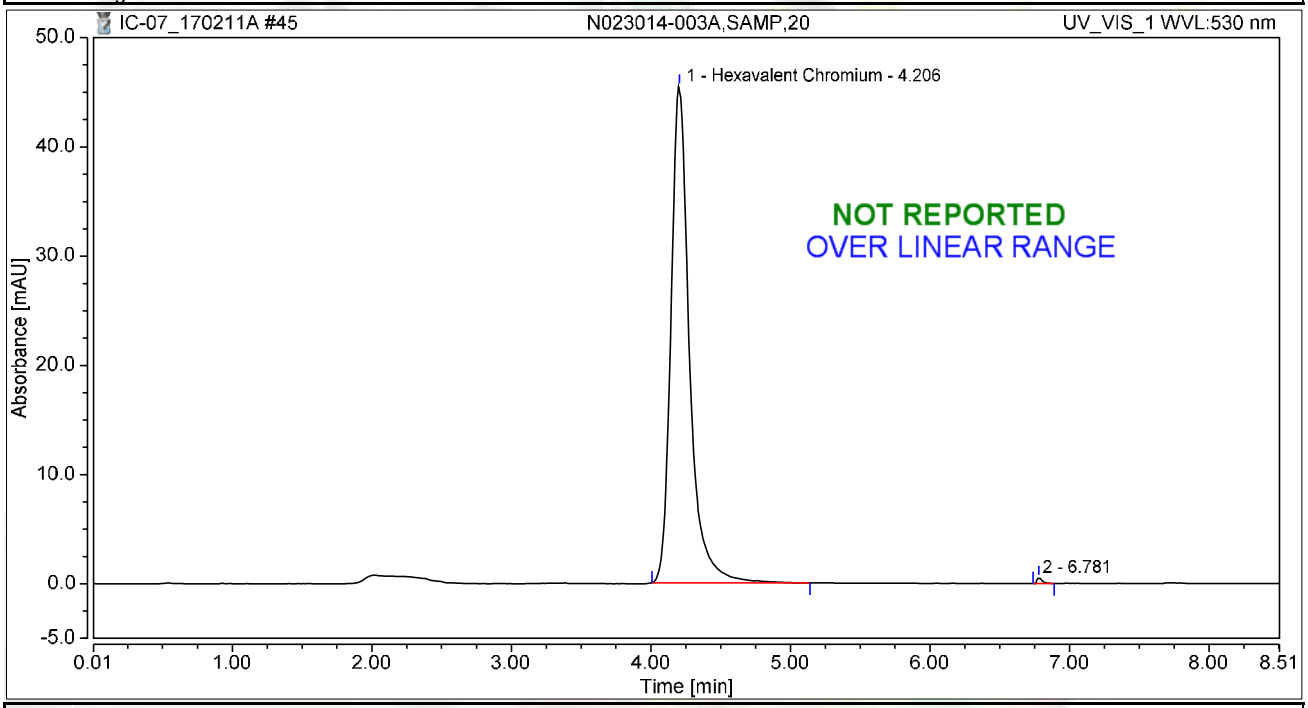
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.227	21.430	100.00	100.00	12.1659
Total:			**3.227**	**21.430**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

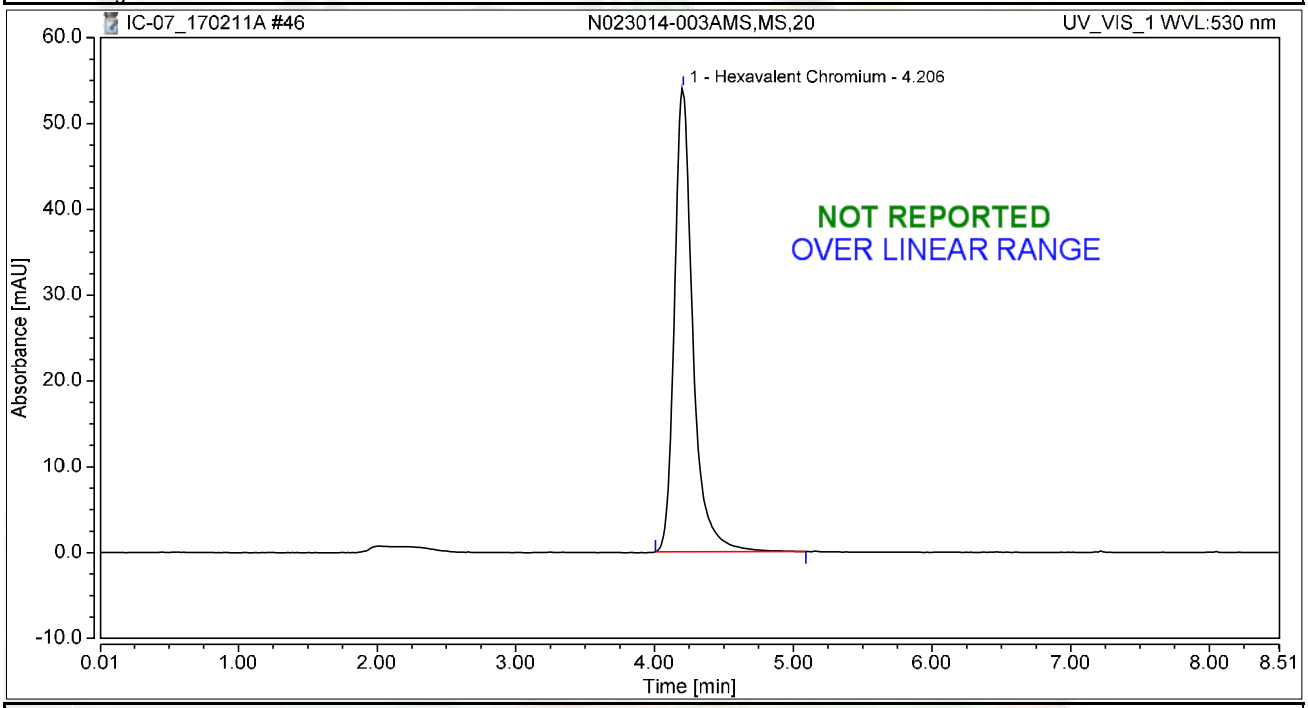
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	7.005	45.457	99.66	98.84	26.4089
2		6.781	0.024	0.534	0.34	1.16	n.a.
Total:			**7.029**	**45.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

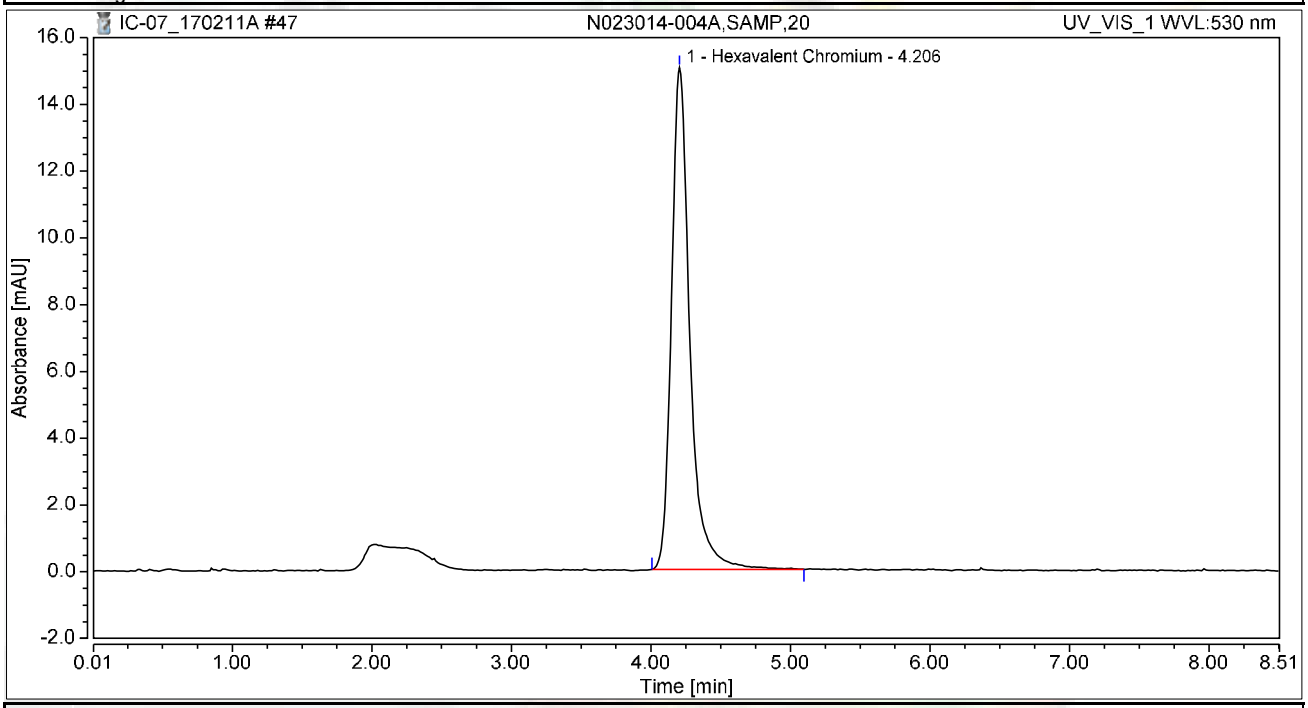
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	8.316	54.013	100.00	100.00	31.3519
Total:			**8.316**	**54.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-004A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

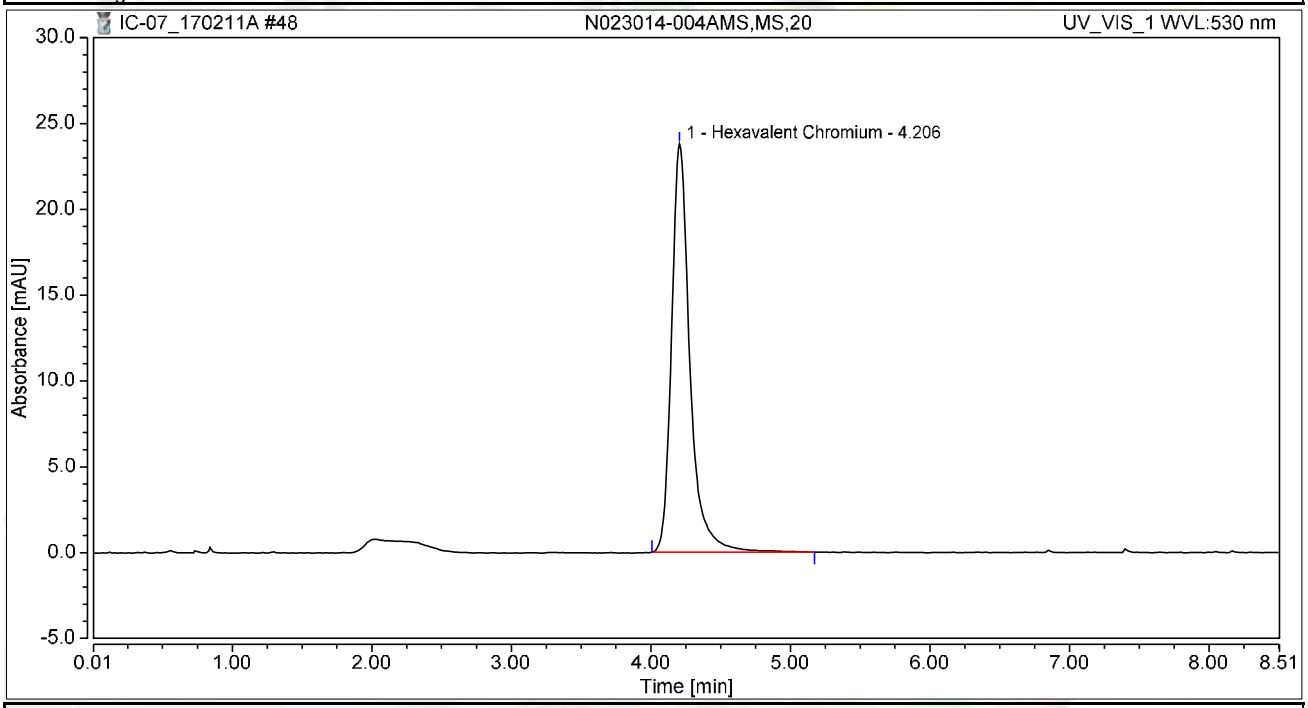
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.307	15.044	100.00	100.00	8.6973
Total:			**2.307**	**15.044**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-004AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

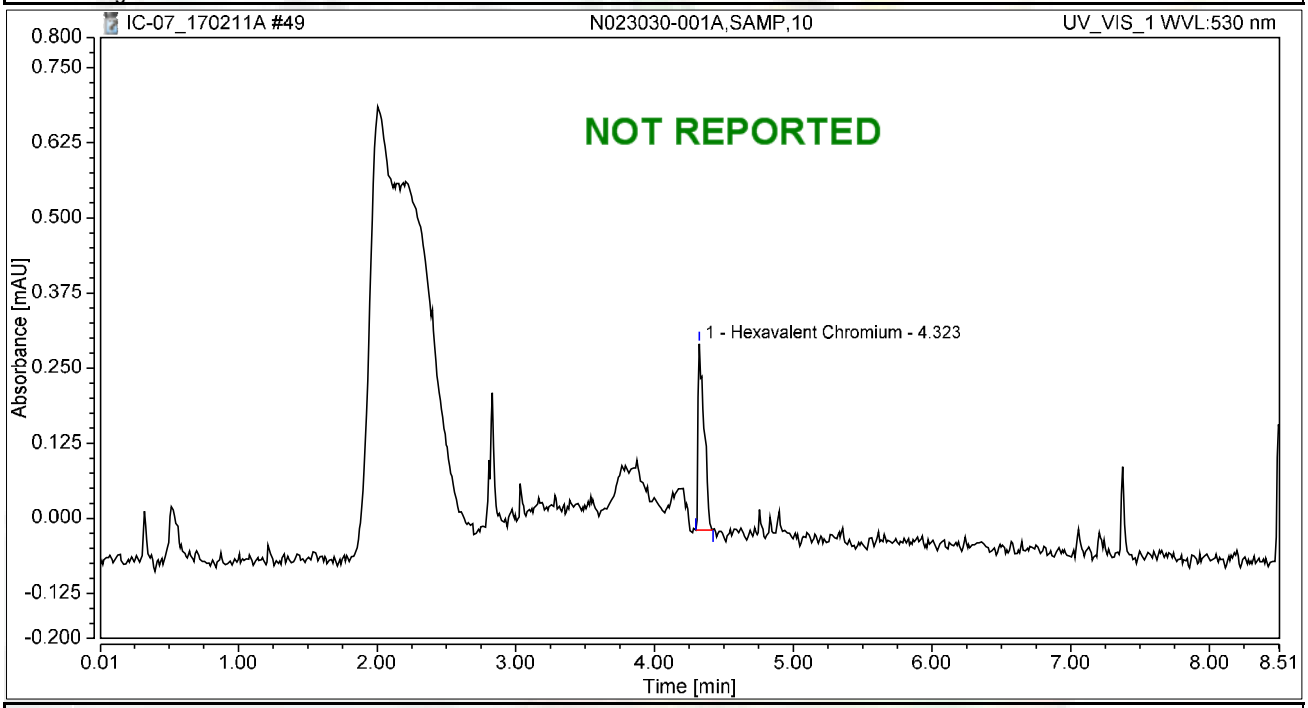
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.634	23.790	100.00	100.00	13.7020
Total:			**3.634**	**23.790**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

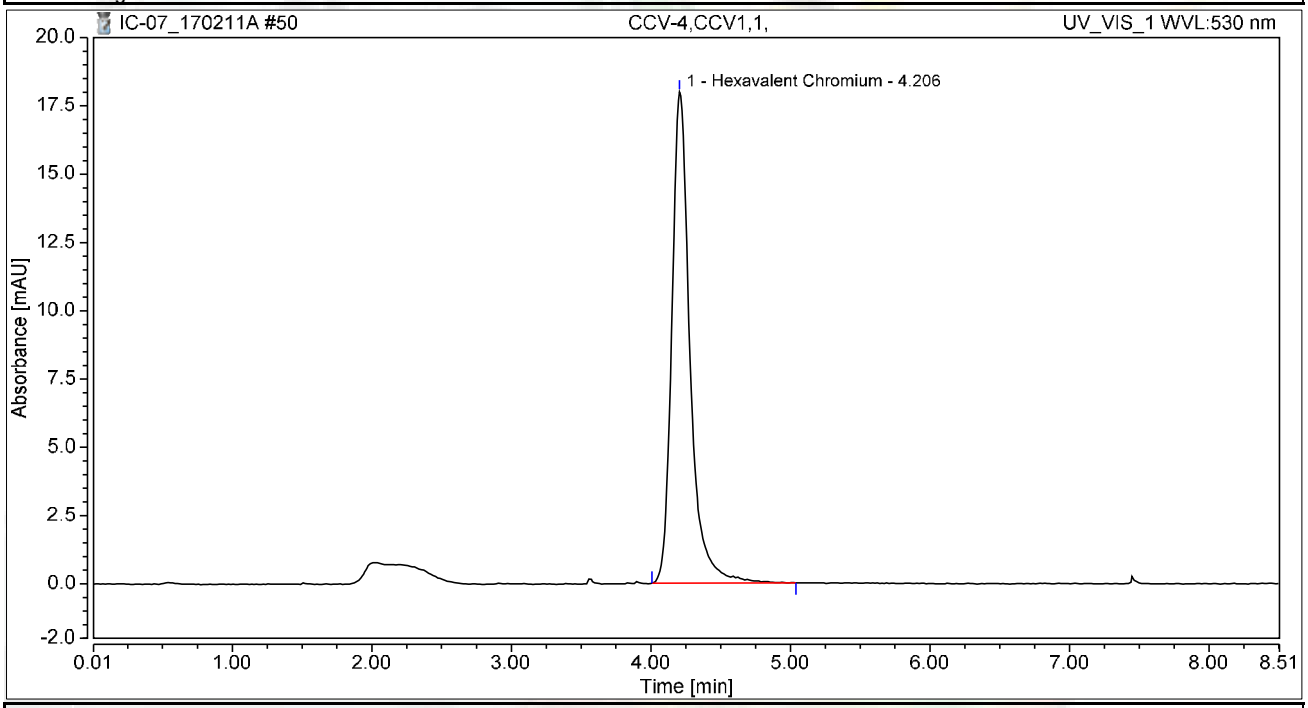
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.323	0.015	0.310	100.00	100.00	0.0583
Total:			**0.015**	**0.310**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

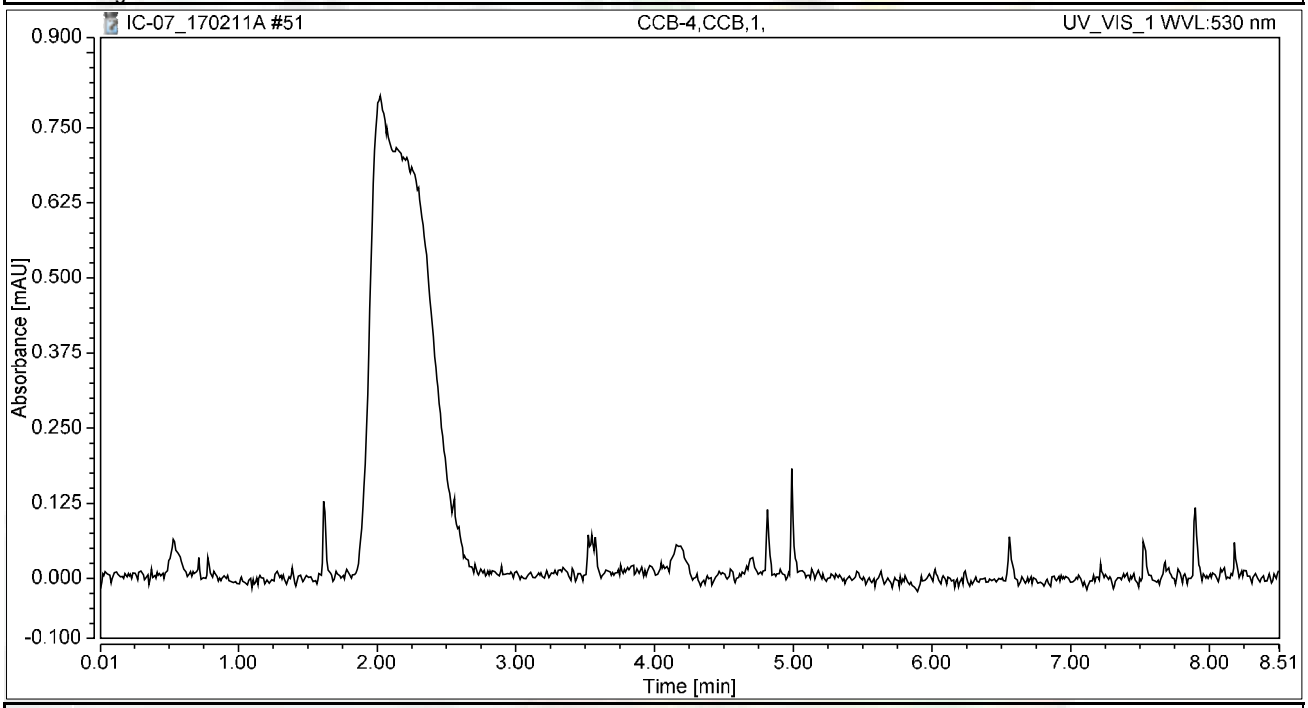
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.716	17.980	100.00	100.00	10.2408
Total:			**2.716**	**17.980**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

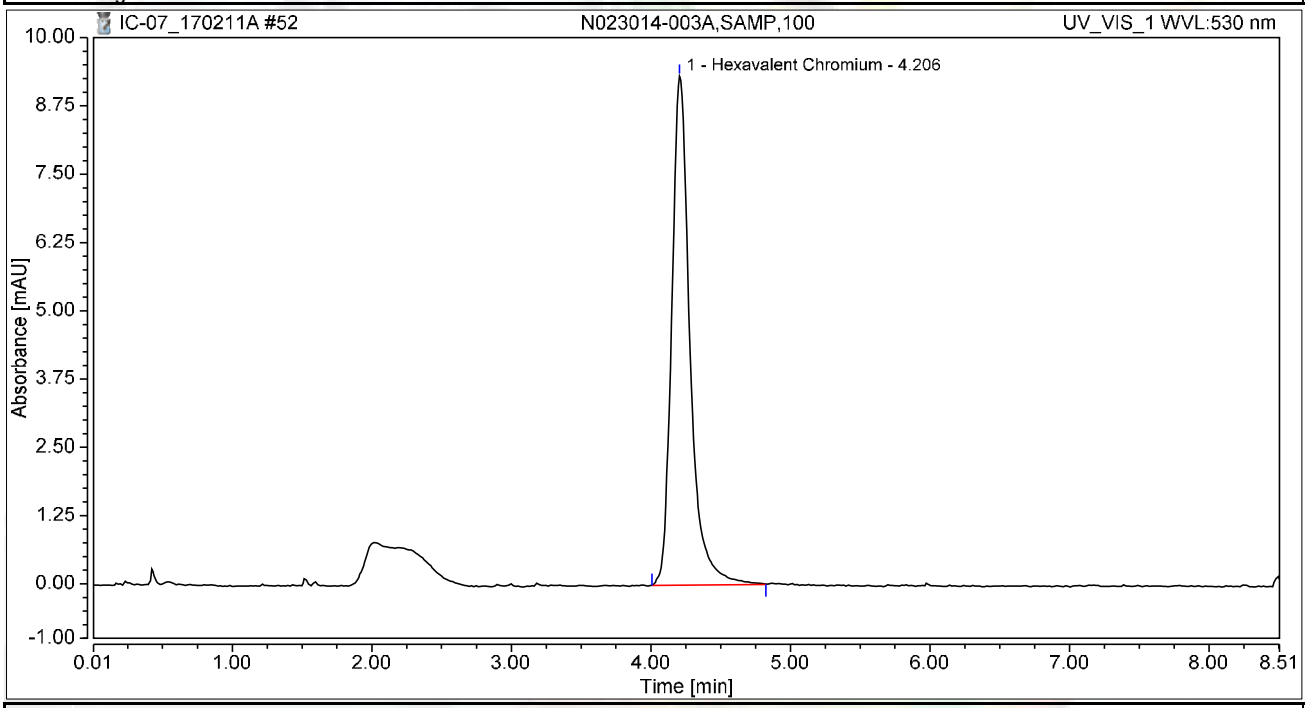
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

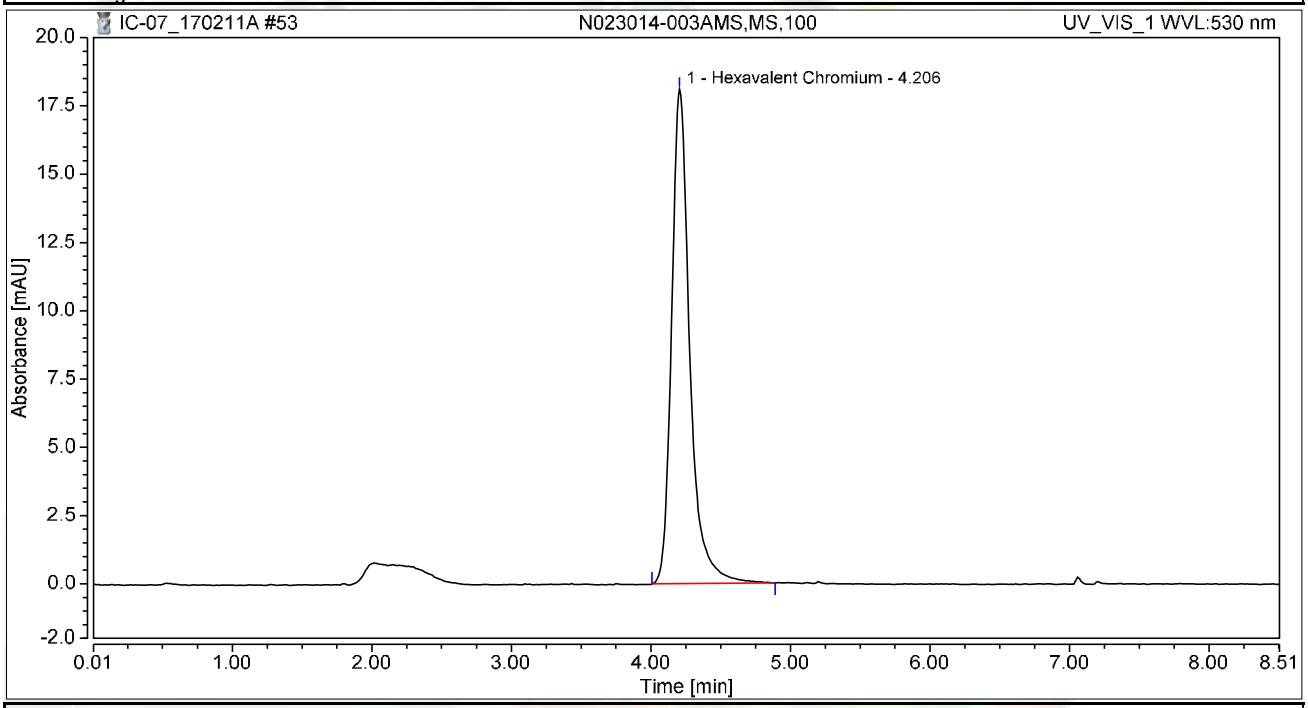
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.415	9.319	100.00	100.00	5.3363
Total:			**1.415**	**9.319**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

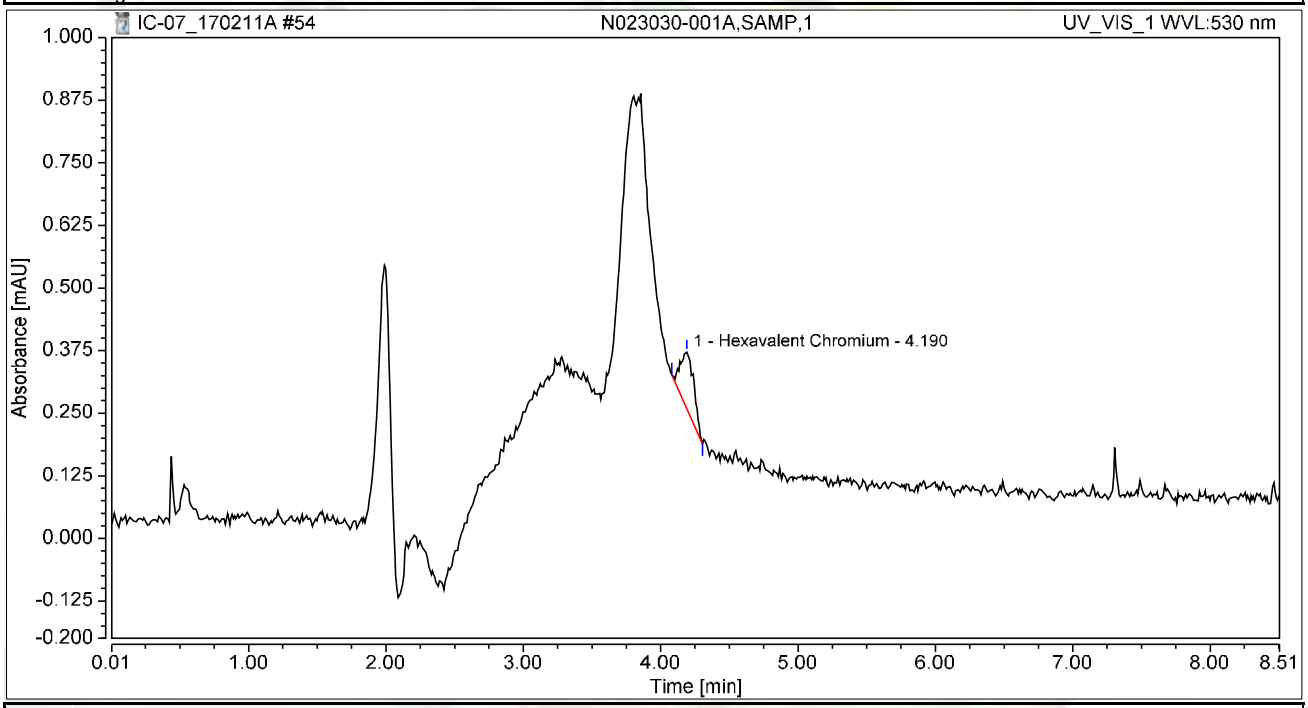
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.733	18.113	100.00	100.00	10.3047
Total:			**2.733**	**18.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

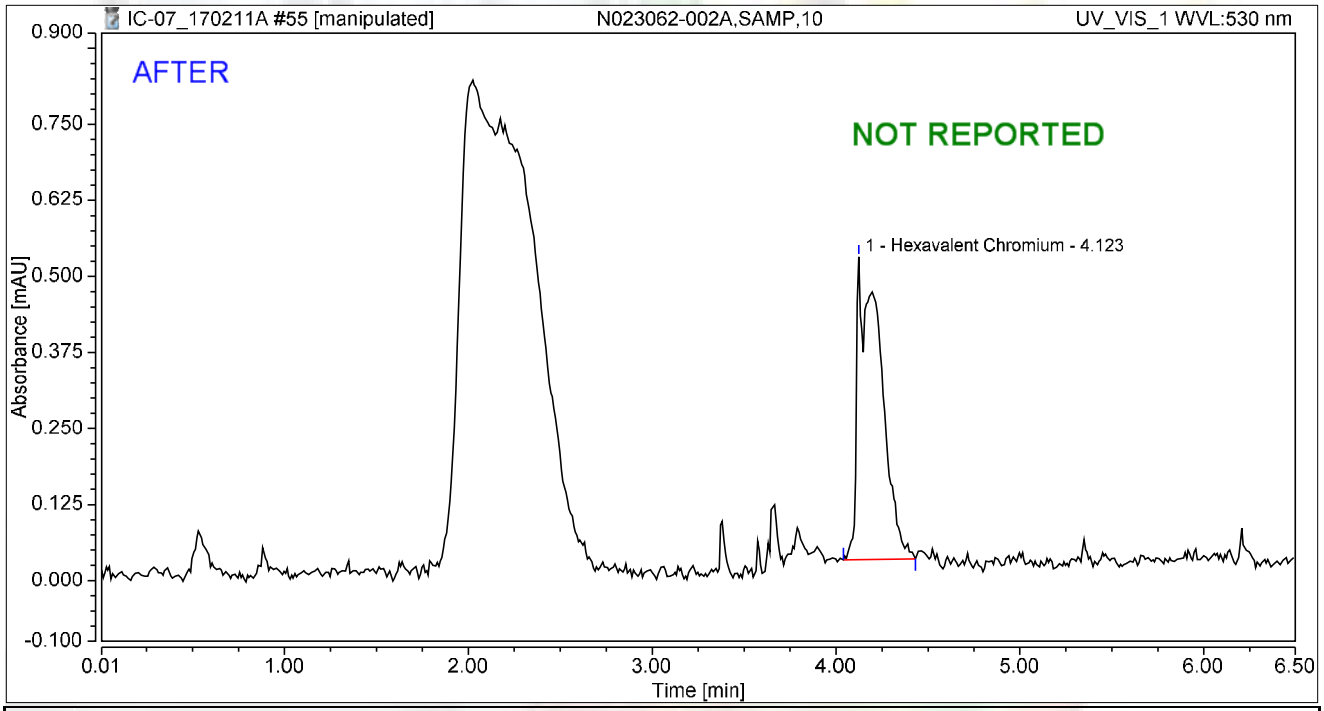
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.013	0.112	100.00	100.00	0.0488
Total:			**0.013**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,10**	*Run Time (min):*	**6.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.074	0.498	100.00	100.00	0.2808
Total:			**0.074**	**0.498**	**100.00**	**100.00**	

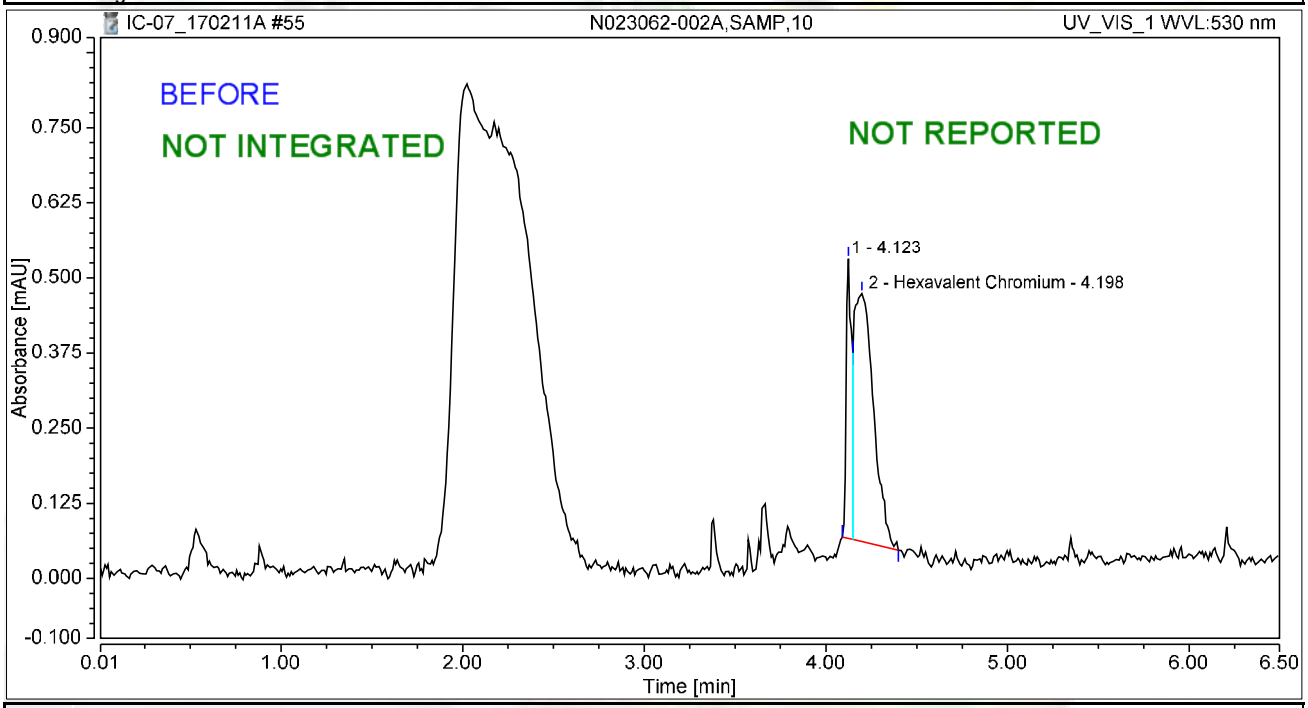
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,10**	*Run Time (min):*	**6.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.123	0.015	0.465	23.23	53.01	n.a.
2	Hexavalent Chromium	4.198	0.051	0.413	76.77	46.99	0.1921
Total:			**0.066**	**0.878**	**100.00**	**100.00**	

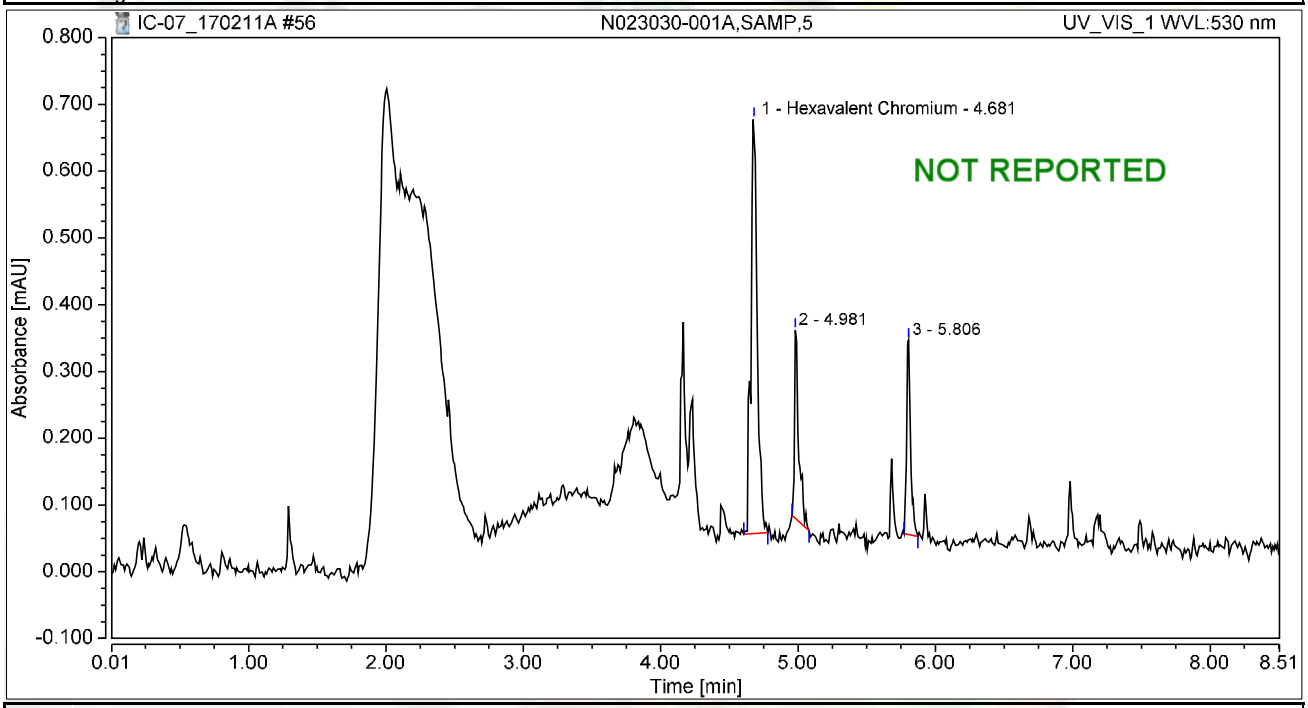
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.681	0.034	0.620	64.63	51.99	0.1286
2		4.981	0.009	0.282	17.86	23.62	n.a.
3		5.806	0.009	0.291	17.50	24.39	n.a.
Total:			**0.053**	**1.193**	**100.00**	**100.00**	

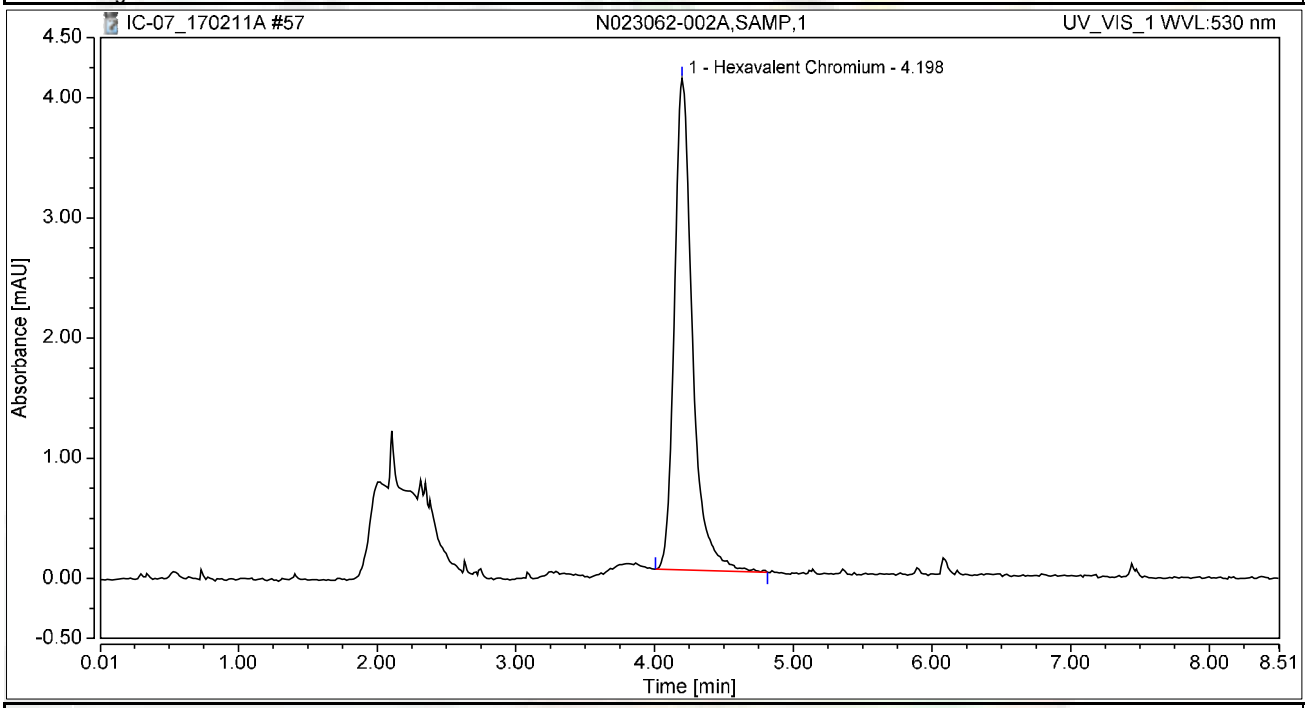
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

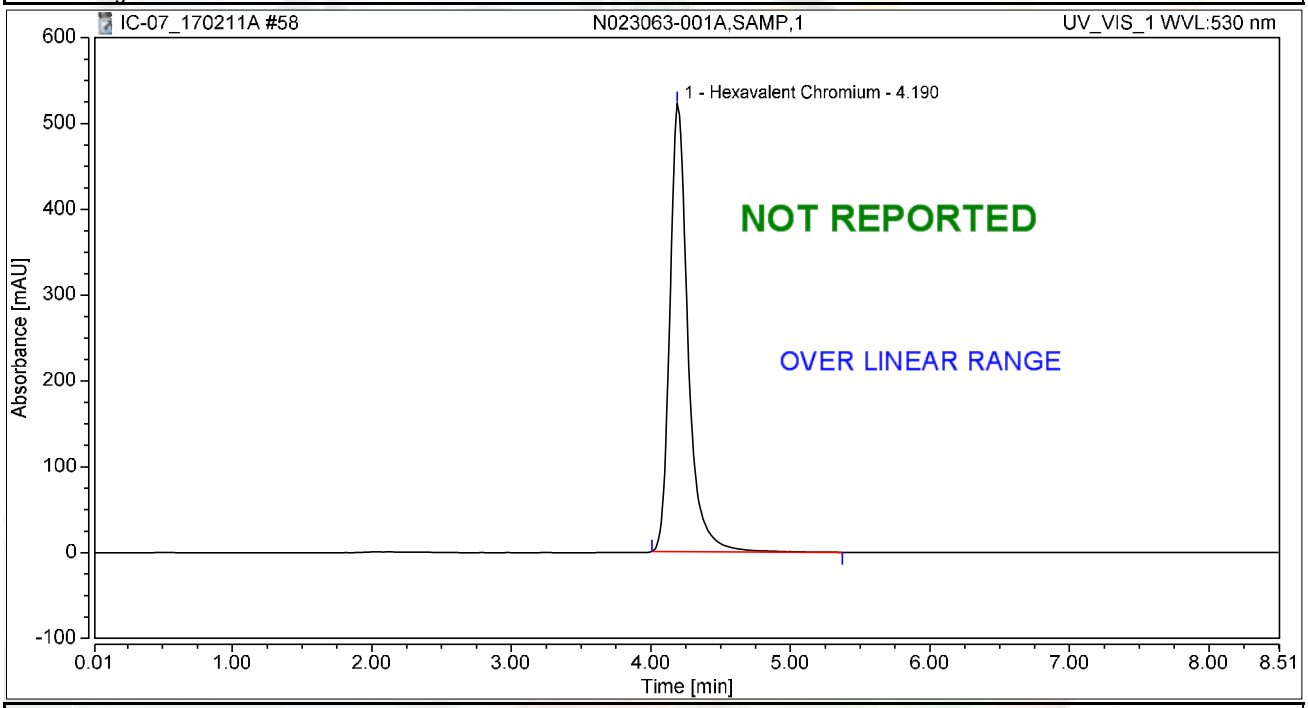
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.617	4.089	100.00	100.00	2.3256
Total:			**0.617**	**4.089**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023063-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

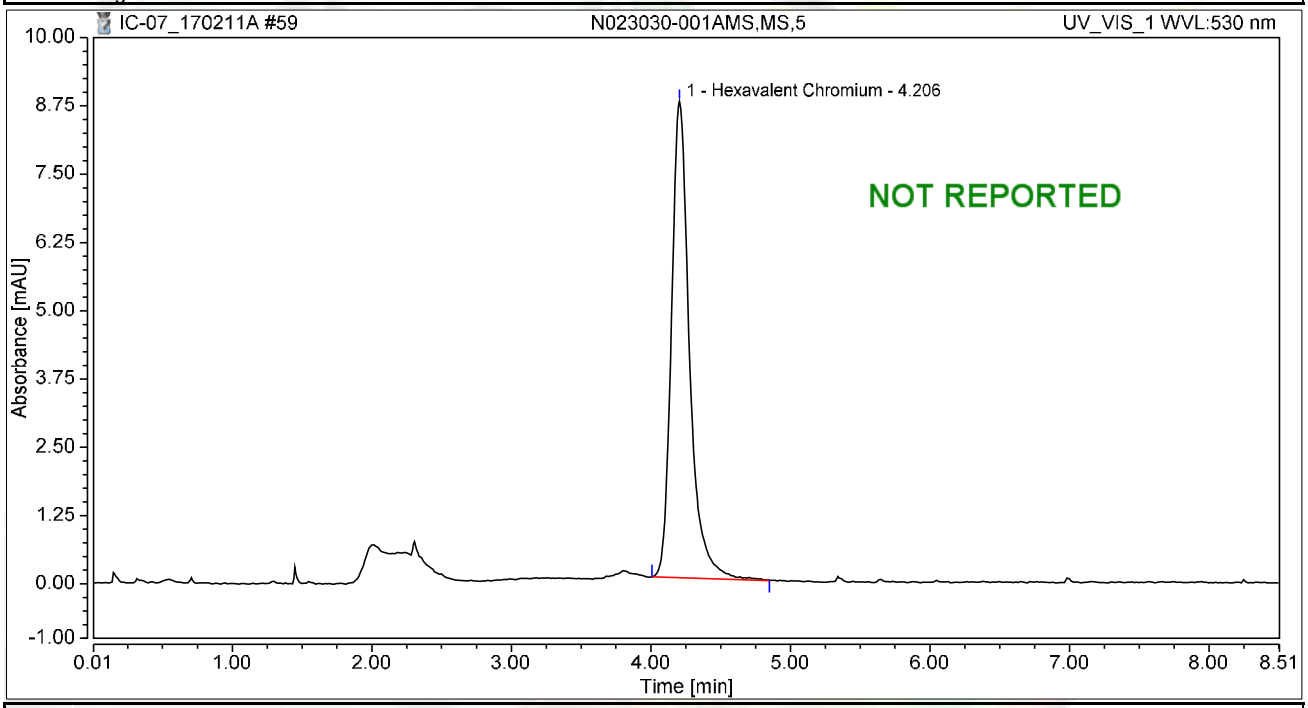
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	78.811	522.121	100.00	100.00	297.1243
Total:			**78.811**	**522.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

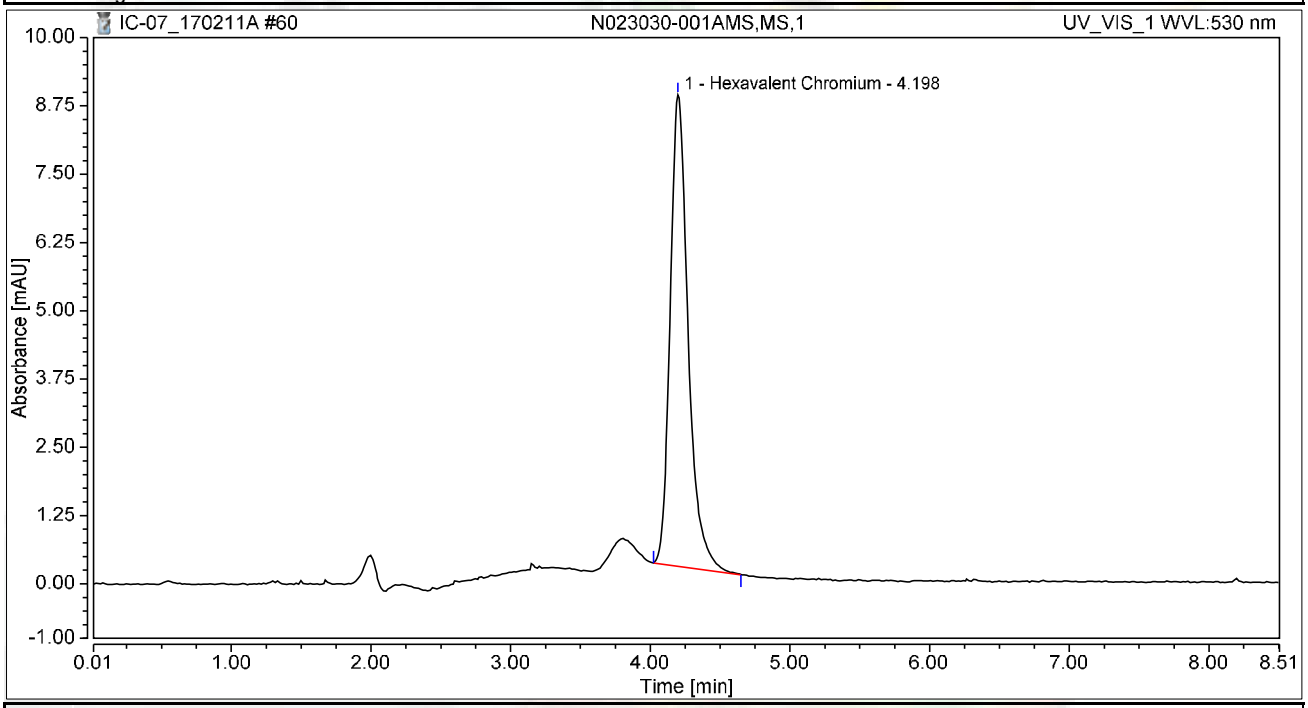
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.309	8.720	100.00	100.00	4.9351
Total:			**1.309**	**8.720**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

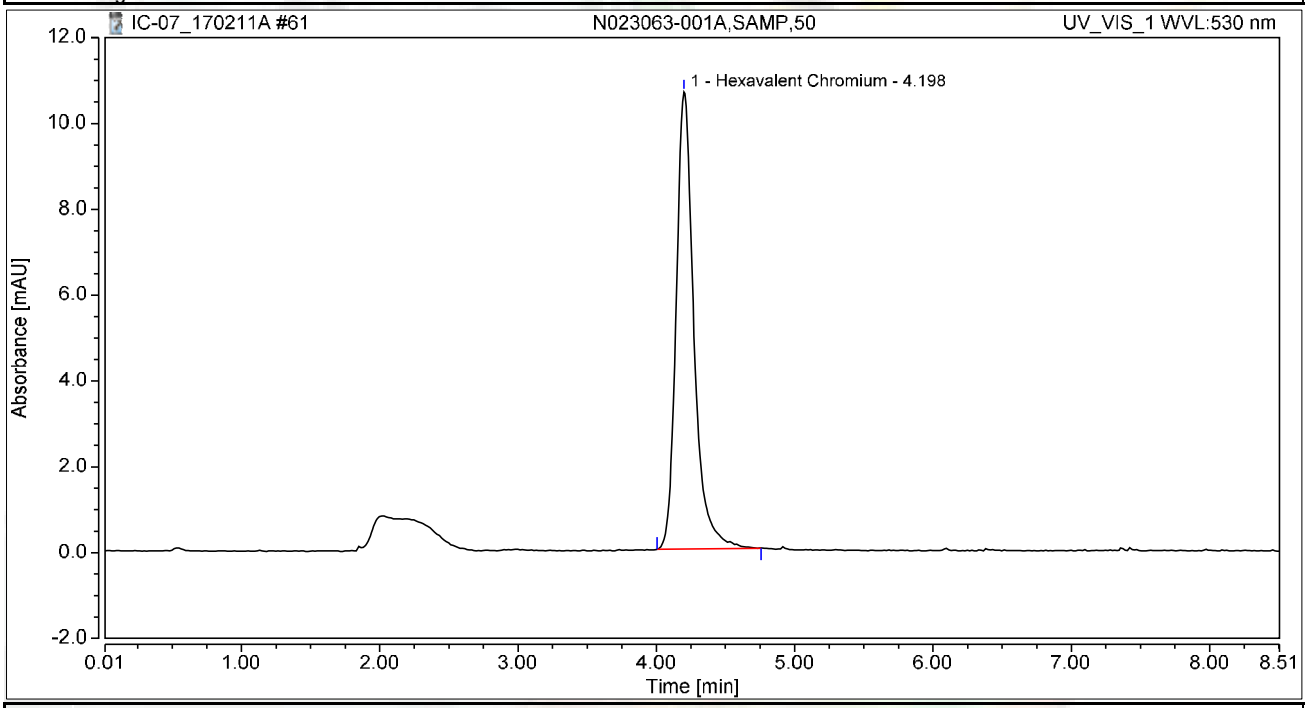
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.291	8.634	100.00	100.00	4.8659
Total:			**1.291**	**8.634**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023063-001A,SAMP,50**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

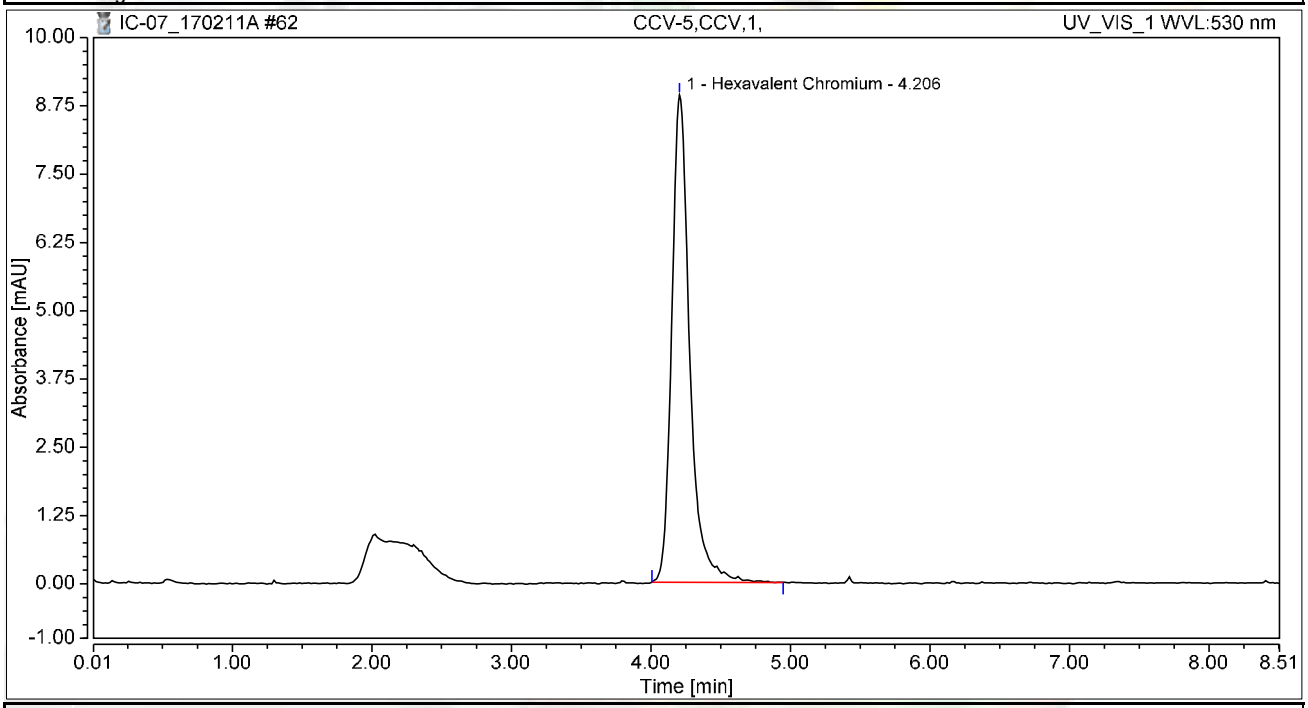
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.583	10.650	100.00	100.00	5.9682
Total:			**1.583**	**10.650**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

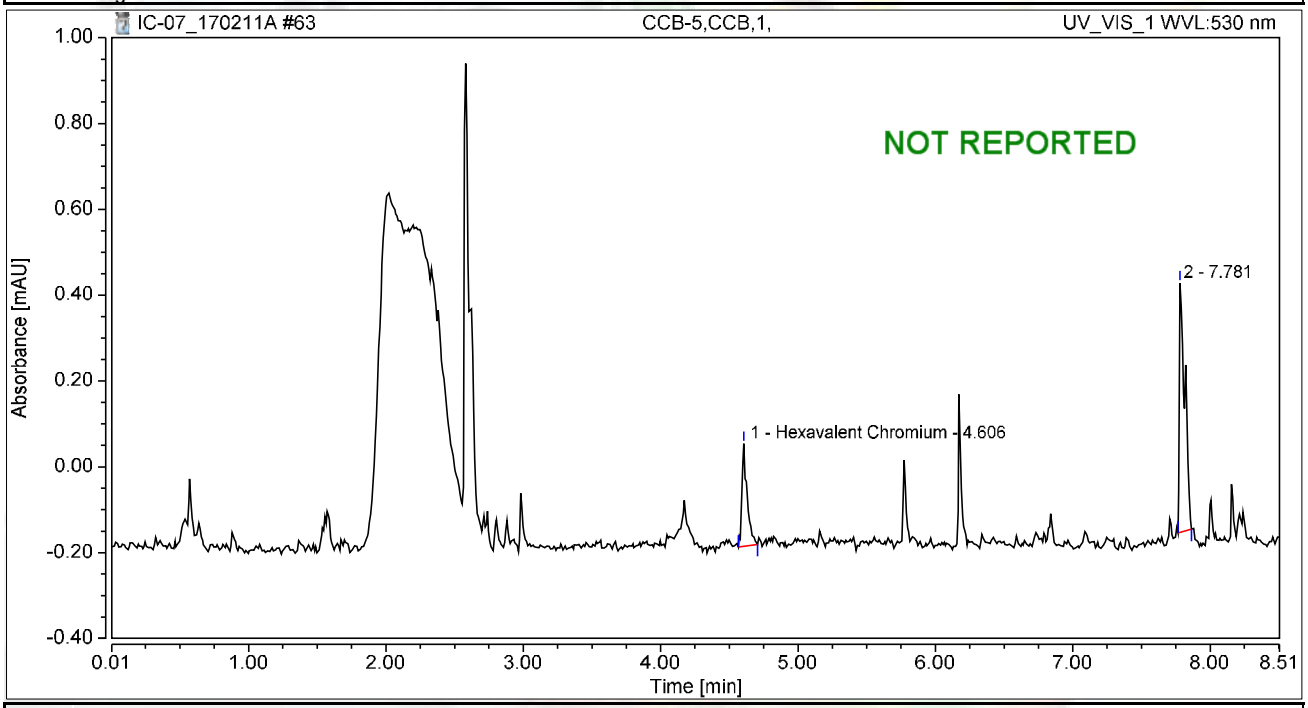
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.335	8.917	100.00	100.00	5.0332
Total:			**1.335**	**8.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

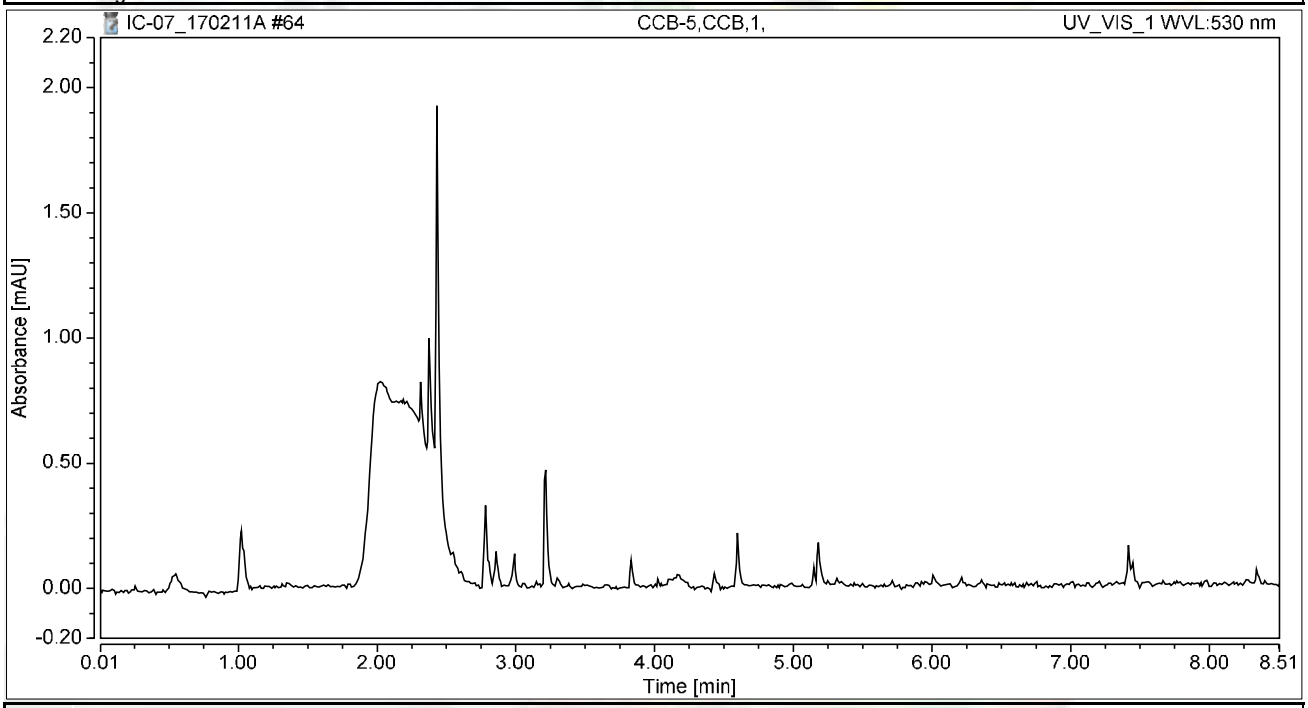
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.606	0.010	0.239	27.29	29.16	0.0373
2		7.781	0.026	0.581	72.71	70.84	n.a.
Total:			**0.036**	**0.821**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

STANDARDS LOG

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
9/14/15	Hexadecane & Stearic Acid Std	15ST150914D	4mg/mL	ACCU STANDARD	215041058	9/14/15		4/8/25	LSR
↓	↓	↓ E	↓	↓	↓	↓		↓	↓
9/28/15	EPA 1664 STANDARD (MS/MSD)	15ST150928A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4130	9/28/15	10/19/15	8/31/18	LSR
11/4/15	Nitrite as N	15ST151104A	1000 ppm	Absolute Stds	102615	11/4/15	11/10/15	10/26/17	2
12/7/15	Hexadecane & Stearic Acid Std	15ST151207A	4mg/mL	ACCU STANDARD	215041058	12/7/15	12/31/15	4/8/25	LSR
↓	↓	B	↓	↓	↓	↓	1/8/16	↓	↓
↓	↓	C	↓	↓	↓	↓	1/19/16	↓	↓
↓	↓	D	↓	↓	↓	↓	2/5/16	↓	↓
↓	↓	E	↓	↓	↓	↓	2/23/16	↓	↓
12/8/15	EPA 1664 STD (MS/MSD)	15ST151208A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4129	12/8/15	12/31/15	8/31/18	LSR
01/05/16	1000 ppm Hexavalent Chromium	15ST160105A	1000 ppm	HIGH-PURITY	1533405	01/05/16	01/07/16	06/30/17	[illegible]
2/11/16	Hexadecane & Stearic Acid Std	15ST160211A	4mg/mL	ACCU STANDARD	216011074	2/11/16	02/24/16	1/12/26	LSR
↓	↓	B	↓	↓	↓	↓	3/14/16	↓	↓
↓	↓	C	↓	↓	↓	↓	4/7/16	↓	↓
↓	↓	D	↓	↓	↓	↓	5/23/16	↓	↓
↓	↓	E	↓	↓	↓	↓	6/23/16	↓	↓
2/11/16	Fluoride, 1000 ppm	15ST160211F	1000 ppm	Absolute Stds	012116	2/11/16	2/12/16	1/21/19	2
	Chloride, 1000 ppm	G	↓	↓	010816	↓	↓	1/8/19	↓
	Nitrite, 1000 ppm	H	↓	↓	010816	↓	↓	1/8/18	↓

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	VG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/14/16	1 ppm Cr^{6+} (1°)	IWST 161114C	ISST - 160817H	1000 ppm	100
	1 ppm Cr^{6+} (2°)	IWST 161114D	ISST - 160105A	1000 ppm	100
11/22/16	1000 ppm Talc	IWST 161122A	CIN - 140317A	–	1.0g

Logbook #2
Inorganics WK Std Log

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 ml	1ppm	H2O	-	-	5/14/17	4/19		RBA
	100ml	1ppm	H2O	-	-	5/14/17	6/30/17		RBA
	1000ml	1000ppm	H2O	-	-	11/22/17	5/9/17		LSR
5									
10									
15									
20									

ASSET Laboratories

* Working std expiration date must not exceed the manufacturer's expiration date.

ASSET LABORATORIES
CALIFORNIA
Santa Fe Springs, CA 90703
P: 562.219.7435 F: 562.219.7426
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

Logbook #2
Inorganics WK Std Log

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1511069G	99.9%	9/7/16			MG	
↓ J	↓	↓	↓	↓	↓	11-12-16	11-12-18	↓	
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	N25C014	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 1005 µS/cm	LSS	CC15087		9/9/16	10/18/16	7/8/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-06	-	9/12/16	10/3/16	10/3/19	LSR	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	3056C514	>98.0%	9/16/16			L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
↓ B	Ammonium Hydroxide	BDH	7216050	-	9/21/16	10/13/16	10/31/18	LSR	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15030	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR	
↓ 161012B	Sulfuric Acid	EMD	56194	-	↓	10/27/16	10/27/18	LSR	#8651

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161012C	Stannous Chloride	LSS	160624C	–	10/12/16			LSR	
CINV-161013A	CITRIC ACID	ALFA AESAR	X15A002	99.100%	10/18/16			LSR	LIMS 3652
CINV-161025A	Buffer pH 7	VWR	4609097	–	10/26/16	11/10/16	9/20/18	LSR	
B	Buffer pH 4		4608A00	–		11/15/16	7/2018		
C	Conductivity Std, 1413 µS/cm		CC15045	–		11/21/16	6/15/17		
D	pH electrode storage Soln		A6189	–			7/2018		
E	electrode internal fill soln	Thermo Scientific	UW1	–					
CINV-161026A	Sodium Hydroxide, pellet	MACRON	7708-06	–	10/26/16	12/6/16	12/6/19 ~~12/12/18~~	LSR	/NSA
B	Ammonium Hydroxide	VWR	7216050			12/12/16	6/2019		/NSA
C	Potassium Hydroxide	JT Baker	116209						
CINV-161026D	Sodium Hydrogen Sulfate	Sigma Aldrich	MKBR1820V	–	10/26/16			LSR	#8668
CINV-161028A	Ammonium Sulfate	LABCHEM	F258-19	–	10/28/16	12/9/16	12/9/19	LSR	/NSA
B				–		12/30/16	12/30/19		/NSA
C				–		1/13/17	1/13/20		NSA
D				–		1/25/17	1/25/20		NSA
CINV-161103A	HEXANES	EMD Chemicals	56139	–	11/3/16	11/18/16	11/18/18	LSR	8686
B				–		11/29/16	11/29/18		8687
C				–			12/19/16		8688
D				–			12/21/16		8689
CINV-161104A	Conductivity Std, 99890 µS/cm	LSS	CC15165	–	11/4/16	12/29/16	5/11/17	LSR	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	–	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	–	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16	12/13/16	12/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161213B	Methyl Alcohol	VWR	4609D524	–	12/14/16	12/30/16	3/2018	LSR	/RMA
CINV-161214A	Buffer, pH 10		CC15355	–		2/8/17	10/3/17	LSR	
B	Conductivity Std, 1413 µS/cm		C692002	–		2/2/17	12/2017	LSR	
C	Turbidity Std, 5.0 NTU	Amco Clear	16030808	99.9%	12/20/16			MG	
CINV-161220A	Methyl Alcohol	Tedia				2/8/17	2/8/19		
B									
C									
D									
E			–	–	–				
F	–	–	161128-A	–					
G	stannous chloride	LSS		–	–			–	
H			CC15085	–	12/16/16	1/16/17	7/8/17	MG	
CINV-161220I	conductivity Std 10,000	VWR	CC15261	–	12/19/16	1/25/17	9/2/17		
J	100,000		7216080	–	12/28/16	1/8/17	1/3/19	MG	/RMA
CINV-161228A	Ammonium Hydroxide	VWR		–		2/7/17	2/7/19		/RMA
161228B			140227	–					
161228C	1-5 Diphenylcarbohydrazide	J.T Baker							

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161225D	Magnesium Chloride Hexahydrate	VWR	16C524	–	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F258-19	–	12/28/16	2/9/17	2/9/20		/ MBA
F									
G									
H									
I	Methanol	Omni solv	JU236	99.9%				–	
J	Sulfuric Acid								
~~CINV MG 1/23/17~~									
CINV170123A	Ammonium Persulfate	BDH	3056C519	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	tmp	5C0356/9	85%	1/25/17	1		MG	
B	Buffer, pH 4	VWR	4610A50	–			9/2018	KSR	
C	Buffer, pH 7		4611C60	–			10/2018	KSR	
D	Buffer, pH 7 (ICS)	Thermo Scientific	UQ1	–			10/2018	KSR	
E	Conductivity Std, 10,000 µS/cm	Ricca	2611936	–			10/2018	KSR	
F	Conductivity Std, 1413 µS/cm	Mettler Toledo	16G205006	–			7/20/18	KSR	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr^{6+})	R160919D	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000
10% H_2SO_4	R160920A	#8529	10 mL	100
~~1,5-Diphen~~ 1,5-Diphenylcarbazide soln	↓ B	CINV-150106G / #8323	0.25g / 50mL	50
Buffer (Cr^{6+})	R160920C	CINV-160624D / CINV-160609A	3.3g / 6.5mL	100
0.02 N H_2SO_4	R160920D	R 160831B	~~[illegible]~~ 200mL	1000
Eluent (Cr^{6+})	R160920E	CINV-160624D / CINV-160609A	66g / 13mL	2000
ASCORBIC ACID SOLUTION	R160921A	CINV141126A / #8319	6g / 2mL	100
Post Column Rgt (Cr^{6+})	R160921B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000
Digestion solution	R160922A	CINV-160721A / #8396	90g / 60g	3000
20% $NaHSO_4$	R160922B	CINV-150311A	800g	4L
ASCORBIC ACID SOLUTION	R160923A	CINV 141126A / #8319	6g / 2mL	100
Buffer (Cr^{6+})	R160923B	CINV-160624D / CINV-160609A	66g / 130mL	2000
5N HNO_3 Cret	R160924A	#8559	138mL	500
POST COLUMN Reagent Cret	R160925A	CINV 160408A / #8529 CINV 160616A	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R160927A	CINV: 8543	1L	2L
ASCORBIC ACID SOLUTION	R160927B	CINV-141126A / #8323	6g / 2mL	100
Eluent (Cr^{6+})	R160928A	CINV-160624D / CINV-160609A	66g / 13mL	2000
DIGESTION SOLUTION	R160930A	CINV-160721A / #8396	60g / 40g	2000
5N HNO_3	↓ B	#8560	138mL	500
6N NaOH	R160990C	#8396	24g	100

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	9/10 [illegible]	9/19/16	9/24/16	8/12/19; 8/31/18; 8/31/18		pba
	10%	9/20/16	9/20/17	8/31/18		2
	–	L	9/20/16	3/12/18; 9/14/18		J
	50	9/20/16	10/20/16	9/11/19; 8/31/18		pba
5	0.[illegible] N	9/20/16	3/20/16	8/31/18		LSR
	–	9/20/16	9/20/17	9/11/19; 8/31/18		pba
	–	9/21/16	10/5/18	8/28/18; 9/1/18		2
	–	9/21/16	9/26/16	8/12/19; 8/31/18; 8/31/18		pba
	–	9/22/16	10/22/16	8/4/19; 6/25/19		pba
10	20%	9/22/16	~~7/14/17~~ 9/22/17 HSL	10/6/18		HSL
	–	9/23/16	10/7/16	8/28/18; 9/1/18		2
	–	9/23/16	10/23/16	9/11/19; 8/31/18		pba
	5N	9/24/16	9/24/15	9/8/18		KEB
	–	9/25/16	9/30/16	8/12/19; 8/31/18; 8/31/18		J
15	1:1	9/27/16	9/27/17	7/25/18		PG
	–	9/27/16	10/11/16	8/28/18; 9/14/18		2
	–	9/28/16	9/28/17	9/11/19; 8/31/18		pba
	–	9/30/16	10/30/16	8/4/19; 6/25/19		2
	5N	J	9/30/17	9/28/18		J
20	6N	9/30/16	9/30/17	6/25/19		pba

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr6+)	R161003A	CINV-160624D / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161003B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Buffer (Cr6+)	R161003C	CINV-160912A / CINV-160609A	39.6g / 78 mL	1200
Eluent (Cr6+)	R161005A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161005B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161006A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Eluent (Cr6+)	R161007A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161007B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
Eluent (Cr6+)	R161010A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161010B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
DIGESTION SOLUTION (Cr6+)	R161010C	CINV-160721A / #8396	60g / 40g	2000
MgCl2 SOLUTION	R161010D	CINV-160219C	40g	100
Eluent (Cr6+)	R161011A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Stock Eluent (Anions)	R161011B	CINV-160721A / CINV-150601A	95.39g / 23.524g	2000
Eluent (Cr6+)	R161012A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161012B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161012C	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Buffer (Cr6+)	R161013A	CINV-160912A / CINV-160912B / ~~CINV-160921B~~ CINV-160921B	66g / 130 mL	2000
STLC Fluid	R161013B	8455 / R160728A	160g / 250 mL	3500
TCLP 1 Fluid	R161013C	8264 / R160725A	11.4 mL / 128.6 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/3/16	10/3/17	9/11/19; 8/31/18		
	–	10/3/16	10/8/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/3/16	11/3/16	10/3/19; 8/31/18		pba
	–	10/5/16	10/5/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
5	–	10/5/16	10/10/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/6/16	10/6/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
	–	10/7/16	10/7/17	10/3/19; 8/31/18		pba
	–	10/7/16	10/12/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/10/16	10/10/17	10/3/19; 8/31/18		pba
10	–	10/10/16	10/15/16	8/12/19 pba ~~8/12/19~~; 8/31/18 8/31/18		pba
	–	10/10/16	11/10/16	8/4/19; 6/25/19		pba
	–	1	10/10/17	3/10/19		2
	–	10/11/16	10/11/17	10/3/19; 8/31/18		1
	–	10/11/16	10/10/17	8/4/19; 6/9/18		pba
15	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/12/16	10/17/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/13/16	10/13/17	10/3/19; 10/3/18		pba
	–	10/10/16	10/10/17	6/21/19, 7/28/17	Late entry	pba
20	–	10/10/16	10/10/17	6/21/19, 7/25/17	Late entry	MG
						MG

* Check reagent expiration date versus stock/manufacturer's expiration date

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2694
"Providing Clients with Passion and Professionalism"

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr6+)	R161014A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161014B	CINV-160408A / #85291 CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161017A	CINV-160912B / CINV-160921B	66g / 13 mL	2000 ~~8000~~ mL
4N NaOH	R161017B	8396	160g	1000
SRC Fluid	R161017C	8652 / R161017B	160g / 800mL	3500
1,5-Diphenylcarbazide solution	R161017D	CINV-150106G / #8328	0.25g / 50 mL	50mL
Post Column Rgt (Cr6+)	R161018A	CINV-160408A / #85291 CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161019A	CINV-160912B / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161020A	CINV-160408A / #85291 CINV-160616A	0.5g / 28mL / 100mL	1000
2% CuSO4	R161019B	CINV-140211D	2g	100
R1 Buffer	C	R160814A / CINV150127A CINV140224A, CINV160407A	2.5mL, 85g 0.1g, 14mL	1000
Coloring Rgt	D	CINV150323A / CINV160407A CINV150224C	0.7g / 4g / 7mL	100
Eluent (Cr6+)	R161021A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
2 ~~R16~~ DIGESTION SOLUTION	R161022A			
Eluent (Cr6+)	R161024A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161024B	CINV-160408A / #85291 CINV-160616A	0.5g / 28mL / 100mL	1000
~~1:1 HNO3~~	~~R161024C~~	~~CINV. 8648~~	~~1L~~	~~2L~~
1:1 HNO3	R161024C	CINV. 8648	1L	2L
ELUENT (Cr6+)	R161025A	CINV-160902B / CINV-160921B	66g / 13 mL	2000
POST-COLUMN RGT (Cr6+)	1 B	CINV-160408A / #8529 CINV-160616A	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/14/16	10/14/17	10/13/19; 10/13/18		
	–	10/14/16	10/19/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/17/16	10/17/17	10/13/19; 10/13/18		pba
	–	10/17/16	10/17/17	6/25/19		pba
	–	10/17/16	10/17/17	10/17/17, 10/17/17		MG
5	–	10/17/16	10/17/17	10/17/17, 10/17/17		MG
	–	10/17/16	10/17/16	3/12/18; 10/10/17		2
	–	10/18/16	10/23/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/19/16	10/19/17	10/13/19; 10/13/18		pba
	–	10/20/16	10/25/16	8/12/19; 8/31/18; 8/31/18		pba
10	2%	10/19/16	10/19/16	5/20/17	LATE ENTRY	REB
	–	↓	↓	9/14/16, 5/22/18 ~~5/22/17, 7/28/18~~	↓	REB
	–			5/22/18, 4/6/19, 10/4/17		REB
	–	10/21/16	10/21/17	10/13/19; 10/13/18		pba
15						
	–	10/24/16	10/24/17	10/13/19; 10/13/18		pba
	–	10/24/16	10/29/16	8/12/19; 8/31/18; 8/31/18		pba
	1:1	10/24/16	10/24/17	10/24/18		pba
	–	10/25/16	10/25/17	10/13/19 - 10/13/18		2
20	–	↓	10/30/16	8/31/19; 8/31/18; 8/31/18		1

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R161026A	CINV-160912B/CINV-160921B	66g/13mL	2000
TCLP 1	R1626B	8264, R1607250	11.4mL, 128.6mL	2000
STLC	R1626C	8652, R161017B	160g, 250mL	3500
Post Column Rgt (Cr^{6+})	R161027A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
DIGESTION SOLUTION (Cr^{6+})	R161027B	CINV-160721A/#8396	120g/80g	4000
5N HNO_3	R161027C	#8527	138mL	500
1N NaOH	R161027D	8396	40g	1000
Eluent (Cr^{6+})	R161028A	CINV-160912C/CINV-160921B	66g/13mL	2000
TCLP Fluid 1	R161024D	R1607250/#8264	128.6mL, 11.4mL	2000
TCLP Fluid #1	R161030A	R161027D/#8264	128.6mL/11.4mL	2000
Eluent (Cr^{6+})	R161031A	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161031B	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Mg(ClO4) Solution	R161101A	CINV-160219C	40g	100
Phosphate buffer solution	B	CINV-M0226A0/CINV-150503A	8.7g/16.8g	100
Eluent (Cr^{6+})	R161101C	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161101D	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Eluent (Cr^{6+})	R161103A	CINV-160912C/CINV-160921B	66g/13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R161103B	CINV-160721A/#8396	30g/20g	1000
5N HNO_3	C	#8562	138mL	500
Post Column Rgt (Cr^{6+})	R161104A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	10/26/16	10/26/19	10/13/19 ; 10/13/18		pbc
	-	10/26/16	10/26/17	6/21/19 , 7/25/17		MG
	-	10/26/16	10/26/17	10/17/17 , 10/17/17		1
	-	10/27/16	11/1/16	8/12/19 ; 10/27/18 8/31/18		pbc
5	-	10/27/16	~~10~~ 2 11/27/16	8/4/19 ; 6/25/19		2
	5N	1	10/27/17	10/25/17		1
	-	10/27/16	10/27/17	6/25/19		MG 2
	-	10/28/16	10/28/17	10/28/19 ; 10/13/18		pbc
	-	10/29/16	7/25/17	7/25/17 ; 5/31/18	pH = 4.93	MG
10	-	10/30/16	2 ~~7/25~~ 10/27/17	10/27/17 ; 5/31/18		2
	-	10/31/16	10/31/17	10/28/19 ; 10/13/18		RRA
	-	10/31/16	11/5/16	8/12/19 ; 10/27/18 ; 8/31/18		RRA
	-	11/1/16	11/1/17	3/10/19		2
	-	1	6/15/17	6/15/17 ; 8/7/18		1
15	-	11/1/16	11/1/17	10/28/19 ; 10/13/18		pbc
	-	11/1/16	11/6/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc
	-	11/3/16	11/3/17	10/28/19 ; 10/13/18		pbc
	-	11/3/16	12/3/16	8/4/19 ; 6/25/19		2
	5N	11/3/16	11/3/17	11/3/18		2
20	-	11/4/16	11/9/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
TCLP 1	R161107A	8264, R160725A	11.4mL, 128.6mL	1000
STLC	R161107B	8652, R161017B	160g, 250mL	3500
TCLP Fluid #1	R161104B	R161027D, #8264	257.2mL; 22.8mL	4000
Eluent (Cr^{6+})	R161107C	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161108A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
0.02N H_2SO_4	R161109A	R160831B	200mL	1000
Eluent (Cr^{6+})	R161109B	CINV-160912C / CINV-160921B	66g / 13mL	2000
Buffer (Cr^{6+})	R161110A	CINV-160912C / CINV-160921B	16.5g / 32.5mL	500
Post Column Rgt (Cr^{6+})	R161111A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
20% $NaHSO_4$	~~R161112A~~ R161111B	#8664	800g	4L
DIGESTION SOLUTION (Cr^{6+})	R161111C	CINV-160721A / #8396	60g / 40g	2000
Eluent (Cr^{6+})	R161115A	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161115B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
ELUENT (Cr^{6+})	R161116A	CINV-160912C / CINV-160921B	66g / 13mL	2000
POST-COLUMN RGT (Cr^{6+})	L B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
~~DIGESTION SOLUTION (Cr^{6+})~~	~~R161117A~~			
Eluent (Cr^{6+})	R161118A	CINV-160912D / CINV-160921B	66g / 13mL	2000
ASCORBIC ACID	R161119A	QNV-141126A / #8691	3g / 1mL	50mL
11N H_2SO_4	R161118B	#8651	31mL	100mL
~~Ammonium molybdate-sbk tartrate~~	~~L C~~			

ASSET LABORATORIES

CALIFORNIA
11000 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

102 of 201

172

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	11/07/16	11/07/17	6/21/19, 7/25/17		MG
–	11/07/16	11/07/17	10/17/17, 10/17/17		1
–	11/4/16	10/27/17	10/27/17; 8/31/18	pH = 4.91	2
–	11/7/16	11/7/17	10/28/19; 10/13/18		[illegible]
–	11/8/16	11/13/16	8/12/19; 10/27/18; 8/31/18		[illegible]
0.02 N	11/9/16	5/9/~~16~~ 17 LSR	8/31/17		LSR
–	11/9/16	11/9/17	10/28/19; 10/13/18		[illegible]
–	11/10/16	12/10/16	10/28/19; 10/13/18		[illegible]
–	11/11/16	11/16/16	8/12/19; 10/27/18; 8/31/18		[illegible]
20%	~~11/13~~ 11/11/16	11/11/17	11/11/19		HSG
–	11/11/16	12/11/16	8/4/19; 6/25/19		2
–	11/15/16	11/15/17	10/28/19; 10/13/18		NBA
–	11/15/16	11/20/16	8/12/19; 10/27/18; 8/31/18		NBA
–	11/16/16	11/16/17	10/28/19; 10/13/18		2
–	1	11/21/16	8/12/19; 10/27/18; 8/31/18		1
					11/17/16
–	11/18/16	11/18/17	11/18/19; 10/13/18		NBA
–	11/19/16	12/3/16	8/26/18; 11/15/18 ~~10/27/18~~		2
1 N	11/18/16	11/18/17	10/27/18		2
	1				1 11/19/16

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"
173
103 of 201

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post column Rgt (Cr6+)	R161122A	CINV-161012A / #8691 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161128A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161128B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28 mL / 100mL	1000
Buffer (Cr6+)	R161128C	CINV-160912D / CINV-160921B	16.5g / 325 mL	500
IN NaOH	R161128D	8396	40g	1000
TCLP 1	R161128E	8269 / R160725A	11.4mL / 128.6mL	2000
STLC	R161128F	8652, R161017B	160g, 250mL	3500
Digestion Solution (Cr6+)	R161128G	CINV-160721A / #8396	70g / 20g	1000
MgCl2 Solution	R161129A	CINV-160219C	40 g	100
5N HNO3	R161129B	#8562	138 mL	500
Eluent (Cr6+)	R161130A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161130B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1600
Buffer (Cr6+)	R161130C	CINV-160912D / CINV-160921B	66g / 130 mL	2000
Digestion Solution (Cr6+)	R161130D	CINV-160721A / #8396	30g / 20g	1000
2% CuSO4	R161129C	CINV-140211D	2g	100
R1 Buffer	R161129D	R160814A / CINV150127A, CINV160224A, CINV160607A	2.5mL, 85g, 0.1g, 14 mL	1000
Coloring Rgt	R161129E	CINV150322A / CINV160405A / CINV150924C	0.2g / 4g / 7mL	100
Eluent (Cr6+)	R161205A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post column Rgt (Cr6+)	~~R161143~~ R161206A	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
Digestion Soln (Cr6+)	R161206B	CINV-160721A / #8396	120g / 80 g	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	11/22/16	11/27/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/28/16	11/28/17	11/18/19; 10/13/18		rba
	-	11/28/16	12/3/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/28/16	12/28/16	11/18/19; 10/13/18		rba
5	-	11/28/16	~~11/29/16~~ MG 11/29/17 ~~12/28/17~~	6/25/19		MG
	-	11/28/16	11/28/17	5/31/16; 7/25/17		!
	-	11/28/16	11/28/17	10/17/17; 10/17/17		!
	-	11/28/16	12/28/16	8/4/19; 6/25/19		
	-	11/29/16	11/29/17	3/10/19		rba
10	5N	11/29/16	11/29/17	11/3/18		rba
	-	11/30/16	11/30/17	11/18/19; 10/31/18		rba
	-	11/30/16	12/5/16	11/22/19; 10/27/18; 8/31/18		rba
	-	11/30/16	12/30/16	11/18/19; 10/31/18		rba
	-	11/30/16	12/30/16	8/4/19; 6/25/19		rba
15	2%	11/29/16	12/29/16	5/2017	LATE ENTRY	REB
	-	!	!	9/14/14; 5/22/18 5/20/17; 7/28/18	!	REB
				5/22/18; 4/16/19; 10/4/17		REB
		12/6/16	12/11/16	11/22/19; 10/27/18; 8/31/18		
	-	12/5/16	12/5/17	11/18/19; ~~10/31/18~~ 10/13/18		rba
20	-	12/6/16	1/6/17	8/4/19; 6/25/19		rba

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R161207A	CINV-160912D / CINV-160912B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161207B	CINV-161012A / #8651 CINV-160616A	0.5 / 28 mL / 100mL	1000
20% NaHSO4	R161208A	#8668 ~~CINV-161028A~~	800 g	4L
Eluent (Cr^{6+})	R161209A	CINV-160912D / ~~CINV-161028A~~ CINV-160912B	6.6g / 13 mL	2000
Eluent (Cr^{6+})	R161212A	CINV-161028A / ~~CINV-160912D~~ CINV-160912B / CINV-161026B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161212B	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
0.02 N H2SO4	R161212C	R160831B	200 mL	1000
Eluent (Cr^{6+})	R161213A	CINV-161028A / CINV-161026B	6.6g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161213B	CINV-161012A / #8651 / CINV-160616A / ~~CINV-~~ #8650	0.5g / 28mL / 100mL	1000
1:1 HNO3	R161215C	CINV. 8665	1L	2L
1:1 H2SO4	R161214A	CINV. 8651	1L	2L
0.1 N H2SO4	R161216A	LIMS 8651	3mL	1000
0.02 N H2SO4	B	R161216A	200 mL	1000
Post Column Rgt (Cr^{6+})	R161216C	CINV-161012A / #8651 / CINV-~~or~~ #8650	0.5g / 28 mL / 100mL	1000
5N HNO3	R161216D	#8664	138 mL	500
Digestion Soln	R161216E	CINV-160721A / CINV 161026A	60g / 40g	2000
MgCl2 Soln	R161216F	CINV-160219C	40 g	100
Phosphate Buffer	R161216G	CINV-140220AD / CINV-[illegible]	8.7g / 6.8g	100
Eluent (Cr^{6+})	R161216H	CINV-161028A / CINV-161026B	6.6g / 13 mL	2000
Eluent (Cr^{6+})	R161219A	CINV-161028A / CINV-161026B	6.6g / 13 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	12/7/16	12/7/17	11/22/19, 10/27/18, 8/31/18		
	–	12/7/16	12/12/16	11/18/19, ~~10/31/18~~ 10/13/18		
	20%	12/08/16	12/08/17	11/11/19		
	–	12/9/16	12/9/17	~~11/22/19~~ 11/18/19, 12/9/19, ~~10/31/18~~ 10/13/18		
5	–	12/12/16	12/12/17	~~11/18/19~~; 10/13/18, 12/9/19, 12/12/18		
	–	12/12/16	12/17/16	11/22/19, 10/27/18, 8/31/18		
	0.02 N	12/12/16	6/12/17	8/31/17		
	5N	12/13/16	12/13/17	12/9/19, 12/12/18		
	–	12/13/16	12/18/16	11/22/19, 10/27/18, 8/31/18, 12/13/18		
10	1:1	12/13/16	12/13/17	10/24/18		
	1:1	12/14/16	12/14/17	10/27/18		PG
	0.1 N	12/16/16	12/16/17	10/27/18		PG
	0.02 N		6/16/17	12/16/17		LSR
	–	12/16/16	12/21/16	11/22/19, 10/27/18, 12/13/18		LSR
15	5N	12/16/16	12/16/17	12/15/18		
	–	12/16/16	1/16/17	8/4/19, 12/6/19		
	–	12/16/16	12/16/17	3/10/19		
	–	12/16/16		6/15/17, 8/17/18		
	–	12/16/16	12/16/17	12/9/19, 12/12/18		
20	–	12/19/16	12/19/17	~~12/4/18~~ 12/9/19, 12/12/18		

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr6+)	R161219B	CINV-161012A / #8651 / #8650	0.5/28mL/100mL	1000
2% $CuSO_4$	R161219C	CINV-140211D	2g	100
R1 Buffer	D	R161219D / CINV-160525A CINV-140224A, CINV-160607C	2.5mL, 85g 0.1g, 14mL	1000
R2 Coloring Rgt.	E	CINV-150323A, CINV-160405A CINV-150924C	0.2g, 4g, 17mL	100
10% Ammonium Persulfate, 5% H_3PO_4	F	CINV-160916A, CINV-150924C	100g, 50mL	1000
Eluent (Cr6+)	R161220A	CINV-161028A / CINV-161026B	66g/13mL	2000
Post Column Rgt (Cr6+)	R161221A	CINV-161012A / #8651 / #8650	0.5/28mL/100mL	1000
Buffer (Cr6+)	R161221B	CINV-161028A / CINV-161026B	33g / 65mL	1000
Digestion Soln	R161223A	CINV-160721A / CINV-161026A	90g / 60g	3000
Eluent (Cr6+)	R161228A	CINV-161028A / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161228B	CINV-161012A / #8782 / #8650	0.5/28mL/100mL	1000
5N HNO3	R161229A	#8665	138mL	500
Eluent (Cr6+)	R161230A	CINV-161028A / CINV-161028B / CINV-161026B	66g/13mL	2000
Post Column Rgt (Cr6+)	R170103A	CINV-161012A / #8782 / #8650	0.5g/28mL/100mL	1000
R1 Buffer	R170102A	R161219D / CINV-160525A CINV-140224A / CINV-160607C	2.5mL, 85g 0.1g, 14mL	1000
R2 Coloring Rgt.	B	CINV-150323A / CINV-160405A CINV-150924C	0.2g, 4g, 17mL	100
1:1 H_2SO_4	R161229B		300ml	600ml
Buffer (Cr6+)	R170103B	CINV-161028B / CINV-161026B	99g / 195mL	3000
Eluent (Cr6+)	R170105A	CINV-161028B / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170105B	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	12/19/16	12/24/16	11/22/19; 10/27/18;	12/13/18	[illegible]
	2%	12/19/16	1/19/17	5/20/17		[illegible]
	–		1/19/17	1/19/17; 9/15/19 5/20/17 2/28/18		
	–		1/19/17	7/22/18; 04/02/19 10/9/17		
5	10% 5%		3/19/17	12/19/19 10/4/17	–	
	–	~~9/19/16~~ 12/20/16	12/20/17	12/9/19; 12/12/18		[illegible]
	–	12/21/16	12/20/16	11/22/19; 10/27/18; 12/13/18		[illegible]
	–	12/21/16	1/21/17	12/19/19; 12/12/18		[illegible]
	–	12/23/16	1/23/17	8/4/15; 12/6/19		[illegible]
10	–	12/28/16	12/28/17	12/9/19; 12/12/18		[illegible]
	–	12/28/16	1/2/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	5N	12/29/16	12/29/17	12/27/18		[illegible]
	–	12/30/16	12/30/17	12/9/19; 12/30/19; 12/12/18		[illegible]
	–	1/3/17	1/8/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	–	1/2/16	1/19/17	1/19/17; 9/15/19 5/20/17; 7/28/18		[illegible]
72	~~1:1~~ –	~~12/29/16~~ ~~6/29/17~~ 3/21/17		5/20/18; 04/02/19; 10/9/17		
	1:1	12-29-16	6/29/17			72
	–	1/3/17	2/3/17	12/28/18; 12/13/18		[illegible]
	–	1/5/17	1/5/18	12/28/18; 12/12/18		[illegible]
20	–	1/5/17	1/10/17	11/22/19; 12/28/18; 12/12/18		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
6N NaOH	~~R16~~ R170106A	CINV-161026A	24g	100
Eluent (Cr^{6+})	R170107A	CINV-161028B / CINV-161228A / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170109A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
Eluent (Cr^{6+})	R170110A	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170110B	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R170111A	CINV-8737	1L	2L
Eluent (Cr^{6+})	R170111B	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170112A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
DIGESTION SOLUTION	R170112B	CINV-160721A / 161026A	60g / 40g	2000
$MgCl_2$ Solution	↓ C	CINV-160219C	40g	100
Buffer (Cr^{6+})	R170112D	CINV-161028B / CINV-161026B	49.5g / 97.5mL	1500
Eluent (Cr^{6+})	R170113A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170113B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate 5% H_3PO_4	R170111C	CINV-160916A / ~~[illegible]~~ CINV-160817B	100g / 50mL	1000
20% H_3PO_4	↓ D	CINV ~~[illegible]~~ 160817B	100	500
Post Column Rgt (Cr^{6+})	R170114A	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate, 5% H_3PO_4	R170114B	CINV-160916A / CINV-160817B	100g, 50mL	1000
Eluent (Cr^{6+})	R170116A	CINV-161028C / CINV-161026B	66g / 13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R170116B	CINV-160721A / 161026A	30g / 20g	1000
10N NaOH	R170116C	CINV-161026A	4g	40ml

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	6N	1/6/17	1/6/18	12/6/19		[illegible]
	–	1/7/17	1/7/18	12/28/18; 12/13/18; 1/3/19		[illegible]
	–	1/9/17	1/10/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/10/17	1/10/18	12/28/18; 1/3/19		[illegible]
5	–	1/10/17	1/15/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	1:1	1/11/17	1/11/18	1/11/19		PG
	–	1/11/17	1/11/18	12/28/18; 1/3/19		[illegible]
	–	1/12/17	1/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/12/17	2/12/17	8/4/19; 12/6/19		[illegible]
10	–	1	1/12/18	3/10/19		[illegible]
	–	1/12/17	2/12/17	12/28/18; 1/3/19		[illegible]
	–	1/13/17	1/13/18	1/13/20; 12/12/18		
	–	1/13/17	1/18/17	11/22/19; 12/28/18	12/13/18	[illegible]
	10%, 5%	1/11/17	4/11/17	12/19/19; 8/17/18	LATE ENTRY MEB 01/13/1967	MEB
15	20%	1	1/11/18	8/17/18		1
	–	1/14/17	1/19/17	11/22/19; 12/28/18;	12/13/18	[illegible]
	10%, 5%	1/14/17	4/14/17	12/19/19; 8/17/18		MEB
	–	1/13/17	1/13/18	1/13/20; 12/12/18		[illegible]
	–	1/16/17	2/16/17	8/4/19; 12/6/19		2
20	10N	1-16-17	~~12-6-19~~ 2-16-17	12-6-19		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116B	#8666	138 mL	500
Eluent (Cr6+)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Cr6+)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Cr6+)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Cr6+)	R170123B	CINV-161028C / CINV-161026B	99g / 195 mL	3000
Post Column Rgt (Cr6+)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R170125A	CINV-161028D / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161022A	120g	500mL
10% Ammonium persulfate, 5% H_3PO_4	R170125B	CINV 170123A / CINV 168117B	100g, 50mL	1000
2% $CuSO_4$	R170125C	CINV-140211D	2g	100
R1 Rgt FTBR	D	R170125C / CINV 160525A CINV-140221A / CINV 160607L	2.5mL, 0.1g, 85% 1mL	1000
R2 Coloring Rgt.	E	CINV 158923A / CINV 160465A CINV [illegible]	100mL, 2g / 4g / 17mL	100
DIGESTION SOLUTION (Cr6+)	R170126A	[illegible]	[illegible]	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	5N	1/16/17	1/16/18	1/10/19		Z
	–	1/17/19	1/17/18	1/13/20; 12/12/18		[illegible]
	–	1/7/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
5	–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	6N	1/18/17	1/18/18	12/16/18		HSG
	20%	1/20/17	1/20/18	11/11/19		HSG
	–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
	–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10	–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
	–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
	–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
	–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	6N	1/25/17	1/25/18	12/6/19		HSG
	10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		KEB
	2%	1/25/17	2/25/17	5/20/17		KEB
	–	|	|	2/25/17 9/15/19 5/20/17, 7/28/18		|
	–	|	|	5/22/18, 4/6/19 8/17/18		|
20	–	1/26/17	2/26/17			Z

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr^{6+})	R170127A	CINV-161028D / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170127B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Cr^{6+})	R170130A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Eluent (Cr^{6+})	R170131A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170131B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
5N HNO_3	R170131C	#8748	138 mL	500 mL
1:1 HNO_3	R170131D	8737	1L	2L
Post Column Rgt (Cr^{6+})	R170201A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170202A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
$MgCl_2$ solution	R170202B	CINV-160219C	40 g	100 mL
Phosphate buffer solution	↓ C	CINV-M0226AD / CINV-150803A	8.7g / 6.8 g	100 mL
Eluent (Cr^{6+})	R170206A	CINV-161028D / CINV-160607C	66g / 13 mL	2000
Post-Column Rgt (Cr^{6+})	↓ B	CINV-161012A / #8782 / #8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170207A	CINV-161028D / CINV-161228B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170207B	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
0.02 N H_2SO_4	R170208A	~~R161~~ R161216A	200 mL	1000
TCDP FWD1	R170207C	R160725A / #8453	~~64~~ 128.6 mL, 11.4 mL	2000
15% Ammonium persulfate 5% H_3PO_4	R170208B	CINV170123A / CINV160817B	100 g, 50 mL	1000
20% H_3PO_4	↓ C	CINV 160817B	100	500
Ascorbic Acid Solution	R170209A	CINV-M1126A	3g	50 mL

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
-1	1/27/17	1/27/18	1/25/20; 12/12/18		[illegible]
–	1/27/17	2/1/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/30/17	1/30/18	1/25/20; 12/12/18		[illegible]
–	1/31/17	1/31/18	11/25/20; 12/12/18		[illegible]
–	1/31/17	2/5/17	11/22/19; 12/28/18; 12/13/18		[illegible]
5N	1/31/17	1/31/18	1/24/19		2
1:1	1/31/17	1/31/18	1/11/19		HSG
–	2/1/17	2/6/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	2/2/17	2/2/18	11/25/20; 12/12/18		[illegible]
–	2/2/17	2/2/18	3/10/19		2
–	1	6/15/17	6/15/17; 8/7/18		1
–	2/6/17	2/6/18	1/25/20; 7/28/18		2
–	1	2/11/17	11/22/19; 12/28/18; 12/13/18		1
–	2/7/17	2/7/18	11/25/20; 2/7/19		[illegible]
–	2/7/17	2/12/12	11/22/19; 12/28/18; 12/13/18		[illegible]
0.02 N	2/8/17	8/8/17	12/16/17		BR
–	02/07/17	2/07/17	7/25/17, 12/29/18	LATE ENTRY, H: 4.89	[illegible]
10%, 5%	02/08/17	5/08/17	1/25/20, 8/17/18		[illegible]
20%	1	2/08/18	8/17/18		1
–	2/9/17	2/23/17	8/26/18		2

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R170209B	CINV-1610280 / CINV-161228E / CINV-161228B	66g / ~~78~~ 13mL	2000
Post Column Rgt (Cr^{6+})	R170209C	CINV-161012A / 8782/8650	0.5g / 28 mL 100 mL	1000
Digestion Soln (Cr^{6+})	R170211A	CINV-160721A / CINV-161026A	60g / 40g	2000
5N HNO_3	~~R161229A~~ R170211B	8749	27.6 mL	100
Post Column Rgt (Cr^{6+})	R170213A	CINV-161012A / 8782/8650	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	2/9/17	2/9/18	11/15/20; 2/9/20; 2/7/19		[illegible]
	-	2/9/17	2/14/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	-	2/11/17	3/11/17	8/14/19; 12/6/19		[illegible]
		2/8/17	2/11/18	2/2/19		[illegible]
5	-	2/13/17	2/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10						
15						
20						

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

1. Act | 2. InAct

INDEX

8650	METHANOL
8649	NITRIC ACID
8648	NITRIC ACID
8647	HYDROCHLORIC
8646	HYDROCHLORIC
8645	HYDROCHLORIC
8644	HYDROCHLORIC
8643	HYDROCHLORIC
8642	HYDROCHLORIC
8633	Glass Fiber Filter
8604	SODIUM HYDRO
8602	STANNOUS CHL
8573	HEXANES
8571	FERROUS SULF
8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID

3507 Records

Bottle #: 8650 Chemical: METHANOL ☑ Active

Received:	10/11/2016	Expires:	
Synonyms:		Status:	Opened
Formula:		CAS #:	67-56-1
Location:	Inorganics	Formula Wt:	32.04
8 Vendor:	Emd	Lot #:	56182
		Catalog #	MX0488-1
		Conc/Purity:	99.9
		Amount:	4
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

Received:10/11/16,1/1
Opened:12/13/16

1. Act | 2. InAct

INDEX

8782	sulfuric acid
8781	HEXANES
8780	HEXANES
8779	HEXANES
8778	HEXANES
8777	DICHLOROMETH
8776	DICHLOROMETH
8775	DICHLOROMETH
8774	DICHLOROMETH
8773	DICHLOROMETH
8772	DICHLOROMETH
8771	DICHLOROMETH
8770	DICHLOROMETH
8769	DICHLOROMETH
8768	DICHLOROMETH
8767	DICHLOROMETH
8766	DICHLOROMETH
8765	DICHLOROMETH
8764	DICHLOROMETH
8763	DICHLOROMETH
8762	DICHLOROMETH
8761	Glass Fiber Filter
8760	Glass Fiber Filter
8759	Glass Fiber Filter
8758	Glass Fiber Filter
8757	SODIUM CHLOR

3508 Records

Bottle #: 8782 Chemical: sulfuric acid ☑ Active

Received:	12/28/2016
Synonyms:	
Formula:	h2so4
Location:	Inorganics
8 Vendor:	GR ACS
Merck Index:	

Add to Reagents database

Expires:	
Status:	New
CAS #:	7664-93-9
Formula Wt:	98.08
Lot #:	56280
Catalog #	
Conc/Purity:	95.0-98.0%
Amount:	2.5
Units:	L
Notes:	

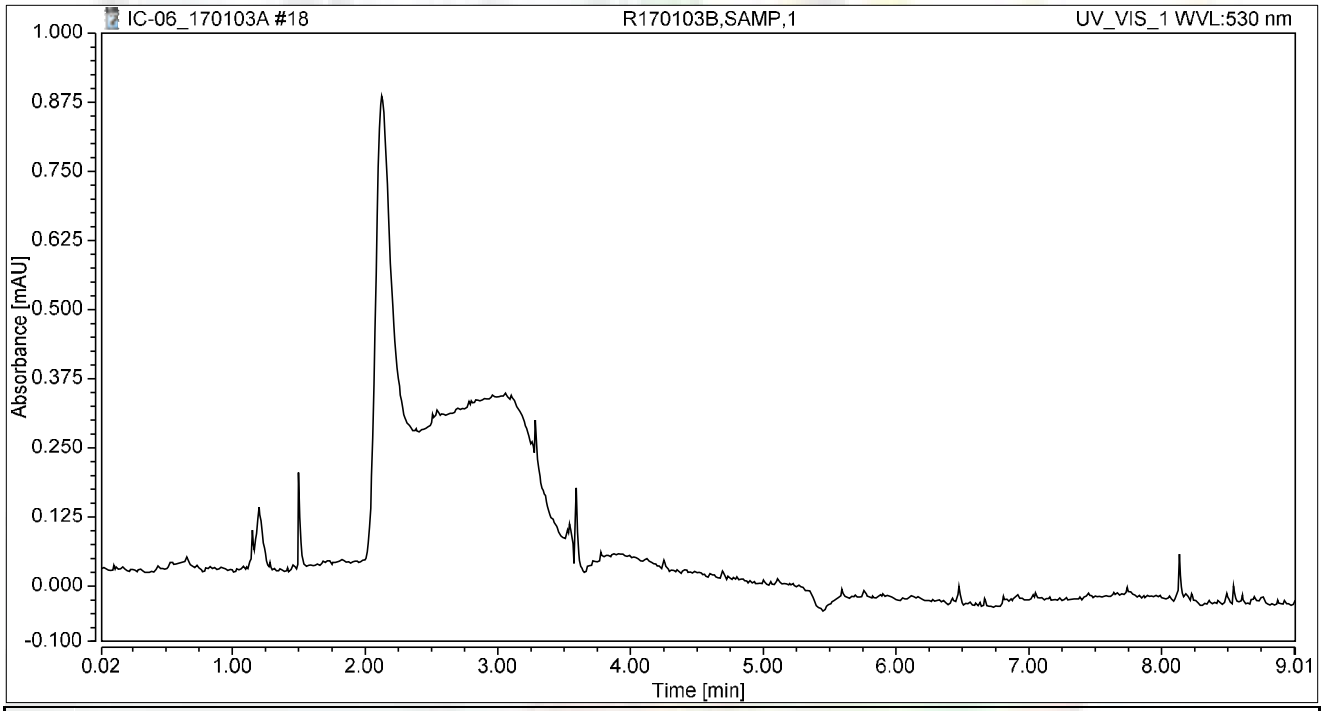
Received: 12/28/2016
Opened: 12/28/2016

Chromatogram and Results

Injection Details

Injection Name:	**R170103B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170103_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/17 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

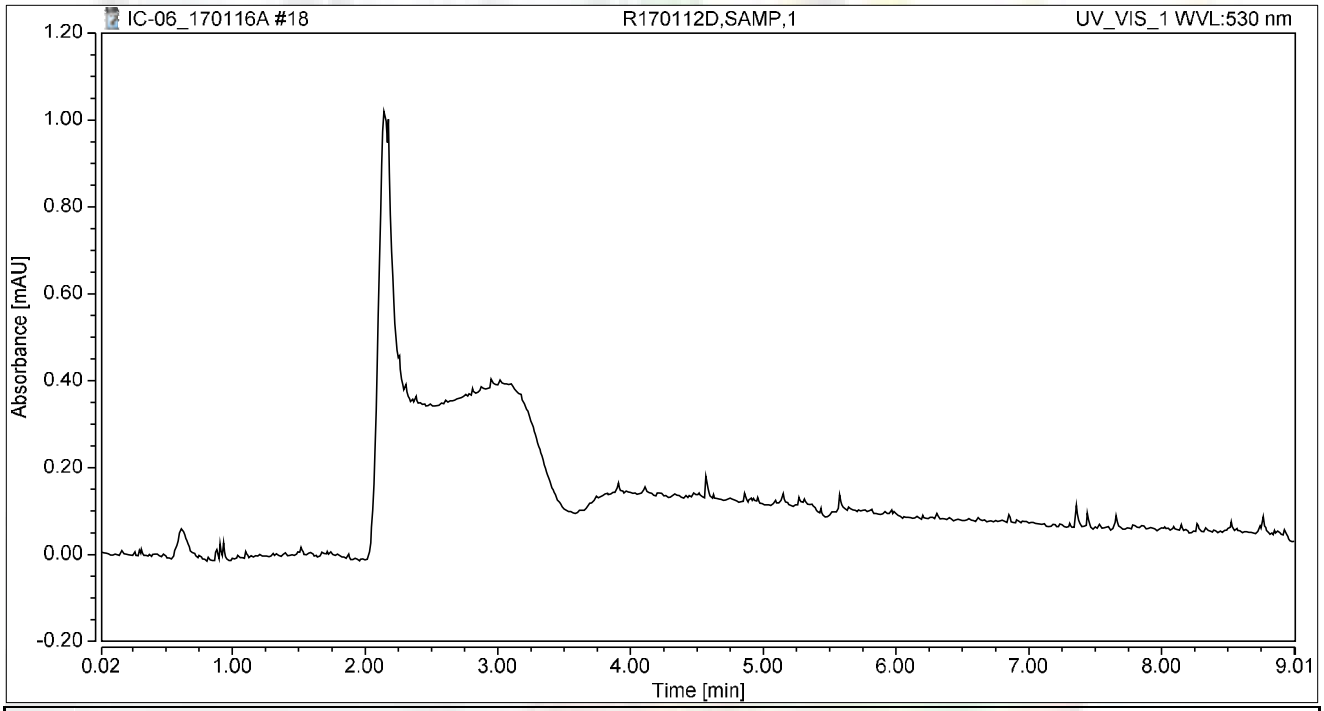
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170112D,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Jan/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

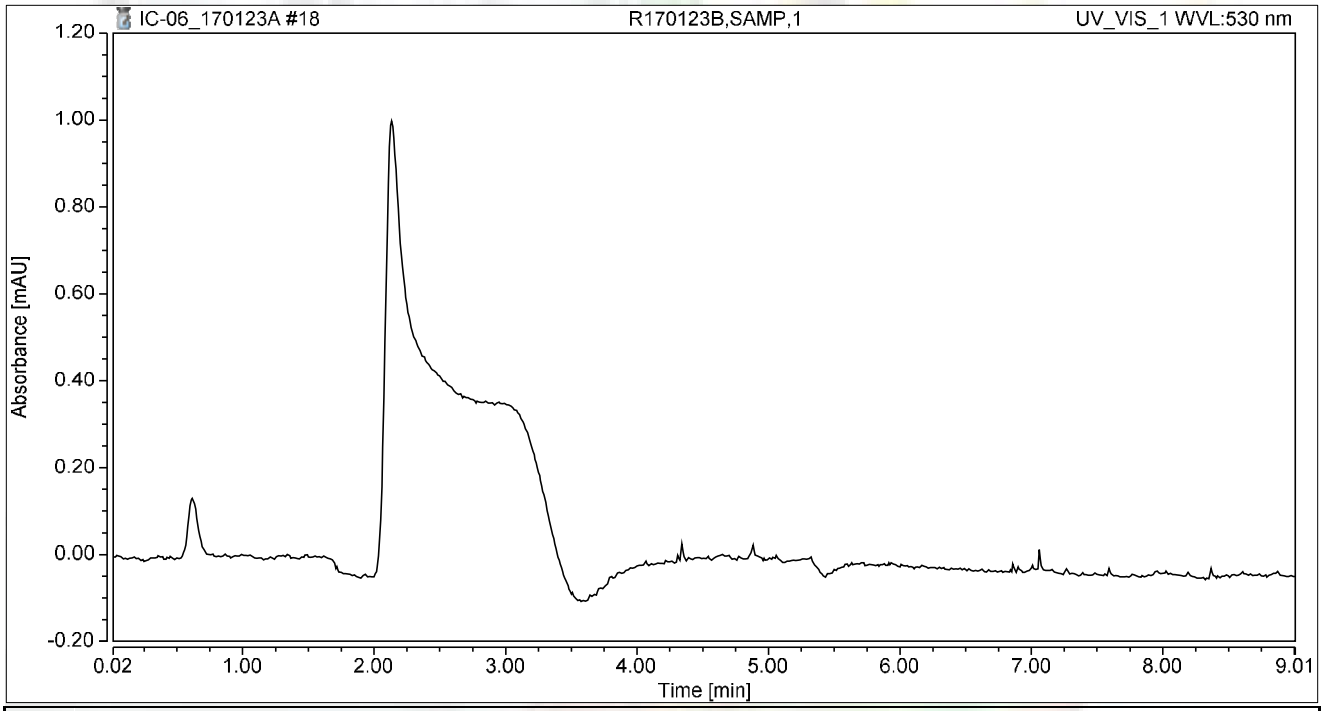
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170123B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Jan/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113466 **Analyst:** REB

ASSET #: N022998 **Date Analyzed:** 2/12/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/21/17 Date:

2nd Level Reviewer Nancy 2/21/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022998-001C** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.2391*1

= 1.2391 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 1.2

RB 02/21/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

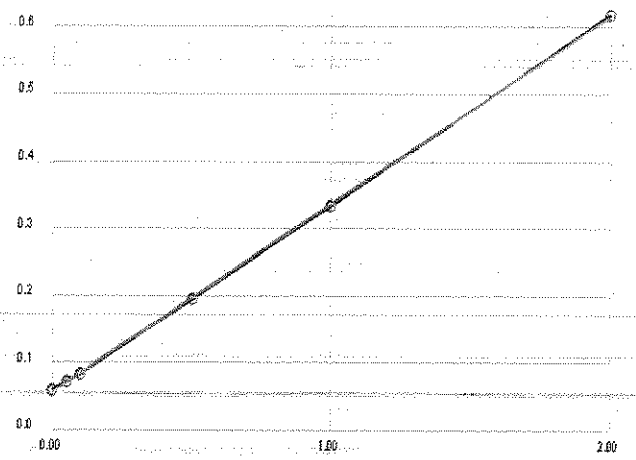
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2797x + 0.0564
Correlation	.999941



Calibrant	Energy	Set	Conc
1	0.0585	0.0000	0.0076
2	0.0716	0.0500	0.0544
3	0.0833	0.1000	0.0963
4	0.1958	0.5000	0.4984
5	0.3321	1.0000	0.9856
6	0.6180	2.0000	2.0077

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/21/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.516	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-12-2017 19:18
Time end: 02-12-2017 22:13

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	21:32:31	0.0101		0.0592
2	<BLANK>	21:33:31	0.0090		0.0589
3	<CAL1>	21:34:26	0.0076	[0]	0.0585
4	<CAL2>	21:35:21	0.0544	[0.05]	0.0716
5	<CAL3>	21:36:23	0.0963	[0.1]	0.0833
6	<CAL4>	21:37:17	0.4984	[0.5]	0.1958
7	<CAL5>	21:38:12	0.9856	[1]	0.3321
8	<CAL6>	21:39:14	2.0077	[2]	0.6180
9	,BLANK,BLANK,1,	21:40:08	0.0265		0.0638
10	,ICV,ICV,1,	21:41:09	0.5077		0.1984
11	,ICB,ICB,1,	21:42:05	0.0155		0.0607
12	,MB-H2O,MBLK,1,	21:43:00	0.0108		0.0594
13	,LCS-H2O,LCS,1,	21:44:00	0.5284		0.2042
14	,N022931-002D,SAMP,5,	21:44:56	0.6650		0.2424
15	,N022931-002DDUP,DUP,5,	21:45:51	0.6879		0.2488
16	,N022931-002DMS,MS,5,	21:46:53	1.1322		0.3731
17	,N022931-002DMSD,MSD,5,	21:47:47	1.1086		0.3665
18	,N022987-001D,SAMP,1,	21:48:43	0.7308		0.2608
19	,N022985-001C,SAMP,1,	21:49:44	0.1549		0.0997
20	,~~N022985-002C~~,SAMP,1,N022985-003C	21:50:38	0.1928		0.1103
21	,BLANK,BLANK,1	21:51:34	0.0133		0.0601
22	,CCV-1,CCV,1,	21:52:35	0.4963		0.1952
23	,CCB-1,CCB,1,	21:53:31	0.0201		0.0620
24	,N022985-004C,SAMP,5,	21:54:31	0.0455		0.0691
25	,N022998-001C,SAMP,1,	21:55:26	1.2391		0.4030
26	,N022998-002C,SAMP,1,	21:56:22	0.3472		0.1535

RB 02/21/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022998-003C,SAMP,1,	21:57:22	0.0451		0.0690
28	,N022998-004C,SAMP,1,	21:58:05	0.8895		0.3052
29	,N022999-001D,SAMP,1,	21:58:55	0.0298		0.0647
30	,N022999-002D,SAMP,5,	21:59:37	0.6225		0.2305
31	,N022999-003D,SAMP,1,	22:00:26	0.0155		0.0607
32	,N023014-001C,SAMP,20,	22:01:08	1.5129		0.4796
33	,BLANK,BLANK,1	22:01:52	0.0190		0.0617
34	,CCV-2,CCV,1,	22:02:40	0.5159		0.2007
35	,CCB-2,CCB,1,	22:03:23	0.0008		0.0566
36	,N023014-002C,SAMP,10,	22:04:06	2.7726		0.8320
37	,N023014-003C,SAMP,2,	22:04:54	4.7066	[HL][OR]	1.3730
38	,N023014-004C,SAMP,10,	22:05:38	1.3092		0.4226
39	,N023014-005C,SAMP,1,	22:06:26	0.1585		0.1007
40	,N023014-006C,SAMP,5,	22:07:09	0.7729		0.2726
41	,N023014-007C,SAMP,1,	22:07:51	0.1309		0.0930
42	,N023014-008C,SAMP,1,	22:08:41	0.0105		0.0593
43	,BLANK,BLANK,1	22:09:24	-0.0103		0.0535
44	,CCV-3,CCV,1,	22:10:06	0.4727		0.1886
45	,CCV-3,CCV,1, not used	22:10:55	0.5066		0.1981
46	,CCB-3,CCB,1,	22:11:37	0.0051		0.0578

RB 02/21/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/12/17
Time Analyzed: 07:18 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022931-001D		8.58						
2)	N022985-001C		7.91						
3)	N022985-003C		7.92						
4)	N022985-004C		7.49						
5)	N022987-001D		7.75						
6)	N022998-001C		7.38						
7)	N022998-002C		8.21						
8)	N022998-003C		6.17						
9)	N022998-004C		7.86						
10)	N022999-001D		7.86						
11)	N022999-002D		7.39						
12)	N022999-003D		7.99						
13)	N023014-001C		8.36						
14)	N023014-002C		6.95						
15)	N023014-003C		7.64						
16)	N023014-004C		6.22						
17)	N023014-005C		7.98						
18)	N023014-006C		7.76						
19)	N023014-007C		7.31						
20)	N023014-008C		7.62						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/21/17

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
2/11/16	Bromide, 1000 ppm	ISST160211 J	1000 ppm	Absolute Standards	010816	2/11/16	2/12/16	1/8/19	L
	Nitrate as N, 1000 ppm	J			061215			6/12/18	
	Phosphate as P, 1000 ppm	K			11115			11/1/18	
	Sulfate, 1000 ppm	L			012516			1/25/19	
2/16/16	EPA 1664 STD (MS/MSD)	ISST160216A	4000 µg/mL	ULTRA SCIENTIFIC	CP-0013	2/16/16	3/18/16	2/28/19	LSR
4/26/16	EPA 1664 STD (MS/MSD)	ISST160426A	4000 ppm each	Ultra Scientific	CP-0013	4/26/16	4/27/16	2/28/19	L
4/28/16	Hexadecane & Stearic Acid	ISST160428A	4000 ppm each	Accustandard	216011074	4/28/16	6/30/16	1/1/16	L
		B					7/5/16		
		C					7/21/16		
		D					7/25/16		
		E					7/28/16		
6/6/16	1000 ppm KHP (TOC P)	ISST160606A	1000 ppm	CPI	168197	6/6/16	06/14/16	12/12/2017	[illegible]
6/9/16	1000 ppm Carbon as TOC	ISST160609A	1000 ppm	High purity	160613b	6/9/16	06/14/16	12/03/2017	[illegible]
7/29/16	Hexadecane & Stearic Acid	ISST160729A	4000 ppm	Accu Standard	215121209	7/29/16	8/15/16	12/17/25	LSR
		B					9/9/16		
		C					9/22/16		
		D					10/3/16		
		E					8/2/16		
	EPA 1664 STD (MS/MSD)	F		Ultra Scientific	CP-0014		8/2/16	2/28/19	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	MG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	
10/3/16	EPA 1664 STD, (MS/MSD)	ISST16100304	4000 ppm	ULTRA SCIENTIFIC	CP-4210	10/3/16	10/10/16	9/30/19	LSR
10/4/16	Hexadecane & Stearic Acid	ISST161004A	4000 ppm	ACCU STANDARD	215121209	10/4/16	10/14/16	12/17/25	LSR
		B					11/1/16		
		C					11/18/16		
		D					11/29/16		
		E							
12/6/16	EPA 1664 STD	ISST161206A	4000 ppm	ULTRA SCIENTIFIC	CP-4210	12/6/16	9/20/19	9/30/19	LSR
12/8/16	Hexadecane & Stearic Acid	ISST161208A	4000 ppm	ACCU STANDARD	215121209	12/8/16		12/17/25	LSR
		B							
		C							
		D							

CHEMICAL INVENTORY LOG

Inventory Code CINV	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
~~SX07~~ 140122A	Sodium Sulfate, anhydrous	EMD	WF03H	99.02	1/22/14			STF	#6912
CINV 140206A	Zinc Acetate 2N	Ricca	1401B21	–	2/5/14		01/16	PS	#6914
CINV 140206 B	2N Zinc Acetate	Ricca	1401B21	–	2/5/14		01/16	PS	
CINV-140211 A	Mercury II oxide	Alfa Aesar	F22I27	99.6%	2/11/14			MC	
B	Pyridine, ACS, 99.0% Liquid	Alfa Aesar	D05Z888	99.0%	2/11/14			MC	
C	Ethanol, Alcohol Reagent	Alfa Aesar	I17Y018	94-96%	2/11/14			MC	
D	Copper II sulfate pentahydrate	Alfa Aesar	C28Y031	98-102%	2/11/14	5/20/14	5/20/17	MC	
E	Ammonium Chloride	Alfa Aesar	D29Z044	99.5%	2/11/14	2/19/14	2/19/17	MC/MI	
CINV-140211F	Silver Nitrate	Spectrum	1040834	≥99.0%	2/11/14			2	
CINV-140213 A	1° Turbidity Std. 0.02 NTU	Oakton	C365301	–	2/13/14	2/13/14	2/13/15	MC	
B	20		C365600						
C	100		C365829						
D	800		C365735						
CINV-140127A	Phosphoric Acid	EMD	53224335	≥85.0%	1/27/14	1/28/14	1/28/16	2	
CINV-140217A	Silica Gel (80-200 Mesh)	J.T. Baker	0000053205	–	2/17/14		6/26/20	PLN	#6962
CINV-140218A	Iron (III) nitrate monohydrate	Alfa Aesar	K132039	98.0-101%	2/18/14			MI	
B	Phenol, ACS, 99+%, stab. Crystalline		A28Z020	99+%					
C	Acetic acid, glacial		J10Z048	99.7%		3/24/14	3/24/16		#6975
D	Sodium hypochlorite		L10Z021	14.5%					
E	Potassium sodium-L tartrate tetrahydrate		C28Z028	99.0-102%					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV - 140218 F	Methyl Red sodium SALT	Alfa Aesar	J31Z031	-	2/18/14			mi	
G	Ethylenediamine tetraacetic acid disodium magnesium salt hydrate		K10175810	-					
H	Glycerol, ACS, 99.5% Viscous liquid		mi 2/18/14 K19Z027	99.5 +%					
I	Potassium cyanide		KZZ010	96.0% min.					
J	Sodium hydrogen phosphate, anhydrous, 99% min., Granular		J16Z014	99.0% min					
K	N-(1-Naphthyl) ethylenediamine dihydrochloride, ACS, powder		K04Z031	-		5/20/14	5/20/17		
L	Calmagite, indicator		10169022	-					
CINV-140218 M	Sodium Nitroferricyanide, Dihydrate	JT Baker	0000052646	-	2/18/14			mi	
N	Chloramine-T, trihydrate	MacRon	00000 562032	-					
CINV-140221A	Sodium Salicylate, 99%	Alfa Aesar	J03Z041	99%	2/21/14			mo	
CINV-140224A	Ethylenediamine tetraacetic acid disodium SALT dihydrate, ACS, 99-101%	Alfa Aesar	A18Z040	99-101%	2/24/14	5/20/14	5/20/17	mi	
B	Calcium carbonate		H01Z033	99%					
CINV-140226A	Dichloromethane	OmniSolv	51090	99.96%	02/25/14			[illegible]	Lims bt# 6916
B									6917
C									6918
D									6919
E									6920
F									6921
G									6922
H									6923

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150320A	Buffer, pH 2	BDH	1408B19	-	3/20/15		8/2016	LSR	
↓ B	Buffer, pH 12	BDH	1409454	-	3/20/15		9/2015	LSR	
CINV-150323A	N-(1-Naphthyl) ethylenediamine	~~Alfa Aesar~~	~~N03A036~~	~~-~~	3/19/15	5/22/15	5/22/18	2	
↓	dihydrochloride							↓	
CINV-150325A	TETRAbutylammonium hydroxide	Macron			3/25/15	3/26/15	3/26/17	PEB	
↓ B	Heptafluorobutyric acid	Alfa Aesar	G07X060	99%	3/25/15	3/26/15	3/26/17	PEB	
CINV-150335C	1,5-diphenyl carbazide	J.T BAKER	000010030	-	3/25/15	3/25/15	3/25/18	PEB	
CINV-150401A	Sodium Chloride	J.T BAKER		99%	4/1/15	04/14/15	4/14/18	PEB	
CINV-150402A	Hexanes	EMD Chemicals	54308	98.5%	4/2/15	5/22/15	5/22/17	LSR	#7546
↓ B	↓	↓	↓	↓	↓	6/25/15	6/25/17	LSR	#7547
↓ C	↓	↓	↓	↓	↓	7/24/15	7/24/15	LSR	#7548
↓ D	↓	↓	↓	↓	↓	8/28/15	8/28/17	LSR	#7549
CINV-150416A	METHANOL	J.T BAKER	57548	99.8%	4/16/15	5/16/15	5/16/17	PEB	
↓ B	1,5-diphenyl carbazide	J.T. BAKER	000010030	-	4/16/15	7/20/15	7/20/18	PEB	
CINV-150430A	Conductivity Std, 99996	VWR	CC13489	-	4/30/15	6/10/15	2/20/16	LSR	
CINV-150501A	Ferrous Sulfate	Aqua Solutions	501214	-	5/1/15			LSR	
CINV-150506A	Ammonium Persulfate	JTBaker	162447	≥98.0%	5/6/15		7/8/16	2	
↓ B	↓	BDH	3495C517	-	↓	5/8/15	5/8/18	↓	
CINV-150511A	Ammonium Sulfate	J.T BAKER	86693	99%	5/11/15	5/20/15	5/20/18	PEB	
↓ B	↓	↓	↓	↓	↓			↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	126292	299%	2/19/16	3/7/16	3/7/19	[illegible]	
F						3/24/16	3/24/19		
G						4/7/16	4/7/19		
H									
CIW-160309A	Buffer, pH 7	BDH	1512854	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	3624-19	..	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322 A	Buffer pH 4	~~BDH~~ VWR	1512A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 100005 µS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD		-	3/22/16			LSR	8388
D								LSR	8389
E								LSR	8390
F								LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123372		4/5/16	4/6/16	4/6/19	[illegible]	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16			[illegible]	
B									
C									
D									
E	Ammonium hydroxide	BDH	7215070	—		04/06/16	04/06/18	[illegible]	
F				-					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1811696	99.9%	9/7/16			MG	
↓ J	↓	↓	↓	↓	↓	11-12-16	11-12-18	↓	
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	A025C004	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 10053 µS/cm	LSS	CC15087		9/9/16	10/18/16 LSR	7/5/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-66		9/12/16	10/3/16	10/3/19	LSR	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	30560514	≥98.0%	9/16/16	9/19/16	10/19/19	L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
↓ B	Ammonium Hydroxide	BDH	1216050	-	9/21/16	10/13/16	10/31/18	LSR	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15036	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR	/KBA
↓ 161012B	Sulfuric Acid	EMD	56194	-	↓	10/27/16	10/27/18	LSR	#8651

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160607A	Turbidity Std, 20 NTU	AMCO Clear	C688405	-	6/7/16	6/8/16	6/2017	LSR	
B	100 NTU		C584931	-				LSR	
CINV-160607C	Ammonium Hydroxide	BDH	7215100	-	6/7/16	7/25/16	7/25/18	JAS	LIMS # 8459
CINV-160609A	Ammonium Hydroxide	BDH	7215100	-	6/9/16	8/31/16	8/31/18	JAS	LIMS # 8471
CINV-160609B	Buffer, pH 7	Labchem	F130-26	-	6/9/16	8/12/16	5/11/18	LSR	
C	Buffer, pH 10		F124-01	-		6/28/16	5/10/17	LSR	
CINV-160615A	Ammonium Hydroxide	Fisher Chem	155222	-	6/15/16	7/11/16	7/11/18	JAS	LIMS # 8481
CINV-160616A	Methanol	Omnisolv	C2153		6/16/16	8/31/16	8/31/18	JAS	LIMS # 8490
CINV-160623A	Conductivity Std, 99663 µS/cm	LSS	CC14664	-	6/23/16	8/2/16	2/19/17	LSR	
CINV-160624A	Ammonium Sulfate	Lab Chem	F091-13	≥99.0%	6/24/16	7/18/16	7/18/19	L	
B			P162-06	≥99.0%		8/2/16	8/2/19		
C				≥99.0%		8/18/16	8/18/19		
D				≥99.0%		9/11/16	9/11/19		
CINV-160629A	Turbidity Std, 0.02 NTU	Cole Parmer	C686343	-	6/29/16	7/6/16	8/2017	LSR	
B	20		C686233						
C	100		C686659	-					
D	800		C686659	-					
CINV-160715A	Conductivity Std, 10.07 mS/cm	VWR	CC14776	-	7/15/16	8/16/16	3/17/17	LSR	
B	Buffer pH 4	VWR	16061811			8/19/16	5/2018		
CINV-160718A	Buffer pH 7	BDH	4604970	-	7/18/16	8/19/16	4/2018	PEB	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160718B	Ammonium Persulfate	BDH	3056C514	≥ 98.0%	7/18/16	7/18/16	7/18/19	MEB	
CINV-160721A	SODIUM CARBONATE	LSS	160324A	-	7/21/16	8/4/16	8/4/19	LSR	
CINV-160727A	HEXANES	EMD	56139	98%	7/27/16	7/28/16	7/28/18	LSR	8544
B						7/28/16	7/28/18		8545
C						8/15/16	8/15/18		8546
D						9/9/16	9/9/18		8547
CINV 160817A	Ammonium Persulfate	BDH	3056C514	≥ 98%	8/17/16			MEB	
B	Phosphoric Acid	EMD	55161546	85%		8/17/18	8/17/18		
CINV-160902A	Conductivity Std. 1413 µs	VWR	CC14947	-	9/2/16	9/23/16	5/9/17	LSR	
B	9977 µs		CC14972	—		9/12/16	5/17/17		
C	99835 µs		CC15000	-		9/26/16	5/26/17		
D	Buffer, pH 10		1607A96	-		9/26/16	12/2017		
CINV-160907A	HEXANES	EMD	56139	98.5%	9/7/16	9/26/16	9/26/18	LSR	8598
B						10/14/16	10/14/18		8599
C						10/20/16	10/20/18		8600
D						11/1/16	11/1/18		8601
CINV-160907E	Methyl Alcohol	Tedia	1511069 6	99.9%	9/7/16			MG	
F									
G						10-18-16	10-18-18		
H	—	—	—	—	—			—	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116B	#8661	138 mL	500
Eluent (Crut)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Crut)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Crut)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Crut)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Crut)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Crut)	R170123B	CINV-161028C / CINV-161026B	99g / 195 mL	3000
Post Column Rgt (Crut)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Crut)	R170125A	CINV-161028D / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Crut)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161026A	120g	500mL
10% Ammonium persulfate, 5% H_3PO_4	R170125B	CINV170123A / CINV160817B	10g, 50mL	1000
2% $CuSO_4$	R170125C	CINV140211D	2g	100
R_1 Buffer	D	CINV140721A / CINV160617C	2.5mL, 0.1g, 853, 14mL	1000
R_2 Coloring Rgt.	E	CINV158929A / CINV160657A / CINV160217B	1070g, 1g, 1.4g, 17mL	100
DIGESTION SOLUTION (Crut)	R170126A	CINV-160721A / CINV-161026A	120g / 80g	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	SN	1/16/17	1/16/18	1/10/19		Z
	–	1/17/19	1/17/18	1/13/20; 12/12/18		[illegible]
	–	1/17/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
5	–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	GN	1/18/17	1/18/18	12/16/18		HSG
	20%	1/20/17	1/20/18	11/11/19		HSG
	–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
	–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10	–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
	–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
	–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
	–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	GN	1/25/17	1/25/18	12/6/19		HSG
	10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		PEB
	2%	1/25/17	2/25/17	5/20/17		PEB
	–	|	|	2/25/17, 4/15/19; 5/20/17, 7/28/18; 5/22/18, 4/4/19; 8/17/18		|
	–	|	|			–
20	–	1/26/17	2/26/17	8/4/18; 12/6/19		Z

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61257
ASSET #: N022998
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/19/2017

Method:
- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.
%Rec of Mo in N022998-001B PS/MS/MSD & Mn in N022998-001B PS failed. However LCS & DT passed criteria.
Mn in N022998-003B is over linear range. For dilution.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/22/2017 Date: —
2nd Level Reviewer 2/22/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61257
ASSET #: N022998
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/20/2017

Method:
- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Mn in N022998-003B only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/22/2017 Date:

2nd Level Reviewer 2/22/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61257 **Instrument ID:** ICPMS-02
ASSET #: N022998 **Analyst:** CEI
Method: **Date Analyzed:** 2/21/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Se in N022998-002B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/22/2017 Date: —

2nd Level Reviewer 2/22/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022998-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 18.2008 * 1 * (25/25)

Chromium , ug/L = 18.2008

Reporting results in two significant figures,

Chromium , ug/L = 18

% RSD SUMMARY

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	20.47	15	<PQL	0.14	14.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.29	15	PASS	0.53	5.75	15	PASS
Std3-5/50 ppb	ICAL	1	5.066	2.55	15	PASS	5.08	3.5	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.068	15	PASS	10.15	1.7	15	PASS
Std5-20/200 ppb	ICAL	1	20.04	0.63	15	PASS	19.81	1.037	15	PASS
Std6-40/400 ppb	ICAL	1	40.099	1.058	15	PASS	39.54	1.05	15	PASS
Std7-100/1000 ppb	ICAL	1	101.95	0.34	15	PASS	100.3	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	198.99	1.11	15	PASS	199.95	1.25	15	PASS
ICV	ICV	1	10.22	0.23	15	PASS	102.049	0.74	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.97	1.77	20	PASS	0.52	6.59	20	PASS
ICSA1	ICSA	1	0.13	7.68	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.74	1.53	15	PASS	16.29	0.61	15	PASS
LLICV	CCV1	1	0.96	2.61	20	PASS	0.53	4.74	20	PASS
CCV1	CCV	1	20.058	1.28	15	PASS	20.045	0.93	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.75	1.57	15	PASS	20.16	0.97	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.055	1.27	15	PASS	20.24	1.61	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.28	0.88	15	PASS	20.36	1.18	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.94	2.51	20	PASS	0.53	2.92	20	PASS
ICSA2	ICSA	1	0.12	11.65	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.75	1.25	15	PASS	16.49	2.0089	15	PASS
MB-61257	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61257	LCS	1	10.028	0.32	15	PASS	101.37	1.057	15	PASS
N022998-001B	SAMP	1	18.2	0.45	15	PASS	13.46	1.63	15	PASS
N022998-001B	SAMP	5	3.87	1.44	15	PASS	2.89	1.71	15	PASS
N022998-001B	SAMP	25	0.79	4.0028	15	PASS	0.58	3.29	15	PASS
N022998-001B-PS	PS	1	26.4	2.86	15	PASS	88.49	1.48	15	PASS
N022998-001B-PS	PS	5	5.65	1.64	15	PASS	20.17	1.26	15	PASS
CCV5	CCV	1	19.67	1.53	15	PASS	20.14	0.98	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N022998-001B-MS	MS	1	26.16	1.45	15	PASS	92.71	0.61	15	PASS
N022998-001B-MS	MS	5	5.69	1.19	15	PASS	20.53	0.52	15	PASS
N022998-001B-MSD	MSD	1	26.14	1.052	15	PASS	93.11	0.14	15	PASS
N022998-001B-MSD	MSD	5	5.73	2.053	15	PASS	20.52	0.4	15	PASS
N022998-002B	SAMP	1	3.96	2.33	15	PASS	342.96	0.88	15	PASS
N022998-002B	SAMP	5	0.85	4.15	15	PASS	76.92	0.28	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	<0.000	N/A	15	<PQL	802.74	1.22	15	PASS
N022998-003B	SAMP	5	<0.000	N/A	15	<PQL	182.43	0.99	15	PASS
N022998-004B	SAMP	1	108.64	0.99	15	PASS	24.14	1.25	15	PASS
N022998-004B	SAMP	5	23.65	1.18	15	PASS	5.22	0.37	15	PASS
CCV6	CCV	1	20.028	0.6	15	PASS	20.18	0.43	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N023014-001B	SAMP	1	31342.31	0.95	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	5	6796.93	0.34	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	250	149.93	1.25	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	1	30172.12	0.76	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	5	6694.081	0.43	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	250	147.24	2.22	15	PASS	<0.000	N/A	15	<PQL
N023014-003B	SAMP	1	479.73	1.27	15	PASS	4.35	0.66	15	PASS
N023014-003B	SAMP	5	109.62	0.76	15	PASS	0.93	2.6	15	PASS
N023014-004B	SAMP	1	173.94	1.44	15	PASS	111.58	0.56	15	PASS
N023014-004B	SAMP	5	38.64	1.045	15	PASS	24.13	1.21	15	PASS
CCV7	CCV	1	20.74	1.92	15	PASS	20.2	2.6	15	PASS
CCB7	CCB	1	0.66	13.57	15	PASS	<0.000	N/A	15	<PQL
N023014-005B	SAMP	1	0.63	9.13	15	PASS	12.95	1.066	15	PASS
N023014-005B	SAMP	5	0.39	13.64	15	PASS	2.84	1.98	15	PASS
N023014-006B	SAMP	1	29.18	1.73	15	PASS	1.72	1.056	15	PASS
N023014-006B	SAMP	5	6.74	1.65	15	PASS	0.38	5.18	15	PASS
N023014-007B	SAMP	1	6.66	1.23	15	PASS	8.99	0.77	15	PASS
N023014-007B	SAMP	5	1.66	2.37	15	PASS	1.96	2.47	15	PASS
N023014-008B	SAMP	1	0.32	14.91	15	PASS	97.054	1.17	15	PASS
N023014-008B	SAMP	5	0.2	14.82	15	PASS	21.45	0.94	15	PASS
N023028-001B	SAMP	1	151.73	0.51	15	PASS	<0.000	N/A	15	<PQL
N023028-001B	SAMP	5	33.045	1.051	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	19.98	1.11	15	PASS	20.1	1.93	15	PASS
CCB8	CCB	1	0.17	13.71	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.13	3.31	20	PASS	0.54	10.16	20	PASS
ICSA3	ICSA	1	0.29	9.028	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.33	0.26	15	PASS	16.45	0.3	15	PASS
N023028-002B	SAMP	1	59.51	1.099	15	PASS	<0.000	N/A	15	<PQL
N023028-002B	SAMP	5	12.81	0.72	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	1	152.72	0.74	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	5	33.66	1.32	15	PASS	<0.000	N/A	15	<PQL
N023029-001B	SAMP	1	1.67	1.27	15	PASS	1.45	2.0014	15	PASS
N023029-001B	SAMP	5	0.39	1.4	15	PASS	0.2	9.29	15	PASS
N023029-002B	SAMP	1	508.63	0.77	15	PASS	0.58	10.14	15	PASS
N023029-002B	SAMP	5	112.12	1.25	15	PASS	0.085	15.4	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	164.62	1.19	15	PASS	0.96	1.0045	15	PASS
N023029-003B	SAMP	5	36.081	0.99	15	PASS	0.2	5.35	15	PASS
CCV9	CCV	1	20.14	1.64	15	PASS	20.28	1.58	15	PASS
CCB9	CCB	1	0.077	7.3	15	PASS	<0.000	N/A	15	<PQL
N023029-004B	SAMP	1	0.82	1.6	15	PASS	119.74	1.096	15	PASS
N023029-004B	SAMP	5	0.21	3.19	15	PASS	26	1.58	15	PASS
N023029-005B	SAMP	1	3.62	0.41	15	PASS	114.94	0.38	15	PASS
N023029-005B	SAMP	5	0.75	6.05	15	PASS	23.44	2.3	15	PASS
CCV10	CCV	1	19.91	0.65	15	PASS	20.25	1.7	15	PASS
CCB10	CCB	1	0.061	16.073	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.044	1.092	20	PASS	0.53	1.79	20	PASS
ICSA4	ICSA	1	0.22	4.077	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.34	1.39	15	PASS	16.57	1.13	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.8	15	PASS	0.11	29.1	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.77	15	PASS	0.45	33.3	15	<PQL
Std3-5/50 ppb	ICAL	1	5.076	3.25	15	PASS	4.82	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.066	0.73	15	PASS	10.023	3.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	1.47	15	PASS	19.99	0.48	15	PASS
Std6-40/400 ppb	ICAL	1	40.28	0.72	15	PASS	40.22	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	100.051	0.89	15	PASS	101.45	1.0022	15	PASS
Std8-200/2000 ppb	ICAL	1	199.93	0.59	15	PASS	199.24	0.51	15	PASS
ICV	ICV	1	10.11	0.95	15	PASS	9.77	2.24	15	PASS
ICB	ICB	1	0.02	31.72	15	<PQL	0.025	72.42	15	<PQL
LLICV	CCV1	1	0.12	13.87	20	PASS	0.5	11.16	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.035	103.21	15	<PQL
ICSAB1	ICSAB	1	19.91	2.18	15	PASS	17.31	1.83	15	PASS
LLICV	CCV1	1	0.12	7.0089	20	PASS	0.46	13.79	20	PASS
CCV1	CCV	1	19.98	0.14	15	PASS	18.74	2.86	15	PASS
CCB1	CCB	1	0.017	86.51	15	<PQL	0.015	113.87	15	<PQL
CCV2	CCV	1	19.75	0.43	15	PASS	19.048	1.086	15	PASS
CCB2	CCB	1	0.003	168.15	15	<PQL	0.019	45.75	15	<PQL
CCV3	CCV	1	20.1	0.92	15	PASS	19.013	3.24	15	PASS
CCB3	CCB	1	0.014	43.41	15	<PQL	0.021	28.41	15	<PQL
CCV4	CCV	1	19.58	0.81	15	PASS	19.36	0.76	15	PASS
CCB4	CCB	1	0.017	34.39	15	<PQL	0.019	83.45	15	<PQL
LLCCV1	CCV2	1	0.085	21.56	20	<PQL	0.5	16.024	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.018	73.29	15	<PQL
ICSAB2	ICSAB	1	19.56	1.083	15	PASS	17.53	0.18	15	PASS
MB-61257	MBLK	1	0.002	392.28	15	<PQL	0.011	77.62	15	<PQL
LCS-61257	LCS	1	10.0097	1.3	15	PASS	9.61	2.47	15	PASS
N022998-001B	SAMP	1	1.95	1.74	15	PASS	0.56	22.076	15	NR!
N022998-001B	SAMP	5	0.42	3.37	15	PASS	0.086	67.16	15	<PQL
N022998-001B	SAMP	25	0.088	19.5	15	<PQL	0.048	49.046	15	<PQL
N022998-001B-PS	PS	1	10.59	1.46	15	PASS	8.67	3.64	15	PASS
N022998-001B-PS	PS	5	2.34	5.13	15	PASS	1.74	6.65	15	PASS
CCV5	CCV	1	20.033	0.82	15	PASS	18.52	1.57	15	PASS
CCB5	CCB	1	0.015	60.54	15	<PQL	0.03	16.99	15	<PQL
N022998-001B-MS	MS	1	10.79	2.2	15	PASS	8.81	3.27	15	PASS
N022998-001B-MS	MS	5	2.31	1.95	15	PASS	1.88	5.53	15	PASS
N022998-001B-MSD	MSD	1	10.8	0.25	15	PASS	8.46	1.72	15	PASS
N022998-001B-MSD	MSD	5	2.3	0.85	15	PASS	1.66	0.52	15	PASS
N022998-002B	SAMP	1	1.4	5.21	15	PASS	1.15	20.6	15	NR!
N022998-002B	SAMP	5	0.3	4.84	15	PASS	0.2	15.68	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	3.58	1.92	15	PASS	0.032	49.73	15	<PQL
N022998-003B	SAMP	5	0.76	7.59	15	PASS	0.017	63.73	15	<PQL
N022998-004B	SAMP	1	9.78	2.59	15	PASS	0.92	10.16	15	PASS
N022998-004B	SAMP	5	2.11	1.32	15	PASS	0.23	26.16	15	<PQL
CCV6	CCV	1	20.059	0.77	15	PASS	19.45	1.31	15	PASS
CCB6	CCB	1	0.016	40.45	15	<PQL	0.021	80.62	15	<PQL
N023014-001B	SAMP	1	2.58	1.81	15	PASS	15.7	2.64	15	PASS
N023014-001B	SAMP	5	0.53	5.76	15	PASS	3.11	5.81	15	PASS
N023014-001B	SAMP	250	0.013	36.4	15	<PQL	0.061	40.056	15	<PQL
N023014-002B	SAMP	1	2.43	4.2	15	PASS	15.038	2.52	15	PASS
N023014-002B	SAMP	5	0.5	8.081	15	PASS	2.91	2.8	15	PASS
N023014-002B	SAMP	250	0.0093	92.14	15	<PQL	0.058	31.42	15	<PQL
N023014-003B	SAMP	1	2.083	4.7	15	PASS	6.075	5.91	15	PASS
N023014-003B	SAMP	5	0.44	0.87	15	PASS	1.33	14.71	15	PASS
N023014-004B	SAMP	1	0.6	6.9	15	PASS	7.59	2.77	15	PASS
N023014-004B	SAMP	5	0.13	18.93	15	NR!	1.51	7.057	15	PASS
CCV7	CCV	1	19.96	0.84	15	PASS	18.54	1.15	15	PASS
CCB7	CCB	1	0.012	34.94	15	<PQL	0.013	100.08	15	<PQL
N023014-005B	SAMP	1	5.88	3.2	15	PASS	2.16	9.49	15	PASS
N023014-005B	SAMP	5	1.27	4.1	15	PASS	0.48	8.46	15	PASS
N023014-006B	SAMP	1	1.61	0.49	15	PASS	3.64	4.64	15	PASS
N023014-006B	SAMP	5	0.33	7.96	15	PASS	0.86	10.72	15	PASS
N023014-007B	SAMP	1	13.52	1.84	15	PASS	0.2	14.95	15	PASS
N023014-007B	SAMP	5	2.9	3.77	15	PASS	0.069	30.99	15	<PQL
N023014-008B	SAMP	1	7.15	0.96	15	PASS	0.045	38.78	15	<PQL
N023014-008B	SAMP	5	1.62	3.9	15	PASS	0.012	125.17	15	<PQL
N023028-001B	SAMP	1	1.69	2.079	15	PASS	4.56	3.75	15	PASS
N023028-001B	SAMP	5	0.34	9.11	15	PASS	1.096	8.31	15	PASS
CCV8	CCV	1	19.64	1.4	15	PASS	18.77	2.33	15	PASS
CCB8	CCB	1	0.013	54.19	15	<PQL	0.012	164.84	15	<PQL
LLCCV2	CCV2	1	0.1	23.85	20	FAILED	0.47	7.6	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.011	29.047	15	<PQL
ICSAB3	ICSAB	1	19.52	0.36	15	PASS	16.79	3.33	15	PASS
N023028-002B	SAMP	1	1.41	4.66	15	PASS	4.069	2.67	15	PASS
N023028-002B	SAMP	5	0.3	2.71	15	PASS	0.84	8.72	15	PASS
N023028-003B	SAMP	1	2.64	2.95	15	PASS	5.4	3.0036	15	PASS
N023028-003B	SAMP	5	0.56	1.32	15	PASS	1.18	9.92	15	PASS
N023029-001B	SAMP	1	1.36	5.064	15	PASS	0.77	5.22	15	PASS
N023029-001B	SAMP	5	0.27	5.2	15	PASS	0.18	27.71	15	<PQL
N023029-002B	SAMP	1	1.27	3.071	15	PASS	3.64	9.83	15	PASS
N023029-002B	SAMP	5	0.29	9.31	15	PASS	0.74	9.095	15	PASS

%RSD of As in LLCCV2 failed > 20%> However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	2.15	2.2	15	PASS	12.32	2.027	15	PASS
N023029-003B	SAMP	5	0.43	2.46	15	PASS	2.52	5.83	15	PASS
CCV9	CCV	1	19.84	1	15	PASS	19.031	1.048	15	PASS
CCB9	CCB	1	0.012	49.24	15	<PQL	0.0053	59.8	15	<PQL
N023029-004B	SAMP	1	8.59	4.17	15	PASS	0.86	3.064	15	PASS
N023029-004B	SAMP	5	1.82	4.23	15	PASS	0.18	7.59	15	PASS
N023029-005B	SAMP	1	8.45	2.76	15	PASS	0.54	4.94	15	PASS
N023029-005B	SAMP	5	1.66	4.82	15	PASS	0.096	33.54	15	<PQL
CCV10	CCV	1	19.98	0.99	15	PASS	18.81	0.34	15	PASS
CCB10	CCB	1	0.018	19.83	15	<PQL	0.011	162.083	15	<PQL
LLCCV3	CCV2	1	0.12	8.13	20	PASS	0.5	25.64	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.013	89.38	15	<PQL
ICSAB4	ICSAB	1	19.41	0.77	15	PASS	16.67	3.18	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	7.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.37	15	PASS
Std3-5/50 ppb	ICAL	1	4.89	0.72	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	2.59	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	0.95	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.055	15	PASS
Std7-100/1000 ppb	ICAL	1	99.79	0.99	15	PASS
Std8-200/2000 ppb	ICAL	1	200	0.63	15	PASS
ICV	ICV	1	10.59	0.71	15	PASS
ICB	ICB	1	0.21	0.086	15	PASS
LLICV	CCV1	1	0.57	7.071	20	PASS
ICSA1	ICSA	1	0.091	5.95	15	PASS
ICSAB1	ICSAB	1	23.25	1.24	15	PASS
LLICV	CCV1	1	0.61	1.15	20	PASS
CCV1	CCV	1	19.91	0.79	15	PASS
CCB1	CCB	1	0.13	14.25	15	PASS
CCV2	CCV	1	19.82	0.82	15	PASS
CCB2	CCB	1	0.11	2.27	15	PASS
CCV3	CCV	1	19.83	0.92	15	PASS
CCB3	CCB	1	0.12	12.3	15	PASS
CCV4	CCV	1	19.64	1.39	15	PASS
CCB4	CCB	1	0.1	8.84	15	PASS
LLCCV1	CCV2	1	0.51	3.018	20	PASS
ICSA2	ICSA	1	0.051	22.61	15	<PQL
ICSAB2	ICSAB	1	23.32	0.79	15	PASS
MB-61257	MBLK	1	0.044	13.53	15	PASS
LCS-61257	LCS	1	10.075	1.13	15	PASS
N022998-001B	SAMP	1	213.39	0.7	15	PASS
N022998-001B	SAMP	5	39.15	0.76	15	PASS
N022998-001B	SAMP	25	7.6	1.35	15	PASS
N022998-001B-PS	PS	1	232.25	1.28	15	PASS
N022998-001B-PS	PS	5	42.36	0.7	15	PASS
CCV5	CCV	1	19.54	0.24	15	PASS
CCB5	CCB	1	0.22	0.38	15	PASS
N022998-001B-MS	MS	1	224.83	0.4	15	PASS
N022998-001B-MS	MS	5	42.29	0.33	15	PASS
N022998-001B-MSD	MSD	1	221.63	0.6	15	PASS
N022998-001B-MSD	MSD	5	42.2	1.41	15	PASS
N022998-002B	SAMP	1	27.17	1.1	15	PASS
N022998-002B	SAMP	5	5.15	2.048	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	68.99	0.75	15	PASS
N022998-003B	SAMP	5	13.049	0.98	15	PASS
N022998-004B	SAMP	1	82.74	0.78	15	PASS
N022998-004B	SAMP	5	15.62	1.89	15	PASS
CCV6	CCV	1	19.91	1.16	15	PASS
CCB6	CCB	1	0.14	8.88	15	PASS
N023014-001B	SAMP	1	52.2	1.74	15	PASS
N023014-001B	SAMP	5	9.9	1.88	15	PASS
N023014-001B	SAMP	250	0.27	7.76	15	PASS
N023014-002B	SAMP	1	50.74	0.32	15	PASS
N023014-002B	SAMP	5	9.72	1.32	15	PASS
N023014-002B	SAMP	250	0.27	5.91	15	PASS
N023014-003B	SAMP	1	33.89	0.95	15	PASS
N023014-003B	SAMP	5	6.52	0.7	15	PASS
N023014-004B	SAMP	1	32.38	1.75	15	PASS
N023014-004B	SAMP	5	6.21	1.85	15	PASS
CCV7	CCV	1	19.81	2.55	15	PASS
CCB7	CCB	1	0.12	3.36	15	PASS
N023014-005B	SAMP	1	66.039	0.76	15	PASS
N023014-005B	SAMP	5	12.36	2.28	15	PASS
N023014-006B	SAMP	1	26.23	1.56	15	PASS
N023014-006B	SAMP	5	5.045	2.18	15	PASS
N023014-007B	SAMP	1	84.15	1.03	15	PASS
N023014-007B	SAMP	5	15.88	1.55	15	PASS
N023014-008B	SAMP	1	50.94	0.78	15	PASS
N023014-008B	SAMP	5	9.63	1.88	15	PASS
N023028-001B	SAMP	1	3.88	2.23	15	PASS
N023028-001B	SAMP	5	0.75	1.17	15	PASS
CCV8	CCV	1	19.88	0.53	15	PASS
CCB8	CCB	1	0.11	3.69	15	PASS
LLCCV2	CCV2	1	0.55	4.31	20	PASS
ICSA3	ICSA	1	0.056	13.68	15	PASS
ICSAB3	ICSAB	1	23.3	0.55	15	PASS
N023028-002B	SAMP	1	6.12	2.2	15	PASS
N023028-002B	SAMP	5	1.15	5.57	15	PASS
N023028-003B	SAMP	1	22.39	1.1	15	PASS
N023028-003B	SAMP	5	4.26	1.15	15	PASS
N023029-001B	SAMP	1	19.65	1.02	15	PASS
N023029-001B	SAMP	5	3.77	1.3	15	PASS
N023029-002B	SAMP	1	13.78	0.38	15	PASS
N023029-002B	SAMP	5	2.68	2.68	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	75.34	0.81	15	PASS
N023029-003B	SAMP	5	14.23	1.67	15	PASS
CCV9	CCV	1	20.057	1.19	15	PASS
CCB9	CCB	1	0.12	8.9	15	PASS
N023029-004B	SAMP	1	45.28	1.12	15	PASS
N023029-004B	SAMP	5	8.6	1.38	15	PASS
N023029-005B	SAMP	1	46.46	0.82	15	PASS
N023029-005B	SAMP	5	8.66	1.19	15	PASS
CCV10	CCV	1	20.08	1.11	15	PASS
CCB10	CCB	1	0.12	7	15	PASS
LLCCV3	CCV2	1	0.53	5.22	20	PASS
ICSA4	ICSA	1	0.059	9.72	15	PASS
ICSAB4	ICSAB	1	22.98	2.0032	15	PASS

PERCENT RSD SUMMARY: 170220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.18	6.95	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.58	7.12	15	PASS
Std3-5/50 ppb	ICAL	1	5.097	1.38	15	PASS
Std4-10/100 ppb	ICAL	1	10.16	1.91	15	PASS
Std5-20/200 ppb	ICAL	1	20.4	2.11	15	PASS
Std6-40/400 ppb	ICAL	1	41.0081	2.067	15	PASS
Std7-100/1000 ppb	ICAL	1	100.43	0.48	15	PASS
Std8-200/2000 ppb	ICAL	1	199.53	0.52	15	PASS
ICV	ICV	1	101.35	2.065	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.49	2.76	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.24	2.23	15	PASS
LLICV	CCV1	1	0.52	3.56	20	PASS
N022998-003B	SAMP	25	40.44	0.51	15	PASS
CCV1	CCV	1	20.63	2.8	15	PASS
CCB1	CCB	1	0.002	419.67	15	<PQL
LLCCV1	CCV2	1	0.53	0.96	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.47	0.63	15	PASS

PERCENT RSD SUMMARY: 170221B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.067	111.62	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.59	5.13	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	6.61	15	PASS
Std4-10/100 ppb	ICAL	1	10.056	1.83	15	PASS
Std5-20/200 ppb	ICAL	1	20.56	2.51	15	PASS
Std6-40/400 ppb	ICAL	1	40.23	2.14	15	PASS
Std7-100/1000 ppb	ICAL	1	100.24	1.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.77	1.0028	15	PASS
ICV	ICV	1	10.44	0.57	15	PASS
ICB	ICB	1	0.018	116.38	15	<PQL
LLICV	CCV1	1	0.48	14.91	20	PASS
ICSA1	ICSA	1	0.0052	312.63	15	<PQL
ICSAB1	ICSAB	1	19.48	1.77	15	PASS
N022998-002B	SAMP	1	1.19	14.59	15	PASS
CCV1	CCV	1	20.29	2.52	15	PASS
CCB1	CCB	1	0.052	27.67	15	<PQL
LLCCV1	CCV2	1	0.53	11.63	20	PASS
ICSA2	ICSA	1	0.034	43.13	15	<PQL
ICSAB2	ICSAB	1	19.49	1.95	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N023085-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

INJECTION LOG: 170220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0220001.D	RINSE	RINSE	1	02/20/17 11:58 AM
A0220002.D	Cal Blank	IBLK	1	02/20/17 12:03 PM
A0220003.D	Std1-0.1/1 ppb	ICAL	1	02/20/17 12:09 PM
A0220004.D	Std2-0.5/5 ppb	ICAL	1	02/20/17 12:14 PM
A0220005.D	Std3-5/50 ppb	ICAL	1	02/20/17 12:20 PM
A0220006.D	Std4-10/100 ppb	ICAL	1	02/20/17 12:25 PM
A0220007.D	Std5-20/200 ppb	ICAL	1	02/20/17 12:31 PM
A0220008.D	Std6-40/400 ppb	ICAL	1	02/20/17 12:37 PM
A0220009.D	Std7-100/1000 ppb	ICAL	1	02/20/17 12:42 PM
A0220010.D	Std8-200/2000 ppb	ICAL	1	02/20/17 12:48 PM
A0220011.D	ICV	ICV	1	02/20/17 12:53 PM
A0220012.D	ICB	ICB	1	02/20/17 12:59 PM
A0220013.D	LLICV	CCV1	1	02/20/17 1:06 PM
A0220014.D	ICSA1	ICSA	1	02/20/17 1:11 PM
A0220015.D	ICSAB1	ICSAB	1	02/20/17 1:31 PM
A0220016.D	LLICV	CCV1	1	02/20/17 1:37 PM
A0220017.D	N022998-003B	SAMP	25	02/20/17 1:42 PM
A0220018.D	N022966-014B	SAMP	1	02/20/17 1:48 PM
A0220019.D	CCV1	CCV	1	02/20/17 1:53 PM
A0220020.D	CCB1	CCB	1	02/20/17 2:00 PM
A0220021.D	LLCCV1	CCV2	1	02/20/17 2:05 PM
A0220022.D	ICSA2	ICSA	1	02/20/17 2:10 PM
A0220023.D	ICSAB2	ICSAB	1	02/20/17 2:16 PM

INJECTION LOG: 170221B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0221001.D	RINSE	RINSE	1	02/21/17 2:35 PM
B0221002.D	Cal Blank	IBLK	1	02/21/17 2:41 PM
B0221003.D	Std1-0.1/1 ppb	ICAL	1	02/21/17 2:46 PM
B0221004.D	Std2-0.5/5 ppb	ICAL	1	02/21/17 2:50 PM
B0221005.D	Std3-5/50 ppb	ICAL	1	02/21/17 2:56 PM
B0221006.D	Std4-10/100 ppb	ICAL	1	02/21/17 3:01 PM
B0221007.D	Std5-20/200 ppb	ICAL	1	02/21/17 3:07 PM
B0221008.D	Std6-40/400 ppb	ICAL	1	02/21/17 3:13 PM
B0221009.D	Std7-100/1000 ppb	ICAL	1	02/21/17 3:18 PM
B0221010.D	Std8-200/2000 ppb	ICAL	1	02/21/17 3:24 PM
B0221011.D	ICV	ICV	1	02/21/17 3:37 PM
B0221012.D	ICB	ICB	1	02/21/17 3:43 PM
B0221013.D	LLICV	CCV1	1	02/21/17 3:48 PM
B0221014.D	ICSA1	ICSA	1	02/21/17 3:54 PM
B0221015.D	ICSAB1	ICSAB	1	02/21/17 3:59 PM
B0221016.D	N022998-002B	SAMP	1	02/21/17 4:05 PM
B0221017.D	CCV1	CCV	1	02/21/17 4:10 PM
B0221018.D	CCB1	CCB	1	02/21/17 4:16 PM
B0221019.D	LLCCV1	CCV2	1	02/21/17 4:21 PM
B0221020.D	ICSA2	ICSA	1	02/21/17 4:27 PM
B0221021.D	ICSAB2	ICSAB	1	02/21/17 4:32 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61257	Aqueous		25	☐	0	0	25	1.000		
MB-61257	Aqueous		25	☐	0	0	25	1.000		
N022998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023014-001B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-002B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-003B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-004B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-005B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-006B	Ground Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023014-007B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-008B	Ground Water	<2	25	☐	0	0	25	1.000		
N023028-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Feb 2017 01:42:57 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	116854.00	0.00	
24 Mg	777417.00	0.00	
25 Mg	106076.00	0.00	
26 Mg	123494.00	0.00	
59 Co	1235140.00	0.00	
115 In	2298460.00	0.00	
206 Pb	592965.00	0.00	
207 Pb	518468.00	0.00	
208 Pb	1274740.00	0.00	

RSD (%)

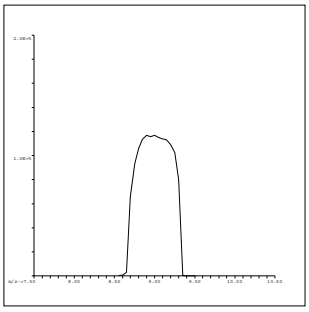
Element	Actual	Required	Flag
9 Be	1.12	5.00	
24 Mg	1.21	5.00	
25 Mg	1.16	5.00	
26 Mg	0.90	5.00	
59 Co	0.32	5.00	
115 In	0.29	5.00	
206 Pb	1.46	5.00	
207 Pb	0.91	5.00	
208 Pb	0.46	5.00	

Ion Ratio

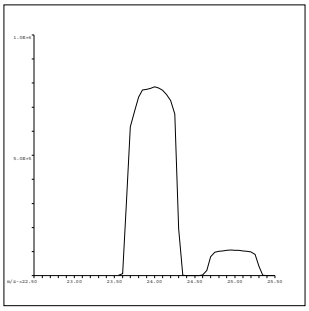
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

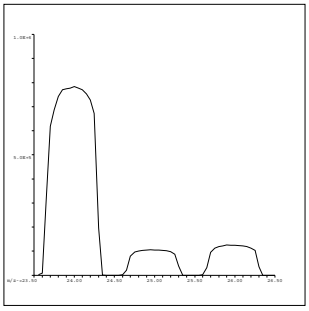
Element	Actual	Required	Flag



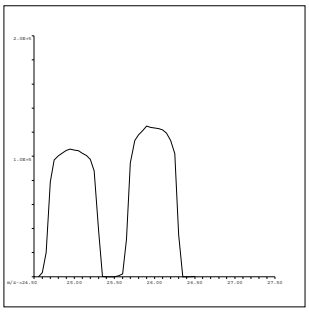
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



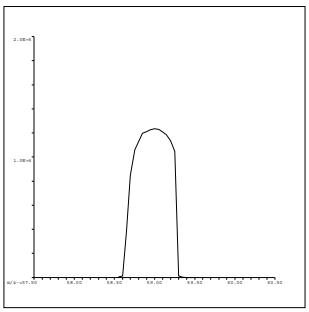
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

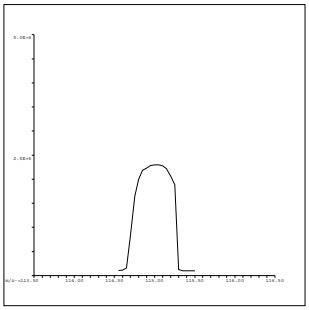


26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

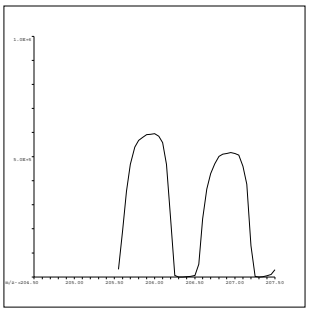


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

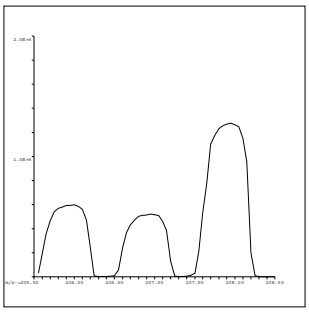
C:\ICPMH\1\7500\qctune.d



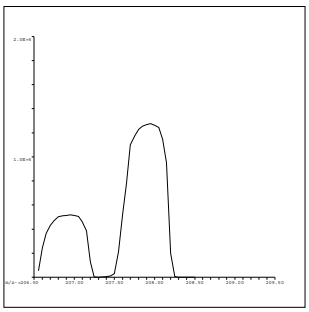
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 20 Feb 2017 11:01:35 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	85352.70	0.00	
24 Mg	612944.00	0.00	
25 Mg	82937.50	0.00	
26 Mg	97420.70	0.00	
59 Co	984270.00	0.00	
115 In	2002650.00	0.00	
206 Pb	502574.00	0.00	
207 Pb	437000.00	0.00	
208 Pb	1071770.00	0.00	

RSD (%)

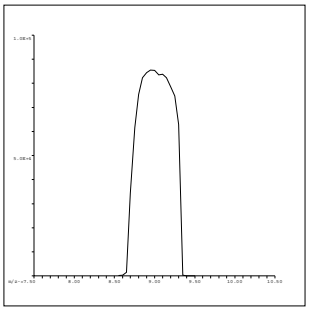
Element	Actual	Required	Flag
9 Be	1.52	5.00	
24 Mg	0.45	5.00	
25 Mg	1.11	5.00	
26 Mg	0.44	5.00	
59 Co	0.75	5.00	
115 In	0.96	5.00	
206 Pb	0.85	5.00	
207 Pb	2.05	5.00	
208 Pb	1.17	5.00	

Ion Ratio

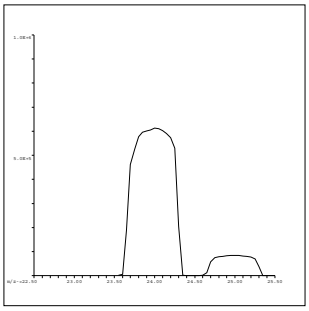
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

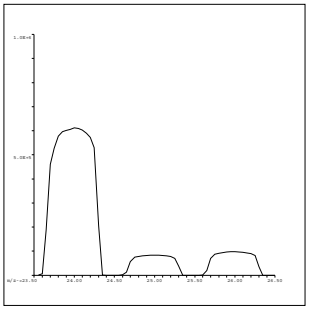
Element	Actual	Required	Flag



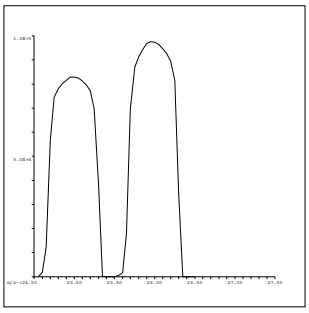
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



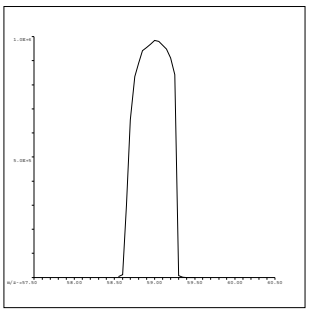
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



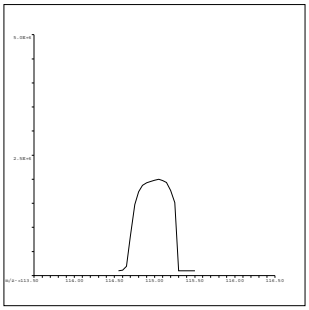
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



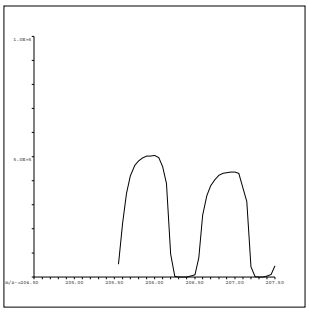
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



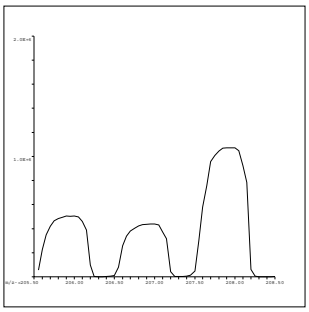
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



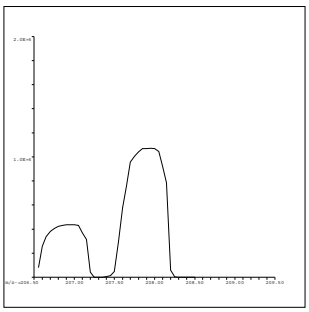
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 21 Feb 2017 02:03:03 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	54022.10	0.00	
24 Mg	371279.00	0.00	
25 Mg	50114.00	0.00	
26 Mg	58911.10	0.00	
59 Co	671438.00	0.00	
115 In	1452170.00	0.00	
206 Pb	407216.00	0.00	
207 Pb	354111.00	0.00	
208 Pb	871703.00	0.00	

RSD (%)

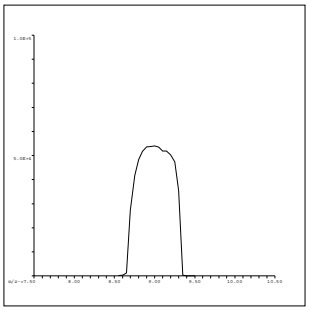
Element	Actual	Required	Flag
9 Be	1.38	5.00	
24 Mg	0.74	5.00	
25 Mg	2.15	5.00	
26 Mg	1.28	5.00	
59 Co	0.58	5.00	
115 In	0.35	5.00	
206 Pb	0.82	5.00	
207 Pb	0.66	5.00	
208 Pb	0.92	5.00	

Ion Ratio

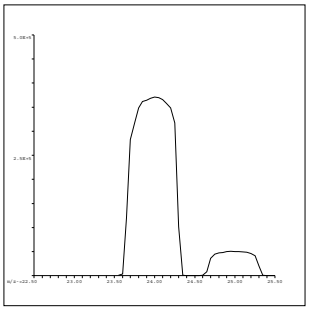
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

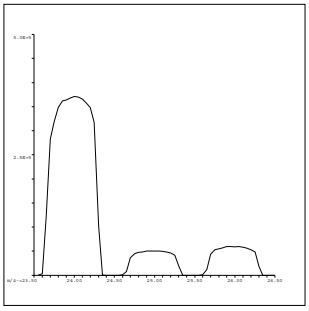
Element	Actual	Required	Flag



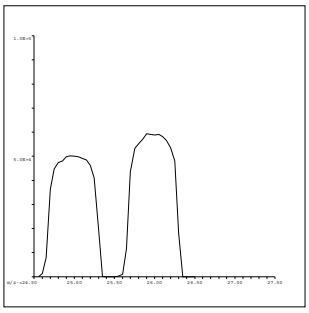
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



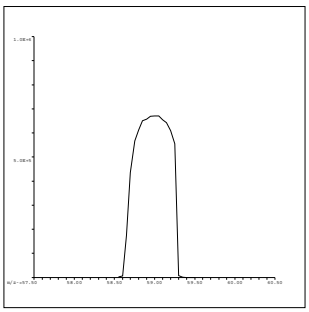
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

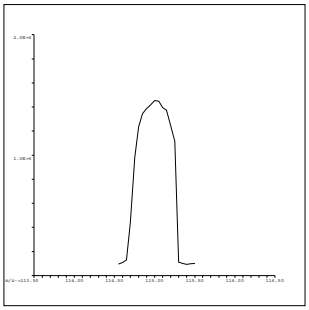


26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

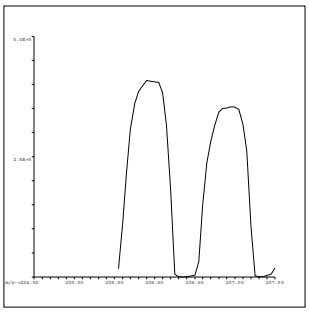


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

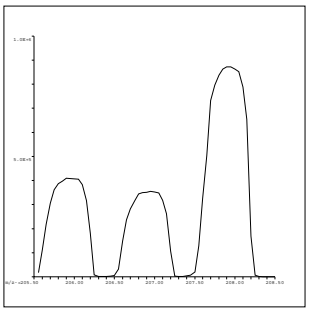
C:\ICPMH\1\7500\qctune.d



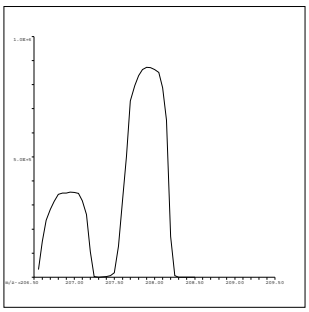
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170219A

Instrument ID: ICPMS-02

Analyte	Data File	A0219002.D	A0219003.D	A0219004.D	A0219005.D	A0219006.D	A0219007.D	A0219008.D	A0219009.D	A0219010.D	
	Acq. Date-Time	02/19/2017 02:06 PM	02/19/2017 02:11 PM	02/19/2017 02:17 PM	02/19/2017 02:22 PM	02/19/2017 02:28 PM	02/19/2017 02:33 PM	02/19/2017 02:39 PM	02/19/2017 02:45 PM	02/19/2017 02:50 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	113178.1		114588.6	113872.3	111751.9	110961.7	108566.7	102144.4	100053	
55 Mn [2]	CPS	382.4		3053.9	25931.1	50434.9	97459.1	189893.9	452690.9	883551.8	1.0000
52 Cr [2]	CPS	1701.2		6757.1	52587	102612.2	197861.8	385693.4	920291.5	1757874.5	0.9999
72 Ge (ISTD) [1]	CPS	110414		110306.7	108093.9	106640.2	108806.3	104974.8	98972.1	96626.3	
78 Se [1]	CPS	1.1		250	2637	5404.5	10995.3	21344.7	50753.6	97318.6	1.0000
72 Ge (ISTD) [2]	CPS	89091.8	90988.6	90684.9	89530.8	87586.8	87134.5	84230.7	81263.6	79698.1	
75 As [2]	CPS	13.8	134.2	528.9	5294.7	10259.3	20124.1	39431.1	94483.8	185164.1	1.0000
103 Rh (ISTD) [2]	CPS	3080409.8		3121173.6	3091363.3	3061200.8	3041671.3	2989323.7	2869890	2816893.8	
95 Mo [2]	CPS	24.4		3440.5	33780.9	66955	140715.2	268543.4	639336.3	1257668.7	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170220A

Instrument ID: ICPMS-02

Analyte	Data File	A0220002.D	A0220004.D	A0220005.D	A0220006.D	A0220007.D	A0220008.D	A0220009.D	A0220010.D	
	Acq. Date-Time	02/20/2017 12:03 PM	02/20/2017 12:14 PM	02/20/2017 12:20 PM	02/20/2017 12:25 PM	02/20/2017 12:31 PM	02/20/2017 12:37 PM	02/20/2017 12:42 PM	02/20/2017 12:48 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	96486.9	94537.9	93997.1	93945	92721.3	100759.9	94720.6	91211.7	
55 Mn [2]	CPS	294.5	2791.4	22024	43573.1	86085.5	187758	431921	826082.6	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170221B

Instrument ID: ICPMS-02

Analyte	Data File	B0221002.D	B0221004.D	B0221005.D	B0221006.D	B0221007.D	B0221008.D	B0221009.D	B0221010.D	
	Acq. Date-Time	02/21/2017 02:41 PM	02/21/2017 02:50 PM	02/21/2017 02:56 PM	02/21/2017 03:01 PM	02/21/2017 03:07 PM	02/21/2017 03:13 PM	02/21/2017 03:18 PM	02/21/2017 03:24 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	82090.8	78952	78560.3	77844.6	75525	73617.4	72522.3	71622	
78 Se [1]	CPS	3.3	211.1	1819.1	3506.1	6950.7	13254.8	32533.5	64036.9	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.108	0.10	10.00	0	101	90	110				
Manganese	102.049	0.50	100.0	0	102	90	110				
Molybdenum	10.590	0.50	10.00	0	106	90	110				
Selenium	9.772	0.50	10.00	0	97.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Manganese	0.525	0.50	0.5000	0	105	80	120				
Molybdenum	0.573	0.50	0.5000	0	115	80	120				
Selenium	0.502	0.50	0.5000	0	100	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.976	0.10	20.00	0	99.9	90	110				
Manganese	20.045	0.50	20.00	0	100	90	110				
Molybdenum	19.913	0.50	20.00	0	99.6	90	110				
Selenium	18.741	0.50	20.00	0	93.7	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.750	0.10	20.00	0	98.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.156	0.50	20.00	0	101	90	110				
Molybdenum	19.815	0.50	20.00	0	99.1	90	110				
Selenium	19.048	0.50	20.00	0	95.2	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.100	0.10	20.00	0	101	90	110				
Manganese	20.244	0.50	20.00	0	101	90	110				
Molybdenum	19.826	0.50	20.00	0	99.1	90	110				
Selenium	19.013	0.50	20.00	0	95.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.580	0.10	20.00	0	97.9	90	110				
Manganese	20.365	0.50	20.00	0	102	90	110				
Molybdenum	19.643	0.50	20.00	0	98.2	90	110				
Selenium	19.361	0.50	20.00	0	96.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	85.4	70	130				
Manganese	0.528	0.50	0.5000	0	106	70	130				
Molybdenum	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.497	0.50	0.5000	0	99.4	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.033	0.10	20.00	0	100	90	110				
Manganese	20.142	0.50	20.00	0	101	90	110				
Molybdenum	19.543	0.50	20.00	0	97.7	90	110				
Selenium	18.524	0.50	20.00	0	92.6	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.059	0.10	20.00	0	100	90	110				
Manganese	20.184	0.50	20.00	0	101	90	110				
Molybdenum	19.914	0.50	20.00	0	99.6	90	110				
Selenium	19.455	0.50	20.00	0	97.3	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.958	0.10	20.00	0	99.8	90	110				
Manganese	20.196	0.50	20.00	0	101	90	110				
Molybdenum	19.809	0.50	20.00	0	99.0	90	110				
Selenium	18.541	0.50	20.00	0	92.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.636	0.10	20.00	0	98.2	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				
Molybdenum	19.884	0.50	20.00	0	99.4	90	110				
Selenium	18.769	0.50	20.00	0	93.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.538	0.50	0.5000	0	108	70	130				
Molybdenum	0.547	0.50	0.5000	0	109	70	130				
Selenium	0.474	0.50	0.5000	0	94.7	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.844	0.10	20.00	0	99.2	90	110				
Manganese	20.275	0.50	20.00	0	101	90	110				
Molybdenum	20.057	0.50	20.00	0	100	90	110				
Selenium	19.031	0.50	20.00	0	95.2	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.248	0.50	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	18.809	0.50	20.00	0	94.0	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.123	0.10	0.1000	0	123	70	130				
Manganese	0.531	0.50	0.5000	0	106	70	130				
Molybdenum	0.528	0.50	0.5000	0	106	70	130				
Selenium	0.498	0.50	0.5000	0	99.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICV	**ICV**	**6020_DIS**	**µg/L**		**113640**
Client ID: **ICV**	Batch ID: **R113640**	TestNo: **EPA 6020**		Analysis Date: **2/20/2017**	SeqNo: **2573878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.350	0.50	100.0	0	101	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LLICV	**CCV1**	**6020_DIS**	**µg/L**		**113640**
Client ID: **ZZZZZZ**	Batch ID: **R113640**	TestNo: **EPA 6020**		Analysis Date: **2/20/2017**	SeqNo: **2573880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.491	0.50	0.5000	0	98.2	80	120				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV1	**CCV**	**6020_DIS**	**µg/L**		**113640**
Client ID: **CCV**	Batch ID: **R113640**	TestNo: **EPA 6020**		Analysis Date: **2/20/2017**	SeqNo: **2573886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.630	0.50	20.00	0	103	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LLCCV1	**CCV2**	**6020_DIS**	**µg/L**		**113640**
Client ID: **ZZZZZZ**	Batch ID: **R113640**	TestNo: **EPA 6020**		Analysis Date: **2/20/2017**	SeqNo: **2573888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.528	0.50	0.5000	0	106	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICV	SampType:	ICV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICV	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.445	0.50	10.00	0	104	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ZZZZZZ	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574908

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.479	0.50	0.5000	0	95.7	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	CCV	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574912

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.292	0.50	20.00	0	101	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ZZZZZZ	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574914

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.534	0.50	0.5000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.224	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.968	1.0	1.000	0	96.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.058	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.746	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.055	1.0	20.00	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.280	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.943	1.0	1.000	0	94.3	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.667	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.028	1.0	20.00	0	100	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.736	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.985	1.0	20.00	0	99.9	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.131	1.0	1.000	0	113	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.136	1.0	20.00	0	101	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.044	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.214	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.126	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.112	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.116	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.102	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.221	0.50									
Selenium	0.030	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.143	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.111	0.50									
Selenium	ND	0.50									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB10	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.120	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113640
Client ID:	ICB	Batch ID:	R113640	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573879

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113640
Client ID:	CCB	Batch ID:	R113640	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICB	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	CCB	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574913

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.052	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.664	1.0									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.169	1.0									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.077	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB10	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	CCB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.061	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.035	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.913	0.10	20.00	0	99.6	80	120				
Manganese	16.293	0.50	20.00	0	81.5	80	120				
Molybdenum	23.248	0.50	20.00	0	116	80	120				
Selenium	17.309	0.50	20.00	0	86.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.051	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.556	0.10	20.00	0	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.492	0.50	20.00	0	82.5	80	120				
Molybdenum	23.324	0.50	20.00	0	117	80	120				
Selenium	17.529	0.50	20.00	0	87.6	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.056	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.519	0.10	20.00	0	97.6	80	120				
Manganese	16.455	0.50	20.00	0	82.3	80	120				
Molybdenum	23.302	0.50	20.00	0	117	80	120				
Selenium	16.788	0.50	20.00	0	83.9	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.059	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSA	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSAB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573578

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.414	0.10	20.00	0	97.1	80	120				
Manganese	16.568	0.50	20.00	0	82.8	80	120				
Molybdenum	22.979	0.50	20.00	0	115	80	120				
Selenium	16.673	0.50	20.00	0	83.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113640**
Client ID: **ICSA** Batch ID: **R113640** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113640**
Client ID: **ICSAB** Batch ID: **R113640** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.235	0.50	20.00	0	86.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113640**
Client ID: **ICSA** Batch ID: **R113640** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113640**
Client ID: **ICSAB** Batch ID: **R113640** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.466	0.50	20.00	0	87.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICSA	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574909

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICSAB	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.480	0.50	20.00	0	97.4	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICSA	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574915

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.034	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113660
Client ID:	ICSAB	Batch ID:	R113660	TestNo:	EPA 6020			Analysis Date:	2/21/2017	SeqNo:	2574916

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.488	0.50	20.00	0	97.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.133	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.735	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.119	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.750	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.286	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSAB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.326	1.0	20.00	0	96.6	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSA	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.223	1.0									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSAB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573437

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.339	1.0	20.00	0	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	113178.1	113178.1	100	PASS	70-125	89091.8	89091.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	116237.5	113178.1	102.7	PASS	70-125	90988.6	89091.8	102.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	114588.6	113178.1	101.25	PASS	70-125	90684.9	89091.8	101.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	113872.3	113178.1	100.61	PASS	70-125	89530.8	89091.8	100.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	111751.9	113178.1	98.74	PASS	70-125	87586.8	89091.8	98.31	PASS	70-125
Std5-20/200 ppb	ICAL	1	110961.7	113178.1	98.042	PASS	70-125	87134.5	89091.8	97.8	PASS	70-125
Std6-40/400 ppb	ICAL	1	108566.7	113178.1	95.93	PASS	70-125	84230.7	89091.8	94.54	PASS	70-125
Std7-100/1000 ppb	ICAL	1	102144.4	113178.1	90.25	PASS	70-125	81263.6	89091.8	91.21	PASS	70-125
Std8-200/2000 ppb	ICAL	1	100053	113178.1	88.4	PASS	70-125	79698.1	89091.8	89.46	PASS	70-125
ICV	ICV	1	111945.8	113178.1	98.91	PASS	70-125	91023.2	89091.8	102.17	PASS	70-125
ICB	ICB	1	97797.5	113178.1	86.41	PASS	70-125	80003	89091.8	89.8	PASS	70-125
LLICV	CCV1	1	109056.8	113178.1	96.36	PASS	70-125	89054.8	89091.8	99.96	PASS	70-125
ICSA1	ICSA	1	120040.2	113178.1	106.06	PASS	70-125	87052.1	89091.8	97.71	PASS	70-125
ICSAB1	ICSAB	1	128225.4	113178.1	113.3	PASS	70-125	89454	89091.8	100.41	PASS	70-125
LLICV	CCV1	1	129078.2	113178.1	114.05	PASS	70-125	103291.4	89091.8	115.94	PASS	70-125
CCV1	CCV	1	126930.5	113178.1	112.15	PASS	70-125	98656.9	89091.8	110.74	PASS	70-125
CCB1	CCB	1	118989.4	113178.1	105.13	PASS	70-125	95257.5	89091.8	106.92	PASS	70-125
CCV2	CCV	1	118396.4	113178.1	104.61	PASS	70-125	93631.3	89091.8	105.1	PASS	70-125
CCB2	CCB	1	113808.1	113178.1	100.56	PASS	70-125	91488.1	89091.8	102.69	PASS	70-125
CCV3	CCV	1	118098.2	113178.1	104.35	PASS	70-125	92681.3	89091.8	104.03	PASS	70-125
CCB3	CCB	1	113827.3	113178.1	100.57	PASS	70-125	90707.1	89091.8	101.81	PASS	70-125
CCV4	CCV	1	105409.2	113178.1	93.14	PASS	70-125	85941.5	89091.8	96.46	PASS	70-125
CCB4	CCB	1	102974.3	113178.1	90.98	PASS	70-125	83349.4	89091.8	93.55	PASS	70-125
LLCCV1	CCV2	1	113317.1	113178.1	100.12	PASS	70-125	92848.6	89091.8	104.22	PASS	70-125
ICSA2	ICSA	1	115538.8	113178.1	102.09	PASS	70-125	85119.4	89091.8	95.54	PASS	70-125
ICSAB2	ICSAB	1	127842.7	113178.1	112.96	PASS	70-125	92239	89091.8	103.53	PASS	70-125
MB-61257	MBLK	1	120318.5	113178.1	106.31	PASS	70-125	95132.1	89091.8	106.78	PASS	70-125
LCS-61257	LCS	1	131672.8	113178.1	116.34	PASS	70-125	102643.7	89091.8	115.21	PASS	70-125
N022998-001B	SAMP	1	83691.5	113178.1	73.95	PASS	70-125	50385.5	89091.8	56.55	NR!	70-125
N022998-001B	SAMP	5	122635.2	113178.1	108.36	PASS	70-125	82056.2	89091.8	92.1	PASS	70-125
N022998-001B	SAMP	25	133530.3	113178.1	117.98	PASS	70-125	97457.8	89091.8	109.39	PASS	70-125
N022998-001B-PS	PS	1	95871.9	113178.1	84.71	PASS	70-125	56166.6	89091.8	63.044	NR!	70-125
N022998-001B-PS	PS	5	126434.5	113178.1	111.71	PASS	70-125	85134.4	89091.8	95.56	PASS	70-125
CCV5	CCV	1	94457.5	113178.1	83.46	PASS	70-125	73740.2	89091.8	82.77	PASS	70-125
CCB5	CCB	1	130945.3	113178.1	115.7	PASS	70-125	101654.5	89091.8	114.1	PASS	70-125
N022998-001B-MS	MS	1	89326.7	113178.1	78.93	PASS	70-125	53145.1	89091.8	59.65	NR!	70-125
N022998-001B-MS	MS	5	124575.1	113178.1	110.07	PASS	70-125	84170.3	89091.8	94.48	PASS	70-125
N022998-001B-MSD	MSD	1	93192.3	113178.1	82.34	PASS	70-125	55462	89091.8	62.25	NR!	70-125
N022998-001B-MSD	MSD	5	122847.9	113178.1	108.54	PASS	70-125	83499.9	89091.8	93.72	PASS	70-125
N022998-002B	SAMP	1	115977.4	113178.1	102.47	PASS	70-125	72032.6	89091.8	80.85	PASS	70-125
N022998-002B	SAMP	5	128904.2	113178.1	113.9	PASS	70-125	91492.9	89091.8	102.7	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	99435.5	113178.1	87.86	PASS	70-125	60172.7	89091.8	67.54	NR!	70-125
N022998-003B	SAMP	5	125549.9	113178.1	110.93	PASS	70-125	87902.1	89091.8	98.66	PASS	70-125
N022998-004B	SAMP	1	94041.4	113178.1	83.092	PASS	70-125	56788.6	89091.8	63.74	NR!	70-125
N022998-004B	SAMP	5	124337.8	113178.1	109.86	PASS	70-125	85104.9	89091.8	95.52	PASS	70-125
CCV6	CCV	1	135134	113178.1	119.4	PASS	70-125	105186.4	89091.8	118.07	PASS	70-125
CCB6	CCB	1	127946.8	113178.1	113.05	PASS	70-125	100507.1	89091.8	112.81	PASS	70-125
N023014-001B	SAMP	1	113651.3	113178.1	100.42	PASS	70-125	75635.2	89091.8	84.9	PASS	70-125
N023014-001B	SAMP	5	121947	113178.1	107.75	PASS	70-125	89823.4	89091.8	100.82	PASS	70-125
N023014-001B	SAMP	250	129084.6	113178.1	114.05	PASS	70-125	101769.8	89091.8	114.23	PASS	70-125
N023014-002B	SAMP	1	112662.3	113178.1	99.54	PASS	70-125	75326.4	89091.8	84.55	PASS	70-125
N023014-002B	SAMP	5	118949.2	113178.1	105.1	PASS	70-125	88265	89091.8	99.072	PASS	70-125
N023014-002B	SAMP	250	125956	113178.1	111.29	PASS	70-125	99332.4	89091.8	111.49	PASS	70-125
N023014-003B	SAMP	1	99583.6	113178.1	87.99	PASS	70-125	65100.7	89091.8	73.071	PASS	70-125
N023014-003B	SAMP	5	121973.9	113178.1	107.77	PASS	70-125	88082.8	89091.8	98.87	PASS	70-125
N023014-004B	SAMP	1	120735.8	113178.1	106.68	PASS	70-125	81711.3	89091.8	91.72	PASS	70-125
N023014-004B	SAMP	5	127934.4	113178.1	113.04	PASS	70-125	94909.9	89091.8	106.53	PASS	70-125
CCV7	CCV	1	127357.1	113178.1	112.53	PASS	70-125	99182.7	89091.8	111.33	PASS	70-125
CCB7	CCB	1	121833.7	113178.1	107.65	PASS	70-125	95934.1	89091.8	107.68	PASS	70-125
N023014-005B	SAMP	1	81511.6	113178.1	72.021	PASS	70-125	50290.5	89091.8	56.45	NR!	70-125
N023014-005B	SAMP	5	119172	113178.1	105.3	PASS	70-125	81794.2	89091.8	91.81	PASS	70-125
N023014-006B	SAMP	1	106122.1	113178.1	93.77	PASS	70-125	63668.2	89091.8	71.46	PASS	70-125
N023014-006B	SAMP	5	126426.6	113178.1	111.71	PASS	70-125	88193.9	89091.8	98.99	PASS	70-125
N023014-007B	SAMP	1	90246.2	113178.1	79.74	PASS	70-125	56077.3	89091.8	62.94	NR!	70-125
N023014-007B	SAMP	5	122301.8	113178.1	108.06	PASS	70-125	84868.2	89091.8	95.26	PASS	70-125
N023014-008B	SAMP	1	105806.2	113178.1	93.49	PASS	70-125	69672.8	89091.8	78.2	PASS	70-125
N023014-008B	SAMP	5	126570	113178.1	111.83	PASS	70-125	89110.6	89091.8	100.02	PASS	70-125
N023028-001B	SAMP	1	125727.2	113178.1	111.09	PASS	70-125	86953.4	89091.8	97.6	PASS	70-125
N023028-001B	SAMP	5	129027.2	113178.1	114	PASS	70-125	95809.4	89091.8	107.54	PASS	70-125
CCV8	CCV	1	128876.5	113178.1	113.87	PASS	70-125	102061.1	89091.8	114.56	PASS	70-125
CCB8	CCB	1	121847	113178.1	107.66	PASS	70-125	96874.5	89091.8	108.74	PASS	70-125
LLCCV2	CCV2	1	135093.5	113178.1	119.36	PASS	70-125	105814.2	89091.8	118.77	PASS	70-125
ICSA3	ICSA	1	133390.4	113178.1	117.86	PASS	70-125	96164.7	89091.8	107.94	PASS	70-125
ICSAB3	ICSAB	1	120431.9	113178.1	106.41	PASS	70-125	84497.3	89091.8	94.84	PASS	70-125
N023028-002B	SAMP	1	107802.9	113178.1	95.25	PASS	70-125	78989.2	89091.8	88.66	PASS	70-125
N023028-002B	SAMP	5	119639.9	113178.1	105.71	PASS	70-125	92438.9	89091.8	103.76	PASS	70-125
N023028-003B	SAMP	1	113818.6	113178.1	100.57	PASS	70-125	80173.6	89091.8	89.99	PASS	70-125
N023028-003B	SAMP	5	119079.9	113178.1	105.21	PASS	70-125	90324.8	89091.8	101.38	PASS	70-125
N023029-001B	SAMP	1	105283.5	113178.1	93.025	PASS	70-125	68798.9	89091.8	77.22	PASS	70-125
N023029-001B	SAMP	5	121643.4	113178.1	107.48	PASS	70-125	88207.2	89091.8	99.007	PASS	70-125
N023029-002B	SAMP	1	110047.3	113178.1	97.23	PASS	70-125	73351.7	89091.8	82.33	PASS	70-125
N023029-002B	SAMP	5	124781.9	113178.1	110.25	PASS	70-125	90966.5	89091.8	102.1	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	117803	113178.1	104.09	PASS	70-125	79999.7	89091.8	89.79	PASS	70-125
N023029-003B	SAMP	5	125346.5	113178.1	110.75	PASS	70-125	94758.8	89091.8	106.36	PASS	70-125
CCV9	CCV	1	125149	113178.1	110.58	PASS	70-125	98921.4	89091.8	111.03	PASS	70-125
CCB9	CCB	1	118731.8	113178.1	104.91	PASS	70-125	95396.6	89091.8	107.08	PASS	70-125
N023029-004B	SAMP	1	118602.2	113178.1	104.79	PASS	70-125	86454.5	89091.8	97.04	PASS	70-125
N023029-004B	SAMP	5	120916.7	113178.1	106.84	PASS	70-125	94547.8	89091.8	106.12	PASS	70-125
N023029-005B	SAMP	1	113665.9	113178.1	100.43	PASS	70-125	81379.3	89091.8	91.34	PASS	70-125
N023029-005B	SAMP	5	121044.2	113178.1	106.95	PASS	70-125	93340.3	89091.8	104.77	PASS	70-125
CCV10	CCV	1	120403.9	113178.1	106.38	PASS	70-125	95316.2	89091.8	106.99	PASS	70-125
CCB10	CCB	1	114769.8	113178.1	101.41	PASS	70-125	91727.2	89091.8	102.96	PASS	70-125
LLCCV3	CCV2	1	126677.5	113178.1	111.93	PASS	70-125	101333.3	89091.8	113.74	PASS	70-125
ICSA4	ICSA	1	127664.1	113178.1	112.8	PASS	70-125	92473.7	89091.8	103.8	PASS	70-125
ICSAB4	ICSAB	1	121966.7	113178.1	107.77	PASS	70-125	84537.8	89091.8	94.89	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	110414	110414	100	PASS	70-125	3080409.8	3080409.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	110623.5	110414	100.19	PASS	70-125	3133695.9	3080409.8	101.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	110306.7	110414	99.9	PASS	70-125	3121173.6	3080409.8	101.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	108093.9	110414	97.9	PASS	70-125	3091363.3	3080409.8	100.36	PASS	70-125
Std4-10/100 ppb	ICAL	1	106640.2	110414	96.58	PASS	70-125	3061200.8	3080409.8	99.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	108806.3	110414	98.54	PASS	70-125	3041671.3	3080409.8	98.74	PASS	70-125
Std6-40/400 ppb	ICAL	1	104974.8	110414	95.074	PASS	70-125	2989323.7	3080409.8	97.043	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98972.1	110414	89.64	PASS	70-125	2869890	3080409.8	93.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	96626.3	110414	87.51	PASS	70-125	2816893.8	3080409.8	91.45	PASS	70-125
ICV	ICV	1	109770.5	110414	99.42	PASS	70-125	3182725.6	3080409.8	103.32	PASS	70-125
ICB	ICB	1	97530	110414	88.33	PASS	70-125	2856016.3	3080409.8	92.72	PASS	70-125
LLICV	CCV1	1	108245.1	110414	98.036	PASS	70-125	3153043.3	3080409.8	102.36	PASS	70-125
ICSA1	ICSA	1	101109.7	110414	91.57	PASS	70-125	2794445.7	3080409.8	90.72	PASS	70-125
ICSAB1	ICSAB	1	99923.9	110414	90.5	PASS	70-125	2810672.9	3080409.8	91.24	PASS	70-125
LLICV	CCV1	1	130055.7	110414	117.79	PASS	70-125	3495165.4	3080409.8	113.46	PASS	70-125
CCV1	CCV	1	124959	110414	113.17	PASS	70-125	3262670.8	3080409.8	105.92	PASS	70-125
CCB1	CCB	1	120040.3	110414	108.72	PASS	70-125	3125253.1	3080409.8	101.46	PASS	70-125
CCV2	CCV	1	120769.6	110414	109.38	PASS	70-125	3080994.5	3080409.8	100.02	PASS	70-125
CCB2	CCB	1	116954.4	110414	105.92	PASS	70-125	3064233.6	3080409.8	99.47	PASS	70-125
CCV3	CCV	1	118039.8	110414	106.91	PASS	70-125	3063413.8	3080409.8	99.45	PASS	70-125
CCB3	CCB	1	116273.6	110414	105.31	PASS	70-125	3034069.8	3080409.8	98.5	PASS	70-125
CCV4	CCV	1	104345.7	110414	94.5	PASS	70-125	2917095.9	3080409.8	94.7	PASS	70-125
CCB4	CCB	1	103875.2	110414	94.078	PASS	70-125	2886174.1	3080409.8	93.69	PASS	70-125
LLCCV1	CCV2	1	115487.4	110414	104.59	PASS	70-125	3193504.6	3080409.8	103.67	PASS	70-125
ICSA2	ICSA	1	100654.5	110414	91.16	PASS	70-125	2692887.7	3080409.8	87.42	PASS	70-125
ICSAB2	ICSAB	1	110007.7	110414	99.63	PASS	70-125	2842872.9	3080409.8	92.29	PASS	70-125
MB-61257	MBLK	1	116702.9	110414	105.7	PASS	70-125	3165068.8	3080409.8	102.75	PASS	70-125
LCS-61257	LCS	1	123953.6	110414	112.26	PASS	70-125	3401856.3	3080409.8	110.44	PASS	70-125
N022998-001B	SAMP	1	54232.2	110414	49.12	NR!	70-125	1440984.9	3080409.8	46.78	NR!	70-125
N022998-001B	SAMP	5	92539.5	110414	83.81	PASS	70-125	2455300.7	3080409.8	79.71	PASS	70-125
N022998-001B	SAMP	25	114693.3	110414	103.88	PASS	70-125	2956995.2	3080409.8	95.99	PASS	70-125
N022998-001B-PS	PS	1	59668.8	110414	54.041	NR!	70-125	1530700.5	3080409.8	49.69	NR!	70-125
N022998-001B-PS	PS	5	95765.6	110414	86.73	PASS	70-125	2538616.6	3080409.8	82.41	PASS	70-125
CCV5	CCV	1	89860.9	110414	81.39	PASS	70-125	2548747.2	3080409.8	82.74	PASS	70-125
CCB5	CCB	1	125081.2	110414	113.28	PASS	70-125	3339266.8	3080409.8	108.4	PASS	70-125
N022998-001B-MS	MS	1	56952.3	110414	51.58	NR!	70-125	1490092.9	3080409.8	48.37	NR!	70-125
N022998-001B-MS	MS	5	94731.1	110414	85.8	PASS	70-125	2508287.4	3080409.8	81.43	PASS	70-125
N022998-001B-MSD	MSD	1	57007.3	110414	51.63	NR!	70-125	1557953.4	3080409.8	50.58	NR!	70-125
N022998-001B-MSD	MSD	5	96158.2	110414	87.089	PASS	70-125	2495511.7	3080409.8	81.012	PASS	70-125
N022998-002B	SAMP	1	79566.5	110414	72.062	PASS	70-125	2094891.7	3080409.8	68.007	NR!	70-125
N022998-002B	SAMP	5	107207.5	110414	97.096	PASS	70-125	2772073.4	3080409.8	89.99	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	65055.9	110414	58.92	NR!	70-125	1734696.2	3080409.8	56.31	NR!	70-125
N022998-003B	SAMP	5	102338.5	110414	92.69	PASS	70-125	2652097.7	3080409.8	86.096	PASS	70-125
N022998-004B	SAMP	1	61089.4	110414	55.33	NR!	70-125	1590566	3080409.8	51.63	NR!	70-125
N022998-004B	SAMP	5	99598.1	110414	90.2	PASS	70-125	2543136.1	3080409.8	82.56	PASS	70-125
CCV6	CCV	1	132014.6	110414	119.56	PASS	70-125	3451492.3	3080409.8	112.05	PASS	70-125
CCB6	CCB	1	125895.3	110414	114.02	PASS	70-125	3333215.3	3080409.8	108.21	PASS	70-125
N023014-001B	SAMP	1	88717.1	110414	80.35	PASS	70-125	2253605.7	3080409.8	73.16	PASS	70-125
N023014-001B	SAMP	5	109229.2	110414	98.93	PASS	70-125	2795474.2	3080409.8	90.75	PASS	70-125
N023014-001B	SAMP	250	126690.5	110414	114.74	PASS	70-125	3283437.3	3080409.8	106.59	PASS	70-125
N023014-002B	SAMP	1	87552	110414	79.29	PASS	70-125	2247324.3	3080409.8	72.96	PASS	70-125
N023014-002B	SAMP	5	106822.8	110414	96.75	PASS	70-125	2755769.5	3080409.8	89.46	PASS	70-125
N023014-002B	SAMP	250	124949	110414	113.16	PASS	70-125	3203868.4	3080409.8	104.01	PASS	70-125
N023014-003B	SAMP	1	75489.2	110414	68.37	NR!	70-125	1909854	3080409.8	62	NR!	70-125
N023014-003B	SAMP	5	104813.9	110414	94.93	PASS	70-125	2682897.6	3080409.8	87.095	PASS	70-125
N023014-004B	SAMP	1	96370.5	110414	87.28	PASS	70-125	2427167	3080409.8	78.79	PASS	70-125
N023014-004B	SAMP	5	116382.3	110414	105.41	PASS	70-125	2894830	3080409.8	93.98	PASS	70-125
CCV7	CCV	1	127308.3	110414	115.3	PASS	70-125	3259577.7	3080409.8	105.82	PASS	70-125
CCB7	CCB	1	120980	110414	109.57	PASS	70-125	3154471.8	3080409.8	102.4	PASS	70-125
N023014-005B	SAMP	1	54768.4	110414	49.6	NR!	70-125	1391496.5	3080409.8	45.17	NR!	70-125
N023014-005B	SAMP	5	94334.2	110414	85.44	PASS	70-125	2414291.3	3080409.8	78.38	PASS	70-125
N023014-006B	SAMP	1	71992.9	110414	65.2	NR!	70-125	1883239.4	3080409.8	61.14	NR!	70-125
N023014-006B	SAMP	5	105256.9	110414	95.33	PASS	70-125	2659160.4	3080409.8	86.32	PASS	70-125
N023014-007B	SAMP	1	62073.3	110414	56.22	NR!	70-125	1558976.9	3080409.8	50.61	NR!	70-125
N023014-007B	SAMP	5	98779.2	110414	89.46	PASS	70-125	2537415.3	3080409.8	82.37	PASS	70-125
N023014-008B	SAMP	1	79070.5	110414	71.61	PASS	70-125	1923421.1	3080409.8	62.44	NR!	70-125
N023014-008B	SAMP	5	108137.3	110414	97.94	PASS	70-125	2715346.6	3080409.8	88.15	PASS	70-125
N023028-001B	SAMP	1	102608.3	110414	92.93	PASS	70-125	2592480.4	3080409.8	84.16	PASS	70-125
N023028-001B	SAMP	5	121131.7	110414	109.71	PASS	70-125	2972250.4	3080409.8	96.49	PASS	70-125
CCV8	CCV	1	128507.4	110414	116.39	PASS	70-125	3275355.3	3080409.8	106.33	PASS	70-125
CCB8	CCB	1	123467.1	110414	111.82	PASS	70-125	3195317.7	3080409.8	103.73	PASS	70-125
LLCCV2	CCV2	1	136373.8	110414	123.51	PASS	70-125	3515155.6	3080409.8	114.11	PASS	70-125
ICSA3	ICSA	1	117668	110414	106.57	PASS	70-125	2899354.2	3080409.8	94.12	PASS	70-125
ICSAB3	ICSAB	1	95685.2	110414	86.66	PASS	70-125	2616310.3	3080409.8	84.93	PASS	70-125
N023028-002B	SAMP	1	100173.1	110414	90.72	PASS	70-125	2376633.9	3080409.8	77.15	PASS	70-125
N023028-002B	SAMP	5	116210.2	110414	105.25	PASS	70-125	2882119	3080409.8	93.56	PASS	70-125
N023028-003B	SAMP	1	98596.8	110414	89.3	PASS	70-125	2412679	3080409.8	78.32	PASS	70-125
N023028-003B	SAMP	5	112973.9	110414	102.32	PASS	70-125	2825190.1	3080409.8	91.71	PASS	70-125
N023029-001B	SAMP	1	80948.6	110414	73.31	PASS	70-125	2030032.3	3080409.8	65.9	NR!	70-125
N023029-001B	SAMP	5	111184.1	110414	100.7	PASS	70-125	2703645.5	3080409.8	87.77	PASS	70-125
N023029-002B	SAMP	1	87330	110414	79.093	PASS	70-125	2123620.9	3080409.8	68.94	NR!	70-125
N023029-002B	SAMP	5	113187.7	110414	102.51	PASS	70-125	2751614.3	3080409.8	89.33	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	95657.3	110414	86.64	PASS	70-125	2374490.4	3080409.8	77.084	PASS	70-125
N023029-003B	SAMP	5	118315.8	110414	107.16	PASS	70-125	2878459.7	3080409.8	93.44	PASS	70-125
CCV9	CCV	1	126961.3	110414	114.99	PASS	70-125	3184420.6	3080409.8	103.38	PASS	70-125
CCB9	CCB	1	120860.1	110414	109.46	PASS	70-125	3107962	3080409.8	100.89	PASS	70-125
N023029-004B	SAMP	1	105005	110414	95.1	PASS	70-125	2621429	3080409.8	85.1	PASS	70-125
N023029-004B	SAMP	5	119095.4	110414	107.86	PASS	70-125	2939954.5	3080409.8	95.44	PASS	70-125
N023029-005B	SAMP	1	100713.2	110414	91.21	PASS	70-125	2534183.3	3080409.8	82.27	PASS	70-125
N023029-005B	SAMP	5	118321.3	110414	107.16	PASS	70-125	2925532.7	3080409.8	94.97	PASS	70-125
CCV10	CCV	1	122655.8	110414	111.09	PASS	70-125	3118022	3080409.8	101.22	PASS	70-125
CCB10	CCB	1	118692.2	110414	107.5	PASS	70-125	3051295.5	3080409.8	99.055	PASS	70-125
LLCCV3	CCV2	1	131425.1	110414	119.03	PASS	70-125	3334095.4	3080409.8	108.24	PASS	70-125
ICSA4	ICSA	1	114636.7	110414	103.82	PASS	70-125	2803239.2	3080409.8	91.002	PASS	70-125
ICSAB4	ICSAB	1	99274.2	110414	89.91	PASS	70-125	2647254	3080409.8	85.94	PASS	70-125

INTERNAL STANDARD: 170220A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	96486.9	96486.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	95022.6	96486.9	98.48	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	94537.9	96486.9	97.98	PASS	70-125
Std3-5/50 ppb	ICAL	1	93997.1	96486.9	97.42	PASS	70-125
Std4-10/100 ppb	ICAL	1	93945	96486.9	97.37	PASS	70-125
Std5-20/200 ppb	ICAL	1	92721.3	96486.9	96.097	PASS	70-125
Std6-40/400 ppb	ICAL	1	100759.9	96486.9	104.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	94720.6	96486.9	98.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	91211.7	96486.9	94.53	PASS	70-125
ICV	ICV	1	96786.3	96486.9	100.31	PASS	70-125
ICB	ICB	1	85554.3	96486.9	88.67	PASS	70-125
LLICV	CCV1	1	100004.7	96486.9	103.65	PASS	70-125
ICSA1	ICSA	1	105851.4	96486.9	109.71	PASS	70-125
ICSAB1	ICSAB	1	105775.8	96486.9	109.63	PASS	70-125
LLICV	CCV1	1	112418.9	96486.9	116.51	PASS	70-125
N022998-003B	SAMP	25	77741.8	96486.9	80.57	PASS	70-125
CCV1	CCV	1	81882.5	96486.9	84.86	PASS	70-125
CCB1	CCB	1	91413.4	96486.9	94.74	PASS	70-125
LLCCV1	CCV2	1	90796.2	96486.9	94.1	PASS	70-125
ICSA2	ICSA	1	81901.9	96486.9	84.88	PASS	70-125
ICSAB2	ICSAB	1	90476.8	96486.9	93.77	PASS	70-125

INTERNAL STANDARD: 170221B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	82090.8	82090.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	45078.6	82090.8	54.91	NR!	70-125
Std2-0.5/5 ppb	ICAL	1	78952	82090.8	96.18	PASS	70-125
Std3-5/50 ppb	ICAL	1	78560.3	82090.8	95.7	PASS	70-125
Std4-10/100 ppb	ICAL	1	77844.6	82090.8	94.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	75525	82090.8	92.002	PASS	70-125
Std6-40/400 ppb	ICAL	1	73617.4	82090.8	89.68	PASS	70-125
Std7-100/1000 ppb	ICAL	1	72522.3	82090.8	88.34	PASS	70-125
Std8-200/2000 ppb	ICAL	1	71622	82090.8	87.25	PASS	70-125
ICV	ICV	1	65748.9	82090.8	80.093	PASS	70-125
ICB	ICB	1	72261.3	82090.8	88.026	PASS	70-125
LLICV	CCV1	1	72804.8	82090.8	88.69	PASS	70-125
ICSA1	ICSA	1	70135.6	82090.8	85.44	PASS	70-125
ICSAB1	ICSAB	1	79025.2	82090.8	96.27	PASS	70-125
N022998-002B	SAMP	1	58602.6	82090.8	71.39	PASS	70-125
CCV1	CCV	1	83783.9	82090.8	102.06	PASS	70-125
CCB1	CCB	1	81670.1	82090.8	99.49	PASS	70-125
LLCCV1	CCV2	1	78254.5	82090.8	95.33	PASS	70-125
ICSA2	ICSA	1	74380.8	82090.8	90.61	PASS	70-125
ICSAB2	ICSAB	1	80298.4	82090.8	97.82	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022998
Test Method: EPA 6020
Analysis Date: 2/19/2017

Matrix: Groundwater
Batch No.: 61257

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022998-001B DT 25X	Arsenic	ug/L	2.199986	NA	2.106512	4.44%	10
N022998-001B DT 5X	Chromium	ug/L	19.37169	NA	18.20078	6.43%	10
N022998-001B DT 5X	Manganese	ug/L	14.44354	PASS	13.45814	7.32%	10
N022998-001B DT 25X	Molybdenum	ug/L	190.0634	PASS	195.7282	2.89%	10
N022998-001B DT 25X	Selenium	ug/L	1.197818	NA	0.431914	177.33%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.487	0.50	100.0	13.46	75.0	80	120				S

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.694	0.50	10.00	2.107	95.9	80	120				
Molybdenum	211.791	2.5	10.00	195.7	161	80	120				S
Selenium	8.691	2.5	10.00	0.4319	82.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022998
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N022998-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.403	1.0	10.00	18.20	82.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

RAW DATA

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

Nancy 2/21/2017

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N022985-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0219001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0219002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0219003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0219004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0219005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0219006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0219007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0219008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0219009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0219010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0219011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0219012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219016	LLICV,CCV1,1	2MWST- 170107G	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3101	A0219017	MB-61298,MBLK,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3102	A0219018	LCS-61298,LCS,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3103	A0219019	N023063-001B,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3104	A0219020	N023063-001B,SAMP,5		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3105	A0219021	N023063-001B-PS,PS,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3106	A0219022	N023063-001B-MS,MS,1		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3107	A0219023	N023063-001B-MSD,MSD,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3108	A0219024	N022985-001B,SAMP,5		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3109	A0219025	N022985-003B,SAMP,5		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3110	A0219026	N022985-004B,SAMP,5		1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219027	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219028	CCB1,CCB,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3201	A0219029	MB-61302,MBLK,1		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3202	A0219030	LCS-61302,LCS,1		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3203	A0219031	N023107-001C,SAMP,1		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3204	A0219032	N023107-001C,SAMP,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3205	A0219033	N023107-001C-PS,PS,1		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3206	A0219034	N023107-001C-MS,MS,1		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3207	A0219035	N023107-001C-MSD,MSD,1		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3208	A0219036	N023107-002C,SAMP,1		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3209	A0219037	N023107-003C,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3210	A0219038	N023107-004C,SAMP,1		1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219039	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219040	CCB2,CCB,1		1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3211	A0219041	N023137-001A,SAMP,1		1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3212	A0219042	N023137-002A,SAMP,1		1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3301	A0219043	N023137-003A,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3302	A0219044	N023137-004A,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3303	A0219045	N023137-005A,SAMP,1		1.000				
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3304	A0219046	N023137-006A,SAMP,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3305	A0219047	N023063-001B,SAMP,25		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3306	A0219048	N023063-001B-PS,PS,5		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3307	A0219049	N023063-001B-MS,MS,5		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3308	A0219050	N023063-001B-MSD,MSD,5		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219051	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219052	CCB3,CCB,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3309	A0219053	N022985-003B,SAMP,5		1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3310	A0219054	N023107-001C,SAMP,25		1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3311	A0219055	N023107-001C,SAMP,125		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3312	A0219056	N023107-001C-PS,PS,25		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3401	A0219057	N023107-001C-MS,MS,25		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3402	A0219058	N023107-001C-MSD,MSD,25		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3403	A0219059	N023107-002C,SAMP,10		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3404	A0219060	N023107-003C,SAMP,10		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3405	A0219061	N023107-004C,SAMP,5		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3406	A0219062	N023137-001A,SAMP,2		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219063	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219064	CCB4,CCB,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219065	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219066	ICSA2,ICSA,1	2MWST- 170107H	1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219067	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3407	A0219068	N023137-002A,SAMP,5		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3408	A0219069	N023137-003A,SAMP,5		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3409	A0219070	N023137-004A,SAMP,5		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0219071	MB-61257,MBLK,1		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0219072	LCS-61257,LCS,1		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0219073	N022998-001B,SAMP,1		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0219074	N022998-001B,SAMP,5		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0219075	N022998-001B,SAMP,25		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0219076	N022998-001B-PS,PS,1		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0219077	N022998-001B-PS,PS,5		1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219078	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219079	CCB5,CCB,1		1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0219080	N022998-001B-MS,MS,1		1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0219081	N022998-001B-MS,MS,5		1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0219082	N022998-001B-MSD,MSD,1		1.000				
83	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0219083	N022998-001B-MSD,MSD,5		1.000				
84	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0219084	N022998-002B,SAMP,1		1.000				
85	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0219085	N022998-002B,SAMP,5		1.000				
86	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0219086	N022998-003B,SAMP,1		1.000				
87	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0219087	N022998-003B,SAMP,5		1.000				
88	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0219088	N022998-004B,SAMP,1		1.000				
89	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0219089	N022998-004B,SAMP,5		1.000				
90	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219090	CCV6,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
91	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219091	CCB6,CCB,1		1.000				
92	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0219092	N023014-001B,SAMP,1		1.000				
93	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2207	A0219093	N023014-001B,SAMP,5		1.000				
94	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2208	A0219094	N023014-001B,SAMP,250		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2209	A0219095	N023014-002B,SAMP,1		1.000				
96	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2210	A0219096	N023014-002B,SAMP,5		1.000				
97	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2211	A0219097	N023014-002B,SAMP,250		1.000				
98	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2212	A0219098	N023014-003B,SAMP,1		1.000				
99	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2301	A0219099	N023014-003B,SAMP,5		1.000				
100	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2302	A0219100	N023014-004B,SAMP,1		1.000				
101	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2303	A0219101	N023014-004B,SAMP,5		1.000				
102	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219102	CCV7,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
103	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219103	CCB7,CCB,1		1.000				
104	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2304	A0219104	N023014-005B,SAMP,1		1.000				
105	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2305	A0219105	N023014-005B,SAMP,5		1.000				
106	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2306	A0219106	N023014-006B,SAMP,1		1.000				
107	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2307	A0219107	N023014-006B,SAMP,5		1.000				
108	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2308	A0219108	N023014-007B,SAMP,1		1.000				
109	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2309	A0219109	N023014-007B,SAMP,5		1.000				
110	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2310	A0219110	N023014-008B,SAMP,1		1.000				
111	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2311	A0219111	N023014-008B,SAMP,5		1.000				
112	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2312	A0219112	N023028-001B,SAMP,1		1.000				
113	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2401	A0219113	N023028-001B,SAMP,5		1.000				
114	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219114	CCV8,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
115	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219115	CCB8,CCB,1		1.000				
116	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219116	LLCCV2,CCV2,1	2MWST- 170107G	1.000				
117	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219117	ICSA3,ICSA,1	2MWST- 170107H	1.000				
118	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219118	ICSAB3,ICSAB,1	2MWST- 170107I	1.000				
119	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2402	A0219119	N023028-002B,SAMP,1		1.000				
120	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2403	A0219120	N023028-002B,SAMP,5		1.000				
121	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2404	A0219121	N023028-003B,SAMP,1		1.000				
122	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2405	A0219122	N023028-003B,SAMP,5		1.000				
123	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2406	A0219123	N023029-001B,SAMP,1		1.000				
124	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2407	A0219124	N023029-001B,SAMP,5		1.000				
125	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2408	A0219125	N023029-002B,SAMP,1		1.000				
126	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2409	A0219126	N023029-002B,SAMP,5		1.000				
127	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2410	A0219127	N023029-003B,SAMP,1		1.000				
128	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2411	A0219128	N023029-003B,SAMP,5		1.000				
129	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219129	CCV9,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
130	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219130	CCB9,CCB,1		1.000				
131	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2412	A0219131	N023029-004B,SAMP,1		1.000				
132	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	A0219132	N023029-004B,SAMP,5		1.000				
133	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2502	A0219133	N023029-005B,SAMP,1		1.000				
134	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2503	A0219134	N023029-005B,SAMP,5		1.000				
135	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219135	CCV10,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
136	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219136	CCB10,CCB,1		1.000				
137	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219137	LLCCV3,CCV2,1	2MWST- 170107G	1.000				
138	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219138	ICSA4,ICSA,1	2MWST- 170107H	1.000				
139	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219139	ICSAB4,ICSAB,1	2MWST- 170107I	1.000				

Quantitation Report

File Name	A0219002.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:06
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	20.00	1.142E-05	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	100,319.33	8.870E-01	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	94.45	8.369E-04	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	383.35	3.396E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	13,609.40	1.203E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	19,679.07	4.211E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	770.05	6.807E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	1,701.17	1.504E-02	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	382.39	3.378E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	2,163.24	1.914E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	27.67	2.439E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	261.00	2.930E-03	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	5,554.85	6.234E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	2,730.99	3.066E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	13.78	1.547E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	1.11	9.973E-06	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	24.44	7.897E-06	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	3,653.80	4.352E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	52.46	5.912E-06	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	2,519.20	2.843E-04	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	164.82	1.315E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,575.72	2.152E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	2,256.56	3.081E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	---	219.05	2.992E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,745,197.15	1.06	100.0	Analog	0.30	3
2	Sc	45	113,178.09	2.67	100.0	Pulse	0.30	3
3	Sc	45	4,673,438.68	0.48	100.0	Analog	0.30	3
1	Ge	72	110,413.98	1.14	100.0	Pulse	0.30	3

2	Ge	72	89,091.79	0.47	100.0	Pulse	0.30	3
2	Rh	103	3,080,409.78	1.47	100.0	Analog	0.30	3
3	Rh	103	8,395,890.78	0.41	100.0	Analog	0.30	3
3	In	115	8,862,188.68	0.65	100.0	Analog	0.30	3
3	Tb	159	12,541,647.73	1.07	100.0	Analog	0.30	3
3	Bi	209	7,325,168.78	0.44	100.0	Analog	0.30	3

Quantitation Report

FOR AS ONLY

File Name	A0219003.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:11
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.106	ppb	4.99	1,156.76	6.542E-04	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	96,141.90	8.275E-01	Pulse	0.30	3
Mg	26	45	2	1.232	ppb	32.15	262.23	2.250E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	301.11	2.595E-03	Pulse	0.30	3
K	39	45	2	1.987	ppb	59.15	14,878.39	1.281E-01	Pulse	0.30	3
Ca	44	45	3	6.198	ppb	7.90	34,202.31	7.209E-03	Pulse	0.30	3
V	51	45	2	0.103	ppb	14.78	1,563.48	1.346E-02	Pulse	0.30	3
Cr	52	45	2	0.093	ppb	20.47	2,702.45	2.328E-02	Pulse	0.30	3
Mn	55	45	2	0.136	ppb	14.46	1,089.80	9.380E-03	Pulse	0.30	3
Fe	56	45	2	0.358	ppb	8.96	5,283.22	4.542E-02	Pulse	0.30	3
Co	59	45	2	0.100	ppb	5.36	2,041.21	1.755E-02	Pulse	0.30	3
Ni	60	72	2	0.340	ppb	3.43	2,137.85	2.350E-02	Pulse	0.30	3
Cu	63	72	2	0.172	ppb	2.59	8,198.21	9.010E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,675.36	2.941E-02	Pulse	0.30	3
As	75	72	2	0.114	ppb	6.80	134.22	1.475E-03	Pulse	0.75	3
Se	78	72	1	0.113	ppb	29.10	64.45	5.826E-04	Pulse	0.30	3
Mo	95	103	2	0.093	ppb	7.19	672.27	2.146E-04	Pulse	0.30	3
Ag	107	103	3	0.028	ppb	13.13	5,746.21	6.819E-04	Pulse	0.30	3
Cd	111	115	3	0.103	ppb	3.66	1,757.23	1.979E-04	Pulse	0.30	3
Sb	121	115	3	0.097	ppb	3.14	7,639.92	8.605E-04	Pulse	0.30	3
Ba	137	159	3	0.179	ppb	0.38	3,991.29	3.164E-04	Pulse	0.30	3
Tl	205	209	3	0.100	ppb	1.14	14,921.41	2.026E-03	Pulse	0.30	3
Pb	208	209	3	0.109	ppb	1.06	21,974.48	2.983E-03	Pulse	0.30	3
U	238	209	3	0.103	ppb	1.84	19,908.93	2.703E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,768,527.68	1.24	101.3	Analog	0.30	3
2	Sc	45	116,237.50	2.46	102.7	Pulse	0.30	3
3	Sc	45	4,744,825.90	0.34	101.5	Analog	0.30	3
1	Ge	72	110,623.51	0.67	100.2	Pulse	0.30	3

2	Ge	72	90,988.56	1.03	102.1	Pulse	0.30	3
2	Rh	103	3,133,695.89	0.78	101.7	Analog	0.30	3
3	Rh	103	8,427,348.07	0.23	100.4	Analog	0.30	3
3	In	115	8,878,910.48	0.26	100.2	Analog	0.30	3
3	Tb	159	12,613,397.45	0.43	100.6	Analog	0.30	3
3	Bi	209	7,365,862.53	0.08	100.6	Analog	0.30	3

Quantitation Report

File Name	A0219004.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:17
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.494	ppb	4.61	5,254.36	3.014E-03	Pulse	0.30	3
Na	23	45	2	9.151	ppb	7.27	114,787.42	1.002E+00	Pulse	0.30	3
Mg	26	45	2	6.869	ppb	7.36	1,000.08	8.717E-03	Pulse	0.30	3
Al	27	45	2	0.073	ppb	203.15	406.60	3.546E-03	Pulse	0.30	3
K	39	45	2	5.609	ppb	9.44	16,298.60	1.423E-01	Pulse	0.30	3
Ca	44	45	3	24.364	ppb	2.49	74,258.27	1.599E-02	Pulse	0.30	3
V	51	45	2	0.525	ppb	4.67	4,653.09	4.063E-02	Pulse	0.30	3
Cr	52	45	2	0.498	ppb	2.29	6,757.05	5.898E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	5.75	3,053.86	2.667E-02	Pulse	0.30	3
Fe	56	45	2	2.531	ppb	22.77	23,573.75	2.050E-01	Pulse	0.30	3
Co	59	45	2	0.529	ppb	2.25	10,504.68	9.169E-02	Pulse	0.30	3
Ni	60	72	2	0.536	ppb	5.39	3,204.59	3.533E-02	Pulse	0.30	3
Cu	63	72	2	0.557	ppb	5.04	13,805.67	1.523E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,728.44	3.009E-02	Pulse	0.30	3
As	75	72	2	0.489	ppb	4.77	528.91	5.833E-03	Pulse	0.75	3
Se	78	72	1	0.446	ppb	33.30	250.01	2.267E-03	Pulse	0.30	3
Mo	95	103	2	0.490	ppb	7.37	3,440.52	1.102E-03	Pulse	0.30	3
Ag	107	103	3	0.394	ppb	5.64	33,077.96	3.957E-03	Pulse	0.30	3
Cd	111	115	3	0.525	ppb	0.78	8,646.27	9.824E-04	Pulse	0.30	3
Sb	121	115	3	0.507	ppb	1.50	29,127.89	3.310E-03	Pulse	0.30	3
Ba	137	159	3	0.601	ppb	2.94	12,899.76	1.029E-03	Pulse	0.30	3
Tl	205	209	3	0.522	ppb	0.71	71,015.11	9.665E-03	Pulse	0.30	3
Pb	208	209	3	0.533	ppb	1.24	98,242.79	1.337E-02	Pulse	0.30	3
U	238	209	3	0.512	ppb	0.88	98,017.13	1.334E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,743,461.77	0.40	99.9	Analog	0.30	3
2	Sc	45	114,588.58	2.69	101.2	Pulse	0.30	3
3	Sc	45	4,642,707.95	0.55	99.3	Analog	0.30	3
1	Ge	72	110,306.75	0.83	99.9	Pulse	0.30	3

2	Ge	72	90,684.86	0.61	101.8	Pulse	0.30	3
2	Rh	103	3,121,173.56	1.42	101.3	Analog	0.30	3
3	Rh	103	8,361,108.14	0.61	99.6	Analog	0.30	3
3	In	115	8,801,059.80	0.05	99.3	Analog	0.30	3
3	Tb	159	12,541,196.06	0.42	100.0	Analog	0.30	3
3	Bi	209	7,347,368.57	0.26	100.3	Analog	0.30	3

Quantitation Report

File Name	A0219005.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:22
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	5.002	ppb	2.04	51,903.06	3.042E-02	Pulse	0.30	3
Na	23	45	2	43.373	ppb	5.73	162,792.83	1.430E+00	Pulse	0.30	3
Mg	26	45	2	51.382	ppb	3.54	6,803.91	5.978E-02	Pulse	0.30	3
Al	27	45	2	5.296	ppb	11.02	1,632.88	1.432E-02	Pulse	0.30	3
K	39	45	2	52.614	ppb	5.97	37,156.80	3.265E-01	Pulse	0.30	3
Ca	44	45	3	58.655	ppb	0.20	148,393.64	3.258E-02	Pulse	0.30	3
V	51	45	2	5.098	ppb	2.50	38,149.39	3.352E-01	Pulse	0.30	3
Cr	52	45	2	5.066	ppb	2.55	52,586.99	4.620E-01	Pulse	0.30	3
Mn	55	45	2	5.080	ppb	3.50	25,931.08	2.277E-01	Pulse	0.30	3
Fe	56	45	2	5.488	ppb	2.40	48,046.83	4.221E-01	Pulse	0.30	3
Co	59	45	2	5.197	ppb	1.51	102,352.11	8.991E-01	Pulse	0.30	3
Ni	60	72	2	5.148	ppb	2.69	28,141.63	3.144E-01	Pulse	0.30	3
Cu	63	72	2	5.394	ppb	1.04	83,503.46	9.328E-01	Pulse	0.30	3
Zn	66	72	2	4.838	ppb	6.09	11,956.46	1.336E-01	Pulse	0.30	3
As	75	72	2	5.076	ppb	3.25	5,294.71	5.914E-02	Pulse	0.75	3
Se	78	72	1	4.824	ppb	0.66	2,637.01	2.439E-02	Pulse	0.30	3
Mo	95	103	2	4.892	ppb	0.72	33,780.94	1.093E-02	Pulse	0.30	3
Ag	107	103	3	5.049	ppb	0.61	374,991.74	4.553E-02	Pulse	0.30	3
Cd	111	115	3	5.254	ppb	0.34	85,529.48	9.779E-03	Pulse	0.30	3
Sb	121	115	3	5.076	ppb	0.34	267,285.31	3.056E-02	Pulse	0.30	3
Ba	137	159	3	5.306	ppb	0.67	111,359.10	8.978E-03	Pulse	0.30	3
Tl	205	209	3	5.224	ppb	0.93	691,072.37	9.473E-02	Pulse	0.30	3
Pb	208	209	3	5.272	ppb	0.81	945,262.70	1.296E-01	Pulse	0.30	3
U	238	209	3	5.099	ppb	0.10	966,535.00	1.325E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,706,751.38	1.40	97.8	Analog	0.30	3
2	Sc	45	113,872.25	2.65	100.6	Pulse	0.30	3
3	Sc	45	4,554,689.20	0.61	97.5	Analog	0.30	3
1	Ge	72	108,093.94	1.49	97.9	Pulse	0.30	3

2	Ge	72	89,530.76	1.78	100.5	Pulse	0.30	3
2	Rh	103	3,091,363.26	0.66	100.4	Analog	0.30	3
3	Rh	103	8,236,314.88	0.10	98.1	Analog	0.30	3
3	In	115	8,746,631.15	0.21	98.7	Analog	0.30	3
3	Tb	159	12,403,571.48	1.14	98.9	Analog	0.30	3
3	Bi	209	7,295,656.56	0.73	99.6	Analog	0.30	3

Quantitation Report

File Name	A0219006.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:28
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.911	ppb	0.83	101,127.25	6.025E-02	Pulse	0.30	3
Na	23	45	2	94.867	ppb	4.40	231,787.62	2.075E+00	Pulse	0.30	3
Mg	26	45	2	103.700	ppb	3.77	13,382.52	1.198E-01	Pulse	0.30	3
Al	27	45	2	10.009	ppb	1.59	2,687.89	2.405E-02	Pulse	0.30	3
K	39	45	2	104.299	ppb	6.61	59,122.46	5.291E-01	Pulse	0.30	3
Ca	44	45	3	111.943	ppb	5.79	259,019.59	5.835E-02	Pulse	0.30	3
V	51	45	2	10.188	ppb	1.67	74,070.37	6.630E-01	Pulse	0.30	3
Cr	52	45	2	10.240	ppb	2.07	102,612.20	9.185E-01	Pulse	0.30	3
Mn	55	45	2	10.146	ppb	1.70	50,434.92	4.514E-01	Pulse	0.30	3
Fe	56	45	2	10.591	ppb	1.56	89,028.62	7.968E-01	Pulse	0.30	3
Co	59	45	2	10.391	ppb	2.13	200,788.67	1.797E+00	Pulse	0.30	3
Ni	60	72	2	10.197	ppb	0.99	54,296.07	6.199E-01	Pulse	0.30	3
Cu	63	72	2	10.599	ppb	0.59	155,262.33	1.773E+00	Pulse	0.30	3
Zn	66	72	2	9.553	ppb	2.42	20,486.30	2.339E-01	Pulse	0.30	3
As	75	72	2	10.066	ppb	0.73	10,259.33	1.171E-01	Pulse	0.75	3
Se	78	72	1	10.023	ppb	3.87	5,404.46	5.068E-02	Pulse	0.30	3
Mo	95	103	2	9.795	ppb	2.59	66,955.02	2.187E-02	Pulse	0.30	3
Ag	107	103	3	10.287	ppb	0.83	749,564.07	9.232E-02	Pulse	0.30	3
Cd	111	115	3	10.448	ppb	0.75	167,578.50	1.944E-02	Pulse	0.30	3
Sb	121	115	3	10.232	ppb	0.18	528,575.58	6.131E-02	Pulse	0.30	3
Ba	137	159	3	10.493	ppb	0.87	218,706.32	1.774E-02	Pulse	0.30	3
Tl	205	209	3	10.214	ppb	2.26	1,344,401.20	1.850E-01	Mix	0.30	3
Pb	208	209	3	10.484	ppb	0.71	1,869,999.38	2.573E-01	Pulse	0.30	3
U	238	209	3	9.932	ppb	1.15	1,874,772.70	2.580E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,678,406.05	0.72	96.2	Analog	0.30	3
2	Sc	45	111,751.86	2.53	98.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,438,519.07	0.16	95.0	Analog	0.30	3
1	Ge	72	106,640.18	0.58	96.6	Pulse	0.30	3
2	Ge	72	87,586.79	1.50	98.3	Pulse	0.30	3
2	Rh	103	3,061,200.75	1.16	99.4	Analog	0.30	3
3	Rh	103	8,119,612.31	0.33	96.7	Analog	0.30	3
3	In	115	8,620,994.48	0.58	97.3	Analog	0.30	3
3	Tb	159	12,325,315.79	0.25	98.3	Analog	0.30	3
3	Bi	209	7,266,841.35	0.54	99.2	Analog	0.30	3

Quantitation Report

File Name	A0219007.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:33
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.956	ppb	0.72	188,867.47	1.213E-01	Pulse	0.30	3
Na	23	45	2	187.547	ppb	1.23	359,026.92	3.236E+00	Pulse	0.30	3
Mg	26	45	2	199.134	ppb	0.55	25,441.17	2.293E-01	Pulse	0.30	3
Al	27	45	2	20.139	ppb	4.43	4,987.31	4.495E-02	Pulse	0.30	3
K	39	45	2	195.527	ppb	1.54	98,387.08	8.867E-01	Pulse	0.30	3
Ca	44	45	3	210.829	ppb	0.72	443,034.42	1.062E-01	Pulse	0.30	3
V	51	45	2	19.920	ppb	0.17	143,119.81	1.290E+00	Pulse	0.30	3
Cr	52	45	2	20.040	ppb	0.63	197,861.83	1.783E+00	Pulse	0.30	3
Mn	55	45	2	19.815	ppb	1.04	97,459.06	8.783E-01	Pulse	0.30	3
Fe	56	45	2	20.903	ppb	0.16	172,446.18	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.365	ppb	1.03	390,871.54	3.523E+00	Pulse	0.30	3
Ni	60	72	2	20.104	ppb	1.08	106,246.33	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.970	ppb	1.32	300,251.16	3.446E+00	Pulse	0.30	3
Zn	66	72	2	19.975	ppb	2.21	39,703.02	4.557E-01	Pulse	0.30	3
As	75	72	2	19.865	ppb	1.47	20,124.06	2.310E-01	Pulse	0.75	3
Se	78	72	1	19.989	ppb	0.48	10,995.32	1.011E-01	Pulse	0.30	3
Mo	95	103	2	20.722	ppb	0.95	140,715.23	4.627E-02	Pulse	0.30	3
Ag	107	103	3	20.370	ppb	0.32	1,424,841.62	1.824E-01	Analog	0.30	3
Cd	111	115	3	20.828	ppb	1.15	325,994.18	3.874E-02	Pulse	0.30	3
Sb	121	115	3	21.128	ppb	0.98	1,062,798.84	1.263E-01	Pulse	0.30	3
Ba	137	159	3	20.966	ppb	0.72	429,918.99	3.544E-02	Pulse	0.30	3
Tl	205	209	3	20.358	ppb	1.51	2,663,575.62	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.718	ppb	0.19	3,673,493.75	5.082E-01	Analog	0.30	3
U	238	209	3	19.993	ppb	0.62	3,753,705.00	5.193E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,556,934.53	1.12	89.2	Analog	0.30	3
2	Sc	45	110,961.69	0.29	98.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,172,590.56	0.83	89.3	Analog	0.30	3
1	Ge	72	108,806.34	1.25	98.5	Pulse	0.30	3
2	Ge	72	87,134.46	1.19	97.8	Pulse	0.30	3
2	Rh	103	3,041,671.31	1.20	98.7	Analog	0.30	3
3	Rh	103	7,812,911.62	0.16	93.1	Analog	0.30	3
3	In	115	8,414,551.72	0.63	94.9	Analog	0.30	3
3	Tb	159	12,131,089.54	0.53	96.7	Analog	0.30	3
3	Bi	209	7,227,840.80	0.37	98.7	Analog	0.30	3

Quantitation Report

File Name	A0219008.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:39
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	40.080	ppb	1.49	366,934.23	2.436E-01	Pulse	0.30	3
Na	23	45	2	388.863	ppb	1.46	624,929.90	5.757E+00	Pulse	0.30	3
Mg	26	45	2	398.728	ppb	0.69	49,748.85	4.583E-01	Pulse	0.30	3
Al	27	45	2	40.207	ppb	1.76	9,373.60	8.635E-02	Pulse	0.30	3
K	39	45	2	394.097	ppb	0.96	180,754.29	1.665E+00	Pulse	0.30	3
Ca	44	45	3	416.120	ppb	0.32	826,132.86	2.055E-01	Pulse	0.30	3
V	51	45	2	40.027	ppb	0.74	280,619.67	2.585E+00	Pulse	0.30	3
Cr	52	45	2	40.099	ppb	1.06	385,693.43	3.553E+00	Pulse	0.30	3
Mn	55	45	2	39.540	ppb	1.05	189,893.86	1.749E+00	Pulse	0.30	3
Fe	56	45	2	41.030	ppb	0.72	329,162.04	3.032E+00	Pulse	0.30	3
Co	59	45	2	40.788	ppb	1.11	765,868.23	7.055E+00	Pulse	0.30	3
Ni	60	72	2	40.819	ppb	0.89	208,279.54	2.473E+00	Pulse	0.30	3
Cu	63	72	2	42.423	ppb	0.50	581,842.58	6.908E+00	Pulse	0.30	3
Zn	66	72	2	40.822	ppb	0.86	75,747.18	8.993E-01	Pulse	0.30	3
As	75	72	2	40.276	ppb	0.72	39,431.14	4.682E-01	Pulse	0.75	3
Se	78	72	1	40.222	ppb	0.61	21,344.72	2.033E-01	Pulse	0.30	3
Mo	95	103	2	40.241	ppb	1.05	268,543.38	8.984E-02	Pulse	0.30	3
Ag	107	103	3	40.169	ppb	0.34	2,753,228.93	3.592E-01	Analog	0.30	3
Cd	111	115	3	41.386	ppb	0.25	632,111.40	7.698E-02	Pulse	0.30	3
Sb	121	115	3	40.201	ppb	0.52	1,971,351.86	2.401E-01	Analog	0.30	3
Ba	137	159	3	41.442	ppb	0.55	836,640.11	7.004E-02	Pulse	0.30	3
Tl	205	209	3	40.269	ppb	0.68	5,164,125.58	7.288E-01	Analog	0.30	3
Pb	208	209	3	40.683	ppb	0.47	7,069,833.78	9.977E-01	Analog	0.30	3
U	238	209	3	39.598	ppb	1.10	7,288,076.41	1.029E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,287.14	1.58	86.3	Analog	0.30	3
2	Sc	45	108,566.74	1.25	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,020,657.51	0.38	86.0	Analog	0.30	3
1	Ge	72	104,974.79	0.85	95.1	Pulse	0.30	3
2	Ge	72	84,230.67	1.02	94.5	Pulse	0.30	3
2	Rh	103	2,989,323.74	0.82	97.0	Analog	0.30	3
3	Rh	103	7,664,703.08	0.34	91.3	Analog	0.30	3
3	In	115	8,211,515.63	0.16	92.7	Analog	0.30	3
3	Tb	159	11,945,550.24	0.97	95.2	Analog	0.30	3
3	Bi	209	7,085,985.45	0.58	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219009.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:45
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	100.637	ppb	0.75	887,847.32	6.117E-01	Pulse	0.30	3
Na	23	45	2	1020.661	ppb	0.63	1,396,207.20	1.367E+01	Analog	0.30	3
Mg	26	45	2	1007.907	ppb	0.30	118,189.64	1.157E+00	Pulse	0.30	3
Al	27	45	2	100.770	ppb	0.79	21,583.91	2.113E-01	Pulse	0.30	3
K	39	45	2	998.022	ppb	1.09	411,854.20	4.032E+00	Pulse	0.30	3
Ca	44	45	3	1002.291	ppb	0.73	1,906,490.67	4.890E-01	Analog	0.30	3
V	51	45	2	101.779	ppb	0.41	670,305.59	6.562E+00	Pulse	0.30	3
Cr	52	45	2	101.948	ppb	0.34	920,291.55	9.010E+00	Pulse	0.30	3
Mn	55	45	2	100.296	ppb	0.41	452,690.94	4.432E+00	Pulse	0.30	3
Fe	56	45	2	103.740	ppb	0.75	780,044.46	7.637E+00	Pulse	0.30	3
Co	59	45	2	101.133	ppb	0.76	1,786,688.57	1.749E+01	Analog	0.30	3
Ni	60	72	2	100.278	ppb	0.46	493,314.73	6.071E+00	Pulse	0.30	3
Cu	63	72	2	101.511	ppb	1.25	1,336,212.93	1.644E+01	Analog	0.30	3
Zn	66	72	2	100.449	ppb	0.24	176,191.27	2.168E+00	Pulse	0.30	3
As	75	72	2	100.051	ppb	0.89	94,483.76	1.163E+00	Pulse	0.75	3
Se	78	72	1	101.449	ppb	1.00	50,753.59	5.129E-01	Pulse	0.30	3
Mo	95	103	2	99.792	ppb	0.99	639,336.34	2.228E-01	Pulse	0.30	3
Ag	107	103	3	99.828	ppb	0.43	6,648,899.94	8.920E-01	Analog	0.30	3
Cd	111	115	3	100.721	ppb	1.55	1,508,598.60	1.873E-01	Analog	0.30	3
Sb	121	115	3	99.343	ppb	0.48	4,774,093.50	5.928E-01	Analog	0.30	3
Ba	137	159	3	100.793	ppb	0.88	1,992,278.97	1.703E-01	Analog	0.30	3
Tl	205	209	3	100.162	ppb	0.40	12,666,801.06	1.812E+00	Analog	0.30	3
Pb	208	209	3	100.586	ppb	0.08	17,237,632.39	2.466E+00	Analog	0.30	3
U	238	209	3	99.470	ppb	0.51	18,057,696.94	2.584E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,418.58	0.74	83.2	Analog	0.30	3
2	Sc	45	102,144.37	0.68	90.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,898,961.33	0.70	83.4	Analog	0.30	3
1	Ge	72	98,972.09	1.27	89.6	Pulse	0.30	3
2	Ge	72	81,263.63	0.80	91.2	Pulse	0.30	3
2	Rh	103	2,869,889.96	0.36	93.2	Analog	0.30	3
3	Rh	103	7,453,587.60	0.46	88.8	Analog	0.30	3
3	In	115	8,053,039.16	0.22	90.9	Analog	0.30	3
3	Tb	159	11,696,657.88	0.43	93.3	Analog	0.30	3
3	Bi	209	6,989,187.05	0.19	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219010.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:50
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	199.674	ppb	1.05	1,726,287.14	1.214E+00	Analog	0.30	3
Na	23	45	2	1993.565	ppb	1.89	2,585,971.49	2.585E+01	Analog	0.30	3
Mg	26	45	2	1996.168	ppb	0.79	229,178.15	2.291E+00	Pulse	0.30	3
Al	27	45	2	199.552	ppb	2.36	41,520.23	4.151E-01	Pulse	0.30	3
K	39	45	2	2002.337	ppb	1.71	797,133.16	7.969E+00	Pulse	0.30	3
Ca	44	45	3	1993.734	ppb	0.40	3,698,899.18	9.685E-01	Analog	0.30	3
V	51	45	2	199.101	ppb	1.23	1,283,566.12	1.283E+01	Analog	0.30	3
Cr	52	45	2	198.988	ppb	1.11	1,757,874.53	1.757E+01	Analog	0.30	3
Mn	55	45	2	199.953	ppb	1.25	883,551.81	8.832E+00	Pulse	0.30	3
Fe	56	45	2	197.792	ppb	1.78	1,454,822.35	1.454E+01	Analog	0.30	3
Co	59	45	2	199.215	ppb	1.31	3,446,875.95	3.446E+01	Analog	0.30	3
Ni	60	72	2	199.673	ppb	0.56	963,160.41	1.208E+01	Pulse	0.30	3
Cu	63	72	2	198.623	ppb	0.67	2,559,392.17	3.211E+01	Analog	0.30	3
Zn	66	72	2	199.642	ppb	0.66	341,022.54	4.279E+00	Pulse	0.30	3
As	75	72	2	199.927	ppb	0.59	185,164.06	2.323E+00	Pulse	0.75	3
Se	78	72	1	199.236	ppb	0.51	97,318.62	1.007E+00	Pulse	0.30	3
Mo	95	103	2	199.996	ppb	0.63	1,257,668.74	4.465E-01	Pulse	0.30	3
Ag	107	103	3	198.298	ppb	0.89	12,915,944.29	1.772E+00	Analog	0.30	3
Cd	111	115	3	199.251	ppb	0.52	2,934,552.14	3.706E-01	Analog	0.30	3
Sb	121	115	3	200.162	ppb	0.31	9,456,260.00	1.194E+00	Analog	0.30	3
Ba	137	159	3	199.186	ppb	0.32	3,916,026.40	3.366E-01	Analog	0.30	3
Tl	205	209	3	199.813	ppb	0.39	24,772,062.13	3.615E+00	Analog	0.30	3
Pb	208	209	3	199.467	ppb	0.43	33,510,547.61	4.891E+00	Analog	0.30	3
U	238	209	3	200.347	ppb	0.10	35,657,352.05	5.204E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,422,353.87	0.77	81.5	Analog	0.30	3
2	Sc	45	100,053.02	2.02	88.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,819,183.24	0.53	81.7	Analog	0.30	3
1	Ge	72	96,626.32	0.69	87.5	Pulse	0.30	3
2	Ge	72	79,698.13	0.41	89.5	Pulse	0.30	3
2	Rh	103	2,816,893.81	0.80	91.4	Analog	0.30	3
3	Rh	103	7,291,192.74	0.93	86.8	Analog	0.30	3
3	In	115	7,918,525.38	0.19	89.4	Analog	0.30	3
3	Tb	159	11,634,266.35	0.67	92.8	Analog	0.30	3
3	Bi	209	6,852,124.07	0.31	93.5	Analog	0.30	3

Quantitation Report

File Name	A0219011.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:57
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.047	ppb	1.59	97,746.88	6.108E-02	Pulse	0.30	3
Na	23	45	2	251.085	ppb	0.57	451,279.02	4.031E+00	Pulse	0.30	3
Mg	26	45	2	105.182	ppb	1.20	13,600.42	1.215E-01	Pulse	0.30	3
Al	27	45	2	201.532	ppb	1.18	46,923.90	4.192E-01	Pulse	0.30	3
K	39	45	2	99.250	ppb	1.97	57,012.36	5.093E-01	Pulse	0.30	3
Ca	44	45	3	113.695	ppb	0.63	255,296.31	5.920E-02	Pulse	0.30	3
V	51	45	2	10.250	ppb	0.28	74,665.91	6.670E-01	Pulse	0.30	3
Cr	52	45	2	10.224	ppb	0.23	102,660.67	9.171E-01	Pulse	0.30	3
Mn	55	45	2	102.049	ppb	0.74	504,817.82	4.509E+00	Pulse	0.30	3
Fe	56	45	2	107.655	ppb	0.34	887,086.50	7.924E+00	Pulse	0.30	3
Co	59	45	2	10.325	ppb	0.42	199,942.41	1.786E+00	Pulse	0.30	3
Ni	60	72	2	10.145	ppb	1.19	56,139.61	6.168E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	1.28	159,687.18	1.754E+00	Pulse	0.30	3
Zn	66	72	2	101.946	ppb	0.78	200,237.86	2.200E+00	Pulse	0.30	3
As	75	72	2	10.108	ppb	0.95	10,704.06	1.176E-01	Pulse	0.75	3
Se	78	72	1	9.772	ppb	2.24	5,423.37	4.941E-02	Pulse	0.30	3
Mo	95	103	2	10.590	ppb	0.71	75,268.19	2.365E-02	Pulse	0.30	3
Ag	107	103	3	10.581	ppb	0.47	792,058.08	9.494E-02	Pulse	0.30	3
Cd	111	115	3	10.608	ppb	0.76	176,516.74	1.974E-02	Pulse	0.30	3
Sb	121	115	3	11.186	ppb	0.42	599,268.44	6.700E-02	Pulse	0.30	3
Ba	137	159	3	104.140	ppb	0.34	2,301,932.41	1.760E-01	Analog	0.30	3
Tl	205	209	3	10.341	ppb	1.56	1,441,182.46	1.873E-01	Analog	0.30	3
Pb	208	209	3	10.734	ppb	0.77	2,027,332.29	2.635E-01	Pulse	0.30	3
U	238	209	3	10.556	ppb	0.60	2,110,009.71	2.742E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,600,423.18	0.96	91.7	Analog	0.30	3
2	Sc	45	111,945.78	0.95	98.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,312,414.24	0.46	92.3	Analog	0.30	3
1	Ge	72	109,770.52	0.71	99.4	Pulse	0.30	3
2	Ge	72	91,023.24	1.56	102.2	Pulse	0.30	3
2	Rh	103	3,182,725.61	0.83	103.3	Analog	0.30	3
3	Rh	103	8,342,891.33	0.09	99.4	Analog	0.30	3
3	In	115	8,943,942.46	0.57	100.9	Analog	0.30	3
3	Tb	159	13,080,388.83	0.53	104.3	Analog	0.30	3
3	Bi	209	7,695,111.21	0.90	105.1	Analog	0.30	3

Quantitation Report

File Name	A0219012.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:02
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	45.55	27.78	1.956E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	61,635.09	6.306E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	20.00	2.048E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	108.89	1.112E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	11,588.92	1.185E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,590.51	2.797E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	366.69	3.750E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,196.71	1.225E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	212.42	2.174E-03	Pulse	0.30	3
Fe	56	45	2	0.024	ppb	88.42	2,041.35	2.090E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.82	1.924E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	108.82	1.361E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,195.92	1.497E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	475.28	5.945E-03	Pulse	0.30	3
As	75	72	2	0.020	ppb	31.72	31.11	3.897E-04	Pulse	0.75	3
Se	78	72	1	0.025	ppb	72.42	13.33	1.372E-04	Pulse	0.30	3
Mo	95	103	2	0.214	ppb	0.09	1,387.90	4.860E-04	Pulse	0.30	3
Ag	107	103	3	0.427	ppb	12.43	31,288.20	4.249E-03	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	158.51	63.45	8.040E-06	Pulse	0.30	3
Sb	121	115	3	0.202	ppb	2.67	11,762.66	1.491E-03	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	30.63	221.78	1.922E-05	Pulse	0.30	3
Tl	205	209	3	0.135	ppb	2.69	18,149.63	2.658E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	47.04	2,319.77	3.398E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	8.21	962.75	1.410E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,421,136.21	0.60	81.4	Analog	0.30	3
2	Sc	45	97,797.48	2.88	86.4	Pulse	0.30	3
3	Sc	45	3,785,994.53	0.43	81.0	Analog	0.30	3
1	Ge	72	97,530.02	1.21	88.3	Pulse	0.30	3

2	Ge	72	80,002.96	1.67	89.8	Pulse	0.30	3
2	Rh	103	2,856,016.31	0.63	92.7	Analog	0.30	3
3	Rh	103	7,364,745.66	0.15	87.7	Analog	0.30	3
3	In	115	7,891,741.66	0.01	89.0	Analog	0.30	3
3	Tb	159	11,537,285.80	0.49	92.0	Analog	0.30	3
3	Bi	209	6,826,853.02	0.28	93.2	Analog	0.30	3

Quantitation Report

File Name	A0219013.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:08
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.474	ppb	1.52	4,551.93	2.890E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	71,184.50	6.531E-01	Pulse	0.30	3
Mg	26	45	2	3.921	ppb	6.30	582.26	5.335E-03	Pulse	0.30	3
Al	27	45	2	11.463	ppb	6.86	2,947.00	2.705E-02	Pulse	0.30	3
K	39	45	2	0.879	ppb	212.97	13,482.66	1.237E-01	Pulse	0.30	3
Ca	44	45	3	8.459	ppb	1.35	34,702.76	8.302E-03	Pulse	0.30	3
V	51	45	2	0.952	ppb	0.73	7,433.09	6.815E-02	Pulse	0.30	3
Cr	52	45	2	0.968	ppb	1.77	10,956.19	1.005E-01	Pulse	0.30	3
Mn	55	45	2	0.525	ppb	6.59	2,892.51	2.655E-02	Pulse	0.30	3
Fe	56	45	2	11.475	ppb	2.15	93,952.31	8.618E-01	Pulse	0.30	3
Co	59	45	2	0.501	ppb	3.06	9,466.36	8.683E-02	Pulse	0.30	3
Ni	60	72	2	0.993	ppb	5.61	5,609.90	6.303E-02	Pulse	0.30	3
Cu	63	72	2	0.817	ppb	0.76	17,289.34	1.941E-01	Pulse	0.30	3
Zn	66	72	2	9.173	ppb	2.92	20,109.15	2.259E-01	Pulse	0.30	3
As	75	72	2	0.119	ppb	13.87	136.45	1.533E-03	Pulse	0.75	3
Se	78	72	1	0.502	ppb	11.16	275.57	2.548E-03	Pulse	0.30	3
Mo	95	103	2	0.573	ppb	7.07	4,057.36	1.287E-03	Pulse	0.30	3
Ag	107	103	3	0.488	ppb	2.84	39,441.24	4.794E-03	Pulse	0.30	3
Cd	111	115	3	0.520	ppb	1.93	8,578.41	9.724E-04	Pulse	0.30	3
Sb	121	115	3	0.635	ppb	1.36	35,915.21	4.072E-03	Pulse	0.30	3
Ba	137	159	3	1.115	ppb	0.41	24,603.86	1.898E-03	Pulse	0.30	3
Tl	205	209	3	0.517	ppb	0.65	73,392.00	9.572E-03	Pulse	0.30	3
Pb	208	209	3	1.042	ppb	0.18	198,241.83	2.586E-02	Pulse	0.30	3
U	238	209	3	0.523	ppb	0.78	104,412.82	1.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,575,111.98	0.67	90.3	Analog	0.30	3
2	Sc	45	109,056.76	2.28	96.4	Pulse	0.30	3
3	Sc	45	4,179,866.99	0.06	89.4	Analog	0.30	3
1	Ge	72	108,245.10	1.20	98.0	Pulse	0.30	3

2	Ge	72	89,054.75	1.63	100.0	Pulse	0.30	3
2	Rh	103	3,153,043.32	0.38	102.4	Analog	0.30	3
3	Rh	103	8,226,623.07	0.26	98.0	Analog	0.30	3
3	In	115	8,821,021.13	0.67	99.5	Analog	0.30	3
3	Tb	159	12,963,602.72	0.07	103.4	Analog	0.30	3
3	Bi	209	7,667,175.02	0.20	104.7	Analog	0.30	3

Quantitation Report

File Name	A0219014.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:13
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	63.67	57.78	3.637E-05	Pulse	0.30	3
Na	23	45	2	94514.911	ppb	1.51	142,139,736.77	1.184E+03	Analog	0.30	3
Mg	26	45	2	92243.670	ppb	1.90	12,697,610.09	1.058E+02	Analog	0.30	3
Al	27	45	2	0.503	ppb	103.22	534.92	4.435E-03	Pulse	0.30	3
K	39	45	2	95501.469	ppb	1.73	44,933,462.66	3.745E+02	Analog	0.30	3
Ca	44	45	3	96156.983	ppb	0.65	222,664,918.91	4.651E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	508.92	4.251E-03	Pulse	0.30	3
Cr	52	45	2	0.133	ppb	7.68	3,214.59	2.679E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,994.01	-1.083E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,605.38	-3.844E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	377.99	39.86	3.340E-04	Pulse	0.30	3
Ni	60	72	2	0.355	ppb	7.26	2,123.86	2.438E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-854.99	-9.812E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-943.45	-1.085E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	5.92	6.745E-05	Pulse	0.75	3
Se	78	72	1	0.035	ppb	103.21	18.89	1.875E-04	Pulse	0.30	3
Mo	95	103	2	0.091	ppb	5.95	591.15	2.116E-04	Pulse	0.30	3
Ag	107	103	3	0.084	ppb	10.10	8,877.89	1.183E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-409.28	-5.030E-05	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.52	5,243.33	6.444E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,786.15	-1.721E-03	Pulse	0.30	3
Tl	205	209	3	0.035	ppb	1.84	4,964.41	8.463E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	225.47	3.834E-05	Pulse	0.30	3
U	238	209	3	0.002	ppb	26.54	496.96	8.470E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,588,395.85	0.74	91.0	Analog	0.30	3
2	Sc	45	120,040.22	3.29	106.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,787,550.66	1.37	102.4	Analog	0.30	3
1	Ge	72	101,109.65	0.59	91.6	Pulse	0.30	3
2	Ge	72	87,052.10	1.68	97.7	Pulse	0.30	3
2	Rh	103	2,794,445.65	1.24	90.7	Analog	0.30	3
3	Rh	103	7,507,253.50	0.32	89.4	Analog	0.30	3
3	In	115	8,135,506.25	0.28	91.8	Analog	0.30	3
3	Tb	159	12,076,023.71	0.23	96.3	Analog	0.30	3
3	Bi	209	5,865,942.62	0.46	80.1	Analog	0.30	3

Quantitation Report

File Name	A0219015.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:19
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.505	ppb	1.28	200,097.03	1.186E-01	Pulse	0.30	3
Na	23	45	2	94129.359	ppb	0.82	151,239,929.97	1.180E+03	Analog	0.30	3
Mg	26	45	2	92238.408	ppb	0.76	13,566,239.52	1.058E+02	Analog	0.30	3
Al	27	45	2	20.098	ppb	3.21	5,749.92	4.486E-02	Pulse	0.30	3
K	39	45	2	93853.877	ppb	0.89	47,179,008.74	3.680E+02	Analog	0.30	3
Ca	44	45	3	95749.463	ppb	0.28	242,683,789.72	4.631E+01	Analog	0.30	3
V	51	45	2	20.674	ppb	1.39	171,575.36	1.338E+00	Pulse	0.30	3
Cr	52	45	2	19.735	ppb	1.53	225,128.85	1.756E+00	Pulse	0.30	3
Mn	55	45	2	16.293	ppb	0.61	92,671.89	7.228E-01	Pulse	0.30	3
Fe	56	45	2	20.789	ppb	2.06	198,234.92	1.546E+00	Pulse	0.30	3
Co	59	45	2	18.805	ppb	1.60	416,961.22	3.253E+00	Pulse	0.30	3
Ni	60	72	2	20.384	ppb	1.22	110,582.44	1.236E+00	Pulse	0.30	3
Cu	63	72	2	19.801	ppb	0.93	291,398.65	3.258E+00	Pulse	0.30	3
Zn	66	72	2	17.808	ppb	2.93	36,638.58	4.096E-01	Pulse	0.30	3
As	75	72	2	19.913	ppb	2.18	20,712.28	2.315E-01	Pulse	0.75	3
Se	78	72	1	17.309	ppb	1.83	8,744.30	8.751E-02	Pulse	0.30	3
Mo	95	103	2	23.248	ppb	1.24	145,899.61	5.190E-02	Pulse	0.30	3
Ag	107	103	3	18.880	ppb	0.63	1,322,297.26	1.691E-01	Analog	0.30	3
Cd	111	115	3	19.409	ppb	1.01	306,366.92	3.610E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.11	1,068,315.45	1.259E-01	Pulse	0.30	3
Ba	137	159	3	23.886	ppb	0.23	498,976.61	4.037E-02	Pulse	0.30	3
Tl	205	209	3	22.487	ppb	1.02	2,414,027.93	4.070E-01	Analog	0.30	3
Pb	208	209	3	22.379	ppb	0.36	3,255,779.57	5.490E-01	Analog	0.30	3
U	238	209	3	22.691	ppb	1.00	3,495,448.30	5.894E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,715.73	1.25	96.7	Analog	0.30	3
2	Sc	45	128,225.35	2.93	113.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,239,920.03	0.57	112.1	Analog	0.30	3
1	Ge	72	99,923.91	0.53	90.5	Pulse	0.30	3
2	Ge	72	89,453.99	1.88	100.4	Pulse	0.30	3
2	Rh	103	2,810,672.87	1.56	91.2	Analog	0.30	3
3	Rh	103	7,821,166.07	0.50	93.2	Analog	0.30	3
3	In	115	8,485,923.21	0.45	95.8	Analog	0.30	3
3	Tb	159	12,358,773.43	0.38	98.5	Analog	0.30	3
3	Bi	209	5,930,884.77	0.87	81.0	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219016.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:24
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.500	ppb	1.08	5,413.30	3.050E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	89,440.10	6.930E-01	Pulse	0.30	3
Mg	26	45	2	4.463	ppb	5.62	768.94	5.957E-03	Pulse	0.30	3
Al	27	45	2	12.391	ppb	3.90	3,738.30	2.896E-02	Pulse	0.30	3
K	39	45	2	6.649	ppb	24.56	18,884.66	1.463E-01	Pulse	0.30	3
Ca	44	45	3	7.957	ppb	2.11	39,121.40	8.059E-03	Pulse	0.30	3
V	51	45	2	1.015	ppb	5.24	9,316.35	7.220E-02	Pulse	0.30	3
Cr	52	45	2	0.963	ppb	2.61	12,903.21	9.998E-02	Pulse	0.30	3
Mn	55	45	2	0.534	ppb	4.74	3,481.13	2.697E-02	Pulse	0.30	3
Fe	56	45	2	11.257	ppb	1.01	109,166.42	8.458E-01	Pulse	0.30	3
Co	59	45	2	0.508	ppb	1.31	11,364.26	8.805E-02	Pulse	0.30	3
Ni	60	72	2	0.988	ppb	4.30	6,473.53	6.270E-02	Pulse	0.30	3
Cu	63	72	2	0.883	ppb	2.07	21,149.82	2.048E-01	Pulse	0.30	3
Zn	66	72	2	8.916	ppb	1.80	22,761.42	2.204E-01	Pulse	0.30	3
As	75	72	2	0.121	ppb	7.01	161.33	1.561E-03	Pulse	0.75	3
Se	78	72	1	0.461	ppb	13.79	304.46	2.343E-03	Pulse	0.30	3
Mo	95	103	2	0.608	ppb	1.15	4,774.26	1.366E-03	Pulse	0.30	3
Ag	107	103	3	0.772	ppb	6.00	66,337.23	7.326E-03	Pulse	0.30	3
Cd	111	115	3	0.523	ppb	2.01	9,264.52	9.778E-04	Pulse	0.30	3
Sb	121	115	3	0.622	ppb	1.54	37,828.74	3.993E-03	Pulse	0.30	3
Ba	137	159	3	1.175	ppb	1.00	26,920.74	1.998E-03	Pulse	0.30	3
Tl	205	209	3	0.487	ppb	2.10	70,495.87	9.026E-03	Pulse	0.30	3
Pb	208	209	3	1.045	ppb	1.13	202,455.80	2.592E-02	Pulse	0.30	3
U	238	209	3	0.514	ppb	1.11	104,502.37	1.338E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,774,791.35	0.93	101.7	Analog	0.30	3
2	Sc	45	129,078.25	1.01	114.0	Pulse	0.30	3
3	Sc	45	4,854,170.66	0.80	103.9	Analog	0.30	3
1	Ge	72	130,055.68	0.85	117.8	Pulse	0.30	3

2	Ge	72	103,291.38	1.53	115.9	Pulse	0.30	3
2	Rh	103	3,495,165.36	1.22	113.5	Analog	0.30	3
3	Rh	103	9,052,348.48	0.61	107.8	Analog	0.30	3
3	In	115	9,474,611.61	0.22	106.9	Analog	0.30	3
3	Tb	159	13,474,382.99	0.24	107.4	Analog	0.30	3
3	Bi	209	7,811,111.90	0.85	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219017.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:30
Sample Name	MB-61298,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	1.073E-05	Pulse	0.30	3
Na	23	45	2	19.697	ppb	18.65	123,056.01	1.134E+00	Pulse	0.30	3
Mg	26	45	2	1.038	ppb	17.66	220.01	2.028E-03	Pulse	0.30	3
Al	27	45	2	29.029	ppb	5.49	6,869.47	6.329E-02	Pulse	0.30	3
K	39	45	2	12.865	ppb	5.85	18,536.46	1.707E-01	Pulse	0.30	3
Ca	44	45	3	1.754	ppb	6.39	20,624.32	5.059E-03	Pulse	0.30	3
V	51	45	2	0.021	ppb	12.12	885.62	8.152E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,195.52	1.102E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	192.14	1.773E-03	Pulse	0.30	3
Fe	56	45	2	0.379	ppb	5.97	5,097.33	4.696E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	117.23	36.52	3.358E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	125.39	1.463E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,775.30	2.074E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,610.68	1.882E-02	Pulse	0.30	3
As	75	72	2	0.003	ppb	254.35	16.00	1.864E-04	Pulse	0.75	3
Se	78	72	1	0.008	ppb	42.57	5.56	5.218E-05	Pulse	0.30	3
Mo	95	103	2	0.052	ppb	5.79	381.13	1.245E-04	Pulse	0.30	3
Ag	107	103	3	0.123	ppb	11.89	11,975.16	1.533E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	46.01	5.498E-06	Pulse	0.30	3
Sb	121	115	3	0.016	ppb	18.24	3,186.03	3.810E-04	Pulse	0.30	3
Ba	137	159	3	0.032	ppb	6.85	800.27	6.727E-05	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	2.88	2,704.81	3.838E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	57.55	2,455.32	3.484E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	14.74	354.10	5.024E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,555,822.60	0.65	89.1	Analog	0.30	3
2	Sc	45	108,605.67	2.25	96.0	Pulse	0.30	3
3	Sc	45	4,076,458.55	0.65	87.2	Analog	0.30	3
1	Ge	72	106,396.93	0.46	96.4	Pulse	0.30	3

2	Ge	72	85,615.43	1.37	96.1	Pulse	0.30	3
2	Rh	103	3,060,101.83	1.19	99.3	Analog	0.30	3
3	Rh	103	7,812,738.01	0.81	93.1	Analog	0.30	3
3	In	115	8,363,631.12	0.30	94.4	Analog	0.30	3
3	Tb	159	11,896,041.07	0.39	94.9	Analog	0.30	3
3	Bi	209	7,047,928.30	0.19	96.2	Analog	0.30	3

Quantitation Report

File Name	A0219018.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:35
Sample Name	LCS-61298,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.072	ppb	1.87	97,221.49	6.123E-02	Pulse	0.30	3
Na	23	45	2	247.105	ppb	1.78	449,216.62	3.981E+00	Pulse	0.30	3
Mg	26	45	2	104.437	ppb	1.68	13,613.73	1.206E-01	Pulse	0.30	3
Al	27	45	2	206.803	ppb	1.50	48,522.70	4.301E-01	Pulse	0.30	3
K	39	45	2	101.734	ppb	2.80	58,557.96	5.191E-01	Pulse	0.30	3
Ca	44	45	3	118.596	ppb	0.62	265,728.26	6.157E-02	Pulse	0.30	3
V	51	45	2	10.545	ppb	0.90	77,405.54	6.860E-01	Pulse	0.30	3
Cr	52	45	2	10.376	ppb	1.91	104,981.99	9.305E-01	Pulse	0.30	3
Mn	55	45	2	102.846	ppb	1.17	512,758.40	4.545E+00	Pulse	0.30	3
Fe	56	45	2	108.684	ppb	0.68	902,695.91	8.000E+00	Pulse	0.30	3
Co	59	45	2	10.370	ppb	1.47	202,391.47	1.794E+00	Pulse	0.30	3
Ni	60	72	2	10.189	ppb	1.96	57,129.59	6.195E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	0.79	161,823.10	1.754E+00	Pulse	0.30	3
Zn	66	72	2	102.146	ppb	0.34	203,309.74	2.204E+00	Pulse	0.30	3
As	75	72	2	10.202	ppb	2.09	10,946.89	1.187E-01	Pulse	0.75	3
Se	78	72	1	9.749	ppb	0.28	5,641.23	4.929E-02	Pulse	0.30	3
Mo	95	103	2	9.992	ppb	0.84	71,935.01	2.231E-02	Pulse	0.30	3
Ag	107	103	3	10.434	ppb	0.68	788,406.98	9.363E-02	Pulse	0.30	3
Cd	111	115	3	10.664	ppb	0.90	178,603.72	1.984E-02	Pulse	0.30	3
Sb	121	115	3	10.632	ppb	0.23	573,463.51	6.370E-02	Pulse	0.30	3
Ba	137	159	3	105.161	ppb	0.79	2,314,739.20	1.777E-01	Analog	0.30	3
Tl	205	209	3	10.399	ppb	0.20	1,434,072.34	1.884E-01	Analog	0.30	3
Pb	208	209	3	10.749	ppb	0.57	2,008,728.42	2.638E-01	Pulse	0.30	3
U	238	209	3	10.469	ppb	1.58	2,070,590.20	2.720E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,587,920.39	1.19	91.0	Analog	0.30	3
2	Sc	45	112,845.83	1.84	99.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,315,823.93	0.77	92.3	Analog	0.30	3
1	Ge	72	114,446.09	1.11	103.7	Pulse	0.30	3
2	Ge	72	92,235.57	1.29	103.5	Pulse	0.30	3
2	Rh	103	3,223,924.64	0.83	104.7	Analog	0.30	3
3	Rh	103	8,420,453.28	0.42	100.3	Analog	0.30	3
3	In	115	9,002,502.60	0.34	101.6	Analog	0.30	3
3	Tb	159	13,025,680.08	0.85	103.9	Analog	0.30	3
3	Bi	209	7,613,684.61	0.14	103.9	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219019.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:41
Sample Name	N023063-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	72.46	21.11	1.696E-05	Pulse	0.30	3
	Na	23	45	2	119335.052	ppb	0.96	145,217,538.95	1.495E+03	Analog	0.30	3
	Mg	26	45	2	14734.562	ppb	1.14	1,641,689.94	1.690E+01	Analog	0.30	3
	Al	27	45	2	7.981	ppb	6.27	1,929.82	1.986E-02	Pulse	0.30	3
	K	39	45	2	6300.621	ppb	1.54	2,410,068.02	2.482E+01	Analog	0.30	3
	Ca	44	45	3	89655.756	ppb	0.15	173,378,555.19	4.337E+01	Analog	0.30	3
OLR	V	51	45	2	3.469	ppb	1.56	22,364.73	2.303E-01	Pulse	0.30	3
	Cr	52	45	2	298.179	ppb	1.49	2,556,274.88	2.632E+01	Analog	0.30	3
	Mn	55	45	2	235.318	ppb	0.55	1,009,433.78	1.039E+01	Pulse	0.30	3
	Fe	56	45	2	42.254	ppb	1.02	303,186.61	3.122E+00	Pulse	0.30	3
	Co	59	45	2	0.413	ppb	4.20	6,955.36	7.159E-02	Pulse	0.30	3
	Ni	60	72	2	4.734	ppb	1.93	21,491.70	2.894E-01	Pulse	0.30	3
	Cu	63	72	2	10.779	ppb	0.60	133,807.74	1.802E+00	Pulse	0.30	3
	Zn	66	72	2	141.627	ppb	0.13	226,099.45	3.044E+00	Pulse	0.30	3
	As	75	72	2	2.136	ppb	0.55	1,854.77	2.497E-02	Pulse	0.75	3
	Se	78	72	1	0.580	ppb	8.56	275.57	2.941E-03	Pulse	0.30	3
	Mo	95	103	2	3.427	ppb	3.23	18,198.81	7.657E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,688.79	2.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.190	ppb	0.56	2,491.30	3.599E-04	Pulse	0.30	3
	Sb	121	115	3	0.133	ppb	3.55	7,446.50	1.076E-03	Pulse	0.30	3
	Ba	137	159	3	38.330	ppb	0.31	676,824.92	6.478E-02	Pulse	0.30	3
	Tl	205	209	3	0.234	ppb	3.65	24,078.22	4.449E-03	Pulse	0.30	3
	Pb	208	209	3	0.900	ppb	0.37	121,080.95	2.237E-02	Pulse	0.30	3
	U	238	209	3	29.016	ppb	0.75	4,079,960.88	7.537E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,243,737.79	0.54	71.3	Analog	0.30	3
2	Sc	45	97,124.59	1.59	85.8	Pulse	0.30	3
3	Sc	45	3,997,911.95	0.59	85.5	Analog	0.30	3
1	Ge	72	93,645.93	1.16	84.8	Pulse	0.30	3
2	Ge	72	74,267.09	0.85	83.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,232.38	0.86	77.1	Analog	0.30	3
3	Rh	103	6,096,434.91	0.60	72.6	Analog	0.30	3
3	In	115	6,922,919.41	0.28	78.1	Analog	0.30	3
3	Tb	159	10,447,985.05	0.61	83.3	Analog	0.30	3
3	Bi	209	5,413,417.63	0.81	73.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE
For Cr only

File Name	A0219020.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:46
Sample Name	N023063-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	133.05	27.78	2.092E-05	Pulse	0.30	3
Na	23	45	2	26244.694	ppb	0.99	31,109,554.54	3.295E+02	Analog	0.30	3
Mg	26	45	2	3285.349	ppb	0.49	355,871.80	3.770E+00	Pulse	0.30	3
Al	27	45	2	9.515	ppb	6.39	2,173.64	2.303E-02	Pulse	0.30	3
K	39	45	2	1414.595	ppb	0.60	534,790.36	5.665E+00	Pulse	0.30	3
Ca	44	45	3	20661.639	ppb	0.34	36,647,578.90	9.998E+00	Analog	0.30	3
V	51	45	2	0.749	ppb	5.92	5,197.71	5.506E-02	Pulse	0.30	3
Cr	52	45	2	66.219	ppb	0.27	552,973.40	5.857E+00	Pulse	0.30	3
Mn	55	45	2	50.978	ppb	0.98	212,804.66	2.254E+00	Pulse	0.30	3
Fe	56	45	2	9.368	ppb	0.93	66,747.88	7.071E-01	Pulse	0.30	3
Co	59	45	2	0.092	ppb	1.54	1,523.02	1.613E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	5.39	4,679.86	6.153E-02	Pulse	0.30	3
Cu	63	72	2	2.130	ppb	2.16	30,896.23	4.061E-01	Pulse	0.30	3
Zn	66	72	2	32.622	ppb	0.91	55,147.09	7.248E-01	Pulse	0.30	3
As	75	72	2	0.457	ppb	1.58	415.83	5.466E-03	Pulse	0.75	3
Se	78	72	1	0.112	ppb	35.07	55.56	5.752E-04	Pulse	0.30	3
Mo	95	103	2	0.670	ppb	5.66	3,803.97	1.504E-03	Pulse	0.30	3
Ag	107	103	3	0.236	ppb	12.97	16,696.51	2.546E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6,938.20	-9.506E-04	Pulse	0.30	3
Sb	121	115	3	0.018	ppb	3.61	2,863.74	3.924E-04	Pulse	0.30	3
Ba	137	159	3	7.581	ppb	0.66	138,535.45	1.282E-02	Pulse	0.30	3
Tl	205	209	3	0.041	ppb	1.35	5,906.98	9.621E-04	Pulse	0.30	3
Pb	208	209	3	0.092	ppb	4.46	15,765.04	2.568E-03	Pulse	0.30	3
U	238	209	3	5.862	ppb	0.42	934,996.06	1.523E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,333,837.07	1.10	76.4	Analog	0.30	3
2	Sc	45	94,404.05	0.91	83.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,665,683.59	0.15	78.4	Analog	0.30	3
1	Ge	72	96,524.58	0.90	87.4	Pulse	0.30	3
2	Ge	72	76,086.76	1.09	85.4	Pulse	0.30	3
2	Rh	103	2,529,294.95	0.39	82.1	Analog	0.30	3
3	Rh	103	6,559,199.76	0.22	78.1	Analog	0.30	3
3	In	115	7,298,471.43	0.51	82.4	Analog	0.30	3
3	Tb	159	10,804,231.51	0.43	86.1	Analog	0.30	3
3	Bi	209	6,139,748.80	0.48	83.8	Analog	0.30	3

Quantitation Report

File Name	A0219021.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:52
Sample Name	N023063-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.554	ppb	0.77	80,819.45	5.808E-02	Pulse	0.30	3
	Na	23	45	2	111953.545	ppb	1.16	149,884,218.88	1.403E+03	Analog	0.30	3
	Mg	26	45	2	13722.815	ppb	1.27	1,682,217.49	1.574E+01	Analog	0.30	3
	Al	27	45	2	200.769	ppb	2.04	44,618.36	4.176E-01	Pulse	0.30	3
	K	39	45	2	5977.490	ppb	1.49	2,516,146.05	2.355E+01	Analog	0.30	3
	Ca	44	45	3	85525.104	ppb	0.79	183,273,297.27	4.137E+01	Analog	0.30	3
	V	51	45	2	13.229	ppb	2.64	91,758.11	8.589E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.411	ppb	1.77	2,691,775.16	2.520E+01	Analog	0.30	3
	Mn	55	45	2	306.020	ppb	1.52	1,443,921.97	1.352E+01	Analog	0.30	3
	Fe	56	45	2	136.671	ppb	0.83	1,074,339.24	1.006E+01	Pulse	0.30	3
	Co	59	45	2	9.273	ppb	0.69	171,378.14	1.604E+00	Pulse	0.30	3
	Ni	60	72	2	13.487	ppb	0.93	66,213.15	8.190E-01	Pulse	0.30	3
	Cu	63	72	2	19.131	ppb	0.73	254,591.41	3.149E+00	Pulse	0.30	3
	Zn	66	72	2	214.407	ppb	0.12	371,316.90	4.593E+00	Pulse	0.30	3
	As	75	72	2	11.515	ppb	0.92	10,829.39	1.340E-01	Pulse	0.75	3
	Se	78	72	1	8.818	ppb	4.23	4,483.03	4.458E-02	Pulse	0.30	3
	Mo	95	103	2	14.551	ppb	0.40	84,038.87	3.249E-02	Pulse	0.30	3
	Ag	107	103	3	8.124	ppb	3.31	498,176.43	7.299E-02	Pulse	0.30	3
	Cd	111	115	3	9.733	ppb	0.34	139,815.46	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.475	ppb	0.15	484,583.42	6.276E-02	Pulse	0.30	3
	Ba	137	159	3	134.855	ppb	0.08	2,657,147.67	2.279E-01	Analog	0.30	3
	Tl	205	209	3	10.368	ppb	0.59	1,132,023.11	1.878E-01	Pulse	0.30	3
	Pb	208	209	3	11.798	ppb	0.50	1,745,406.14	2.895E-01	Pulse	0.30	3
	U	238	209	3	38.151	ppb	0.70	5,973,837.90	9.910E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,391,476.73	0.56	79.7	Analog	0.30	3
2	Sc	45	106,849.84	1.67	94.4	Pulse	0.30	3
3	Sc	45	4,430,292.92	0.70	94.8	Analog	0.30	3
1	Ge	72	100,536.08	0.61	91.1	Pulse	0.30	3
2	Ge	72	80,840.61	1.00	90.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,586,662.25	0.42	84.0	Analog	0.30	3
3	Rh	103	6,824,063.58	0.52	81.3	Analog	0.30	3
3	In	115	7,720,723.92	0.39	87.1	Analog	0.30	3
3	Tb	159	11,660,006.63	0.47	93.0	Analog	0.30	3
3	Bi	209	6,028,229.56	0.53	82.3	Analog	0.30	3

Quantitation Report

File Name	A0219022.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:57
Sample Name	N023063-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.524	ppb	0.70	78,863.97	5.790E-02	Pulse	0.30	3
	Na	23	45	2	112300.467	ppb	1.13	149,683,931.10	1.407E+03	Analog	0.30	3
	Mg	26	45	2	13897.562	ppb	0.83	1,695,983.40	1.594E+01	Analog	0.30	3
	Al	27	45	2	197.521	ppb	1.59	43,705.28	4.109E-01	Pulse	0.30	3
	K	39	45	2	6012.822	ppb	1.53	2,519,717.58	2.369E+01	Analog	0.30	3
	Ca	44	45	3	85546.221	ppb	0.60	182,729,417.28	4.138E+01	Analog	0.30	3
OLR	V	51	45	2	13.061	ppb	1.32	90,205.23	8.480E-01	Pulse	0.30	3
	Cr	52	45	2	285.955	ppb	0.90	2,685,276.71	2.524E+01	Analog	0.30	3
	Mn	55	45	2	304.080	ppb	1.16	1,428,654.82	1.343E+01	Analog	0.30	3
	Fe	56	45	2	134.081	ppb	1.16	1,049,316.14	9.865E+00	Pulse	0.30	3
	Co	59	45	2	9.263	ppb	0.89	170,443.78	1.602E+00	Pulse	0.30	3
	Ni	60	72	2	13.566	ppb	1.01	65,692.38	8.238E-01	Pulse	0.30	3
	Cu	63	72	2	19.302	ppb	1.89	253,339.99	3.177E+00	Pulse	0.30	3
	Zn	66	72	2	216.825	ppb	1.55	370,378.58	4.645E+00	Pulse	0.30	3
	As	75	72	2	11.479	ppb	1.63	10,649.22	1.335E-01	Pulse	0.75	3
	Se	78	72	1	8.757	ppb	3.89	4,426.35	4.428E-02	Pulse	0.30	3
	Mo	95	103	2	14.568	ppb	0.25	82,484.41	3.253E-02	Pulse	0.30	3
	Ag	107	103	3	8.782	ppb	1.95	523,929.88	7.887E-02	Pulse	0.30	3
	Cd	111	115	3	9.724	ppb	0.28	136,361.82	1.809E-02	Pulse	0.30	3
	Sb	121	115	3	10.466	ppb	0.34	472,637.06	6.271E-02	Pulse	0.30	3
	Ba	137	159	3	135.709	ppb	0.46	2,579,725.65	2.293E-01	Analog	0.30	3
	Tl	205	209	3	10.400	ppb	0.34	1,090,818.25	1.884E-01	Pulse	0.30	3
	Pb	208	209	3	11.787	ppb	0.70	1,675,159.70	2.893E-01	Pulse	0.30	3
	U	238	209	3	38.194	ppb	1.14	5,745,089.90	9.921E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,362,001.97	0.21	78.0	Analog	0.30	3
2	Sc	45	106,381.26	1.93	94.0	Pulse	0.30	3
3	Sc	45	4,416,126.70	1.30	94.5	Analog	0.30	3
1	Ge	72	99,965.82	0.37	90.5	Pulse	0.30	3
2	Ge	72	79,748.22	0.58	89.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,535,812.13	1.28	82.3	Analog	0.30	3
3	Rh	103	6,642,396.57	0.51	79.1	Analog	0.30	3
3	In	115	7,536,916.86	0.52	85.0	Analog	0.30	3
3	Tb	159	11,248,909.28	0.31	89.7	Analog	0.30	3
3	Bi	209	5,790,867.90	0.98	79.1	Analog	0.30	3

Quantitation Report

File Name	A0219023.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:03
Sample Name	N023063-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.589	ppb	0.34	81,452.64	5.830E-02	Pulse	0.30	3
	Na	23	45	2	113466.483	ppb	0.51	152,317,006.62	1.422E+03	Analog	0.30	3
	Mg	26	45	2	14033.261	ppb	0.32	1,724,719.51	1.610E+01	Analog	0.30	3
	Al	27	45	2	200.738	ppb	0.15	44,733.13	4.176E-01	Pulse	0.30	3
	K	39	45	2	6049.140	ppb	0.73	2,552,873.92	2.383E+01	Analog	0.30	3
	Ca	44	45	3	85075.813	ppb	0.37	186,297,139.45	4.115E+01	Analog	0.30	3
	V	51	45	2	13.148	ppb	1.10	91,455.14	8.537E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.514	ppb	1.56	2,699,901.94	2.521E+01	Analog	0.30	3
	Mn	55	45	2	304.543	ppb	0.91	1,440,825.03	1.345E+01	Analog	0.30	3
	Fe	56	45	2	134.937	ppb	0.47	1,063,525.42	9.928E+00	Pulse	0.30	3
	Co	59	45	2	9.280	ppb	0.36	171,976.90	1.605E+00	Pulse	0.30	3
	Ni	60	72	2	13.548	ppb	1.68	66,255.25	8.227E-01	Pulse	0.30	3
	Cu	63	72	2	19.286	ppb	1.79	255,645.14	3.174E+00	Pulse	0.30	3
	Zn	66	72	2	215.674	ppb	1.34	372,087.97	4.620E+00	Pulse	0.30	3
	As	75	72	2	11.447	ppb	4.24	10,723.83	1.332E-01	Pulse	0.75	3
	Se	78	72	1	8.553	ppb	2.23	4,413.02	4.324E-02	Pulse	0.30	3
	Mo	95	103	2	14.423	ppb	0.45	82,502.20	3.220E-02	Pulse	0.30	3
	Ag	107	103	3	8.762	ppb	2.05	529,657.94	7.869E-02	Pulse	0.30	3
	Cd	111	115	3	9.732	ppb	0.66	137,478.48	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.473	ppb	0.43	476,440.35	6.275E-02	Pulse	0.30	3
	Ba	137	159	3	135.784	ppb	0.64	2,593,140.41	2.295E-01	Analog	0.30	3
	Tl	205	209	3	10.406	ppb	1.35	1,094,527.37	1.885E-01	Pulse	0.30	3
	Pb	208	209	3	11.776	ppb	1.16	1,678,513.57	2.890E-01	Pulse	0.30	3
	U	238	209	3	37.991	ppb	0.53	5,731,162.13	9.868E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,397,135.98	0.91	80.1	Analog	0.30	3
2	Sc	45	107,131.63	1.69	94.7	Pulse	0.30	3
3	Sc	45	4,527,114.27	0.94	96.9	Analog	0.30	3
1	Ge	72	102,058.20	0.80	92.4	Pulse	0.30	3
2	Ge	72	80,552.19	2.24	90.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,561,765.50	1.00	83.2	Analog	0.30	3
3	Rh	103	6,730,290.87	0.55	80.2	Analog	0.30	3
3	In	115	7,592,865.26	0.74	85.7	Analog	0.30	3
3	Tb	159	11,301,174.55	0.32	90.1	Analog	0.30	3
3	Bi	209	5,808,018.59	1.28	79.3	Analog	0.30	3

Quantitation Report

File Name	A0219024.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:08
Sample Name	N022985-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.572E-06	Pulse	0.30	3
Na	23	45	2	457979.498	ppb	0.85	576,827,164.74	5.736E+03	Analog	0.30	3
Mg	26	45	2	1362.852	ppb	1.49	157,291.74	1.564E+00	Pulse	0.30	3
Al	27	45	2	2.040	ppb	29.29	764.37	7.605E-03	Pulse	0.30	3
K	39	45	2	3553.337	ppb	1.64	1,412,530.41	1.405E+01	Analog	0.30	3
Ca	44	45	3	20807.842	ppb	0.35	39,755,575.52	1.007E+01	Analog	0.30	3
V	51	45	2	1.300	ppb	0.57	9,105.15	9.054E-02	Pulse	0.30	3
Cr	52	45	2	3.685	ppb	3.19	34,197.62	3.402E-01	Pulse	0.30	3
Mn	55	45	2	1.056	ppb	4.38	5,026.14	5.000E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-35,713.31	-3.552E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-568.01	-5.649E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-372.54	-5.036E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,275.24	-1.660E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-493.51	-6.693E-03	Pulse	0.30	3
As	75	72	2	1.125	ppb	8.34	978.24	1.323E-02	Pulse	0.75	3
Se	78	72	1	0.027	ppb	27.55	13.33	1.477E-04	Pulse	0.30	3
Mo	95	103	2	16.704	ppb	0.71	85,794.05	3.730E-02	Pulse	0.30	3
Ag	107	103	3	0.702	ppb	12.53	40,746.82	6.708E-03	Pulse	0.30	3
Cd	111	115	3	0.009	ppb	16.14	154.77	2.269E-05	Pulse	0.30	3
Sb	121	115	3	0.010	ppb	47.32	2,324.72	3.410E-04	Pulse	0.30	3
Ba	137	159	3	3.963	ppb	1.17	67,268.55	6.710E-03	Pulse	0.30	3
Tl	205	209	3	0.086	ppb	3.62	8,827.45	1.772E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,539.08	-5.093E-04	Pulse	0.30	3
U	238	209	3	0.355	ppb	1.24	46,072.01	9.245E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,296,868.20	0.58	74.3	Analog	0.30	3
2	Sc	45	100,570.83	2.14	88.9	Pulse	0.30	3
3	Sc	45	3,948,631.33	0.82	84.5	Analog	0.30	3
1	Ge	72	90,403.15	0.71	81.9	Pulse	0.30	3
2	Ge	72	73,970.37	1.85	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,300,423.96	1.36	74.7	Analog	0.30	3
3	Rh	103	6,077,618.87	0.74	72.4	Analog	0.30	3
3	In	115	6,821,156.88	1.33	77.0	Analog	0.30	3
3	Tb	159	10,025,475.89	1.07	79.9	Analog	0.30	3
3	Bi	209	4,983,637.77	1.21	68.0	Analog	0.30	3

Quantitation Report

File Name	A0219025.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:14
Sample Name	N022985-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.788E-06	Pulse	0.30	3
Na	23	45	2	650264.599	ppb	0.63	861,405,676.05	8.144E+03	Analog	0.30	3
Mg	26	45	2	1930.978	ppb	0.41	234,410.05	2.216E+00	Pulse	0.30	3
Al	27	45	2	0.965	ppb	17.43	569.99	5.386E-03	Pulse	0.30	3
K	39	45	2	5594.851	ppb	1.25	2,332,496.87	2.205E+01	Analog	0.30	3
Ca	44	45	3	26012.402	ppb	0.65	52,118,278.67	1.259E+01	Analog	0.30	3
V	51	45	2	0.200	ppb	6.25	2,082.45	1.970E-02	Pulse	0.30	3
Cr	52	45	2	8.909	ppb	0.67	84,733.97	8.011E-01	Pulse	0.30	3
Mn	55	45	2	5.228	ppb	1.27	24,770.91	2.342E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-61,726.51	-5.836E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-635.42	-6.010E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-555.09	-7.431E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,656.34	-2.498E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,121.63	-2.841E-02	Pulse	0.30	3
As	75	72	2	0.257	ppb	18.74	235.30	3.147E-03	Pulse	0.75	3
Se	78	72	1	0.018	ppb	120.83	8.89	9.958E-05	Pulse	0.30	3
Mo	95	103	2	10.684	ppb	1.35	54,354.12	2.386E-02	Pulse	0.30	3
Ag	107	103	3	0.062	ppb	18.39	5,982.68	9.919E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.24	1.660E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,680.16	2.496E-04	Pulse	0.30	3
Ba	137	159	3	3.835	ppb	0.36	63,959.49	6.493E-03	Pulse	0.30	3
Tl	205	209	3	0.120	ppb	0.32	11,400.42	2.391E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,882.49	-1.024E-03	Pulse	0.30	3
U	238	209	3	0.736	ppb	0.58	91,283.64	1.914E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,275,817.58	1.48	73.1	Analog	0.30	3
2	Sc	45	105,778.68	1.94	93.5	Pulse	0.30	3
3	Sc	45	4,141,110.95	0.86	88.6	Analog	0.30	3
1	Ge	72	89,574.25	0.61	81.1	Pulse	0.30	3
2	Ge	72	74,694.61	1.02	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,278,216.82	1.99	74.0	Analog	0.30	3
3	Rh	103	6,036,206.86	1.14	71.9	Analog	0.30	3
3	In	115	6,728,897.19	0.56	75.9	Analog	0.30	3
3	Tb	159	9,850,671.24	0.90	78.5	Analog	0.30	3
3	Bi	209	4,768,408.47	0.57	65.1	Analog	0.30	3

Quantitation Report

File Name	A0219026.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:19
Sample Name	N022985-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.588E-06	Pulse	0.30	3
Na	23	45	2	693680.135	ppb	1.52	960,718,385.69	8.688E+03	Analog	0.30	3
Mg	26	45	2	2046.112	ppb	0.81	259,665.25	2.348E+00	Pulse	0.30	3
Al	27	45	2	0.086	ppb	82.42	395.24	3.574E-03	Pulse	0.30	3
K	39	45	2	5903.083	ppb	2.08	2,572,105.45	2.326E+01	Analog	0.30	3
Ca	44	45	3	26912.427	ppb	0.71	56,945,571.93	1.302E+01	Analog	0.30	3
V	51	45	2	0.212	ppb	11.26	2,261.37	2.046E-02	Pulse	0.30	3
Cr	52	45	2	9.155	ppb	1.27	90,986.03	8.228E-01	Pulse	0.30	3
Mn	55	45	2	5.542	ppb	1.17	27,432.24	2.481E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-70,625.55	-6.387E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-781.76	-7.072E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-612.53	-7.797E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,667.89	-2.759E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,298.66	-1.654E-02	Pulse	0.30	3
As	75	72	2	0.256	ppb	8.90	245.45	3.124E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	86.35	8.89	9.696E-05	Pulse	0.30	3
Mo	95	103	2	11.156	ppb	1.27	58,369.54	2.491E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	852.67	1.386E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	19.13	2.785E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,551.26	2.262E-04	Pulse	0.30	3
Ba	137	159	3	3.926	ppb	0.35	66,583.01	6.647E-03	Pulse	0.30	3
Tl	205	209	3	0.110	ppb	2.99	10,578.67	2.205E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,380.96	-1.539E-03	Pulse	0.30	3
U	238	209	3	0.766	ppb	0.05	95,583.77	1.992E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,317,028.61	0.66	75.5	Analog	0.30	3
2	Sc	45	110,587.59	1.86	97.7	Pulse	0.30	3
3	Sc	45	4,373,659.62	1.11	93.6	Analog	0.30	3
1	Ge	72	91,494.99	0.87	82.9	Pulse	0.30	3
2	Ge	72	78,544.68	1.27	88.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,342,690.16	1.95	76.1	Analog	0.30	3
3	Rh	103	6,163,141.09	0.81	73.4	Analog	0.30	3
3	In	115	6,857,616.19	0.69	77.4	Analog	0.30	3
3	Tb	159	10,017,579.16	0.58	79.9	Analog	0.30	3
3	Bi	209	4,797,225.73	0.32	65.5	Analog	0.30	3

Quantitation Report

File Name	A0219027.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:25
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.794	ppb	0.20	214,411.91	1.203E-01	Pulse	0.30	3
Na	23	45	2	318.930	ppb	4.16	619,389.44	4.881E+00	Pulse	0.30	3
Mg	26	45	2	201.806	ppb	2.83	29,484.36	2.323E-01	Pulse	0.30	3
Al	27	45	2	21.683	ppb	2.25	6,108.42	4.813E-02	Pulse	0.30	3
K	39	45	2	216.515	ppb	2.19	122,970.40	9.690E-01	Pulse	0.30	3
Ca	44	45	3	210.826	ppb	0.65	512,292.58	1.062E-01	Pulse	0.30	3
V	51	45	2	20.162	ppb	0.51	165,689.26	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.058	ppb	1.28	226,524.80	1.785E+00	Pulse	0.30	3
Mn	55	45	2	20.045	ppb	0.93	112,765.74	8.885E-01	Pulse	0.30	3
Fe	56	45	2	20.737	ppb	1.41	195,694.05	1.542E+00	Pulse	0.30	3
Co	59	45	2	20.213	ppb	0.80	443,749.72	3.496E+00	Pulse	0.30	3
Ni	60	72	2	20.095	ppb	0.32	120,245.88	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.807	ppb	0.46	337,381.30	3.420E+00	Pulse	0.30	3
Zn	66	72	2	19.410	ppb	0.76	43,774.08	4.437E-01	Pulse	0.30	3
As	75	72	2	19.976	ppb	0.14	22,915.75	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.741	ppb	2.86	11,840.33	9.475E-02	Pulse	0.30	3
Mo	95	103	2	19.913	ppb	0.79	145,067.89	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.833	ppb	0.71	1,500,405.28	1.776E-01	Analog	0.30	3
Cd	111	115	3	20.785	ppb	0.09	344,649.51	3.866E-02	Pulse	0.30	3
Sb	121	115	3	20.367	ppb	0.73	1,085,414.36	1.218E-01	Pulse	0.30	3
Ba	137	159	3	21.573	ppb	0.70	451,551.30	3.647E-02	Pulse	0.30	3
Tl	205	209	3	20.297	ppb	0.38	2,615,596.45	3.674E-01	Analog	0.30	3
Pb	208	209	3	20.632	ppb	0.80	3,602,895.23	5.061E-01	Analog	0.30	3
U	238	209	3	19.553	ppb	0.55	3,615,642.16	5.079E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,781,878.98	0.52	102.1	Analog	0.30	3
2	Sc	45	126,930.47	1.33	112.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,824,747.46	0.44	103.2	Analog	0.30	3
1	Ge	72	124,959.01	0.64	113.2	Pulse	0.30	3
2	Ge	72	98,656.86	1.16	110.7	Pulse	0.30	3
2	Rh	103	3,262,670.78	1.03	105.9	Analog	0.30	3
3	Rh	103	8,449,640.15	0.41	100.6	Analog	0.30	3
3	In	115	8,914,087.45	0.55	100.6	Analog	0.30	3
3	Tb	159	12,383,373.29	0.80	98.7	Analog	0.30	3
3	Bi	209	7,118,676.84	0.29	97.2	Analog	0.30	3

Quantitation Report

File Name	A0219028.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:30
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	232.31	23.34	1.357E-05	Pulse	0.30	3
Na	23	45	2	76.375	ppb	6.16	219,270.91	1.843E+00	Pulse	0.30	3
Mg	26	45	2	0.043	ppb	374.73	105.56	8.867E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	371.13	3.120E-03	Pulse	0.30	3
K	39	45	2	9.246	ppb	7.56	18,621.12	1.565E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,071.65	3.703E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	610.04	5.126E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,338.77	1.124E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	297.25	2.494E-03	Pulse	0.30	3
Fe	56	45	2	0.025	ppb	25.45	2,492.79	2.095E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.32	2.125E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	70.87	7.432E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	755.19	7.943E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	485.86	5.099E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	86.51	33.33	3.494E-04	Pulse	0.75	3
Se	78	72	1	0.015	ppb	113.87	10.00	8.379E-05	Pulse	0.30	3
Mo	95	103	2	0.126	ppb	14.25	904.51	2.892E-04	Pulse	0.30	3
Ag	107	103	3	0.442	ppb	13.09	35,985.06	4.381E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	4.87	5.649E-07	Pulse	0.30	3
Sb	121	115	3	0.057	ppb	7.88	5,378.91	6.246E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	12.11	292.92	2.424E-05	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	10.57	3,687.29	5.317E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,251.16	1.804E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	8.46	837.32	1.207E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,715,630.93	0.95	98.3	Analog	0.30	3
2	Sc	45	118,989.40	1.73	105.1	Pulse	0.30	3
3	Sc	45	4,610,525.35	0.18	98.7	Analog	0.30	3
1	Ge	72	120,040.27	0.87	108.7	Pulse	0.30	3

2	Ge	72	95,257.46	1.62	106.9	Pulse	0.30	3
2	Rh	103	3,125,253.11	1.04	101.5	Analog	0.30	3
3	Rh	103	8,215,051.89	0.63	97.8	Analog	0.30	3
3	In	115	8,612,108.42	0.12	97.2	Analog	0.30	3
3	Tb	159	12,082,911.63	0.24	96.3	Analog	0.30	3
3	Bi	209	6,936,292.88	0.33	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219029.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:36
Sample Name	MB-61302,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.319E-06	Pulse	0.30	3
Na	23	45	2	40.078	ppb	9.63	161,116.14	1.389E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	43.33	3.739E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.24	2.690E-03	Pulse	0.30	3
K	39	45	2	6.391	ppb	17.33	16,860.29	1.453E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	12,600.86	2.807E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	648.94	5.591E-03	Pulse	0.30	3
Cr	52	45	2	0.027	ppb	73.28	2,018.94	1.741E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	204.96	1.765E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,958.21	1.687E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.72	1.616E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	126.54	1.368E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	628.89	6.781E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	388.29	4.184E-03	Pulse	0.30	3
As	75	72	2	0.000	ppb	850.97	14.67	1.583E-04	Pulse	0.75	3
Se	78	72	1	0.006	ppb	155.20	4.44	3.880E-05	Pulse	0.30	3
Mo	95	103	2	0.037	ppb	18.89	275.57	8.988E-05	Pulse	0.30	3
Ag	107	103	3	0.055	ppb	6.91	7,458.67	9.254E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	8.73	1.031E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,234.72	2.633E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	113.91	9.579E-06	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	6.73	2,755.93	4.011E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,123.81	1.636E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	189.87	2.763E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,680,580.88	0.79	96.3	Analog	0.30	3
2	Sc	45	116,037.80	1.28	102.5	Pulse	0.30	3
3	Sc	45	4,490,004.55	0.78	96.1	Analog	0.30	3
1	Ge	72	115,032.52	0.97	104.2	Pulse	0.30	3

2	Ge	72	92,775.19	0.89	104.1	Pulse	0.30	3
2	Rh	103	3,066,529.19	0.52	99.5	Analog	0.30	3
3	Rh	103	8,060,372.03	0.43	96.0	Analog	0.30	3
3	In	115	8,487,645.79	0.45	95.8	Analog	0.30	3
3	Tb	159	11,890,521.21	0.84	94.8	Analog	0.30	3
3	Bi	209	6,870,824.97	0.20	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219030.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:41
Sample Name	LCS-61302,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.545	ppb	0.99	102,183.49	5.803E-02	Pulse	0.30	3
Na	23	45	2	345.165	ppb	2.18	675,847.30	5.209E+00	Pulse	0.30	3
Mg	26	45	2	102.616	ppb	1.25	15,382.01	1.186E-01	Pulse	0.30	3
Al	27	45	2	199.844	ppb	2.08	53,931.47	4.157E-01	Pulse	0.30	3
K	39	45	2	107.012	ppb	1.78	70,027.18	5.397E-01	Pulse	0.30	3
Ca	44	45	3	113.251	ppb	0.80	286,810.63	5.899E-02	Pulse	0.30	3
V	51	45	2	9.730	ppb	1.10	82,193.49	6.335E-01	Pulse	0.30	3
Cr	52	45	2	9.612	ppb	2.63	111,961.16	8.631E-01	Pulse	0.30	3
Mn	55	45	2	98.037	ppb	1.25	562,076.25	4.332E+00	Pulse	0.30	3
Fe	56	45	2	104.861	ppb	1.58	1,001,474.76	7.719E+00	Pulse	0.30	3
Co	59	45	2	9.573	ppb	1.43	214,838.88	1.656E+00	Pulse	0.30	3
Ni	60	72	2	9.728	ppb	0.93	60,065.12	5.916E-01	Pulse	0.30	3
Cu	63	72	2	9.874	ppb	0.89	168,116.97	1.656E+00	Pulse	0.30	3
Zn	66	72	2	93.352	ppb	1.32	204,798.70	2.017E+00	Pulse	0.30	3
As	75	72	2	9.494	ppb	0.61	11,217.73	1.105E-01	Pulse	0.75	3
Se	78	72	1	8.769	ppb	4.05	5,710.14	4.434E-02	Pulse	0.30	3
Mo	95	103	2	9.993	ppb	1.77	74,722.37	2.231E-02	Pulse	0.30	3
Ag	107	103	3	8.079	ppb	4.37	634,211.77	7.259E-02	Pulse	0.30	3
Cd	111	115	3	10.126	ppb	0.96	174,718.74	1.884E-02	Pulse	0.30	3
Sb	121	115	3	10.195	ppb	0.20	566,636.18	6.110E-02	Pulse	0.30	3
Ba	137	159	3	105.811	ppb	0.39	2,319,960.46	1.788E-01	Analog	0.30	3
Tl	205	209	3	9.948	ppb	0.39	1,317,630.80	1.802E-01	Analog	0.30	3
Pb	208	209	3	10.685	ppb	1.00	1,917,698.50	2.623E-01	Pulse	0.30	3
U	238	209	3	9.942	ppb	0.74	1,888,554.18	2.583E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,760,907.80	0.34	100.9	Analog	0.30	3
2	Sc	45	129,767.40	2.19	114.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,862,335.55	0.11	104.0	Analog	0.30	3
1	Ge	72	128,774.75	0.47	116.6	Pulse	0.30	3
2	Ge	72	101,536.96	1.08	114.0	Pulse	0.30	3
2	Rh	103	3,348,327.48	1.12	108.7	Analog	0.30	3
3	Rh	103	8,735,848.20	0.45	104.0	Analog	0.30	3
3	In	115	9,274,588.33	0.28	104.7	Analog	0.30	3
3	Tb	159	12,974,559.39	0.68	103.5	Analog	0.30	3
3	Bi	209	7,312,113.57	0.71	99.8	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219031.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:47
Sample Name	N023107-001C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.039	ppb	13.97	396.69	2.493E-04	Pulse	0.30	3
	Na	23	45	2	19509.394	ppb	0.43	29,323,846.78	2.452E+02	Analog	0.30	3
	Mg	26	45	2	1020.629	ppb	1.57	140,117.67	1.172E+00	Pulse	0.30	3
OLR	Al	27	45	2	1930.746	ppb	1.16	476,771.45	3.987E+00	Pulse	0.30	3
	K	39	45	2	5555.566	ppb	1.51	2,618,610.69	2.190E+01	Analog	0.30	3
	Ca	44	45	3	12269.086	ppb	0.17	27,607,721.81	5.938E+00	Analog	0.30	3
	V	51	45	2	6.890	ppb	2.07	53,876.06	4.506E-01	Pulse	0.30	3
	Cr	52	45	2	6.662	ppb	0.90	72,091.39	6.029E-01	Pulse	0.30	3
	Mn	55	45	2	67.064	ppb	0.49	354,525.94	2.965E+00	Pulse	0.30	3
	Fe	56	45	2	3836.785	ppb	0.88	33,694,932.37	2.818E+02	Analog	0.30	3
	Co	59	45	2	1.285	ppb	2.05	26,605.26	2.225E-01	Pulse	0.30	3
	Ni	60	72	2	17.740	ppb	1.26	99,209.57	1.076E+00	Pulse	0.30	3
	Cu	63	72	2	69.457	ppb	0.79	1,038,811.00	1.127E+01	Pulse	0.30	3
OLR	Zn	66	72	2	485.900	ppb	0.47	955,897.47	1.037E+01	Pulse	0.30	3
	As	75	72	2	3.496	ppb	2.55	3,759.63	4.078E-02	Pulse	0.75	3
	Se	78	72	1	0.237	ppb	24.74	142.23	1.210E-03	Pulse	0.30	3
	Mo	95	103	2	5.465	ppb	1.13	35,994.93	1.221E-02	Pulse	0.30	3
	Ag	107	103	3	0.154	ppb	1.49	14,081.43	1.813E-03	Pulse	0.30	3
	Cd	111	115	3	0.185	ppb	4.66	2,940.21	3.506E-04	Pulse	0.30	3
	Sb	121	115	3	5.724	ppb	1.35	288,724.07	3.443E-02	Pulse	0.30	3
	Ba	137	159	3	1516.844	ppb	0.45	30,732,428.14	2.563E+00	Analog	0.30	3
	Tl	205	209	3	0.090	ppb	2.17	12,278.87	1.851E-03	Pulse	0.30	3
	Pb	208	209	3	14.087	ppb	0.23	2,293,048.38	3.457E-01	Pulse	0.30	3
	U	238	209	3	0.201	ppb	0.80	34,771.32	5.242E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,590,652.23	0.78	91.1	Analog	0.30	3
2	Sc	45	119,594.12	1.65	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,649,080.94	0.21	99.5	Analog	0.30	3
1	Ge	72	117,594.49	0.57	106.5	Pulse	0.30	3
2	Ge	72	92,176.99	1.32	103.5	Pulse	0.30	3
2	Rh	103	2,948,743.60	0.94	95.7	Analog	0.30	3
3	Rh	103	7,768,478.01	0.36	92.5	Analog	0.30	3
3	In	115	8,386,824.54	0.50	94.6	Analog	0.30	3
3	Tb	159	11,990,509.13	0.68	95.6	Analog	0.30	3
3	Bi	209	6,633,490.11	0.43	90.6	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219032.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:53
Sample Name	N023107-001C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

OLR

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	42.34	107.78	6.956E-05	Pulse	0.30	3
Na	23	45	2	4165.341	ppb	2.30	6,070,498.45	5.305E+01	Analog	0.30	3
Mg	26	45	2	213.888	ppb	2.28	28,173.24	2.462E-01	Pulse	0.30	3
Al	27	45	2	405.326	ppb	0.84	96,099.63	8.397E-01	Pulse	0.30	3
K	39	45	2	1224.082	ppb	1.77	562,842.33	4.918E+00	Pulse	0.30	3
Ca	44	45	3	2634.168	ppb	0.90	5,557,049.43	1.278E+00	Analog	0.30	3
V	51	45	2	1.430	ppb	3.74	11,322.10	9.893E-02	Pulse	0.30	3
Cr	52	45	2	1.363	ppb	1.84	15,482.08	1.353E-01	Pulse	0.30	3
Mn	55	45	2	14.384	ppb	2.29	73,061.72	6.385E-01	Pulse	0.30	3
Fe	56	45	2	816.210	ppb	2.07	6,860,874.45	5.995E+01	Analog	0.30	3
Co	59	45	2	0.277	ppb	3.90	5,508.44	4.814E-02	Pulse	0.30	3
Ni	60	72	2	3.616	ppb	1.14	20,320.91	2.218E-01	Pulse	0.30	3
Cu	63	72	2	14.453	ppb	0.55	219,424.58	2.395E+00	Pulse	0.30	3
Zn	66	72	2	107.192	ppb	0.82	211,834.94	2.312E+00	Pulse	0.30	3
As	75	72	2	0.786	ppb	5.24	851.52	9.291E-03	Pulse	0.75	3
Se	78	72	1	0.053	ppb	60.49	32.23	2.792E-04	Pulse	0.30	3
Mo	95	103	2	1.090	ppb	4.57	7,280.89	2.442E-03	Pulse	0.30	3
Ag	107	103	3	0.535	ppb	11.07	40,449.58	5.215E-03	Pulse	0.30	3
Cd	111	115	3	0.039	ppb	20.27	656.11	7.910E-05	Pulse	0.30	3
Sb	121	115	3	1.195	ppb	1.25	61,496.57	7.413E-03	Pulse	0.30	3
Ba	137	159	3	317.691	ppb	0.40	6,290,837.98	5.368E-01	Analog	0.30	3
Tl	205	209	3	0.016	ppb	7.94	3,397.20	5.060E-04	Pulse	0.30	3
Pb	208	209	3	2.917	ppb	1.30	482,203.38	7.183E-02	Pulse	0.30	3
U	238	209	3	0.041	ppb	0.40	7,271.41	1.083E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,998.40	0.74	88.8	Analog	0.30	3
2	Sc	45	114,462.10	1.89	101.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,347,583.06	0.96	93.0	Analog	0.30	3
1	Ge	72	115,189.93	0.64	104.3	Pulse	0.30	3
2	Ge	72	91,635.93	0.44	102.9	Pulse	0.30	3
2	Rh	103	2,981,445.96	1.15	96.8	Analog	0.30	3
3	Rh	103	7,758,476.90	0.81	92.4	Analog	0.30	3
3	In	115	8,296,337.59	0.45	93.6	Analog	0.30	3
3	Tb	159	11,718,333.16	0.62	93.4	Analog	0.30	3
3	Bi	209	6,713,791.22	1.18	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219033.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:58
Sample Name	N023107-001C-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.289	ppb	0.68	90,811.23	5.647E-02	Pulse	0.30	3
	Na	23	45	2	19048.672	ppb	1.92	29,410,389.28	2.394E+02	Analog	0.30	3
	Mg	26	45	2	1078.775	ppb	0.67	152,113.24	1.238E+00	Pulse	0.30	3
OLR	Al	27	45	2	2034.795	ppb	0.52	516,099.36	4.202E+00	Pulse	0.30	3
	K	39	45	2	5491.315	ppb	1.56	2,658,857.60	2.164E+01	Analog	0.30	3
	Ca	44	45	3	12122.607	ppb	0.87	27,821,909.59	5.867E+00	Analog	0.30	3
	V	51	45	2	16.224	ppb	0.98	129,190.69	1.052E+00	Pulse	0.30	3
	Cr	52	45	2	15.485	ppb	0.80	169,670.44	1.381E+00	Pulse	0.30	3
	Mn	55	45	2	158.326	ppb	1.26	859,115.83	6.994E+00	Pulse	0.30	3
	Fe	56	45	2	3754.480	ppb	1.03	33,867,388.91	2.757E+02	Analog	0.30	3
	Co	59	45	2	10.237	ppb	0.79	217,512.58	1.771E+00	Pulse	0.30	3
	Ni	60	72	2	26.785	ppb	0.25	152,787.10	1.624E+00	Pulse	0.30	3
	Cu	63	72	2	77.997	ppb	1.05	1,190,125.76	1.265E+01	Pulse	0.30	3
OLR	Zn	66	72	2	560.945	ppb	0.86	1,126,107.91	1.197E+01	Pulse	0.30	3
	As	75	72	2	12.898	ppb	1.40	14,117.82	1.500E-01	Pulse	0.75	3
	Se	78	72	1	8.344	ppb	5.36	5,102.16	4.219E-02	Pulse	0.30	3
	Mo	95	103	2	15.320	ppb	0.92	103,483.70	3.421E-02	Pulse	0.30	3
	Ag	107	103	3	7.465	ppb	5.66	532,645.82	6.711E-02	Pulse	0.30	3
	Cd	111	115	3	9.943	ppb	0.82	158,428.47	1.850E-02	Pulse	0.30	3
	Sb	121	115	3	15.533	ppb	0.91	795,839.07	9.293E-02	Pulse	0.30	3
	Ba	137	159	3	1499.852	ppb	0.91	31,052,399.50	2.534E+00	Analog	0.30	3
	Tl	205	209	3	10.039	ppb	0.71	1,226,949.89	1.818E-01	Pulse	0.30	3
	Pb	208	209	3	23.364	ppb	0.69	3,866,944.69	5.731E-01	Analog	0.30	3
	U	238	209	3	10.249	ppb	0.31	1,796,441.04	2.662E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,608,139.56	1.00	92.1	Analog	0.30	3
2	Sc	45	122,833.82	0.76	108.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,742,074.86	1.34	101.5	Analog	0.30	3
1	Ge	72	120,931.97	0.15	109.5	Pulse	0.30	3
2	Ge	72	94,099.68	1.12	105.6	Pulse	0.30	3
2	Rh	103	3,025,029.26	1.71	98.2	Analog	0.30	3
3	Rh	103	7,937,392.73	0.35	94.5	Analog	0.30	3
3	In	115	8,564,090.04	0.85	96.6	Analog	0.30	3
3	Tb	159	12,252,784.96	0.61	97.7	Analog	0.30	3
3	Bi	209	6,747,435.39	0.45	92.1	Analog	0.30	3

Quantitation Report

File Name	A0219034.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:04
Sample Name	N023107-001C-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.582	ppb	0.16	92,901.29	5.825E-02	Pulse	0.30	3
	Na	23	45	2	18341.761	ppb	0.20	28,395,759.30	2.306E+02	Analog	0.30	3
	Mg	26	45	2	1044.347	ppb	0.61	147,639.20	1.199E+00	Pulse	0.30	3
OLR	Al	27	45	2	1986.939	ppb	0.94	505,225.00	4.103E+00	Pulse	0.30	3
	K	39	45	2	5362.788	ppb	0.61	2,603,387.31	2.114E+01	Analog	0.30	3
	Ca	44	45	3	11687.298	ppb	0.42	27,056,808.21	5.657E+00	Analog	0.30	3
	V	51	45	2	16.310	ppb	0.80	130,200.37	1.057E+00	Pulse	0.30	3
	Cr	52	45	2	15.565	ppb	0.64	170,966.40	1.388E+00	Pulse	0.30	3
	Mn	55	45	2	159.125	ppb	0.14	865,673.98	7.030E+00	Pulse	0.30	3
	Fe	56	45	2	3635.805	ppb	0.60	32,879,687.06	2.670E+02	Analog	0.30	3
	Co	59	45	2	10.423	ppb	0.75	222,017.81	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.424	ppb	0.68	150,655.89	1.602E+00	Pulse	0.30	3
	Cu	63	72	2	76.588	ppb	0.71	1,168,237.27	1.242E+01	Pulse	0.30	3
OLR	Zn	66	72	2	548.298	ppb	0.45	1,100,286.48	1.170E+01	Pulse	0.30	3
	As	75	72	2	12.765	ppb	1.00	13,966.62	1.485E-01	Pulse	0.75	3
	Se	78	72	1	8.580	ppb	3.26	5,241.10	4.338E-02	Pulse	0.30	3
	Mo	95	103	2	15.703	ppb	0.29	105,860.69	3.506E-02	Pulse	0.30	3
	Ag	107	103	3	8.498	ppb	2.36	608,852.96	7.633E-02	Pulse	0.30	3
	Cd	111	115	3	10.094	ppb	1.17	161,921.78	1.878E-02	Pulse	0.30	3
	Sb	121	115	3	15.516	ppb	0.39	800,431.39	9.283E-02	Pulse	0.30	3
	Ba	137	159	3	1511.671	ppb	0.21	31,071,170.28	2.554E+00	Analog	0.30	3
	Tl	205	209	3	10.293	ppb	0.29	1,249,439.76	1.864E-01	Pulse	0.30	3
	Pb	208	209	3	23.334	ppb	0.68	3,836,010.73	5.724E-01	Analog	0.30	3
	U	238	209	3	10.225	ppb	1.12	1,780,229.79	2.656E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,766.60	0.62	91.4	Analog	0.30	3
2	Sc	45	123,149.68	1.24	108.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,782,904.58	0.47	102.3	Analog	0.30	3
1	Ge	72	120,825.62	1.00	109.4	Pulse	0.30	3
2	Ge	72	94,057.39	1.15	105.6	Pulse	0.30	3
2	Rh	103	3,019,309.61	1.44	98.0	Analog	0.30	3
3	Rh	103	7,975,857.24	0.58	95.0	Analog	0.30	3
3	In	115	8,622,350.72	0.36	97.3	Analog	0.30	3
3	Tb	159	12,164,031.48	0.83	97.0	Analog	0.30	3
3	Bi	209	6,702,085.87	0.91	91.5	Analog	0.30	3

Quantitation Report

File Name	A0219035.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:09
Sample Name	N023107-001C-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.644	ppb	0.69	94,079.85	5.863E-02	Pulse	0.30	3
	Na	23	45	2	18324.680	ppb	0.54	28,860,210.68	2.304E+02	Analog	0.30	3
	Mg	26	45	2	1050.555	ppb	0.65	151,085.21	1.206E+00	Pulse	0.30	3
OLR	Al	27	45	2	1997.576	ppb	0.32	516,755.85	4.125E+00	Pulse	0.30	3
	K	39	45	2	5337.619	ppb	1.72	2,636,247.35	2.104E+01	Analog	0.30	3
	Ca	44	45	3	11786.686	ppb	0.44	27,420,781.82	5.705E+00	Analog	0.30	3
	V	51	45	2	16.322	ppb	0.82	132,554.51	1.058E+00	Pulse	0.30	3
	Cr	52	45	2	15.490	ppb	0.85	173,090.00	1.382E+00	Pulse	0.30	3
	Mn	55	45	2	158.765	ppb	0.14	878,675.24	7.014E+00	Pulse	0.30	3
	Fe	56	45	2	3648.059	ppb	0.14	33,563,158.28	2.679E+02	Analog	0.30	3
	Co	59	45	2	10.422	ppb	0.30	225,843.85	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.063	ppb	0.54	152,317.68	1.580E+00	Pulse	0.30	3
	Cu	63	72	2	75.601	ppb	0.87	1,182,063.53	1.226E+01	Pulse	0.30	3
OLR	Zn	66	72	2	541.622	ppb	1.39	1,113,963.91	1.156E+01	Pulse	0.30	3
	As	75	72	2	12.585	ppb	0.77	14,112.51	1.464E-01	Pulse	0.75	3
	Se	78	72	1	8.768	ppb	0.33	5,365.57	4.433E-02	Pulse	0.30	3
	Mo	95	103	2	15.671	ppb	0.52	107,365.89	3.499E-02	Pulse	0.30	3
	Ag	107	103	3	8.521	ppb	2.91	613,080.41	7.654E-02	Pulse	0.30	3
	Cd	111	115	3	10.142	ppb	0.60	163,126.14	1.887E-02	Pulse	0.30	3
	Sb	121	115	3	15.603	ppb	0.74	807,060.82	9.335E-02	Pulse	0.30	3
	Ba	137	159	3	1517.472	ppb	0.30	31,407,455.10	2.564E+00	Analog	0.30	3
	Tl	205	209	3	10.308	ppb	0.18	1,255,185.22	1.867E-01	Pulse	0.30	3
	Pb	208	209	3	23.292	ppb	0.53	3,840,975.20	5.714E-01	Analog	0.30	3
	U	238	209	3	10.154	ppb	1.09	1,773,199.23	2.638E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,632.24	0.40	91.9	Analog	0.30	3
2	Sc	45	125,280.62	1.07	110.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,806,488.54	0.44	102.8	Analog	0.30	3
1	Ge	72	121,023.80	0.37	109.6	Pulse	0.30	3
2	Ge	72	96,408.68	1.59	108.2	Pulse	0.30	3
2	Rh	103	3,068,662.07	1.51	99.6	Analog	0.30	3
3	Rh	103	8,009,303.22	0.20	95.4	Analog	0.30	3
3	In	115	8,645,523.06	0.58	97.6	Analog	0.30	3
3	Tb	159	12,248,633.70	0.38	97.7	Analog	0.30	3
3	Bi	209	6,722,614.97	0.29	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219036.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:15
Sample Name	N023107-002C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.022	ppb	23.65	234.46	1.453E-04	Pulse	0.30	3
	Na	23	45	2	13216.677	ppb	0.46	21,009,201.91	1.664E+02	Analog	0.30	3
OLR	Mg	26	45	2	434.833	ppb	0.50	63,086.34	4.997E-01	Pulse	0.30	3
	Al	27	45	2	878.927	ppb	0.97	229,381.36	1.817E+00	Pulse	0.30	3
	K	39	45	2	3532.848	ppb	1.49	1,763,540.69	1.397E+01	Analog	0.30	3
	Ca	44	45	3	3351.739	ppb	0.28	7,817,937.04	1.625E+00	Analog	0.30	3
	V	51	45	2	13.877	ppb	0.71	113,706.51	9.006E-01	Pulse	0.30	3
	Cr	52	45	2	5.068	ppb	1.77	58,345.91	4.622E-01	Pulse	0.30	3
	Mn	55	45	2	50.738	ppb	0.26	283,273.71	2.244E+00	Pulse	0.30	3
	Fe	56	45	2	2370.001	ppb	0.84	21,974,477.51	1.741E+02	Analog	0.30	3
	Co	59	45	2	0.771	ppb	2.02	16,860.31	1.336E-01	Pulse	0.30	3
	Ni	60	72	2	15.946	ppb	0.59	93,782.54	9.678E-01	Pulse	0.30	3
	Cu	63	72	2	55.620	ppb	0.37	875,759.93	9.038E+00	Pulse	0.30	3
OLR	Zn	66	72	2	395.772	ppb	0.48	819,062.82	8.453E+00	Pulse	0.30	3
	As	75	72	2	2.275	ppb	0.57	2,576.50	2.659E-02	Pulse	0.75	3
	Se	78	72	1	0.118	ppb	14.33	75.56	6.070E-04	Pulse	0.30	3
	Mo	95	103	2	2.707	ppb	1.09	18,849.55	6.051E-03	Pulse	0.30	3
	Ag	107	103	3	0.170	ppb	0.31	16,048.51	1.957E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-331.12	-3.775E-05	Pulse	0.30	3
	Sb	121	115	3	27.422	ppb	1.74	1,437,461.96	1.638E-01	Analog	0.30	3
	Ba	137	159	3	423.884	ppb	0.74	8,836,352.66	7.163E-01	Analog	0.30	3
	Tl	205	209	3	0.082	ppb	4.70	11,420.39	1.698E-03	Pulse	0.30	3
	Pb	208	209	3	10.369	ppb	0.81	1,711,882.78	2.545E-01	Pulse	0.30	3
	U	238	209	3	0.090	ppb	1.67	15,877.07	2.360E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,615,750.94	1.61	92.6	Analog	0.30	3
2	Sc	45	126,255.55	1.39	111.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,810,082.05	0.77	102.9	Analog	0.30	3
1	Ge	72	124,560.53	1.35	112.8	Pulse	0.30	3
2	Ge	72	96,904.32	1.00	108.8	Pulse	0.30	3
2	Rh	103	3,114,711.34	1.29	101.1	Analog	0.30	3
3	Rh	103	8,200,317.52	0.33	97.7	Analog	0.30	3
3	In	115	8,774,015.03	1.20	99.0	Analog	0.30	3
3	Tb	159	12,336,499.54	0.35	98.4	Analog	0.30	3
3	Bi	209	6,726,190.18	1.11	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219037.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:20
Sample Name	N023107-003C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.024	ppb	23.25	250.01	1.559E-04	Pulse	0.30	3
	Na	23	45	2	11520.563	ppb	0.61	18,258,328.48	1.452E+02	Analog	0.30	3
	Mg	26	45	2	560.740	ppb	0.40	81,016.85	6.441E-01	Pulse	0.30	3
OLR	Al	27	45	2	807.278	ppb	1.04	209,924.41	1.669E+00	Pulse	0.30	3
	K	39	45	2	2913.126	ppb	0.58	1,451,393.00	1.154E+01	Analog	0.30	3
	Ca	44	45	3	4681.658	ppb	0.94	10,781,309.15	2.269E+00	Analog	0.30	3
	V	51	45	2	9.638	ppb	1.01	78,938.35	6.276E-01	Pulse	0.30	3
	Cr	52	45	2	3.893	ppb	1.03	45,093.97	3.585E-01	Pulse	0.30	3
	Mn	55	45	2	43.407	ppb	1.47	241,479.98	1.920E+00	Pulse	0.30	3
	Fe	56	45	2	2717.071	ppb	0.83	25,098,937.07	1.995E+02	Analog	0.30	3
	Co	59	45	2	0.843	ppb	1.59	18,375.01	1.461E-01	Pulse	0.30	3
	Ni	60	72	2	5.749	ppb	0.61	33,898.97	3.508E-01	Pulse	0.30	3
	Cu	63	72	2	45.954	ppb	0.81	722,606.77	7.478E+00	Pulse	0.30	3
OLR	Zn	66	72	2	295.378	ppb	0.30	610,394.58	6.316E+00	Pulse	0.30	3
	As	75	72	2	4.161	ppb	1.80	4,686.73	4.850E-02	Pulse	0.75	3
	Se	78	72	1	0.110	ppb	39.51	71.11	5.658E-04	Pulse	0.30	3
	Mo	95	103	2	1.839	ppb	1.78	12,722.27	4.114E-03	Pulse	0.30	3
	Ag	107	103	3	0.058	ppb	6.22	7,757.39	9.573E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-657.07	-7.561E-05	Pulse	0.30	3
	Sb	121	115	3	2.417	ppb	0.37	127,772.73	1.470E-02	Pulse	0.30	3
	Ba	137	159	3	453.564	ppb	0.67	9,285,531.34	7.664E-01	Analog	0.30	3
	Tl	205	209	3	0.056	ppb	4.43	8,178.13	1.233E-03	Pulse	0.30	3
	Pb	208	209	3	5.996	ppb	0.89	976,865.92	1.473E-01	Pulse	0.30	3
	U	238	209	3	0.066	ppb	3.21	11,608.55	1.751E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,197.95	0.61	91.9	Analog	0.30	3
2	Sc	45	125,781.66	0.86	111.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,752,729.44	0.83	101.7	Analog	0.30	3
1	Ge	72	125,544.32	0.74	113.7	Pulse	0.30	3
2	Ge	72	96,639.84	1.09	108.5	Pulse	0.30	3
2	Rh	103	3,092,595.41	0.82	100.4	Analog	0.30	3
3	Rh	103	8,103,391.55	0.20	96.5	Analog	0.30	3
3	In	115	8,689,928.45	0.19	98.1	Analog	0.30	3
3	Tb	159	12,115,474.40	0.46	96.6	Analog	0.30	3
3	Bi	209	6,632,214.07	1.13	90.5	Analog	0.30	3

Quantitation Report

File Name	A0219038.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:26
Sample Name	N023107-004C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	147.66	27.78	1.693E-05	Pulse	0.30	3
	Na	23	45	2	2459.087	ppb	0.78	4,007,503.79	3.168E+01	Analog	0.30	3
	Mg	26	45	2	219.266	ppb	2.85	31,922.19	2.524E-01	Pulse	0.30	3
	Al	27	45	2	93.057	ppb	5.05	24,712.23	1.954E-01	Pulse	0.30	3
	K	39	45	2	805.312	ppb	0.78	414,496.63	3.277E+00	Pulse	0.30	3
	Ca	44	45	3	3593.764	ppb	0.67	8,275,001.27	1.742E+00	Analog	0.30	3
	V	51	45	2	0.711	ppb	2.94	6,653.83	5.260E-02	Pulse	0.30	3
	Cr	52	45	2	5.572	ppb	1.05	64,087.09	5.066E-01	Pulse	0.30	3
	Mn	55	45	2	17.283	ppb	1.09	96,953.24	7.665E-01	Pulse	0.30	3
	Fe	56	45	2	302.554	ppb	1.47	2,812,531.84	2.224E+01	Analog	0.30	3
	Co	59	45	2	0.164	ppb	0.69	3,615.90	2.858E-02	Pulse	0.30	3
	Ni	60	72	2	7.140	ppb	0.51	43,216.82	4.350E-01	Pulse	0.30	3
	Cu	63	72	2	9.123	ppb	1.22	152,438.10	1.534E+00	Pulse	0.30	3
OLR	Zn	66	72	2	224.355	ppb	0.86	477,357.87	4.805E+00	Pulse	0.30	3
	As	75	72	2	1.010	ppb	1.34	1,180.86	1.189E-02	Pulse	0.75	3
	Se	78	72	1	0.114	ppb	22.60	76.67	5.873E-04	Pulse	0.30	3
	Mo	95	103	2	0.591	ppb	5.46	4,263.00	1.327E-03	Pulse	0.30	3
	Ag	107	103	3	0.021	ppb	10.06	5,183.96	6.198E-04	Pulse	0.30	3
	Cd	111	115	3	0.100	ppb	2.07	1,699.83	1.925E-04	Pulse	0.30	3
	Sb	121	115	3	2.160	ppb	0.81	116,247.37	1.317E-02	Pulse	0.30	3
	Ba	137	159	3	86.379	ppb	0.44	1,788,487.21	1.460E-01	Analog	0.30	3
	Tl	205	209	3	0.041	ppb	4.47	6,435.02	9.496E-04	Pulse	0.30	3
	Pb	208	209	3	1.129	ppb	1.23	189,710.15	2.799E-02	Pulse	0.30	3
	U	238	209	3	0.010	ppb	8.19	1,981.64	2.925E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,638,775.80	0.59	93.9	Analog	0.30	3
2	Sc	45	126,495.34	1.03	111.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,749,382.19	0.73	101.6	Analog	0.30	3
1	Ge	72	130,472.11	0.35	118.2	Pulse	0.30	3
2	Ge	72	99,355.46	1.37	111.5	Pulse	0.30	3
2	Rh	103	3,212,644.95	1.08	104.3	Analog	0.30	3
3	Rh	103	8,363,344.67	0.30	99.6	Analog	0.30	3
3	In	115	8,829,257.25	0.36	99.6	Analog	0.30	3
3	Tb	159	12,252,364.96	0.71	97.7	Analog	0.30	3
3	Bi	209	6,777,691.63	1.04	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219039.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:31
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.688	ppb	0.65	188,122.84	1.197E-01	Pulse	0.30	3
Na	23	45	2	202.417	ppb	3.55	404,971.81	3.422E+00	Pulse	0.30	3
Mg	26	45	2	196.725	ppb	1.08	26,814.38	2.265E-01	Pulse	0.30	3
Al	27	45	2	21.614	ppb	4.20	5,678.54	4.799E-02	Pulse	0.30	3
K	39	45	2	209.229	ppb	3.80	111,284.40	9.404E-01	Pulse	0.30	3
Ca	44	45	3	211.944	ppb	0.52	467,149.56	1.067E-01	Pulse	0.30	3
V	51	45	2	20.053	ppb	1.72	153,686.83	1.298E+00	Pulse	0.30	3
Cr	52	45	2	19.746	ppb	1.57	207,995.73	1.757E+00	Pulse	0.30	3
Mn	55	45	2	20.156	ppb	0.97	105,756.72	8.934E-01	Pulse	0.30	3
Fe	56	45	2	20.830	ppb	2.82	183,293.49	1.549E+00	Pulse	0.30	3
Co	59	45	2	19.990	ppb	1.42	409,281.74	3.458E+00	Pulse	0.30	3
Ni	60	72	2	19.379	ppb	0.73	110,063.84	1.176E+00	Pulse	0.30	3
Cu	63	72	2	20.252	ppb	0.43	311,810.56	3.330E+00	Pulse	0.30	3
Zn	66	72	2	19.198	ppb	0.57	41,122.99	4.392E-01	Pulse	0.30	3
As	75	72	2	19.750	ppb	0.43	21,501.82	2.296E-01	Pulse	0.75	3
Se	78	72	1	19.048	ppb	1.09	11,630.23	9.630E-02	Pulse	0.30	3
Mo	95	103	2	19.815	ppb	0.82	136,309.08	4.424E-02	Pulse	0.30	3
Ag	107	103	3	20.027	ppb	0.30	1,443,869.29	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.709	ppb	0.26	328,451.00	3.852E-02	Pulse	0.30	3
Sb	121	115	3	20.505	ppb	0.66	1,045,211.65	1.226E-01	Pulse	0.30	3
Ba	137	159	3	21.759	ppb	0.36	434,082.71	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.250	ppb	0.66	2,515,616.78	3.666E-01	Analog	0.30	3
Pb	208	209	3	20.649	ppb	0.70	3,476,109.05	5.065E-01	Analog	0.30	3
U	238	209	3	19.562	ppb	0.55	3,487,010.81	5.081E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,571,817.70	0.54	90.1	Analog	0.30	3
2	Sc	45	118,396.37	2.30	104.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,377,428.10	0.83	93.7	Analog	0.30	3
1	Ge	72	120,769.56	0.80	109.4	Pulse	0.30	3
2	Ge	72	93,631.35	0.89	105.1	Pulse	0.30	3
2	Rh	103	3,080,994.47	0.73	100.0	Analog	0.30	3
3	Rh	103	8,052,352.52	0.29	95.9	Analog	0.30	3
3	In	115	8,526,113.91	0.39	96.2	Analog	0.30	3
3	Tb	159	11,802,323.99	0.93	94.1	Analog	0.30	3
3	Bi	209	6,862,468.09	0.51	93.7	Analog	0.30	3

Quantitation Report

File Name	A0219040.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:37
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	103.27	25.56	1.659E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	99,480.76	8.744E-01	Pulse	0.30	3
Mg	26	45	2	0.230	ppb	62.68	125.56	1.101E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.23	2.742E-03	Pulse	0.30	3
K	39	45	2	2.282	ppb	37.02	14,702.60	1.292E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,965.21	3.745E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	5.600E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,138.87	1.001E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	270.08	2.369E-03	Pulse	0.30	3
Fe	56	45	2	0.085	ppb	8.29	2,888.56	2.538E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	53.54	34.33	3.014E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	68.75	7.512E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,174.80	1.285E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	365.07	3.990E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	168.15	17.33	1.896E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	45.75	12.22	1.044E-04	Pulse	0.30	3
Mo	95	103	2	0.112	ppb	2.27	791.17	2.582E-04	Pulse	0.30	3
Ag	107	103	3	0.520	ppb	11.33	40,375.60	5.080E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	48.44	5.769E-06	Pulse	0.30	3
Sb	121	115	3	0.058	ppb	0.68	5,296.69	6.316E-04	Pulse	0.30	3
Ba	137	159	3	0.024	ppb	7.66	641.51	5.438E-05	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	18.67	2,256.95	3.315E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,554.34	2.283E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	12.59	754.02	1.107E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,804.95	0.76	88.1	Analog	0.30	3
2	Sc	45	113,808.15	1.91	100.6	Pulse	0.30	3
3	Sc	45	4,263,224.59	0.78	91.2	Analog	0.30	3
1	Ge	72	116,954.37	0.46	105.9	Pulse	0.30	3

2	Ge	72	91,488.13	0.72	102.7	Pulse	0.30	3
2	Rh	103	3,064,233.63	1.39	99.5	Analog	0.30	3
3	Rh	103	7,948,730.64	0.20	94.7	Analog	0.30	3
3	In	115	8,385,445.21	0.54	94.6	Analog	0.30	3
3	Tb	159	11,795,585.38	0.26	94.1	Analog	0.30	3
3	Bi	209	6,810,085.11	0.43	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219041.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:42
Sample Name	N023137-001A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	16.77	83.33	5.396E-05	Pulse	0.30	3
	Na	23	45	2	2140.859	ppb	1.36	3,269,645.47	2.770E+01	Analog	0.30	3
	Mg	26	45	2	1031.467	ppb	0.96	139,789.97	1.184E+00	Pulse	0.30	3
OLR	Al	27	45	2	203.316	ppb	1.56	49,920.40	4.229E-01	Pulse	0.30	3
	K	39	45	2	1030.442	ppb	0.55	491,044.05	4.159E+00	Pulse	0.30	3
	Ca	44	45	3	12325.137	ppb	0.61	25,989,299.34	5.965E+00	Analog	0.30	3
	V	51	45	2	2.210	ppb	1.52	17,611.12	1.492E-01	Pulse	0.30	3
	Cr	52	45	2	0.832	ppb	16.71	10,450.75	8.844E-02	Pulse	0.30	3
	Mn	55	45	2	9.308	ppb	1.04	48,925.26	4.144E-01	Pulse	0.30	3
	Fe	56	45	2	231.349	ppb	0.73	2,007,891.11	1.701E+01	Analog	0.30	3
	Co	59	45	2	0.193	ppb	0.68	3,975.32	3.367E-02	Pulse	0.30	3
	Ni	60	72	2	1.904	ppb	1.84	10,900.98	1.181E-01	Pulse	0.30	3
	Cu	63	72	2	13.180	ppb	1.10	202,030.88	2.189E+00	Pulse	0.30	3
	Zn	66	72	2	70.984	ppb	1.65	142,219.93	1.541E+00	Pulse	0.30	3
	As	75	72	2	0.576	ppb	1.85	632.05	6.849E-03	Pulse	0.75	3
	Se	78	72	1	0.124	ppb	29.72	76.67	6.354E-04	Pulse	0.30	3
	Mo	95	103	2	1.269	ppb	2.95	8,620.49	2.840E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-198.76	-2.546E-05	Pulse	0.30	3
	Cd	111	115	3	0.008	ppb	11.72	171.91	2.049E-05	Pulse	0.30	3
	Sb	121	115	3	1.680	ppb	0.54	86,419.33	1.030E-02	Pulse	0.30	3
	Ba	137	159	3	27.941	ppb	0.28	560,873.04	4.723E-02	Pulse	0.30	3
	Tl	205	209	3	0.027	ppb	0.30	4,605.34	6.978E-04	Pulse	0.30	3
	Pb	208	209	3	1.331	ppb	0.79	217,454.83	3.295E-02	Pulse	0.30	3
	U	238	209	3	0.135	ppb	0.46	23,332.70	3.535E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,543,337.27	1.22	88.4	Analog	0.30	3
2	Sc	45	118,062.44	1.13	104.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,356,688.27	0.25	93.2	Analog	0.30	3
1	Ge	72	120,818.38	0.92	109.4	Pulse	0.30	3
2	Ge	72	92,293.73	1.37	103.6	Pulse	0.30	3
2	Rh	103	3,035,606.24	1.04	98.5	Analog	0.30	3
3	Rh	103	7,803,226.76	0.81	92.9	Analog	0.30	3
3	In	115	8,387,919.35	0.51	94.6	Analog	0.30	3
3	Tb	159	11,876,189.96	0.43	94.7	Analog	0.30	3
3	Bi	209	6,600,061.15	0.51	90.1	Analog	0.30	3

Quantitation Report

File Name	A0219042.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:48
Sample Name	N023137-002A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.008	ppb	23.84	87.78	5.835E-05	Pulse	0.30	3
	Na	23	45	2	2325.162	ppb	0.19	3,422,747.62	3.000E+01	Analog	0.30	3
	Mg	26	45	2	1061.363	ppb	0.11	138,987.75	1.218E+00	Pulse	0.30	3
OLR	Al	27	45	2	276.598	ppb	2.17	65,477.68	5.741E-01	Pulse	0.30	3
	K	39	45	2	1230.861	ppb	0.34	564,074.57	4.945E+00	Pulse	0.30	3
	Ca	44	45	3	12176.880	ppb	0.47	24,920,603.79	5.894E+00	Analog	0.30	3
	V	51	45	2	2.350	ppb	0.04	18,043.96	1.582E-01	Pulse	0.30	3
	Cr	52	45	2	0.907	ppb	1.34	10,845.89	9.509E-02	Pulse	0.30	3
	Mn	55	45	2	11.098	ppb	2.19	56,278.80	4.934E-01	Pulse	0.30	3
	Fe	56	45	2	321.610	ppb	4.04	2,696,120.65	2.364E+01	Analog	0.30	3
	Co	59	45	2	0.235	ppb	4.21	4,657.67	4.082E-02	Pulse	0.30	3
	Ni	60	72	2	2.081	ppb	2.15	11,641.72	1.289E-01	Pulse	0.30	3
	Cu	63	72	2	13.651	ppb	0.40	204,605.15	2.265E+00	Pulse	0.30	3
	Zn	66	72	2	78.119	ppb	0.90	152,915.04	1.693E+00	Pulse	0.30	3
	As	75	72	2	0.603	ppb	2.19	647.16	7.166E-03	Pulse	0.75	3
	Se	78	72	1	0.183	ppb	20.91	108.90	9.367E-04	Pulse	0.30	3
	Mo	95	103	2	1.372	ppb	1.38	9,103.01	3.070E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-224.71	-2.947E-05	Pulse	0.30	3
	Cd	111	115	3	0.019	ppb	17.93	333.11	4.046E-05	Pulse	0.30	3
	Sb	121	115	3	2.259	ppb	0.65	113,282.82	1.376E-02	Pulse	0.30	3
	Ba	137	159	3	27.493	ppb	0.36	543,249.24	4.647E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	0.74	4,969.93	7.687E-04	Pulse	0.30	3
	Pb	208	209	3	4.845	ppb	0.97	769,881.55	1.191E-01	Pulse	0.30	3
	U	238	209	3	0.135	ppb	1.28	22,886.48	3.540E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,566.68	0.47	86.2	Analog	0.30	3
2	Sc	45	114,071.78	0.82	100.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,228,342.37	0.21	90.5	Analog	0.30	3
1	Ge	72	116,403.82	0.95	105.4	Pulse	0.30	3
2	Ge	72	90,330.70	1.59	101.4	Pulse	0.30	3
2	Rh	103	2,964,536.42	1.45	96.2	Analog	0.30	3
3	Rh	103	7,628,910.24	0.50	90.9	Analog	0.30	3
3	In	115	8,232,197.23	0.19	92.9	Analog	0.30	3
3	Tb	159	11,690,427.33	0.29	93.2	Analog	0.30	3
3	Bi	209	6,464,892.68	0.75	88.3	Analog	0.30	3

Quantitation Report

File Name	A0219043.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:53
Sample Name	N023137-003A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.015	ppb	9.23	152.23	1.013E-04	Pulse	0.30	3
	Na	23	45	2	3814.152	ppb	0.83	5,510,344.22	4.865E+01	Analog	0.30	3
	Mg	26	45	2	1071.745	ppb	1.27	139,342.66	1.230E+00	Pulse	0.30	3
OLR	Al	27	45	2	504.586	ppb	2.62	118,275.23	1.044E+00	Pulse	0.30	3
	K	39	45	2	1301.836	ppb	2.00	591,520.67	5.223E+00	Pulse	0.30	3
	Ca	44	45	3	8138.466	ppb	0.49	16,715,639.89	3.940E+00	Analog	0.30	3
	V	51	45	2	2.393	ppb	0.88	18,227.79	1.609E-01	Pulse	0.30	3
	Cr	52	45	2	2.776	ppb	7.39	29,424.73	2.600E-01	Pulse	0.30	3
	Mn	55	45	2	27.924	ppb	0.88	140,030.17	1.236E+00	Pulse	0.30	3
	Fe	56	45	2	622.859	ppb	0.64	5,183,063.01	4.576E+01	Analog	0.30	3
	Co	59	45	2	0.741	ppb	0.27	14,536.50	1.283E-01	Pulse	0.30	3
	Ni	60	72	2	6.938	ppb	6.71	37,551.86	4.228E-01	Pulse	0.30	3
	Cu	63	72	2	32.256	ppb	1.49	467,768.37	5.267E+00	Pulse	0.30	3
OLR	Zn	66	72	2	496.990	ppb	0.92	941,971.90	1.061E+01	Pulse	0.30	3
	As	75	72	2	0.526	ppb	0.98	556.49	6.265E-03	Pulse	0.75	3
	Se	78	72	1	0.160	ppb	13.17	95.56	8.197E-04	Pulse	0.30	3
	Mo	95	103	2	5.575	ppb	3.31	36,965.65	1.245E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	102.21	1.327E-05	Pulse	0.30	3
	Cd	111	115	3	0.188	ppb	6.05	2,932.91	3.557E-04	Pulse	0.30	3
	Sb	121	115	3	6.796	ppb	1.27	336,612.84	4.082E-02	Pulse	0.30	3
	Ba	137	159	3	34.150	ppb	0.69	675,315.19	5.772E-02	Pulse	0.30	3
	Tl	205	209	3	0.034	ppb	7.21	5,483.49	8.381E-04	Pulse	0.30	3
	Pb	208	209	3	40.885	ppb	0.64	6,561,138.40	1.003E+00	Analog	0.30	3
	U	238	209	3	0.164	ppb	1.28	28,124.79	4.298E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,104.00	1.23	86.2	Analog	0.30	3
2	Sc	45	113,270.80	1.53	100.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,242,008.31	0.66	90.8	Analog	0.30	3
1	Ge	72	116,556.28	0.59	105.6	Pulse	0.30	3
2	Ge	72	88,817.98	1.37	99.7	Pulse	0.30	3
2	Rh	103	2,969,177.97	1.05	96.4	Analog	0.30	3
3	Rh	103	7,705,187.32	0.10	91.8	Analog	0.30	3
3	In	115	8,246,465.29	0.61	93.1	Analog	0.30	3
3	Tb	159	11,700,553.02	0.56	93.3	Analog	0.30	3
3	Bi	209	6,544,132.12	1.52	89.3	Analog	0.30	3

Quantitation Report

File Name	A0219044.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:59
Sample Name	N023137-004A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.012	ppb	22.75	125.56	8.213E-05	Pulse	0.30	3
	Na	23	45	2	5293.788	ppb	1.15	7,690,138.01	6.718E+01	Analog	0.30	3
	Mg	26	45	2	893.580	ppb	0.34	117,449.31	1.026E+00	Pulse	0.30	3
OLR	Al	27	45	2	510.840	ppb	1.89	121,063.67	1.057E+00	Pulse	0.30	3
	K	39	45	2	1655.259	ppb	0.50	756,518.91	6.608E+00	Pulse	0.30	3
	Ca	44	45	3	9419.663	ppb	0.50	19,575,420.54	4.560E+00	Analog	0.30	3
	V	51	45	2	2.260	ppb	0.55	17,440.95	1.523E-01	Pulse	0.30	3
	Cr	52	45	2	6.699	ppb	13.39	69,494.63	6.061E-01	Pulse	0.30	3
	Mn	55	45	2	41.588	ppb	0.46	210,605.03	1.840E+00	Pulse	0.30	3
	Fe	56	45	2	691.059	ppb	0.98	5,811,147.29	5.076E+01	Analog	0.30	3
	Co	59	45	2	0.696	ppb	2.17	13,815.41	1.207E-01	Pulse	0.30	3
	Ni	60	72	2	15.443	ppb	0.90	84,573.69	9.374E-01	Pulse	0.30	3
	Cu	63	72	2	28.295	ppb	0.46	417,523.48	4.628E+00	Pulse	0.30	3
OLR	Zn	66	72	2	244.149	ppb	0.56	471,455.45	5.226E+00	Pulse	0.30	3
	As	75	72	2	0.490	ppb	3.00	527.22	5.845E-03	Pulse	0.75	3
	Se	78	72	1	0.107	ppb	24.16	65.56	5.509E-04	Pulse	0.30	3
	Mo	95	103	2	7.371	ppb	9.59	49,085.64	1.646E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,372.49	1.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.854	ppb	1.14	13,203.25	1.594E-03	Pulse	0.30	3
	Sb	121	115	3	3.349	ppb	1.82	167,800.22	2.026E-02	Pulse	0.30	3
	Ba	137	159	3	31.650	ppb	0.33	633,301.42	5.349E-02	Pulse	0.30	3
	Tl	205	209	3	0.032	ppb	2.81	5,208.92	8.019E-04	Pulse	0.30	3
	Pb	208	209	3	19.565	ppb	0.77	3,117,926.63	4.800E-01	Analog	0.30	3
	U	238	209	3	0.190	ppb	0.87	32,238.95	4.963E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,527,362.24	1.14	87.5	Analog	0.30	3
2	Sc	45	114,484.55	1.86	101.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,292,714.10	0.15	91.9	Analog	0.30	3
1	Ge	72	118,959.58	0.34	107.7	Pulse	0.30	3
2	Ge	72	90,216.94	1.49	101.3	Pulse	0.30	3
2	Rh	103	2,983,216.66	0.93	96.8	Analog	0.30	3
3	Rh	103	7,750,173.63	0.28	92.3	Analog	0.30	3
3	In	115	8,281,794.92	0.34	93.5	Analog	0.30	3
3	Tb	159	11,838,723.02	0.23	94.4	Analog	0.30	3
3	Bi	209	6,496,317.26	0.61	88.7	Analog	0.30	3

Quantitation Report

File Name	A0219045.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:05
Sample Name	N023138-005A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.056	ppb	4.67	424.47	3.512E-04	Pulse	0.30	3
Na	23	45	2	1249167.705	ppb	0.15	1,589,730,447.42	1.564E+04	Analog	0.30	3
Mg	26	45	2	16891.856	ppb	0.28	1,969,282.80	1.938E+01	Analog	0.30	3
Al	27	45	2	96.154	ppb	2.12	20,503.14	2.018E-01	Pulse	0.30	3
K	39	45	2	12639.038	ppb	0.43	5,046,823.60	4.966E+01	Analog	0.30	3
Ca	44	45	3	28957.208	ppb	0.61	59,827,153.00	1.401E+01	Analog	0.30	3
V	51	45	2	20.905	ppb	0.54	137,523.62	1.353E+00	Pulse	0.30	3
Cr	52	45	2	44.618	ppb	0.34	401,574.23	3.952E+00	Pulse	0.30	3
Mn	55	45	2	22.429	ppb	0.31	100,979.56	9.937E-01	Pulse	0.30	3
Fe	56	45	2	1415.366	ppb	0.04	10,563,458.08	1.040E+02	Analog	0.30	3
Co	59	45	2	0.931	ppb	0.84	16,378.58	1.612E-01	Pulse	0.30	3
Ni	60	72	2	13.858	ppb	2.27	58,703.37	8.415E-01	Pulse	0.30	3
Cu	63	72	2	10.418	ppb	0.70	121,646.30	1.744E+00	Pulse	0.30	3
Zn	66	72	2	305.351	ppb	0.92	455,445.83	6.528E+00	Pulse	0.30	3
As	75	72	2	4.212	ppb	2.74	3,425.18	4.909E-02	Pulse	0.75	3
Se	78	72	1	1.843	ppb	3.52	803.39	9.326E-03	Pulse	0.30	3
Mo	95	103	2	177.054	ppb	1.60	799,142.29	3.952E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	107.74	2.071E-05	Pulse	0.30	3
Cd	111	115	3	11.398	ppb	1.75	124,981.84	2.121E-02	Pulse	0.30	3
Sb	121	115	3	1.496	ppb	0.79	54,263.43	9.206E-03	Pulse	0.30	3
Ba	137	159	3	27.106	ppb	0.35	398,160.53	4.582E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	9.00	1,855.75	4.586E-04	Pulse	0.30	3
Pb	208	209	3	2.549	ppb	0.06	254,204.43	6.280E-02	Pulse	0.30	3
U	238	209	3	7.041	ppb	0.25	740,320.99	1.829E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,209,611.49	2.69	69.3	Analog	0.30	3
2	Sc	45	101,618.97	1.64	89.8	Pulse	0.30	3
3	Sc	45	4,270,436.12	1.40	91.4	Analog	0.30	3
1	Ge	72	86,143.73	0.12	78.0	Pulse	0.30	3
2	Ge	72	69,770.60	1.94	78.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,021,752.90	0.95	65.6	Analog	0.30	3
3	Rh	103	5,223,832.15	0.62	62.2	Analog	0.30	3
3	In	115	5,894,451.98	1.21	66.5	Analog	0.30	3
3	Tb	159	8,690,531.12	1.01	69.3	Analog	0.30	3
3	Bi	209	4,047,551.85	0.82	55.3	Analog	0.30	3

Quantitation Report

File Name	A0219046.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:10
Sample Name	N023138-006A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.026	ppb	13.69	224.46	1.713E-04	Pulse	0.30	3
Na	23	45	2	967508.186	ppb	1.01	1,314,156,104.86	1.212E+04	Analog	0.30	3
Mg	26	45	2	33681.629	ppb	0.41	4,190,723.75	3.864E+01	Analog	0.30	3
Al	27	45	2	59.904	ppb	3.64	13,778.68	1.270E-01	Pulse	0.30	3
K	39	45	2	16795.017	ppb	0.45	7,152,981.07	6.595E+01	Analog	0.30	3
Ca	44	45	3	40200.898	ppb	0.62	91,195,145.31	1.945E+01	Analog	0.30	3
V	51	45	2	25.412	ppb	0.18	178,253.86	1.644E+00	Pulse	0.30	3
Cr	52	45	2	76.531	ppb	0.14	733,960.82	6.767E+00	Pulse	0.30	3
Mn	55	45	2	14.984	ppb	0.42	72,126.00	6.650E-01	Pulse	0.30	3
Fe	56	45	2	324.346	ppb	0.38	2,585,126.89	2.384E+01	Analog	0.30	3
Co	59	45	2	1.010	ppb	1.63	18,974.47	1.750E-01	Pulse	0.30	3
Ni	60	72	2	44.222	ppb	0.93	197,983.37	2.679E+00	Pulse	0.30	3
Cu	63	72	2	19.111	ppb	1.49	232,506.37	3.146E+00	Pulse	0.30	3
Zn	66	72	2	57.061	ppb	1.62	92,000.86	1.245E+00	Pulse	0.30	3
As	75	72	2	2.851	ppb	5.86	2,457.88	3.328E-02	Pulse	0.75	3
Se	78	72	1	2.534	ppb	1.67	1,124.53	1.282E-02	Pulse	0.30	3
Mo	95	103	2	76.239	ppb	0.89	371,318.77	1.702E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,028.39	-5.336E-04	Pulse	0.30	3
Cd	111	115	3	0.233	ppb	2.61	2,787.64	4.385E-04	Pulse	0.30	3
Sb	121	115	3	1.836	ppb	2.42	71,436.97	1.124E-02	Pulse	0.30	3
Ba	137	159	3	59.087	ppb	0.67	926,771.28	9.986E-02	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	4.01	2,927.09	6.454E-04	Pulse	0.30	3
Pb	208	209	3	3.113	ppb	1.01	347,543.26	7.663E-02	Pulse	0.30	3
U	238	209	3	8.001	ppb	0.47	942,755.87	2.079E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,310,892.69	0.97	75.1	Analog	0.30	3
2	Sc	45	108,457.21	2.09	95.8	Pulse	0.30	3
3	Sc	45	4,689,279.03	0.94	100.3	Analog	0.30	3
1	Ge	72	87,711.78	1.15	79.4	Pulse	0.30	3
2	Ge	72	73,916.58	2.52	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,181,590.72	1.43	70.8	Analog	0.30	3
3	Rh	103	5,674,024.57	0.76	67.6	Analog	0.30	3
3	In	115	6,357,284.42	0.33	71.7	Analog	0.30	3
3	Tb	159	9,281,162.50	0.29	74.0	Analog	0.30	3
3	Bi	209	4,535,772.40	1.21	61.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219047.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:16
Sample Name	N023063-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	6.148E-06	Pulse	0.30	3
Na	23	45	2	5708.222	ppb	0.48	9,561,103.75	7.237E+01	Analog	0.30	3
Mg	26	45	2	689.866	ppb	1.23	104,658.45	7.922E-01	Pulse	0.30	3
Al	27	45	2	2.609	ppb	4.15	1,159.66	8.780E-03	Pulse	0.30	3
K	39	45	2	311.179	ppb	1.77	177,015.95	1.340E+00	Pulse	0.30	3
Ca	44	45	3	4420.396	ppb	0.65	11,137,574.00	2.142E+00	Analog	0.30	3
V	51	45	2	0.107	ppb	5.25	1,807.97	1.369E-02	Pulse	0.30	3
Cr	52	45	2	13.388	ppb	0.55	158,034.97	1.196E+00	Pulse	0.30	3
Mn	55	45	2	10.263	ppb	0.36	60,321.63	4.566E-01	Pulse	0.30	3
Fe	56	45	2	1.986	ppb	2.56	21,797.83	1.650E-01	Pulse	0.30	3
Co	59	45	2	0.017	ppb	10.60	409.31	3.100E-03	Pulse	0.30	3
Ni	60	72	2	0.191	ppb	4.52	1,486.34	1.450E-02	Pulse	0.30	3
Cu	63	72	2	0.248	ppb	3.01	10,501.80	1.024E-01	Pulse	0.30	3
Zn	66	72	2	5.867	ppb	0.59	15,945.27	1.555E-01	Pulse	0.30	3
As	75	72	2	0.110	ppb	20.25	147.24	1.434E-03	Pulse	0.75	3
Se	78	72	1	0.020	ppb	52.50	14.45	1.102E-04	Pulse	0.30	3
Mo	95	103	2	0.527	ppb	6.70	3,853.97	1.185E-03	Pulse	0.30	3
Ag	107	103	3	0.268	ppb	10.63	24,588.92	2.833E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,106.24	-2.283E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,671.27	1.811E-04	Pulse	0.30	3
Ba	137	159	3	1.605	ppb	2.24	34,409.27	2.726E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,475.69	2.083E-04	Pulse	0.30	3
Pb	208	209	3	0.014	ppb	7.44	4,616.49	6.519E-04	Pulse	0.30	3
U	238	209	3	1.112	ppb	1.17	204,832.84	2.892E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,804,909.07	0.29	103.4	Analog	0.30	3
2	Sc	45	132,118.68	1.49	116.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,199,109.37	0.10	111.2	Analog	0.30	3
1	Ge	72	130,956.33	0.48	118.6	Pulse	0.30	3
2	Ge	72	102,536.21	0.98	115.1	Pulse	0.30	3
2	Rh	103	3,251,181.06	0.50	105.5	Analog	0.30	3
3	Rh	103	8,682,149.11	0.43	103.4	Analog	0.30	3
3	In	115	9,227,482.59	0.18	104.1	Analog	0.30	3
3	Tb	159	12,625,817.87	0.56	100.7	Analog	0.30	3
3	Bi	209	7,082,786.35	0.49	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219048.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:21
Sample Name	N023063-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.281	ppb	0.92	23,637.17	1.387E-02	Pulse	0.30	3
Na	23	45	2	26989.871	ppb	0.90	43,512,365.46	3.389E+02	Analog	0.30	3
Mg	26	45	2	3360.457	ppb	1.38	495,072.28	3.856E+00	Pulse	0.30	3
Al	27	45	2	48.211	ppb	1.31	13,207.49	1.029E-01	Pulse	0.30	3
K	39	45	2	1492.643	ppb	0.88	766,689.65	5.971E+00	Pulse	0.30	3
Ca	44	45	3	21300.812	ppb	0.25	51,802,739.78	1.031E+01	Analog	0.30	3
V	51	45	2	3.003	ppb	1.34	25,713.09	2.002E-01	Pulse	0.30	3
Cr	52	45	2	67.797	ppb	1.12	769,961.01	5.997E+00	Pulse	0.30	3
Mn	55	45	2	72.104	ppb	1.21	409,214.33	3.187E+00	Pulse	0.30	3
Fe	56	45	2	32.915	ppb	1.11	312,797.48	2.436E+00	Pulse	0.30	3
Co	59	45	2	2.166	ppb	1.40	48,136.86	3.749E-01	Pulse	0.30	3
Ni	60	72	2	3.198	ppb	1.65	19,310.18	1.965E-01	Pulse	0.30	3
Cu	63	72	2	4.337	ppb	0.52	74,907.56	7.621E-01	Pulse	0.30	3
Zn	66	72	2	53.308	ppb	1.13	114,500.56	1.165E+00	Pulse	0.30	3
As	75	72	2	2.698	ppb	2.12	3,096.19	3.150E-02	Pulse	0.75	3
Se	78	72	1	2.098	ppb	7.55	1,342.34	1.062E-02	Pulse	0.30	3
Mo	95	103	2	3.158	ppb	2.69	21,616.36	7.058E-03	Pulse	0.30	3
Ag	107	103	3	2.077	ppb	2.07	151,581.83	1.898E-02	Pulse	0.30	3
Cd	111	115	3	1.671	ppb	3.40	27,249.96	3.114E-03	Pulse	0.30	3
Sb	121	115	3	2.356	ppb	0.91	125,442.53	1.434E-02	Pulse	0.30	3
Ba	137	159	3	32.017	ppb	0.32	666,361.45	5.411E-02	Pulse	0.30	3
Tl	205	209	3	1.971	ppb	0.81	238,940.10	3.587E-02	Pulse	0.30	3
Pb	208	209	3	2.458	ppb	0.51	403,519.01	6.058E-02	Pulse	0.30	3
U	238	209	3	7.952	ppb	0.73	1,375,971.89	2.066E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,703,603.19	0.88	97.6	Analog	0.30	3
2	Sc	45	128,413.65	1.71	113.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,026,150.48	0.11	107.5	Analog	0.30	3
1	Ge	72	126,424.97	0.81	114.5	Pulse	0.30	3
2	Ge	72	98,291.66	1.38	110.3	Pulse	0.30	3
2	Rh	103	3,063,135.86	1.14	99.4	Analog	0.30	3
3	Rh	103	7,985,617.45	0.44	95.1	Analog	0.30	3
3	In	115	8,749,614.19	0.75	98.7	Analog	0.30	3
3	Tb	159	12,314,079.54	0.15	98.2	Analog	0.30	3
3	Bi	209	6,661,101.29	0.66	90.9	Analog	0.30	3

Quantitation Report

File Name	A0219049.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:27
Sample Name	N023063-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.166	ppb	1.72	21,546.55	1.318E-02	Pulse	0.30	3
Na	23	45	2	26329.855	ppb	1.50	40,441,022.18	3.306E+02	Analog	0.30	3
Mg	26	45	2	3296.903	ppb	1.07	462,759.27	3.783E+00	Pulse	0.30	3
Al	27	45	2	45.120	ppb	1.30	11,802.92	9.649E-02	Pulse	0.30	3
K	39	45	2	1442.579	ppb	1.51	706,379.04	5.775E+00	Pulse	0.30	3
Ca	44	45	3	20825.805	ppb	0.72	47,776,417.62	1.008E+01	Analog	0.30	3
V	51	45	2	2.951	ppb	2.17	24,081.60	1.969E-01	Pulse	0.30	3
Cr	52	45	2	65.769	ppb	0.59	711,694.05	5.818E+00	Pulse	0.30	3
Mn	55	45	2	69.862	ppb	0.77	377,764.82	3.088E+00	Pulse	0.30	3
Fe	56	45	2	30.412	ppb	0.96	275,518.24	2.252E+00	Pulse	0.30	3
Co	59	45	2	2.103	ppb	1.07	44,525.03	3.640E-01	Pulse	0.30	3
Ni	60	72	2	3.128	ppb	3.47	17,906.75	1.922E-01	Pulse	0.30	3
Cu	63	72	2	4.262	ppb	0.26	69,887.00	7.500E-01	Pulse	0.30	3
Zn	66	72	2	52.750	ppb	0.64	107,444.21	1.153E+00	Pulse	0.30	3
As	75	72	2	2.601	ppb	1.37	2,830.90	3.038E-02	Pulse	0.75	3
Se	78	72	1	2.178	ppb	2.38	1,304.55	1.102E-02	Pulse	0.30	3
Mo	95	103	2	2.997	ppb	0.98	19,683.92	6.698E-03	Pulse	0.30	3
Ag	107	103	3	2.213	ppb	0.89	155,750.70	2.020E-02	Pulse	0.30	3
Cd	111	115	3	1.638	ppb	2.50	25,718.91	3.052E-03	Pulse	0.30	3
Sb	121	115	3	2.296	ppb	0.62	117,803.75	1.398E-02	Pulse	0.30	3
Ba	137	159	3	31.186	ppb	0.44	629,049.96	5.271E-02	Pulse	0.30	3
Tl	205	209	3	1.931	ppb	0.50	230,108.87	3.515E-02	Pulse	0.30	3
Pb	208	209	3	2.382	ppb	0.68	384,232.81	5.870E-02	Pulse	0.30	3
U	238	209	3	7.993	ppb	1.00	1,359,171.22	2.076E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,634,842.82	0.94	93.7	Analog	0.30	3
2	Sc	45	122,337.19	1.35	108.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,741,296.70	0.53	101.5	Analog	0.30	3
1	Ge	72	118,415.47	1.30	107.2	Pulse	0.30	3
2	Ge	72	93,176.49	1.07	104.6	Pulse	0.30	3
2	Rh	103	2,938,845.96	0.42	95.4	Analog	0.30	3
3	Rh	103	7,711,396.83	0.26	91.8	Analog	0.30	3
3	In	115	8,427,379.32	0.47	95.1	Analog	0.30	3
3	Tb	159	11,934,342.18	0.27	95.2	Analog	0.30	3
3	Bi	209	6,546,038.93	0.73	89.4	Analog	0.30	3

Quantitation Report

File Name	A0219050.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:32
Sample Name	N023063-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.199	ppb	3.00	21,336.26	1.338E-02	Pulse	0.30	3
Na	23	45	2	26518.754	ppb	1.71	38,984,946.09	3.330E+02	Analog	0.30	3
Mg	26	45	2	3310.413	ppb	1.71	444,721.18	3.798E+00	Pulse	0.30	3
Al	27	45	2	45.587	ppb	2.98	11,414.45	9.745E-02	Pulse	0.30	3
K	39	45	2	1449.175	ppb	1.81	679,124.37	5.801E+00	Pulse	0.30	3
Ca	44	45	3	20828.837	ppb	0.67	46,611,339.31	1.008E+01	Analog	0.30	3
V	51	45	2	2.934	ppb	2.73	22,917.69	1.958E-01	Pulse	0.30	3
Cr	52	45	2	66.572	ppb	2.01	689,391.21	5.889E+00	Pulse	0.30	3
Mn	55	45	2	70.550	ppb	1.73	365,107.04	3.119E+00	Pulse	0.30	3
Fe	56	45	2	30.540	ppb	1.81	264,795.46	2.262E+00	Pulse	0.30	3
Co	59	45	2	2.154	ppb	2.54	43,643.65	3.728E-01	Pulse	0.30	3
Ni	60	72	2	3.052	ppb	1.86	17,053.99	1.876E-01	Pulse	0.30	3
Cu	63	72	2	4.232	ppb	0.88	67,747.38	7.453E-01	Pulse	0.30	3
Zn	66	72	2	52.426	ppb	1.07	104,194.73	1.146E+00	Pulse	0.30	3
As	75	72	2	2.602	ppb	1.98	2,762.50	3.039E-02	Pulse	0.75	3
Se	78	72	1	2.056	ppb	3.99	1,196.77	1.040E-02	Pulse	0.30	3
Mo	95	103	2	2.973	ppb	1.01	19,036.46	6.645E-03	Pulse	0.30	3
Ag	107	103	3	2.223	ppb	0.41	153,291.09	2.029E-02	Pulse	0.30	3
Cd	111	115	3	1.625	ppb	1.49	25,088.02	3.028E-03	Pulse	0.30	3
Sb	121	115	3	2.301	ppb	0.22	116,065.48	1.401E-02	Pulse	0.30	3
Ba	137	159	3	30.925	ppb	0.31	616,549.03	5.227E-02	Pulse	0.30	3
Tl	205	209	3	1.958	ppb	0.70	230,298.26	3.563E-02	Pulse	0.30	3
Pb	208	209	3	2.368	ppb	0.15	377,242.18	5.837E-02	Pulse	0.30	3
U	238	209	3	8.011	ppb	1.08	1,344,917.69	2.081E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,920.51	0.63	91.4	Analog	0.30	3
2	Sc	45	117,109.54	2.39	103.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,625,024.06	0.77	99.0	Analog	0.30	3
1	Ge	72	115,052.61	0.27	104.2	Pulse	0.30	3
2	Ge	72	90,901.38	1.17	102.0	Pulse	0.30	3
2	Rh	103	2,864,484.02	1.02	93.0	Analog	0.30	3
3	Rh	103	7,555,751.48	0.38	90.0	Analog	0.30	3
3	In	115	8,286,054.28	0.53	93.5	Analog	0.30	3
3	Tb	159	11,795,585.10	0.24	94.1	Analog	0.30	3
3	Bi	209	6,462,586.08	0.81	88.2	Analog	0.30	3

Quantitation Report

File Name	A0219051.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:38
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.016	ppb	1.10	197,173.35	1.217E-01	Pulse	0.30	3
Na	23	45	2	242.775	ppb	2.39	463,721.19	3.927E+00	Pulse	0.30	3
Mg	26	45	2	204.624	ppb	1.24	27,823.92	2.356E-01	Pulse	0.30	3
Al	27	45	2	21.970	ppb	4.88	5,751.76	4.872E-02	Pulse	0.30	3
K	39	45	2	213.197	ppb	2.57	112,873.17	9.560E-01	Pulse	0.30	3
Ca	44	45	3	213.254	ppb	0.38	482,215.89	1.074E-01	Pulse	0.30	3
V	51	45	2	20.179	ppb	0.75	154,285.74	1.307E+00	Pulse	0.30	3
Cr	52	45	2	20.055	ppb	1.27	210,719.40	1.784E+00	Pulse	0.30	3
Mn	55	45	2	20.244	ppb	1.61	105,949.57	8.973E-01	Pulse	0.30	3
Fe	56	45	2	21.023	ppb	1.20	184,557.81	1.563E+00	Pulse	0.30	3
Co	59	45	2	20.153	ppb	1.55	411,624.80	3.486E+00	Pulse	0.30	3
Ni	60	72	2	19.687	ppb	0.69	110,679.01	1.194E+00	Pulse	0.30	3
Cu	63	72	2	20.576	ppb	0.22	313,505.32	3.383E+00	Pulse	0.30	3
Zn	66	72	2	19.239	ppb	1.74	40,787.37	4.401E-01	Pulse	0.30	3
As	75	72	2	20.100	ppb	0.92	21,661.63	2.337E-01	Pulse	0.75	3
Se	78	72	1	19.013	ppb	3.24	11,345.59	9.612E-02	Pulse	0.30	3
Mo	95	103	2	19.826	ppb	0.92	135,591.17	4.427E-02	Pulse	0.30	3
Ag	107	103	3	20.030	ppb	0.93	1,447,282.24	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.560	ppb	0.29	328,974.72	3.825E-02	Pulse	0.30	3
Sb	121	115	3	20.439	ppb	0.61	1,051,069.26	1.222E-01	Pulse	0.30	3
Ba	137	159	3	21.679	ppb	0.98	437,635.61	3.665E-02	Pulse	0.30	3
Tl	205	209	3	20.032	ppb	0.44	2,514,394.91	3.626E-01	Analog	0.30	3
Pb	208	209	3	20.608	ppb	0.53	3,505,124.52	5.055E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	1.39	3,519,035.81	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,620,595.30	1.40	92.9	Analog	0.30	3
2	Sc	45	118,098.24	1.43	104.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,491,826.08	0.49	96.1	Analog	0.30	3
1	Ge	72	118,039.76	0.35	106.9	Pulse	0.30	3
2	Ge	72	92,681.27	0.44	104.0	Pulse	0.30	3
2	Rh	103	3,063,413.84	1.77	99.4	Analog	0.30	3
3	Rh	103	8,070,367.03	0.48	96.1	Analog	0.30	3
3	In	115	8,601,687.02	0.48	97.1	Analog	0.30	3
3	Tb	159	11,942,777.32	0.46	95.2	Analog	0.30	3
3	Bi	209	6,933,543.37	1.13	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219052.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:43
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	7.558E-06	Pulse	0.30	3
Na	23	45	2	39.871	ppb	7.59	157,761.97	1.386E+00	Pulse	0.30	3
Mg	26	45	2	0.223	ppb	57.68	124.45	1.093E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	342.23	3.007E-03	Pulse	0.30	3
K	39	45	2	5.993	ppb	26.87	16,359.83	1.438E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,610.08	3.972E-03	Pulse	0.30	3
V	51	45	2	0.014	ppb	47.90	880.06	7.735E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,203.26	1.057E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	341.42	3.001E-03	Pulse	0.30	3
Fe	56	45	2	0.087	ppb	10.68	2,904.27	2.551E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.38	2.238E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	80.93	8.920E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	647.80	7.145E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	403.80	4.456E-03	Pulse	0.30	3
As	75	72	2	0.014	ppb	43.41	28.89	3.188E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	28.41	13.33	1.148E-04	Pulse	0.30	3
Mo	95	103	2	0.116	ppb	12.30	810.06	2.668E-04	Pulse	0.30	3
Ag	107	103	3	0.461	ppb	13.67	36,427.07	4.554E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	12.94	1.524E-06	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	0.77	5,272.21	6.198E-04	Pulse	0.30	3
Ba	137	159	3	0.010	ppb	30.76	363.28	3.058E-05	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	3.79	4,423.08	6.420E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,396.08	2.026E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	10.09	837.87	1.216E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,906.95	1.65	92.1	Analog	0.30	3
2	Sc	45	113,827.28	1.27	100.6	Pulse	0.30	3
3	Sc	45	4,434,656.18	1.06	94.9	Analog	0.30	3
1	Ge	72	116,273.62	1.47	105.3	Pulse	0.30	3

2	Ge	72	90,707.11	1.49	101.8	Pulse	0.30	3
2	Rh	103	3,034,069.78	0.76	98.5	Analog	0.30	3
3	Rh	103	8,004,709.95	1.11	95.3	Analog	0.30	3
3	In	115	8,505,968.91	0.95	96.0	Analog	0.30	3
3	Tb	159	11,879,937.46	0.21	94.7	Analog	0.30	3
3	Bi	209	6,889,766.98	0.46	94.1	Analog	0.30	3

Quantitation Report

File Name	A0219053.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:49
Sample Name	~~N023085-003B,SAMP,5~~ N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	1.022E-05	Pulse	0.30	3
Na	23	45	2	652061.549	ppb	0.66	834,622,698.67	8.167E+03	Analog	0.30	3
Mg	26	45	2	1929.157	ppb	0.97	226,252.91	2.214E+00	Pulse	0.30	3
Al	27	45	2	1.144	ppb	21.53	588.58	5.756E-03	Pulse	0.30	3
K	39	45	2	5623.916	ppb	0.49	2,265,294.67	2.216E+01	Analog	0.30	3
Ca	44	45	3	25853.868	ppb	0.37	50,285,383.14	1.251E+01	Analog	0.30	3
V	51	45	2	0.213	ppb	12.17	2,093.56	2.051E-02	Pulse	0.30	3
Cr	52	45	2	8.994	ppb	1.18	82,654.50	8.086E-01	Pulse	0.30	3
Mn	55	45	2	5.397	ppb	1.18	24,704.70	2.417E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-58,693.54	-5.743E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-616.23	-6.030E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-531.04	-7.192E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,003.98	-2.441E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,082.59	-2.823E-02	Pulse	0.30	3
As	75	72	2	0.249	ppb	5.68	225.10	3.054E-03	Pulse	0.75	3
Se	78	72	1	0.031	ppb	78.67	14.45	1.650E-04	Pulse	0.30	3
Mo	95	103	2	10.608	ppb	1.31	52,947.23	2.369E-02	Pulse	0.30	3
Ag	107	103	3	0.025	ppb	14.63	3,889.30	6.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	7.53	1.133E-06	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	92.67	2,016.89	3.020E-04	Pulse	0.30	3
Ba	137	159	3	3.765	ppb	1.19	62,624.15	6.375E-03	Pulse	0.30	3
Tl	205	209	3	0.093	ppb	1.08	9,029.79	1.893E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,263.79	-8.937E-04	Pulse	0.30	3
U	238	209	3	0.725	ppb	0.62	90,023.62	1.887E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,162.89	0.63	68.8	Analog	0.30	3
2	Sc	45	102,208.66	2.10	90.3	Pulse	0.30	3
3	Sc	45	4,020,075.81	0.81	86.0	Analog	0.30	3
1	Ge	72	87,457.81	0.32	79.2	Pulse	0.30	3
2	Ge	72	73,765.98	1.98	82.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,234,960.77	1.43	72.6	Analog	0.30	3
3	Rh	103	5,936,385.75	0.50	70.7	Analog	0.30	3
3	In	115	6,677,499.61	0.27	75.3	Analog	0.30	3
3	Tb	159	9,824,263.19	0.81	78.3	Analog	0.30	3
3	Bi	209	4,771,202.70	0.59	65.1	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

For Al & Zn only

File Name	A0219054.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:54
Sample Name	N023107-001C,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	186.09	23.33	1.434E-05	Pulse	0.30	3
Na	23	45	2	975.767	ppb	1.86	1,526,601.59	1.311E+01	Analog	0.30	3
Mg	26	45	2	46.366	ppb	2.39	6,292.55	5.403E-02	Pulse	0.30	3
Al	27	45	2	85.151	ppb	0.90	20,862.05	1.791E-01	Pulse	0.30	3
K	39	45	2	264.682	ppb	1.17	134,862.32	1.158E+00	Pulse	0.30	3
Ca	44	45	3	557.040	ppb	1.03	1,234,254.63	2.736E-01	Analog	0.30	3
V	51	45	2	0.292	ppb	9.01	2,987.07	2.564E-02	Pulse	0.30	3
Cr	52	45	2	0.244	ppb	3.70	4,265.42	3.661E-02	Pulse	0.30	3
Mn	55	45	2	2.915	ppb	2.36	15,385.32	1.321E-01	Pulse	0.30	3
Fe	56	45	2	172.368	ppb	0.69	1,476,678.61	1.268E+01	Analog	0.30	3
Co	59	45	2	0.058	ppb	7.69	1,187.36	1.020E-02	Pulse	0.30	3
Ni	60	72	2	0.748	ppb	0.85	4,462.69	4.820E-02	Pulse	0.30	3
Cu	63	72	2	2.837	ppb	1.03	48,156.06	5.202E-01	Pulse	0.30	3
Zn	66	72	2	22.197	ppb	0.73	46,566.35	5.030E-01	Pulse	0.30	3
As	75	72	2	0.146	ppb	2.43	171.54	1.853E-03	Pulse	0.75	3
Se	78	72	1	0.022	ppb	104.64	14.44	1.224E-04	Pulse	0.30	3
Mo	95	103	2	0.283	ppb	6.82	1,949.10	6.388E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,807.05	3.489E-04	Pulse	0.30	3
Cd	111	115	3	0.006	ppb	30.79	142.85	1.672E-05	Pulse	0.30	3
Sb	121	115	3	0.220	ppb	0.99	13,641.99	1.597E-03	Pulse	0.30	3
Ba	137	159	3	65.952	ppb	0.36	1,322,201.72	1.115E-01	Analog	0.30	3
Tl	205	209	3	0.007	ppb	4.98	2,352.51	3.410E-04	Pulse	0.30	3
Pb	208	209	3	0.603	ppb	1.33	104,171.98	1.510E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	6.54	1,566.39	2.270E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,628,151.17	0.94	93.3	Analog	0.30	3
2	Sc	45	116,496.95	1.53	102.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,510,662.47	0.08	96.5	Analog	0.30	3
1	Ge	72	117,971.02	0.25	106.8	Pulse	0.30	3
2	Ge	72	92,577.69	1.45	103.9	Pulse	0.30	3
2	Rh	103	3,050,894.36	0.36	99.0	Analog	0.30	3
3	Rh	103	8,045,042.94	0.66	95.8	Analog	0.30	3
3	In	115	8,542,516.40	0.31	96.4	Analog	0.30	3
3	Tb	159	11,863,153.71	0.72	94.6	Analog	0.30	3
3	Bi	209	6,899,652.68	0.27	94.2	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219055.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:00
Sample Name	N023107-001C,SAMP,125
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.34	8.265E-06	Pulse	0.30	3
Na	23	45	2	225.063	ppb	3.54	428,600.05	3.705E+00	Pulse	0.30	3
Mg	26	45	2	8.737	ppb	7.91	1,255.66	1.086E-02	Pulse	0.30	3
Al	27	45	2	16.058	ppb	5.68	4,223.92	3.653E-02	Pulse	0.30	3
K	39	45	2	58.347	ppb	4.04	40,367.76	3.490E-01	Pulse	0.30	3
Ca	44	45	3	116.689	ppb	0.13	268,532.65	6.065E-02	Pulse	0.30	3
V	51	45	2	0.060	ppb	19.94	1,237.89	1.069E-02	Pulse	0.30	3
Cr	52	45	2	0.022	ppb	66.04	1,964.12	1.699E-02	Pulse	0.30	3
Mn	55	45	2	0.570	ppb	3.27	3,300.01	2.853E-02	Pulse	0.30	3
Fe	56	45	2	35.820	ppb	1.57	306,519.07	2.649E+00	Pulse	0.30	3
Co	59	45	2	0.011	ppb	10.06	250.45	2.162E-03	Pulse	0.30	3
Ni	60	72	2	0.134	ppb	7.84	1,008.10	1.103E-02	Pulse	0.30	3
Cu	63	72	2	0.302	ppb	1.89	10,146.51	1.110E-01	Pulse	0.30	3
Zn	66	72	2	3.492	ppb	2.43	9,592.54	1.050E-01	Pulse	0.30	3
As	75	72	2	0.032	ppb	29.77	48.00	5.243E-04	Pulse	0.75	3
Se	78	72	1	0.009	ppb	60.35	6.67	5.770E-05	Pulse	0.30	3
Mo	95	103	2	0.070	ppb	9.67	497.81	1.641E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,634.08	3.306E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	388.10	56.49	6.606E-06	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	15.93	3,473.87	4.071E-04	Pulse	0.30	3
Ba	137	159	3	13.851	ppb	0.68	277,066.27	2.342E-02	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	19.80	1,807.96	2.630E-04	Pulse	0.30	3
Pb	208	209	3	0.129	ppb	2.10	23,929.11	3.482E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	370.25	5.384E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,193.61	1.77	92.1	Analog	0.30	3
2	Sc	45	115,718.35	2.44	102.2	Pulse	0.30	3
3	Sc	45	4,427,632.02	0.20	94.7	Analog	0.30	3
1	Ge	72	115,540.58	0.31	104.6	Pulse	0.30	3
2	Ge	72	91,389.82	1.34	102.6	Pulse	0.30	3
2	Rh	103	3,032,968.98	0.59	98.5	Analog	0.30	3
3	Rh	103	7,967,603.49	0.29	94.9	Analog	0.30	3
3	In	115	8,534,750.54	0.72	96.3	Analog	0.30	3
3	Tb	159	11,831,440.52	0.33	94.3	Analog	0.30	3
3	Bi	209	6,873,907.61	0.92	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219056.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:06
Sample Name	N023107-001C-PS,PS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.398	ppb	2.99	3,805.03	2.433E-03	Pulse	0.30	3
Na	23	45	2	916.537	ppb	1.30	1,396,367.57	1.236E+01	Analog	0.30	3
Mg	26	45	2	47.515	ppb	3.54	6,250.29	5.534E-02	Pulse	0.30	3
Al	27	45	2	89.443	ppb	1.25	21,227.36	1.879E-01	Pulse	0.30	3
K	39	45	2	258.506	ppb	2.34	127,998.60	1.134E+00	Pulse	0.30	3
Ca	44	45	3	551.348	ppb	1.38	1,165,371.41	2.709E-01	Mix	0.30	3
V	51	45	2	0.704	ppb	3.00	5,887.97	5.215E-02	Pulse	0.30	3
Cr	52	45	2	0.633	ppb	5.94	8,002.66	7.090E-02	Pulse	0.30	3
Mn	55	45	2	6.983	ppb	2.05	35,195.71	3.117E-01	Pulse	0.30	3
Fe	56	45	2	169.921	ppb	2.09	1,411,057.04	1.250E+01	Analog	0.30	3
Co	59	45	2	0.464	ppb	1.12	9,088.13	8.045E-02	Pulse	0.30	3
Ni	60	72	2	1.165	ppb	3.33	6,571.47	7.340E-02	Pulse	0.30	3
Cu	63	72	2	3.217	ppb	1.33	52,064.22	5.814E-01	Pulse	0.30	3
Zn	66	72	2	25.515	ppb	0.89	51,359.10	5.736E-01	Pulse	0.30	3
As	75	72	2	0.605	ppb	4.52	643.56	7.186E-03	Pulse	0.75	3
Se	78	72	1	0.405	ppb	28.67	234.46	2.057E-03	Pulse	0.30	3
Mo	95	103	2	0.624	ppb	5.39	4,197.40	1.401E-03	Pulse	0.30	3
Ag	107	103	3	0.262	ppb	7.80	21,668.76	2.779E-03	Pulse	0.30	3
Cd	111	115	3	0.435	ppb	1.27	6,829.22	8.143E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.99	33,958.86	4.049E-03	Pulse	0.30	3
Ba	137	159	3	64.967	ppb	0.42	1,288,939.85	1.098E-01	Analog	0.30	3
Tl	205	209	3	0.364	ppb	0.64	45,978.96	6.792E-03	Pulse	0.30	3
Pb	208	209	3	1.014	ppb	0.48	170,348.08	2.516E-02	Pulse	0.30	3
U	238	209	3	0.431	ppb	1.23	75,915.63	1.121E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,564,069.65	0.25	89.6	Analog	0.30	3
2	Sc	45	112,953.92	2.52	99.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,302,224.69	0.41	92.1	Analog	0.30	3
1	Ge	72	114,134.49	0.83	103.4	Pulse	0.30	3
2	Ge	72	89,537.58	0.98	100.5	Pulse	0.30	3
2	Rh	103	2,996,179.57	1.06	97.3	Analog	0.30	3
3	Rh	103	7,797,470.51	0.47	92.9	Analog	0.30	3
3	In	115	8,387,038.90	0.42	94.6	Analog	0.30	3
3	Tb	159	11,739,695.10	0.68	93.6	Analog	0.30	3
3	Bi	209	6,769,743.58	0.93	92.4	Analog	0.30	3

Quantitation Report

File Name	A0219057.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:11
Sample Name	N023107-001C-MS,MS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.409	ppb	1.33	3,843.92	2.500E-03	Pulse	0.30	3
Na	23	45	2	876.147	ppb	3.27	1,301,436.10	1.186E+01	Analog	0.30	3
Mg	26	45	2	46.935	ppb	1.40	6,002.46	5.468E-02	Pulse	0.30	3
Al	27	45	2	86.444	ppb	1.98	19,948.85	1.817E-01	Pulse	0.30	3
K	39	45	2	248.520	ppb	1.32	120,145.40	1.094E+00	Pulse	0.30	3
Ca	44	45	3	541.118	ppb	0.45	1,130,444.94	2.659E-01	Pulse	0.30	3
V	51	45	2	0.737	ppb	1.25	5,961.33	5.429E-02	Pulse	0.30	3
Cr	52	45	2	0.665	ppb	4.67	8,085.01	7.368E-02	Pulse	0.30	3
Mn	55	45	2	6.980	ppb	2.74	34,198.28	3.116E-01	Pulse	0.30	3
Fe	56	45	2	164.134	ppb	1.20	1,325,189.79	1.207E+01	Analog	0.30	3
Co	59	45	2	0.467	ppb	1.41	8,887.08	8.095E-02	Pulse	0.30	3
Ni	60	72	2	1.119	ppb	2.09	6,211.53	7.065E-02	Pulse	0.30	3
Cu	63	72	2	3.074	ppb	0.71	49,098.06	5.584E-01	Pulse	0.30	3
Zn	66	72	2	24.545	ppb	1.30	48,620.42	5.530E-01	Pulse	0.30	3
As	75	72	2	0.559	ppb	1.53	584.45	6.647E-03	Pulse	0.75	3
Se	78	72	1	0.417	ppb	12.58	236.68	2.119E-03	Pulse	0.30	3
Mo	95	103	2	0.621	ppb	3.46	4,107.37	1.394E-03	Pulse	0.30	3
Ag	107	103	3	0.401	ppb	1.39	31,330.80	4.020E-03	Pulse	0.30	3
Cd	111	115	3	0.449	ppb	0.67	7,014.94	8.409E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.77	33,757.13	4.047E-03	Pulse	0.30	3
Ba	137	159	3	66.793	ppb	0.52	1,323,261.04	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.373	ppb	0.79	47,439.33	6.959E-03	Pulse	0.30	3
Pb	208	209	3	0.998	ppb	0.72	168,877.92	2.477E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	0.57	74,024.68	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,233.40	1.11	88.1	Analog	0.30	3
2	Sc	45	109,797.71	2.51	97.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,250,996.29	0.82	91.0	Analog	0.30	3
1	Ge	72	111,672.69	1.17	101.1	Pulse	0.30	3
2	Ge	72	87,920.96	0.87	98.7	Pulse	0.30	3
2	Rh	103	2,946,767.04	1.02	95.7	Analog	0.30	3
3	Rh	103	7,793,361.00	0.74	92.8	Analog	0.30	3
3	In	115	8,342,307.15	0.36	94.1	Analog	0.30	3
3	Tb	159	11,723,287.88	0.66	93.5	Analog	0.30	3
3	Bi	209	6,817,213.58	0.46	93.1	Analog	0.30	3

Quantitation Report

File Name	A0219058.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:17
Sample Name	N023107-001C-MSD,MSD,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.430	ppb	1.09	3,970.64	2.624E-03	Pulse	0.30	3
Na	23	45	2	867.953	ppb	1.34	1,276,517.47	1.176E+01	Analog	0.30	3
Mg	26	45	2	47.220	ppb	3.87	5,972.46	5.501E-02	Pulse	0.30	3
Al	27	45	2	86.837	ppb	1.05	19,823.96	1.826E-01	Pulse	0.30	3
K	39	45	2	245.166	ppb	0.03	117,414.04	1.081E+00	Pulse	0.30	3
Ca	44	45	3	535.668	ppb	0.80	1,100,425.19	2.633E-01	Pulse	0.30	3
V	51	45	2	0.721	ppb	5.03	5,783.48	5.324E-02	Pulse	0.30	3
Cr	52	45	2	0.654	ppb	3.16	7,893.84	7.271E-02	Pulse	0.30	3
Mn	55	45	2	7.042	ppb	1.25	34,131.45	3.143E-01	Pulse	0.30	3
Fe	56	45	2	163.871	ppb	0.29	1,308,765.18	1.205E+01	Analog	0.30	3
Co	59	45	2	0.477	ppb	0.95	8,981.61	8.271E-02	Pulse	0.30	3
Ni	60	72	2	1.086	ppb	2.90	6,023.73	6.861E-02	Pulse	0.30	3
Cu	63	72	2	3.034	ppb	0.94	48,462.64	5.520E-01	Pulse	0.30	3
Zn	66	72	2	24.081	ppb	0.72	47,686.88	5.431E-01	Pulse	0.30	3
As	75	72	2	0.557	ppb	3.36	581.78	6.627E-03	Pulse	0.75	3
Se	78	72	1	0.378	ppb	10.15	212.23	1.922E-03	Pulse	0.30	3
Mo	95	103	2	0.603	ppb	3.21	3,971.78	1.355E-03	Pulse	0.30	3
Ag	107	103	3	0.409	ppb	2.01	31,405.66	4.085E-03	Pulse	0.30	3
Cd	111	115	3	0.439	ppb	3.70	6,784.98	8.229E-04	Pulse	0.30	3
Sb	121	115	3	0.633	ppb	2.21	33,498.79	4.062E-03	Pulse	0.30	3
Ba	137	159	3	66.785	ppb	0.22	1,307,194.38	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.370	ppb	0.75	46,649.90	6.907E-03	Pulse	0.30	3
Pb	208	209	3	0.995	ppb	0.17	166,832.36	2.470E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	1.30	73,368.74	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,513,027.32	1.20	86.7	Analog	0.30	3
2	Sc	45	108,589.21	0.98	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,179,501.99	0.24	89.4	Analog	0.30	3
1	Ge	72	110,371.18	0.51	100.0	Pulse	0.30	3
2	Ge	72	87,803.72	0.73	98.6	Pulse	0.30	3
2	Rh	103	2,930,998.78	0.90	95.1	Analog	0.30	3
3	Rh	103	7,688,174.47	0.62	91.6	Analog	0.30	3
3	In	115	8,246,383.21	0.86	93.1	Analog	0.30	3
3	Tb	159	11,582,076.08	0.35	92.3	Analog	0.30	3
3	Bi	209	6,754,241.63	0.15	92.2	Analog	0.30	3

Quantitation Report

File Name	A0219059.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:22
Sample Name	N023107-002C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	44.38	25.55	1.709E-05	Pulse	0.30	3
Na	23	45	2	1547.301	ppb	0.74	2,165,468.08	2.026E+01	Analog	0.30	3
Mg	26	45	2	47.984	ppb	2.19	5,971.31	5.588E-02	Pulse	0.30	3
Al	27	45	2	94.894	ppb	3.78	21,278.73	1.992E-01	Pulse	0.30	3
K	39	45	2	403.419	ppb	0.93	181,833.77	1.702E+00	Pulse	0.30	3
Ca	44	45	3	369.776	ppb	0.76	761,033.97	1.831E-01	Pulse	0.30	3
V	51	45	2	1.523	ppb	0.92	11,209.82	1.049E-01	Pulse	0.30	3
Cr	52	45	2	0.518	ppb	3.99	6,493.39	6.078E-02	Pulse	0.30	3
Mn	55	45	2	5.609	ppb	3.06	26,824.48	2.510E-01	Pulse	0.30	3
Fe	56	45	2	266.180	ppb	0.92	2,090,908.89	1.957E+01	Analog	0.30	3
Co	59	45	2	0.085	ppb	2.67	1,590.56	1.489E-02	Pulse	0.30	3
Ni	60	72	2	1.711	ppb	5.36	9,264.85	1.064E-01	Pulse	0.30	3
Cu	63	72	2	5.839	ppb	1.85	87,447.11	1.005E+00	Pulse	0.30	3
Zn	66	72	2	45.212	ppb	1.24	86,429.53	9.928E-01	Pulse	0.30	3
As	75	72	2	0.241	ppb	12.03	257.76	2.959E-03	Pulse	0.75	3
Se	78	72	1	0.004	ppb	148.01	3.33	3.114E-05	Pulse	0.30	3
Mo	95	103	2	0.279	ppb	3.64	1,835.74	6.298E-04	Pulse	0.30	3
Ag	107	103	3	0.092	ppb	5.38	9,542.78	1.254E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.93	-9.716E-07	Pulse	0.30	3
Sb	121	115	3	2.972	ppb	0.43	147,102.87	1.801E-02	Pulse	0.30	3
Ba	137	159	3	46.028	ppb	0.13	899,615.76	7.779E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	6.15	2,353.63	3.495E-04	Pulse	0.30	3
Pb	208	209	3	1.062	ppb	0.80	177,368.49	2.634E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	8.01	1,634.60	2.428E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,494,959.24	0.69	85.7	Analog	0.30	3
2	Sc	45	106,870.80	1.55	94.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,157,441.22	0.55	89.0	Analog	0.30	3
1	Ge	72	107,780.82	1.08	97.6	Pulse	0.30	3
2	Ge	72	87,061.96	1.30	97.7	Pulse	0.30	3
2	Rh	103	2,915,295.51	0.79	94.6	Analog	0.30	3
3	Rh	103	7,613,773.98	0.93	90.7	Analog	0.30	3
3	In	115	8,166,288.26	0.31	92.1	Analog	0.30	3
3	Tb	159	11,564,675.10	0.28	92.2	Analog	0.30	3
3	Bi	209	6,734,192.12	0.34	91.9	Analog	0.30	3

Quantitation Report

File Name	A0219060.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:28
Sample Name	N023107-003C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	85.33	25.56	1.753E-05	Pulse	0.30	3
Na	23	45	2	1296.569	ppb	1.85	1,821,523.72	1.712E+01	Analog	0.30	3
Mg	26	45	2	59.985	ppb	4.00	7,408.62	6.965E-02	Pulse	0.30	3
Al	27	45	2	82.052	ppb	4.53	18,362.35	1.727E-01	Pulse	0.30	3
K	39	45	2	321.812	ppb	1.91	146,980.33	1.382E+00	Pulse	0.30	3
Ca	44	45	3	512.800	ppb	0.71	1,026,229.29	2.522E-01	Pulse	0.30	3
V	51	45	2	1.024	ppb	3.41	7,744.35	7.276E-02	Pulse	0.30	3
Cr	52	45	2	0.367	ppb	6.01	5,039.77	4.739E-02	Pulse	0.30	3
Mn	55	45	2	4.646	ppb	1.26	22,186.02	2.085E-01	Pulse	0.30	3
Fe	56	45	2	295.629	ppb	1.41	2,311,348.96	2.173E+01	Analog	0.30	3
Co	59	45	2	0.095	ppb	0.72	1,770.75	1.664E-02	Pulse	0.30	3
Ni	60	72	2	0.594	ppb	5.48	3,330.01	3.889E-02	Pulse	0.30	3
Cu	63	72	2	4.567	ppb	0.91	68,412.15	7.993E-01	Pulse	0.30	3
Zn	66	72	2	33.356	ppb	0.37	63,372.88	7.405E-01	Pulse	0.30	3
As	75	72	2	0.461	ppb	11.15	471.11	5.508E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	74.90	10.00	9.431E-05	Pulse	0.30	3
Mo	95	103	2	0.183	ppb	3.79	1,198.99	4.158E-04	Pulse	0.30	3
Ag	107	103	3	0.014	ppb	13.97	4,234.28	5.596E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9.88	-1.218E-06	Pulse	0.30	3
Sb	121	115	3	0.217	ppb	1.95	12,893.57	1.580E-03	Pulse	0.30	3
Ba	137	159	3	47.940	ppb	0.52	932,906.31	8.102E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	12.98	1,629.05	2.424E-04	Pulse	0.30	3
Pb	208	209	3	0.601	ppb	0.34	101,143.62	1.505E-02	Pulse	0.30	3
U	238	209	3	0.006	ppb	5.46	1,225.11	1.823E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,456,254.06	0.89	83.4	Analog	0.30	3
2	Sc	45	106,399.75	2.16	94.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,068,579.42	0.29	87.1	Analog	0.30	3
1	Ge	72	106,071.14	0.61	96.1	Pulse	0.30	3
2	Ge	72	85,588.82	1.38	96.1	Pulse	0.30	3
2	Rh	103	2,883,816.14	1.75	93.6	Analog	0.30	3
3	Rh	103	7,566,477.32	0.21	90.1	Analog	0.30	3
3	In	115	8,162,124.28	0.21	92.1	Analog	0.30	3
3	Tb	159	11,514,592.05	0.33	91.8	Analog	0.30	3
3	Bi	209	6,720,685.73	0.55	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219061.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:33
Sample Name	N023107-004C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.535E-06	Pulse	0.30	3
Na	23	45	2	548.615	ppb	1.81	826,975.87	7.757E+00	Pulse	0.30	3
Mg	26	45	2	46.754	ppb	3.12	5,810.13	5.447E-02	Pulse	0.30	3
Al	27	45	2	18.083	ppb	5.65	4,336.85	4.070E-02	Pulse	0.30	3
K	39	45	2	167.829	ppb	1.77	82,956.84	7.781E-01	Pulse	0.30	3
Ca	44	45	3	748.298	ppb	0.53	1,491,085.86	3.661E-01	Analog	0.30	3
V	51	45	2	0.156	ppb	7.94	1,796.85	1.686E-02	Pulse	0.30	3
Cr	52	45	2	1.102	ppb	2.01	11,970.21	1.123E-01	Pulse	0.30	3
Mn	55	45	2	3.556	ppb	0.68	17,105.60	1.604E-01	Pulse	0.30	3
Fe	56	45	2	66.463	ppb	1.77	522,321.19	4.900E+00	Pulse	0.30	3
Co	59	45	2	0.032	ppb	10.40	612.20	5.739E-03	Pulse	0.30	3
Ni	60	72	2	1.459	ppb	1.23	7,936.82	9.121E-02	Pulse	0.30	3
Cu	63	72	2	1.620	ppb	3.18	28,158.28	3.237E-01	Pulse	0.30	3
Zn	66	72	2	47.917	ppb	1.03	91,374.59	1.050E+00	Pulse	0.30	3
As	75	72	2	0.204	ppb	2.56	219.54	2.524E-03	Pulse	0.75	3
Se	78	72	1	0.035	ppb	17.55	20.00	1.855E-04	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	3.91	802.28	2.761E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,569.51	3.355E-04	Pulse	0.30	3
Cd	111	115	3	0.024	ppb	10.03	412.75	5.028E-05	Pulse	0.30	3
Sb	121	115	3	0.423	ppb	2.21	23,067.65	2.809E-03	Pulse	0.30	3
Ba	137	159	3	18.003	ppb	0.38	353,460.30	3.043E-02	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	407.59	1,495.70	2.197E-04	Pulse	0.30	3
Pb	208	209	3	0.239	ppb	1.90	41,924.61	6.157E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	4.32	429.52	6.308E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,461,534.94	1.84	83.7	Analog	0.30	3
2	Sc	45	106,634.31	2.51	94.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,072,457.82	0.25	87.1	Analog	0.30	3
1	Ge	72	107,797.73	0.40	97.6	Pulse	0.30	3
2	Ge	72	87,008.55	1.85	97.7	Pulse	0.30	3
2	Rh	103	2,905,985.69	1.37	94.3	Analog	0.30	3
3	Rh	103	7,659,656.07	0.66	91.2	Analog	0.30	3
3	In	115	8,210,849.46	0.31	92.7	Analog	0.30	3
3	Tb	159	11,613,964.97	1.00	92.6	Analog	0.30	3
3	Bi	209	6,809,217.75	0.47	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219062.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:39
Sample Name	N023137-001A,SAMP,2
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	175.00	27.78	1.945E-05	Pulse	0.30	3
Na	23	45	2	1169.758	ppb	0.99	1,625,196.87	1.554E+01	Analog	0.30	3
Mg	26	45	2	536.909	ppb	0.97	64,518.49	6.168E-01	Pulse	0.30	3
Al	27	45	2	106.848	ppb	3.53	23,417.02	2.238E-01	Pulse	0.30	3
K	39	45	2	534.528	ppb	1.13	231,750.99	2.215E+00	Pulse	0.30	3
Ca	44	45	3	6320.894	ppb	0.78	12,214,375.38	3.061E+00	Analog	0.30	3
V	51	45	2	1.131	ppb	1.58	8,333.58	7.966E-02	Pulse	0.30	3
Cr	52	45	2	0.351	ppb	5.35	4,811.20	4.597E-02	Pulse	0.30	3
Mn	55	45	2	4.785	ppb	2.13	22,454.13	2.147E-01	Pulse	0.30	3
Fe	56	45	2	124.763	ppb	0.80	960,516.66	9.181E+00	Pulse	0.30	3
Co	59	45	2	0.096	ppb	6.22	1,763.03	1.685E-02	Pulse	0.30	3
Ni	60	72	2	0.917	ppb	5.19	4,945.27	5.843E-02	Pulse	0.30	3
Cu	63	72	2	6.568	ppb	1.37	95,030.53	1.122E+00	Pulse	0.30	3
Zn	66	72	2	36.450	ppb	0.53	68,284.71	8.063E-01	Pulse	0.30	3
As	75	72	2	0.295	ppb	3.55	302.93	3.578E-03	Pulse	0.75	3
Se	78	72	1	0.073	ppb	38.73	40.00	3.774E-04	Pulse	0.30	3
Mo	95	103	2	0.613	ppb	2.20	3,937.40	1.376E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	821.02	1.101E-04	Pulse	0.30	3
Cd	111	115	3	0.002	ppb	200.86	70.41	8.729E-06	Pulse	0.30	3
Sb	121	115	3	0.820	ppb	0.87	41,693.99	5.176E-03	Pulse	0.30	3
Ba	137	159	3	13.942	ppb	0.77	270,848.83	2.357E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	8.51	1,693.50	2.574E-04	Pulse	0.30	3
Pb	208	209	3	0.662	ppb	1.02	108,763.59	1.653E-02	Pulse	0.30	3
U	238	209	3	0.068	ppb	2.12	11,826.77	1.798E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,424,963.21	0.59	81.7	Analog	0.30	3
2	Sc	45	104,617.50	1.69	92.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,989,872.20	0.41	85.4	Analog	0.30	3
1	Ge	72	105,853.88	0.75	95.9	Pulse	0.30	3
2	Ge	72	84,693.28	1.92	95.1	Pulse	0.30	3
2	Rh	103	2,860,790.58	0.88	92.9	Analog	0.30	3
3	Rh	103	7,460,905.24	0.61	88.9	Analog	0.30	3
3	In	115	8,056,073.23	0.43	90.9	Analog	0.30	3
3	Tb	159	11,490,496.77	0.49	91.6	Analog	0.30	3
3	Bi	209	6,578,641.57	0.64	89.8	Analog	0.30	3

Quantitation Report

File Name	A0219063.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:44
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.432	ppb	0.55	172,200.15	1.181E-01	Pulse	0.30	3
Na	23	45	2	221.479	ppb	1.25	385,824.10	3.661E+00	Pulse	0.30	3
Mg	26	45	2	202.731	ppb	0.75	24,602.12	2.334E-01	Pulse	0.30	3
Al	27	45	2	21.467	ppb	3.06	5,026.27	4.769E-02	Pulse	0.30	3
K	39	45	2	210.370	ppb	0.55	99,594.71	9.449E-01	Pulse	0.30	3
Ca	44	45	3	211.707	ppb	0.67	425,018.51	1.066E-01	Pulse	0.30	3
V	51	45	2	20.411	ppb	0.26	139,290.18	1.321E+00	Pulse	0.30	3
Cr	52	45	2	20.280	ppb	0.88	190,182.55	1.804E+00	Pulse	0.30	3
Mn	55	45	2	20.365	ppb	1.18	95,132.01	9.026E-01	Pulse	0.30	3
Fe	56	45	2	21.400	ppb	1.00	167,644.48	1.591E+00	Pulse	0.30	3
Co	59	45	2	20.730	ppb	0.80	377,938.99	3.586E+00	Pulse	0.30	3
Ni	60	72	2	19.670	ppb	1.71	102,533.42	1.193E+00	Pulse	0.30	3
Cu	63	72	2	20.360	ppb	1.19	287,674.97	3.348E+00	Pulse	0.30	3
Zn	66	72	2	18.808	ppb	2.06	37,027.76	4.309E-01	Pulse	0.30	3
As	75	72	2	19.580	ppb	0.81	19,566.06	2.277E-01	Pulse	0.75	3
Se	78	72	1	19.361	ppb	0.76	10,213.64	9.788E-02	Pulse	0.30	3
Mo	95	103	2	19.643	ppb	1.39	127,931.47	4.386E-02	Pulse	0.30	3
Ag	107	103	3	19.929	ppb	0.33	1,356,935.43	1.784E-01	Analog	0.30	3
Cd	111	115	3	20.613	ppb	0.70	310,944.71	3.834E-02	Pulse	0.30	3
Sb	121	115	3	20.597	ppb	0.42	998,592.16	1.231E-01	Pulse	0.30	3
Ba	137	159	3	21.303	ppb	0.42	415,987.87	3.601E-02	Pulse	0.30	3
Tl	205	209	3	20.175	ppb	0.95	2,474,987.41	3.652E-01	Analog	0.30	3
Pb	208	209	3	20.705	ppb	0.76	3,442,029.74	5.079E-01	Analog	0.30	3
U	238	209	3	19.628	ppb	0.54	3,455,074.41	5.098E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,457,734.49	0.49	83.5	Analog	0.30	3
2	Sc	45	105,409.21	1.35	93.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,986,958.79	0.91	85.3	Analog	0.30	3
1	Ge	72	104,345.70	0.30	94.5	Pulse	0.30	3
2	Ge	72	85,941.48	1.22	96.5	Pulse	0.30	3
2	Rh	103	2,917,095.86	0.28	94.7	Analog	0.30	3
3	Rh	103	7,604,613.15	0.04	90.6	Analog	0.30	3
3	In	115	8,109,390.88	0.29	91.5	Analog	0.30	3
3	Tb	159	11,551,906.63	0.43	92.1	Analog	0.30	3
3	Bi	209	6,776,784.55	0.48	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219064.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:50
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	9.488E-06	Pulse	0.30	3
Na	23	45	2	21.873	ppb	11.36	119,500.41	1.161E+00	Pulse	0.30	3
Mg	26	45	2	0.445	ppb	59.64	138.90	1.347E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	300.00	2.916E-03	Pulse	0.30	3
K	39	45	2	3.626	ppb	41.09	13,841.83	1.345E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,657.49	4.014E-03	Pulse	0.30	3
V	51	45	2	0.007	ppb	115.37	750.05	7.278E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,053.29	1.023E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.45	2.562E-03	Pulse	0.30	3
Fe	56	45	2	0.093	ppb	17.89	2,673.57	2.598E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	22.08	2.131E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	54.29	6.517E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	697.70	8.373E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	371.70	4.455E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	34.39	29.78	3.580E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	83.45	11.11	1.069E-04	Pulse	0.30	3
Mo	95	103	2	0.102	ppb	8.84	680.05	2.356E-04	Pulse	0.30	3
Ag	107	103	3	0.443	ppb	15.11	33,183.86	4.394E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	20.92	2.598E-06	Pulse	0.30	3
Sb	121	115	3	0.051	ppb	1.04	4,730.92	5.865E-04	Pulse	0.30	3
Ba	137	159	3	0.014	ppb	8.05	429.12	3.730E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	53.34	1,679.06	2.491E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,174.81	1.743E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	12.44	849.98	1.261E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,403,258.64	0.25	80.4	Analog	0.30	3
2	Sc	45	102,974.34	2.05	91.0	Pulse	0.30	3
3	Sc	45	3,901,056.02	0.49	83.5	Analog	0.30	3
1	Ge	72	103,875.21	0.72	94.1	Pulse	0.30	3

2	Ge	72	83,349.43	1.52	93.6	Pulse	0.30	3
2	Rh	103	2,886,174.09	0.63	93.7	Analog	0.30	3
3	Rh	103	7,552,502.67	0.17	90.0	Analog	0.30	3
3	In	115	8,066,673.38	0.49	91.0	Analog	0.30	3
3	Tb	159	11,504,500.94	0.12	91.7	Analog	0.30	3
3	Bi	209	6,739,121.01	0.31	92.0	Analog	0.30	3

Quantitation Report

File Name	A0219065.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:55
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.487	ppb	2.21	4,553.02	2.972E-03	Pulse	0.30	3
Na	23	45	2	2.810	ppb	49.26	104,484.03	9.222E-01	Pulse	0.30	3
Mg	26	45	2	3.578	ppb	10.23	560.03	4.942E-03	Pulse	0.30	3
Al	27	45	2	11.715	ppb	5.70	3,122.60	2.757E-02	Pulse	0.30	3
K	39	45	2	2.648	ppb	16.93	14,804.86	1.307E-01	Pulse	0.30	3
Ca	44	45	3	8.215	ppb	1.09	34,857.46	8.184E-03	Pulse	0.30	3
V	51	45	2	0.992	ppb	0.50	8,013.38	7.071E-02	Pulse	0.30	3
Cr	52	45	2	0.943	ppb	2.51	11,136.29	9.828E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	2.92	3,022.71	2.667E-02	Pulse	0.30	3
Fe	56	45	2	11.290	ppb	0.23	96,114.67	8.482E-01	Pulse	0.30	3
Co	59	45	2	0.511	ppb	2.03	10,037.76	8.857E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	3.47	5,706.57	6.148E-02	Pulse	0.30	3
Cu	63	72	2	0.749	ppb	3.20	17,006.06	1.832E-01	Pulse	0.30	3
Zn	66	72	2	8.823	ppb	0.60	20,278.20	2.184E-01	Pulse	0.30	3
As	75	72	2	0.085	ppb	21.56	106.22	1.147E-03	Pulse	0.75	3
Se	78	72	1	0.497	ppb	16.02	291.13	2.523E-03	Pulse	0.30	3
Mo	95	103	2	0.514	ppb	3.02	3,687.26	1.155E-03	Pulse	0.30	3
Ag	107	103	3	0.457	ppb	1.09	37,249.17	4.521E-03	Pulse	0.30	3
Cd	111	115	3	0.513	ppb	0.88	8,522.73	9.602E-04	Pulse	0.30	3
Sb	121	115	3	0.524	ppb	1.37	30,261.13	3.409E-03	Pulse	0.30	3
Ba	137	159	3	1.173	ppb	1.58	25,420.23	1.996E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.56	65,447.48	8.741E-03	Pulse	0.30	3
Pb	208	209	3	1.035	ppb	1.25	192,243.67	2.568E-02	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.42	100,320.81	1.340E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,531,860.01	0.61	87.8	Analog	0.30	3
2	Sc	45	113,317.15	1.20	100.1	Pulse	0.30	3
3	Sc	45	4,259,075.73	0.46	91.1	Analog	0.30	3
1	Ge	72	115,487.39	1.07	104.6	Pulse	0.30	3

2	Ge	72	92,848.63	2.00	104.2	Pulse	0.30	3
2	Rh	103	3,193,504.64	0.34	103.7	Analog	0.30	3
3	Rh	103	8,239,404.67	0.50	98.1	Analog	0.30	3
3	In	115	8,876,788.72	0.82	100.2	Analog	0.30	3
3	Tb	159	12,738,041.48	0.20	101.6	Analog	0.30	3
3	Bi	209	7,487,344.75	0.95	102.2	Analog	0.30	3

Quantitation Report

File Name	A0219066.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:01
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	185.02	26.67	1.761E-05	Pulse	0.30	3
Na	23	45	2	93642.739	ppb	1.64	135,547,466.87	1.174E+03	Analog	0.30	3
Mg	26	45	2	91761.974	ppb	1.44	12,159,026.21	1.053E+02	Analog	0.30	3
Al	27	45	2	0.331	ppb	155.88	471.95	4.079E-03	Pulse	0.30	3
K	39	45	2	97154.993	ppb	0.89	44,005,661.57	3.809E+02	Analog	0.30	3
Ca	44	45	3	96250.448	ppb	0.57	213,957,810.15	4.656E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	558.92	4.844E-03	Pulse	0.30	3
Cr	52	45	2	0.119	ppb	11.65	2,952.69	2.556E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-11,797.48	-1.022E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,979.48	-3.454E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	24.22	2.125E-04	Pulse	0.30	3
Ni	60	72	2	0.350	ppb	8.46	2,049.66	2.410E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,716.99	-2.016E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,111.92	-1.305E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.91	-5.664E-05	Pulse	0.75	3
Se	78	72	1	0.018	ppb	73.29	10.00	9.887E-05	Pulse	0.30	3
Mo	95	103	2	0.051	ppb	22.61	327.80	1.220E-04	Pulse	0.30	3
Ag	107	103	3	0.081	ppb	4.60	8,394.51	1.160E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-447.20	-5.631E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,629.05	2.051E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-19,079.95	-1.637E-03	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	26.17	1,856.87	3.272E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-425.19	-7.496E-05	Pulse	0.30	3
U	238	209	3	0.001	ppb	22.79	319.41	5.630E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,515,147.11	1.17	86.8	Analog	0.30	3
2	Sc	45	115,538.84	3.10	102.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,595,748.79	1.15	98.3	Analog	0.30	3
1	Ge	72	100,654.47	1.10	91.2	Pulse	0.30	3
2	Ge	72	85,119.42	2.01	95.5	Pulse	0.30	3
2	Rh	103	2,692,887.69	2.13	87.4	Analog	0.30	3
3	Rh	103	7,240,122.95	0.53	86.2	Analog	0.30	3
3	In	115	7,940,775.25	0.23	89.6	Analog	0.30	3
3	Tb	159	11,657,066.35	0.42	92.9	Analog	0.30	3
3	Bi	209	5,675,417.62	0.44	77.5	Analog	0.30	3

Quantitation Report

File Name	A0219067.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:06
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.549	ppb	1.49	191,380.81	1.188E-01	Pulse	0.30	3
Na	23	45	2	93131.371	ppb	1.49	149,184,135.56	1.167E+03	Analog	0.30	3
Mg	26	45	2	91663.474	ppb	1.49	13,440,731.61	1.052E+02	Analog	0.30	3
Al	27	45	2	21.091	ppb	3.75	5,997.04	4.691E-02	Pulse	0.30	3
K	39	45	2	95563.026	ppb	1.49	47,891,720.95	3.747E+02	Analog	0.30	3
Ca	44	45	3	96048.568	ppb	0.38	231,565,823.22	4.646E+01	Analog	0.30	3
V	51	45	2	20.711	ppb	1.58	171,374.93	1.341E+00	Pulse	0.30	3
Cr	52	45	2	19.750	ppb	1.25	224,653.34	1.758E+00	Pulse	0.30	3
Mn	55	45	2	16.492	ppb	2.01	93,504.42	7.316E-01	Pulse	0.30	3
Fe	56	45	2	20.589	ppb	2.16	195,668.78	1.531E+00	Pulse	0.30	3
Co	59	45	2	18.900	ppb	1.02	417,900.90	3.269E+00	Pulse	0.30	3
Ni	60	72	2	19.686	ppb	1.19	110,150.90	1.194E+00	Pulse	0.30	3
Cu	63	72	2	19.188	ppb	0.34	291,341.42	3.159E+00	Pulse	0.30	3
Zn	66	72	2	17.740	ppb	0.73	37,648.99	4.082E-01	Pulse	0.30	3
As	75	72	2	19.556	ppb	1.08	20,972.05	2.274E-01	Pulse	0.75	3
Se	78	72	1	17.529	ppb	0.18	9,748.86	8.862E-02	Pulse	0.30	3
Mo	95	103	2	23.324	ppb	0.79	148,049.34	5.207E-02	Pulse	0.30	3
Ag	107	103	3	19.211	ppb	0.88	1,308,136.69	1.720E-01	Mix	0.30	3
Cd	111	115	3	19.357	ppb	0.80	301,171.07	3.601E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.57	1,052,995.69	1.259E-01	Pulse	0.30	3
Ba	137	159	3	24.096	ppb	0.48	492,776.51	4.073E-02	Pulse	0.30	3
Tl	205	209	3	22.093	ppb	0.79	2,341,947.14	3.999E-01	Analog	0.30	3
Pb	208	209	3	22.271	ppb	0.84	3,199,201.83	5.463E-01	Analog	0.30	3
U	238	209	3	22.767	ppb	0.27	3,463,210.38	5.914E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,610,545.96	0.89	92.3	Analog	0.30	3
2	Sc	45	127,842.65	2.32	113.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,984,177.63	0.76	106.6	Analog	0.30	3
1	Ge	72	110,007.65	0.86	99.6	Pulse	0.30	3
2	Ge	72	92,238.97	1.69	103.5	Pulse	0.30	3
2	Rh	103	2,842,872.88	1.80	92.3	Analog	0.30	3
3	Rh	103	7,604,470.79	0.63	90.6	Analog	0.30	3
3	In	115	8,364,111.15	0.29	94.4	Analog	0.30	3
3	Tb	159	12,098,636.62	0.22	96.5	Analog	0.30	3
3	Bi	209	5,856,107.06	0.35	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219068.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:11
Sample Name	N023137-002A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	25.38	35.55	1.898E-05	Pulse	0.30	3
Na	23	45	2	930.445	ppb	3.76	1,538,874.16	1.254E+01	Analog	0.30	3
Mg	26	45	2	236.547	ppb	1.03	33,415.17	2.722E-01	Pulse	0.30	3
Al	27	45	2	59.148	ppb	5.75	15,391.02	1.254E-01	Pulse	0.30	3
K	39	45	2	268.668	ppb	1.16	144,046.71	1.173E+00	Pulse	0.30	3
Ca	44	45	3	2519.195	ppb	0.37	6,272,579.42	1.223E+00	Analog	0.30	3
V	51	45	2	0.472	ppb	5.27	4,566.39	3.719E-02	Pulse	0.30	3
Cr	52	45	2	0.316	ppb	6.42	5,267.05	4.291E-02	Pulse	0.30	3
Mn	55	45	2	2.321	ppb	4.21	12,993.17	1.059E-01	Pulse	0.30	3
Fe	56	45	2	67.183	ppb	1.53	607,980.89	4.953E+00	Pulse	0.30	3
Co	59	45	2	0.049	ppb	7.74	1,061.76	8.648E-03	Pulse	0.30	3
Ni	60	72	2	0.433	ppb	4.75	2,737.14	2.916E-02	Pulse	0.30	3
Cu	63	72	2	2.719	ppb	1.28	47,051.89	5.011E-01	Pulse	0.30	3
Zn	66	72	2	16.185	ppb	1.48	35,210.82	3.751E-01	Pulse	0.30	3
As	75	72	2	0.136	ppb	14.55	163.02	1.735E-03	Pulse	0.75	3
Se	78	72	1	0.063	ppb	40.23	34.44	3.276E-04	Pulse	0.30	3
Mo	95	103	2	0.655	ppb	2.16	4,551.95	1.469E-03	Pulse	0.30	3
Ag	107	103	3	0.133	ppb	10.13	13,814.35	1.622E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6.41	-7.101E-07	Pulse	0.30	3
Sb	121	115	3	0.440	ppb	1.91	26,490.99	2.911E-03	Pulse	0.30	3
Ba	137	159	3	5.598	ppb	0.78	120,109.00	9.473E-03	Pulse	0.30	3
Tl	205	209	3	0.129	ppb	11.79	18,216.40	2.546E-03	Pulse	0.30	3
Pb	208	209	3	0.969	ppb	0.91	172,239.80	2.406E-02	Pulse	0.30	3
U	238	209	3	0.029	ppb	1.68	5,632.35	7.868E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,871,949.06	0.84	107.3	Analog	0.30	3
2	Sc	45	122,772.72	1.61	108.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,130,306.45	0.12	109.8	Analog	0.30	3
1	Ge	72	104,809.73	1.21	94.9	Pulse	0.30	3
2	Ge	72	93,882.83	1.73	105.4	Pulse	0.30	3
2	Rh	103	3,098,226.90	0.53	100.6	Analog	0.30	3
3	Rh	103	8,517,910.08	0.43	101.5	Analog	0.30	3
3	In	115	9,099,579.88	0.42	102.7	Analog	0.30	3
3	Tb	159	12,679,645.23	0.66	101.1	Analog	0.30	3
3	Bi	209	7,158,279.76	0.50	97.7	Analog	0.30	3

Quantitation Report

File Name	A0219069.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:16
Sample Name	N023137-003A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	19.66	38.89	2.148E-05	Pulse	0.30	3
Na	23	45	2	1099.762	ppb	1.93	1,832,702.21	1.466E+01	Analog	0.30	3
Mg	26	45	2	229.137	ppb	2.55	32,967.61	2.637E-01	Pulse	0.30	3
Al	27	45	2	103.911	ppb	1.40	27,236.80	2.178E-01	Pulse	0.30	3
K	39	45	2	277.469	ppb	1.48	151,018.65	1.208E+00	Pulse	0.30	3
Ca	44	45	3	1709.619	ppb	0.66	4,067,600.25	8.311E-01	Analog	0.30	3
V	51	45	2	0.459	ppb	5.02	4,547.48	3.638E-02	Pulse	0.30	3
Cr	52	45	2	0.531	ppb	2.75	7,736.85	6.188E-02	Pulse	0.30	3
Mn	55	45	2	5.706	ppb	1.16	31,925.70	2.553E-01	Pulse	0.30	3
Fe	56	45	2	131.242	ppb	1.78	1,207,380.33	9.656E+00	Pulse	0.30	3
Co	59	45	2	0.157	ppb	5.11	3,426.98	2.742E-02	Pulse	0.30	3
Ni	60	72	2	1.509	ppb	9.46	8,995.39	9.423E-02	Pulse	0.30	3
Cu	63	72	2	6.632	ppb	0.96	108,066.32	1.132E+00	Pulse	0.30	3
Zn	66	72	2	107.974	ppb	1.88	222,157.90	2.328E+00	Pulse	0.30	3
As	75	72	2	0.115	ppb	15.65	142.12	1.490E-03	Pulse	0.75	3
Se	78	72	1	0.030	ppb	60.17	18.89	1.608E-04	Pulse	0.30	3
Mo	95	103	2	1.175	ppb	7.64	8,292.17	2.631E-03	Pulse	0.30	3
Ag	107	103	3	0.021	ppb	15.97	5,202.76	6.236E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	5.97	561.36	6.326E-05	Pulse	0.30	3
Sb	121	115	3	1.358	ppb	0.74	74,423.12	8.386E-03	Pulse	0.30	3
Ba	137	159	3	6.955	ppb	0.61	145,517.85	1.176E-02	Pulse	0.30	3
Tl	205	209	3	0.040	ppb	3.73	6,689.56	9.408E-04	Pulse	0.30	3
Pb	208	209	3	8.445	ppb	0.31	1,474,229.26	2.074E-01	Pulse	0.30	3
U	238	209	3	0.032	ppb	4.71	6,038.00	8.492E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,809,627.96	0.66	103.7	Analog	0.30	3
2	Sc	45	125,046.77	1.77	110.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,894,445.59	0.77	104.7	Analog	0.30	3
1	Ge	72	117,317.12	0.62	106.3	Pulse	0.30	3
2	Ge	72	95,433.17	1.77	107.1	Pulse	0.30	3
2	Rh	103	3,151,227.69	0.71	102.3	Analog	0.30	3
3	Rh	103	8,345,096.54	0.51	99.4	Analog	0.30	3
3	In	115	8,875,222.70	0.63	100.1	Analog	0.30	3
3	Tb	159	12,369,176.34	0.58	98.6	Analog	0.30	3
3	Bi	209	7,109,823.44	0.27	97.1	Analog	0.30	3

Quantitation Report

File Name	A0219070.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:22
Sample Name	N023137-004A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	27.18	74.45	4.178E-05	Pulse	0.30	3
Na	23	45	2	1393.202	ppb	1.76	2,210,406.60	1.833E+01	Analog	0.30	3
Mg	26	45	2	194.401	ppb	0.37	26,992.41	2.239E-01	Pulse	0.30	3
Al	27	45	2	106.548	ppb	1.45	26,912.47	2.232E-01	Pulse	0.30	3
K	39	45	2	361.676	ppb	2.19	185,406.17	1.538E+00	Pulse	0.30	3
Ca	44	45	3	1985.203	ppb	0.25	4,576,194.62	9.644E-01	Analog	0.30	3
V	51	45	2	0.453	ppb	6.42	4,339.66	3.601E-02	Pulse	0.30	3
Cr	52	45	2	1.168	ppb	2.46	14,238.04	1.181E-01	Pulse	0.30	3
Mn	55	45	2	8.684	ppb	3.02	46,623.13	3.868E-01	Pulse	0.30	3
Fe	56	45	2	146.935	ppb	1.07	1,303,186.82	1.081E+01	Analog	0.30	3
Co	59	45	2	0.142	ppb	2.11	2,987.08	2.476E-02	Pulse	0.30	3
Ni	60	72	2	3.210	ppb	2.76	18,506.81	1.972E-01	Pulse	0.30	3
Cu	63	72	2	5.805	ppb	0.41	93,798.94	9.990E-01	Pulse	0.30	3
Zn	66	72	2	52.644	ppb	2.39	108,034.27	1.151E+00	Pulse	0.30	3
As	75	72	2	0.111	ppb	25.79	135.48	1.446E-03	Pulse	0.75	3
Se	78	72	1	0.052	ppb	22.93	31.11	2.720E-04	Pulse	0.30	3
Mo	95	103	2	1.578	ppb	16.24	10,937.91	3.530E-03	Pulse	0.30	3
Ag	107	103	3	0.043	ppb	9.54	6,699.83	8.196E-04	Pulse	0.30	3
Cd	111	115	3	0.171	ppb	6.36	2,844.31	3.240E-04	Pulse	0.30	3
Sb	121	115	3	0.643	ppb	1.12	36,169.15	4.120E-03	Pulse	0.30	3
Ba	137	159	3	6.928	ppb	1.11	143,591.39	1.172E-02	Pulse	0.30	3
Tl	205	209	3	0.027	ppb	4.25	4,856.57	6.951E-04	Pulse	0.30	3
Pb	208	209	3	4.013	ppb	0.34	689,564.21	9.870E-02	Pulse	0.30	3
U	238	209	3	0.036	ppb	1.85	6,714.83	9.611E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,780,964.46	0.45	102.0	Analog	0.30	3
2	Sc	45	120,584.36	2.02	106.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,745,192.53	0.21	101.5	Analog	0.30	3
1	Ge	72	114,331.02	0.28	103.5	Pulse	0.30	3
2	Ge	72	93,897.27	1.98	105.4	Pulse	0.30	3
2	Rh	103	3,101,081.66	2.31	100.7	Analog	0.30	3
3	Rh	103	8,175,388.42	0.44	97.4	Analog	0.30	3
3	In	115	8,778,581.01	0.29	99.1	Analog	0.30	3
3	Tb	159	12,253,007.87	0.62	97.7	Analog	0.30	3
3	Bi	209	6,986,674.55	0.54	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219071.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:27
Sample Name	MB-61257,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	7.466E-06	Pulse	0.30	3
Na	23	45	2	176.444	ppb	4.54	372,419.93	3.097E+00	Pulse	0.30	3
Mg	26	45	2	1.666	ppb	26.34	330.02	2.749E-03	Pulse	0.30	3
Al	27	45	2	0.254	ppb	71.97	471.11	3.920E-03	Pulse	0.30	3
K	39	45	2	26.330	ppb	7.09	26,880.29	2.235E-01	Pulse	0.30	3
Ca	44	45	3	6.656	ppb	4.83	35,457.61	7.430E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	650.05	5.412E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,398.61	1.163E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	266.16	2.212E-03	Pulse	0.30	3
Fe	56	45	2	0.156	ppb	40.05	3,680.60	3.061E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	8.49	7.049E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	69.56	7.288E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	738.93	7.774E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,724.47	2.863E-02	Pulse	0.30	3
As	75	72	2	0.002	ppb	392.28	16.89	1.785E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	77.62	7.78	6.678E-05	Pulse	0.30	3
Mo	95	103	2	0.044	ppb	13.53	338.91	1.071E-04	Pulse	0.30	3
Ag	107	103	3	0.037	ppb	17.23	6,388.29	7.638E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19.49	-2.194E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	815.61	9.181E-05	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	3.94	600.57	4.852E-05	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	9.04	3,103.80	4.370E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,094.07	1.541E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	9.47	309.21	4.355E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,787,561.23	0.77	102.4	Analog	0.30	3
2	Sc	45	120,318.49	1.96	106.3	Pulse	0.30	3
3	Sc	45	4,772,175.80	0.32	102.1	Analog	0.30	3
1	Ge	72	116,702.90	0.61	105.7	Pulse	0.30	3
2	Ge	72	95,132.14	1.99	106.8	Pulse	0.30	3
2	Rh	103	3,165,068.77	1.24	102.7	Analog	0.30	3
3	Rh	103	8,366,029.60	0.81	99.6	Analog	0.30	3
3	In	115	8,883,523.63	0.07	100.2	Analog	0.30	3
3	Tb	159	12,377,543.84	0.53	98.7	Analog	0.30	3
3	Bi	209	7,100,382.26	0.76	96.9	Analog	0.30	3

Quantitation Report

File Name	A0219072.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:33
Sample Name	LCS-61257,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.825	ppb	1.05	113,926.08	5.973E-02	Pulse	0.30	3
Na	23	45	2	390.901	ppb	1.76	761,262.06	5.782E+00	Pulse	0.30	3
Mg	26	45	2	105.924	ppb	0.86	16,109.42	1.224E-01	Pulse	0.30	3
Al	27	45	2	212.526	ppb	1.09	58,186.15	4.419E-01	Pulse	0.30	3
K	39	45	2	111.811	ppb	1.70	73,537.71	5.586E-01	Pulse	0.30	3
Ca	44	45	3	121.515	ppb	0.95	324,681.52	6.298E-02	Pulse	0.30	3
V	51	45	2	10.157	ppb	0.57	87,037.06	6.610E-01	Pulse	0.30	3
Cr	52	45	2	10.028	ppb	0.32	118,476.02	8.998E-01	Pulse	0.30	3
Mn	55	45	2	101.371	ppb	1.06	589,760.74	4.479E+00	Pulse	0.30	3
Fe	56	45	2	105.565	ppb	0.83	1,023,159.97	7.771E+00	Pulse	0.30	3
Co	59	45	2	9.886	ppb	1.34	225,160.93	1.710E+00	Pulse	0.30	3
Ni	60	72	2	10.039	ppb	1.11	62,649.06	6.104E-01	Pulse	0.30	3
Cu	63	72	2	10.359	ppb	1.51	177,964.70	1.734E+00	Pulse	0.30	3
Zn	66	72	2	101.569	ppb	1.01	224,987.69	2.192E+00	Pulse	0.30	3
As	75	72	2	10.010	ppb	1.30	11,954.71	1.165E-01	Pulse	0.75	3
Se	78	72	1	9.607	ppb	2.47	6,022.50	4.858E-02	Pulse	0.30	3
Mo	95	103	2	10.075	ppb	1.13	76,540.83	2.250E-02	Pulse	0.30	3
Ag	107	103	3	10.233	ppb	0.69	827,163.15	9.183E-02	Pulse	0.30	3
Cd	111	115	3	10.614	ppb	0.56	189,218.44	1.975E-02	Pulse	0.30	3
Sb	121	115	3	10.430	ppb	0.38	598,820.48	6.249E-02	Pulse	0.30	3
Ba	137	159	3	107.586	ppb	0.82	2,434,614.80	1.818E-01	Analog	0.30	3
Tl	205	209	3	10.169	ppb	1.46	1,418,836.44	1.842E-01	Analog	0.30	3
Pb	208	209	3	10.669	ppb	0.35	2,017,230.29	2.619E-01	Pulse	0.30	3
U	238	209	3	10.376	ppb	1.04	2,076,159.41	2.695E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,907,310.09	0.92	109.3	Analog	0.30	3
2	Sc	45	131,672.75	1.33	116.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,155,212.91	0.62	110.3	Analog	0.30	3
1	Ge	72	123,953.64	1.23	112.3	Pulse	0.30	3
2	Ge	72	102,643.72	1.18	115.2	Pulse	0.30	3
2	Rh	103	3,401,856.34	0.85	110.4	Analog	0.30	3
3	Rh	103	9,007,882.85	0.58	107.3	Analog	0.30	3
3	In	115	9,582,152.96	0.34	108.1	Analog	0.30	3
3	Tb	159	13,391,451.19	0.58	106.8	Analog	0.30	3
3	Bi	209	7,702,850.30	0.62	105.2	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219073.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:38
Sample Name	N022998-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	46.05	13.33	4.535E-05	Pulse	0.30	3
Na	23	45	2	3697597.968	ppb	0.98	3,875,718,235.58	4.631E+04	Analog	0.30	3
Mg	26	45	2	2695.905	ppb	0.80	258,916.51	3.094E+00	Pulse	0.30	3
Al	27	45	2	4.512	ppb	2.54	1,063.20	1.270E-02	Pulse	0.30	3
K	39	45	2	30711.190	ppb	1.11	10,085,954.92	1.205E+02	Analog	0.30	3
Ca	44	45	3	90436.756	ppb	0.24	134,780,581.32	4.375E+01	Analog	0.30	3
V	51	45	2	2.630	ppb	0.59	14,746.05	1.762E-01	Pulse	0.30	3
Cr	52	45	2	18.201	ppb	0.45	135,647.01	1.621E+00	Pulse	0.30	3
Mn	55	45	2	13.458	ppb	1.63	50,018.76	5.976E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-316,264.24	-3.779E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,782.49	-4.519E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,577.46	-7.100E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-88,947.75	-1.765E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,030.75	-1.991E-01	Pulse	0.30	3
As	75	72	2	1.949	ppb	1.74	1,149.06	2.280E-02	Pulse	0.75	3
Se	78	72	1	0.562	ppb	22.08	154.45	2.849E-03	Pulse	0.30	3
Mo	95	103	2	213.393	ppb	0.70	686,490.88	4.764E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,616.82	-7.321E-04	Pulse	0.30	3
Cd	111	115	3	0.115	ppb	12.19	918.93	2.191E-04	Pulse	0.30	3
Sb	121	115	3	0.087	ppb	6.92	3,371.61	8.037E-04	Pulse	0.30	3
Ba	137	159	3	28.734	ppb	0.26	304,301.58	4.857E-02	Pulse	0.30	3
Tl	205	209	3	0.699	ppb	2.06	35,155.86	1.285E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-28,354.29	-1.037E-02	Pulse	0.30	3
U	238	209	3	0.099	ppb	2.44	7,140.56	2.611E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	288,829.26	8.68	16.5	Analog	0.30	3
2	Sc	45	83,691.45	1.69	73.9	Pulse	0.30	3
3	Sc	45	3,081,007.63	0.80	65.9	Analog	0.30	3
1	Ge	72	54,232.19	1.03	49.1	Pulse	0.30	3
2	Ge	72	50,385.49	2.16	56.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,440,984.91	1.87	46.8	Analog	0.30	3
3	Rh	103	3,579,234.63	0.41	42.6	Analog	0.30	3
3	In	115	4,195,173.17	0.52	47.3	Analog	0.30	3
3	Tb	159	6,265,773.45	0.32	50.0	Analog	0.30	3
3	Bi	209	2,735,025.69	0.87	37.3	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE

For As, Mo & Se only

File Name	A0219074.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:44
Sample Name	N022998-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.099E-06	Pulse	0.30	3
Na	23	45	2	774247.183	ppb	1.37	1,188,861,164.51	9.697E+03	Analog	0.30	3
Mg	26	45	2	578.956	ppb	1.50	81,531.25	6.650E-01	Pulse	0.30	3
Al	27	45	2	1.820	ppb	13.23	877.48	7.151E-03	Pulse	0.30	3
K	39	45	2	6127.292	ppb	0.84	2,959,662.73	2.414E+01	Analog	0.30	3
Ca	44	45	3	18850.082	ppb	0.34	44,435,614.89	9.121E+00	Analog	0.30	3
V	51	45	2	0.505	ppb	3.52	4,823.15	3.935E-02	Pulse	0.30	3
Cr	52	45	2	3.874	ppb	1.44	43,760.12	3.569E-01	Pulse	0.30	3
Mn	55	45	2	2.889	ppb	1.71	16,056.69	1.309E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-91,682.20	-7.478E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,156.71	-9.433E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-989.15	-1.205E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-26,775.49	-3.263E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,344.10	-2.857E-02	Pulse	0.30	3
As	75	72	2	0.421	ppb	3.37	414.43	5.050E-03	Pulse	0.75	3
Se	78	72	1	0.086	ppb	67.16	41.11	4.467E-04	Pulse	0.30	3
Mo	95	103	2	39.146	ppb	0.76	214,589.09	8.739E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,151.48	-3.308E-04	Pulse	0.30	3
Cd	111	115	3	0.030	ppb	9.91	450.96	6.207E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,529.03	2.104E-04	Pulse	0.30	3
Ba	137	159	3	5.801	ppb	1.38	104,803.29	9.816E-03	Pulse	0.30	3
Tl	205	209	3	0.157	ppb	2.47	15,477.55	3.057E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,292.16	-1.243E-03	Pulse	0.30	3
U	238	209	3	0.018	ppb	2.75	2,473.16	4.884E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,459,666.82	1.03	83.6	Analog	0.30	3
2	Sc	45	122,635.24	2.78	108.4	Pulse	0.30	3
3	Sc	45	4,871,647.70	0.64	104.2	Analog	0.30	3
1	Ge	72	92,539.54	1.31	83.8	Pulse	0.30	3
2	Ge	72	82,056.17	1.44	92.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,455,300.67	1.44	79.7	Analog	0.30	3
3	Rh	103	6,503,768.72	0.13	77.5	Analog	0.30	3
3	In	115	7,266,894.53	0.52	82.0	Analog	0.30	3
3	Tb	159	10,676,794.98	0.31	85.1	Analog	0.30	3
3	Bi	209	5,063,566.90	0.39	69.1	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219075.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:50
Sample Name	N022998-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.028E-06	Pulse	0.30	3
Na	23	45	2	159527.210	ppb	1.41	266,832,760.47	1.999E+03	Analog	0.30	3
Mg	26	45	2	120.599	ppb	2.01	18,580.89	1.392E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	413.73	3.100E-03	Pulse	0.30	3
K	39	45	2	1311.672	ppb	0.57	702,543.25	5.262E+00	Pulse	0.30	3
Ca	44	45	3	3883.325	ppb	0.50	10,041,024.29	1.882E+00	Analog	0.30	3
V	51	45	2	0.080	ppb	6.76	1,594.59	1.194E-02	Pulse	0.30	3
Cr	52	45	2	0.791	ppb	4.00	11,324.96	8.485E-02	Pulse	0.30	3
Mn	55	45	2	0.584	ppb	3.29	3,894.13	2.917E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-17,898.47	-1.341E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-246.03	-1.843E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-146.57	-1.504E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,345.64	-5.485E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-112.95	-1.154E-03	Pulse	0.30	3
As	75	72	2	0.088	ppb	19.50	114.61	1.177E-03	Pulse	0.75	3
Se	78	72	1	0.048	ppb	49.05	28.89	2.522E-04	Pulse	0.30	3
Mo	95	103	2	7.603	ppb	1.35	50,208.46	1.698E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	253.43	3.184E-05	Pulse	0.30	3
Cd	111	115	3	0.005	ppb	28.28	130.01	1.489E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	854.50	9.788E-05	Pulse	0.30	3
Ba	137	159	3	1.248	ppb	1.64	26,271.14	2.123E-03	Pulse	0.30	3
Tl	205	209	3	0.051	ppb	3.76	7,248.76	1.133E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	256.78	2,052.42	3.208E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	21.97	751.23	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,836,246.38	0.47	105.2	Analog	0.30	3
2	Sc	45	133,530.28	1.96	118.0	Pulse	0.30	3
3	Sc	45	5,334,135.20	0.44	114.1	Analog	0.30	3
1	Ge	72	114,693.32	0.73	103.9	Pulse	0.30	3
2	Ge	72	97,457.75	1.11	109.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,956,995.23	0.66	96.0	Analog	0.30	3
3	Rh	103	7,962,917.45	0.23	94.8	Analog	0.30	3
3	In	115	8,729,524.15	0.25	98.5	Analog	0.30	3
3	Tb	159	12,377,439.12	0.54	98.7	Analog	0.30	3
3	Bi	209	6,399,614.00	0.63	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219076.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:56
Sample Name	N022998-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	37.781	ppb	3.01	50,677.04	2.297E-01	Pulse	0.30	3
Na	23	45	2	OR	ppb	---	OR	1.545E+04	Error	0.30	3
Mg	26	45	2	2799.004	ppb	0.51	307,929.80	3.212E+00	Pulse	0.30	3
Al	27	45	2	195.250	ppb	0.66	38,946.30	4.062E-01	Pulse	0.30	3
K	39	45	2	30498.973	ppb	0.77	11,473,246.77	1.197E+02	Analog	0.30	3
Ca	44	45	3	91287.726	ppb	0.68	144,552,743.40	4.416E+01	Analog	0.30	3
V	51	45	2	11.868	ppb	1.11	73,945.12	7.712E-01	Pulse	0.30	3
Cr	52	45	2	26.403	ppb	2.86	224,809.05	2.345E+00	Pulse	0.30	3
Mn	55	45	2	88.487	ppb	1.48	374,878.44	3.911E+00	Pulse	0.30	3
Fe	56	45	2	62.045	ppb	52.77	439,832.46	4.575E+00	Pulse	0.30	3
Co	59	45	2	6.838	ppb	3.62	113,425.74	1.183E+00	Pulse	0.30	3
Ni	60	72	2	8.507	ppb	9.40	29,109.60	5.177E-01	Pulse	0.30	3
Cu	63	72	2	4.602	ppb	145.06	45,931.99	8.049E-01	Pulse	0.30	3
Zn	66	72	2	67.408	ppb	8.25	82,363.07	1.465E+00	Pulse	0.30	3
As	75	72	2	10.588	ppb	1.46	6,917.54	1.232E-01	Pulse	0.75	3
Se	78	72	1	8.675	ppb	3.64	2,618.09	4.386E-02	Pulse	0.30	3
Mo	95	103	2	232.246	ppb	1.28	793,646.47	5.184E-01	Pulse	0.30	3
Ag	107	103	3	8.373	ppb	0.78	273,121.32	7.522E-02	Pulse	0.30	3
Cd	111	115	3	8.022	ppb	0.95	63,785.27	1.493E-02	Pulse	0.30	3
Sb	121	115	3	9.329	ppb	0.85	238,993.14	5.593E-02	Pulse	0.30	3
Ba	137	159	3	126.860	ppb	1.34	1,359,493.07	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.277	ppb	0.48	515,017.80	1.861E-01	Pulse	0.30	3
Pb	208	209	3	10.675	ppb	0.24	724,955.07	2.620E-01	Pulse	0.30	3
U	238	209	3	14.125	ppb	0.03	1,015,183.61	3.669E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	220,799.58	3.23	12.7	Analog	0.30	3
2	Sc	45	95,871.88	0.90	84.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,273,742.24	0.96	70.0	Analog	0.30	3
1	Ge	72	59,668.80	2.10	54.0	Pulse	0.30	3
2	Ge	72	56,166.57	1.80	63.0	Pulse	0.30	3
2	Rh	103	1,530,700.50	0.85	49.7	Analog	0.30	3
3	Rh	103	3,630,986.79	0.64	43.2	Analog	0.30	3
3	In	115	4,273,432.94	0.79	48.2	Analog	0.30	3
3	Tb	159	6,341,989.56	0.77	50.6	Analog	0.30	3
3	Bi	209	2,766,838.78	0.33	37.8	Analog	0.30	3

Quantitation Report

File Name	A0219077.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:01
Sample Name	N022998-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.009	ppb	1.63	18,066.84	1.222E-02	Pulse	0.30	3
Na	23	45	2	802284.904	ppb	0.81	1,270,323,154.40	1.005E+04	Analog	0.30	3
Mg	26	45	2	609.762	ppb	1.41	88,535.24	7.003E-01	Pulse	0.30	3
Al	27	45	2	40.746	ppb	1.53	11,056.38	8.746E-02	Pulse	0.30	3
K	39	45	2	6305.995	ppb	0.83	3,140,025.30	2.484E+01	Analog	0.30	3
Ca	44	45	3	19108.719	ppb	0.52	46,457,370.42	9.246E+00	Analog	0.30	3
V	51	45	2	2.425	ppb	1.90	20,605.75	1.630E-01	Pulse	0.30	3
Cr	52	45	2	5.650	ppb	1.64	64,921.53	5.135E-01	Pulse	0.30	3
Mn	55	45	2	20.169	ppb	1.26	113,015.20	8.939E-01	Pulse	0.30	3
Fe	56	45	2	6.605	ppb	2.44	63,729.63	5.042E-01	Pulse	0.30	3
Co	59	45	2	1.583	ppb	1.39	34,639.40	2.740E-01	Pulse	0.30	3
Ni	60	72	2	1.592	ppb	2.72	8,452.27	9.926E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,128.63	-2.497E-02	Pulse	0.30	3
Zn	66	72	2	13.393	ppb	1.50	26,870.52	3.157E-01	Pulse	0.30	3
As	75	72	2	2.339	ppb	5.13	2,327.05	2.733E-02	Pulse	0.75	3
Se	78	72	1	1.738	ppb	6.65	842.28	8.796E-03	Pulse	0.30	3
Mo	95	103	2	42.358	ppb	0.70	240,076.12	9.456E-02	Pulse	0.30	3
Ag	107	103	3	1.828	ppb	1.02	111,489.65	1.676E-02	Pulse	0.30	3
Cd	111	115	3	1.856	ppb	0.33	25,794.93	3.458E-03	Pulse	0.30	3
Sb	121	115	3	2.017	ppb	0.62	91,874.06	1.232E-02	Pulse	0.30	3
Ba	137	159	3	26.510	ppb	0.83	490,006.64	4.481E-02	Pulse	0.30	3
Tl	205	209	3	2.199	ppb	0.74	207,595.04	4.001E-02	Pulse	0.30	3
Pb	208	209	3	2.130	ppb	0.27	272,579.00	5.253E-02	Pulse	0.30	3
U	238	209	3	2.705	ppb	0.07	364,769.79	7.030E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,478,020.90	0.76	84.7	Analog	0.30	3
2	Sc	45	126,434.49	2.10	111.7	Pulse	0.30	3
3	Sc	45	5,024,496.49	0.79	107.5	Analog	0.30	3
1	Ge	72	95,765.63	0.94	86.7	Pulse	0.30	3
2	Ge	72	85,134.40	1.19	95.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,538,616.56	1.45	82.4	Analog	0.30	3
3	Rh	103	6,651,488.65	0.07	79.2	Analog	0.30	3
3	In	115	7,459,483.66	0.64	84.2	Analog	0.30	3
3	Tb	159	10,936,340.67	1.06	87.2	Analog	0.30	3
3	Bi	209	5,188,888.32	0.59	70.8	Analog	0.30	3

Quantitation Report

File Name	A0219078.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:08
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.562	ppb	1.32	142,832.93	1.189E-01	Pulse	0.30	3
Na	23	45	2	208.000	ppb	4.06	329,692.29	3.492E+00	Pulse	0.30	3
Mg	26	45	2	197.519	ppb	0.95	21,479.97	2.274E-01	Pulse	0.30	3
Al	27	45	2	21.651	ppb	3.19	4,542.00	4.807E-02	Pulse	0.30	3
K	39	45	2	209.983	ppb	1.61	89,094.01	9.434E-01	Pulse	0.30	3
Ca	44	45	3	212.966	ppb	0.39	389,090.76	1.072E-01	Pulse	0.30	3
V	51	45	2	19.882	ppb	1.55	121,579.72	1.287E+00	Pulse	0.30	3
Cr	52	45	2	19.667	ppb	1.53	165,295.09	1.750E+00	Pulse	0.30	3
Mn	55	45	2	20.142	ppb	0.98	84,324.18	8.927E-01	Pulse	0.30	3
Fe	56	45	2	20.807	ppb	0.37	146,127.93	1.547E+00	Pulse	0.30	3
Co	59	45	2	20.157	ppb	1.09	329,288.40	3.487E+00	Pulse	0.30	3
Ni	60	72	2	19.869	ppb	0.93	88,869.51	1.205E+00	Pulse	0.30	3
Cu	63	72	2	20.638	ppb	0.82	250,151.18	3.393E+00	Pulse	0.30	3
Zn	66	72	2	19.149	ppb	1.03	32,306.24	4.381E-01	Pulse	0.30	3
As	75	72	2	20.033	ppb	0.82	17,177.18	2.329E-01	Pulse	0.75	3
Se	78	72	1	18.524	ppb	1.57	8,415.89	9.365E-02	Pulse	0.30	3
Mo	95	103	2	19.543	ppb	0.24	111,215.74	4.363E-02	Pulse	0.30	3
Ag	107	103	3	20.571	ppb	0.78	1,265,736.30	1.842E-01	Pulse	0.30	3
Cd	111	115	3	20.512	ppb	0.37	282,465.89	3.816E-02	Pulse	0.30	3
Sb	121	115	3	20.267	ppb	1.04	896,979.73	1.212E-01	Pulse	0.30	3
Ba	137	159	3	21.756	ppb	0.11	382,973.18	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.195	ppb	1.04	2,220,975.25	3.656E-01	Analog	0.30	3
Pb	208	209	3	20.515	ppb	1.11	3,057,276.85	5.033E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	0.89	3,083,701.09	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,150.95	0.70	68.8	Analog	0.30	3
2	Sc	45	94,457.47	1.97	83.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,629,070.40	0.08	77.7	Analog	0.30	3
1	Ge	72	89,860.86	0.55	81.4	Pulse	0.30	3
2	Ge	72	73,740.21	1.16	82.8	Pulse	0.30	3
2	Rh	103	2,548,747.22	1.34	82.7	Analog	0.30	3
3	Rh	103	6,872,907.47	0.69	81.9	Analog	0.30	3
3	In	115	7,402,853.78	0.69	83.5	Analog	0.30	3
3	Tb	159	10,413,839.57	0.80	83.0	Analog	0.30	3
3	Bi	209	6,075,389.42	1.07	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219079.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:13
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	277.88	25.55	1.345E-05	Pulse	0.30	3
Na	23	45	2	613.226	ppb	2.73	1,121,387.42	8.566E+00	Analog	0.30	3
Mg	26	45	2	0.151	ppb	57.00	132.23	1.011E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	410.02	3.126E-03	Pulse	0.30	3
K	39	45	2	21.119	ppb	12.50	26,574.28	2.031E-01	Pulse	0.30	3
Ca	44	45	3	0.581	ppb	4.53	23,109.16	4.492E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.866E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,713.48	1.309E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.09	2.331E-03	Pulse	0.30	3
Fe	56	45	2	0.141	ppb	8.91	3,861.46	2.950E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	292.01	37.75	2.893E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	45.53	4.473E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	950.57	9.354E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	592.19	5.824E-03	Pulse	0.30	3
As	75	72	2	0.015	ppb	60.54	33.33	3.275E-04	Pulse	0.75	3
Se	78	72	1	0.030	ppb	16.99	20.00	1.598E-04	Pulse	0.30	3
Mo	95	103	2	0.221	ppb	0.38	1,670.16	5.002E-04	Pulse	0.30	3
Ag	107	103	3	0.445	ppb	11.88	38,956.98	4.406E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-202.28	-2.162E-05	Pulse	0.30	3
Sb	121	115	3	0.050	ppb	3.22	5,445.60	5.821E-04	Pulse	0.30	3
Ba	137	159	3	0.001	ppb	162.04	200.75	1.546E-05	Pulse	0.30	3
Tl	205	209	3	0.071	ppb	1.97	11,203.56	1.505E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	793.77	1.066E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	9.35	951.46	1.279E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,900,416.10	1.02	108.9	Analog	0.30	3
2	Sc	45	130,945.25	1.86	115.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,144,440.82	0.55	110.1	Analog	0.30	3
1	Ge	72	125,081.18	0.74	113.3	Pulse	0.30	3
2	Ge	72	101,654.46	1.11	114.1	Pulse	0.30	3
2	Rh	103	3,339,266.76	0.72	108.4	Analog	0.30	3
3	Rh	103	8,841,507.23	0.10	105.3	Analog	0.30	3
3	In	115	9,354,702.88	0.26	105.6	Analog	0.30	3
3	Tb	159	12,988,170.64	0.35	103.6	Analog	0.30	3
3	Bi	209	7,441,913.50	0.44	101.6	Analog	0.30	3

Quantitation Report

File Name	A0219080.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:18
Sample Name	N022998-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	32.871	ppb	9.86	51,790.29	1.998E-01	Pulse	0.30	3
Na	23	45	2	3719489.471	ppb	0.33	4,160,691,244.67	4.658E+04	Analog	0.30	3
Mg	26	45	2	2787.224	ppb	0.48	285,674.63	3.198E+00	Pulse	0.30	3
Al	27	45	2	192.895	ppb	1.92	35,865.13	4.014E-01	Pulse	0.30	3
K	39	45	2	30574.873	ppb	0.38	10,716,738.04	1.200E+02	Analog	0.30	3
Ca	44	45	3	89691.565	ppb	0.56	141,013,395.68	4.338E+01	Analog	0.30	3
V	51	45	2	11.847	ppb	1.03	68,759.89	7.699E-01	Pulse	0.30	3
Cr	52	45	2	26.159	ppb	1.45	207,462.30	2.323E+00	Pulse	0.30	3
Mn	55	45	2	92.710	ppb	0.61	365,961.65	4.097E+00	Pulse	0.30	3
Fe	56	45	2	26.151	ppb	3.03	173,241.40	1.939E+00	Pulse	0.30	3
Co	59	45	2	6.880	ppb	1.07	106,304.91	1.190E+00	Pulse	0.30	3
Ni	60	72	2	7.500	ppb	0.99	24,274.42	4.567E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-22,395.86	-4.213E-01	Pulse	0.30	3
Zn	66	72	2	62.324	ppb	1.26	72,111.45	1.357E+00	Pulse	0.30	3
As	75	72	2	10.786	ppb	2.20	6,667.26	1.255E-01	Pulse	0.75	3
Se	78	72	1	8.807	ppb	3.27	2,535.87	4.453E-02	Pulse	0.30	3
Mo	95	103	2	224.832	ppb	0.40	747,850.72	5.019E-01	Pulse	0.30	3
Ag	107	103	3	8.528	ppb	0.92	280,548.21	7.661E-02	Pulse	0.30	3
Cd	111	115	3	8.086	ppb	0.69	64,854.89	1.505E-02	Pulse	0.30	3
Sb	121	115	3	9.371	ppb	0.75	242,174.20	5.618E-02	Pulse	0.30	3
Ba	137	159	3	126.901	ppb	0.57	1,377,953.22	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.072	ppb	0.97	510,064.75	1.824E-01	Pulse	0.30	3
Pb	208	209	3	10.800	ppb	0.29	741,116.49	2.651E-01	Pulse	0.30	3
U	238	209	3	14.295	ppb	0.37	1,038,129.88	3.713E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	260,580.16	8.19	14.9	Analog	0.30	3
2	Sc	45	89,326.71	2.57	78.9	Pulse	0.30	3
3	Sc	45	3,250,309.43	0.53	69.5	Analog	0.30	3
1	Ge	72	56,952.33	0.27	51.6	Pulse	0.30	3
2	Ge	72	53,145.13	2.10	59.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,490,092.95	2.90	48.4	Analog	0.30	3
3	Rh	103	3,662,244.08	0.40	43.6	Analog	0.30	3
3	In	115	4,310,495.47	0.06	48.6	Analog	0.30	3
3	Tb	159	6,425,756.09	0.30	51.2	Analog	0.30	3
3	Bi	209	2,795,731.76	0.32	38.2	Analog	0.30	3

Quantitation Report

File Name	A0219081.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:24
Sample Name	N022998-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.144	ppb	1.21	18,594.09	1.304E-02	Pulse	0.30	3
Na	23	45	2	790325.731	ppb	0.24	1,233,039,368.29	9.898E+03	Analog	0.30	3
Mg	26	45	2	606.750	ppb	1.35	86,801.18	6.969E-01	Pulse	0.30	3
Al	27	45	2	40.531	ppb	1.20	10,841.95	8.702E-02	Pulse	0.30	3
K	39	45	2	6260.233	ppb	0.64	3,071,948.98	2.466E+01	Analog	0.30	3
Ca	44	45	3	19164.713	ppb	0.60	45,569,450.99	9.273E+00	Analog	0.30	3
V	51	45	2	2.490	ppb	1.92	20,828.26	1.672E-01	Pulse	0.30	3
Cr	52	45	2	5.688	ppb	1.19	64,376.56	5.168E-01	Pulse	0.30	3
Mn	55	45	2	20.529	ppb	0.52	113,336.93	9.098E-01	Pulse	0.30	3
Fe	56	45	2	7.583	ppb	0.65	71,746.99	5.760E-01	Pulse	0.30	3
Co	59	45	2	1.638	ppb	2.14	35,315.54	2.836E-01	Pulse	0.30	3
Ni	60	72	2	1.635	ppb	4.01	8,577.32	1.019E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,449.36	-1.719E-02	Pulse	0.30	3
Zn	66	72	2	13.708	ppb	1.86	27,129.78	3.224E-01	Pulse	0.30	3
As	75	72	2	2.310	ppb	1.95	2,271.49	2.699E-02	Pulse	0.75	3
Se	78	72	1	1.875	ppb	5.53	898.96	9.489E-03	Pulse	0.30	3
Mo	95	103	2	42.292	ppb	0.33	236,827.16	9.442E-02	Pulse	0.30	3
Ag	107	103	3	1.859	ppb	0.38	112,081.06	1.704E-02	Pulse	0.30	3
Cd	111	115	3	1.894	ppb	1.14	26,157.43	3.529E-03	Pulse	0.30	3
Sb	121	115	3	2.049	ppb	1.20	92,697.60	1.251E-02	Pulse	0.30	3
Ba	137	159	3	27.006	ppb	0.27	492,720.57	4.565E-02	Pulse	0.30	3
Tl	205	209	3	2.190	ppb	0.91	205,471.30	3.984E-02	Pulse	0.30	3
Pb	208	209	3	2.175	ppb	0.25	276,652.63	5.364E-02	Pulse	0.30	3
U	238	209	3	2.746	ppb	1.23	368,049.73	7.137E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,425,448.15	0.72	81.7	Analog	0.30	3
2	Sc	45	124,575.07	1.87	110.1	Pulse	0.30	3
3	Sc	45	4,914,124.82	0.93	105.2	Analog	0.30	3
1	Ge	72	94,731.11	0.24	85.8	Pulse	0.30	3
2	Ge	72	84,170.32	1.49	94.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,508,287.39	2.09	81.4	Analog	0.30	3
3	Rh	103	6,576,598.72	0.23	78.3	Analog	0.30	3
3	In	115	7,412,709.91	0.92	83.6	Analog	0.30	3
3	Tb	159	10,794,039.70	0.43	86.1	Analog	0.30	3
3	Bi	209	5,157,807.98	1.28	70.4	Analog	0.30	3

Quantitation Report

File Name	A0219082.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:29
Sample Name	N022998-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	33.829	ppb	3.86	52,299.32	2.056E-01	Pulse	0.30	3
Na	23	45	2	3773588.878	ppb	0.04	4,404,035,987.71	4.726E+04	Analog	0.30	3
Mg	26	45	2	2821.225	ppb	1.27	301,644.78	3.237E+00	Pulse	0.30	3
Al	27	45	2	206.732	ppb	0.76	40,062.88	4.299E-01	Pulse	0.30	3
K	39	45	2	30963.830	ppb	0.22	11,321,703.16	1.215E+02	Analog	0.30	3
Ca	44	45	3	89626.566	ppb	0.14	144,714,362.29	4.335E+01	Analog	0.30	3
V	51	45	2	11.953	ppb	0.16	72,380.90	7.767E-01	Pulse	0.30	3
Cr	52	45	2	26.143	ppb	1.05	216,326.08	2.322E+00	Pulse	0.30	3
Mn	55	45	2	93.113	ppb	0.14	383,455.54	4.115E+00	Pulse	0.30	3
Fe	56	45	2	25.067	ppb	1.22	173,313.37	1.860E+00	Pulse	0.30	3
Co	59	45	2	6.862	ppb	0.96	110,616.03	1.187E+00	Pulse	0.30	3
Ni	60	72	2	7.652	ppb	3.46	25,825.00	4.659E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-25,082.67	-4.521E-01	Pulse	0.30	3
Zn	66	72	2	61.712	ppb	1.49	74,521.66	1.344E+00	Pulse	0.30	3
As	75	72	2	10.795	ppb	0.25	6,966.03	1.256E-01	Pulse	0.75	3
Se	78	72	1	8.462	ppb	1.72	2,439.18	4.279E-02	Pulse	0.30	3
Mo	95	103	2	221.626	ppb	0.60	770,814.81	4.947E-01	Pulse	0.30	3
Ag	107	103	3	8.522	ppb	0.33	286,669.20	7.655E-02	Pulse	0.30	3
Cd	111	115	3	8.054	ppb	1.24	65,865.14	1.499E-02	Pulse	0.30	3
Sb	121	115	3	9.384	ppb	0.36	247,262.02	5.626E-02	Pulse	0.30	3
Ba	137	159	3	127.696	ppb	1.03	1,407,359.16	2.158E-01	Analog	0.30	3
Tl	205	209	3	10.262	ppb	0.47	524,690.71	1.859E-01	Pulse	0.30	3
Pb	208	209	3	10.815	ppb	0.30	749,328.85	2.655E-01	Pulse	0.30	3
U	238	209	3	14.357	ppb	0.33	1,052,739.37	3.729E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	254,535.39	3.36	14.6	Analog	0.30	3
2	Sc	45	93,192.26	2.21	82.3	Pulse	0.30	3
3	Sc	45	3,338,014.12	0.45	71.4	Analog	0.30	3
1	Ge	72	57,007.28	0.87	51.6	Pulse	0.30	3
2	Ge	72	55,461.99	2.81	62.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,557,953.42	1.73	50.6	Analog	0.30	3
3	Rh	103	3,744,731.99	0.39	44.6	Analog	0.30	3
3	In	115	4,395,016.12	0.10	49.6	Analog	0.30	3
3	Tb	159	6,522,106.85	0.43	52.0	Analog	0.30	3
3	Bi	209	2,822,763.29	0.26	38.5	Analog	0.30	3

Quantitation Report

File Name	A0219083.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:35
Sample Name	N022998-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.078	ppb	1.57	18,072.42	1.264E-02	Pulse	0.30	3
Na	23	45	2	786553.236	ppb	0.33	1,210,172,017.52	9.851E+03	Analog	0.30	3
Mg	26	45	2	604.957	ppb	0.61	85,355.35	6.948E-01	Pulse	0.30	3
Al	27	45	2	41.642	ppb	2.57	10,973.30	8.931E-02	Pulse	0.30	3
K	39	45	2	6298.357	ppb	0.23	3,047,621.76	2.481E+01	Analog	0.30	3
Ca	44	45	3	19125.171	ppb	0.34	45,484,985.99	9.254E+00	Analog	0.30	3
V	51	45	2	2.509	ppb	0.99	20,691.45	1.684E-01	Pulse	0.30	3
Cr	52	45	2	5.733	ppb	2.05	63,984.34	5.209E-01	Pulse	0.30	3
Mn	55	45	2	20.519	ppb	0.40	111,722.89	9.094E-01	Pulse	0.30	3
Fe	56	45	2	7.982	ppb	2.13	74,354.17	6.053E-01	Pulse	0.30	3
Co	59	45	2	1.673	ppb	1.71	35,583.36	2.897E-01	Pulse	0.30	3
Ni	60	72	2	1.723	ppb	2.84	8,949.94	1.072E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	929.71	1.117E-02	Pulse	0.30	3
Zn	66	72	2	13.527	ppb	1.26	26,596.96	3.185E-01	Pulse	0.30	3
As	75	72	2	2.300	ppb	0.85	2,244.38	2.688E-02	Pulse	0.75	3
Se	78	72	1	1.660	ppb	0.52	807.83	8.401E-03	Pulse	0.30	3
Mo	95	103	2	42.196	ppb	1.41	235,053.65	9.420E-02	Pulse	0.30	3
Ag	107	103	3	1.858	ppb	0.41	113,277.21	1.703E-02	Pulse	0.30	3
Cd	111	115	3	1.878	ppb	1.58	26,097.67	3.498E-03	Pulse	0.30	3
Sb	121	115	3	2.039	ppb	0.77	92,841.38	1.245E-02	Pulse	0.30	3
Ba	137	159	3	26.897	ppb	0.48	496,292.21	4.546E-02	Pulse	0.30	3
Tl	205	209	3	2.234	ppb	1.41	211,447.30	4.063E-02	Pulse	0.30	3
Pb	208	209	3	2.184	ppb	0.41	280,241.06	5.384E-02	Pulse	0.30	3
U	238	209	3	2.734	ppb	0.62	369,798.97	7.105E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,429,470.87	1.47	81.9	Analog	0.30	3
2	Sc	45	122,847.94	1.27	108.5	Pulse	0.30	3
3	Sc	45	4,914,997.84	0.29	105.2	Analog	0.30	3
1	Ge	72	96,158.21	0.69	87.1	Pulse	0.30	3
2	Ge	72	83,499.94	1.25	93.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,495,511.74	1.74	81.0	Analog	0.30	3
3	Rh	103	6,651,073.23	0.06	79.2	Analog	0.30	3
3	In	115	7,460,177.76	0.34	84.2	Analog	0.30	3
3	Tb	159	10,916,722.89	0.30	87.0	Analog	0.30	3
3	Bi	209	5,204,738.39	0.65	71.1	Analog	0.30	3

Quantitation Report

File Name	A0219084.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:40
Sample Name	N022998-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.002	ppb	90.60	20.00	2.493E-05	Pulse	0.30	3
	Na	23	45	2	1202234.999	ppb	0.38	1,746,105,733.98	1.506E+04	Analog	0.30	3
	Mg	26	45	2	24785.718	ppb	0.93	3,297,429.95	2.843E+01	Analog	0.30	3
	Al	27	45	2	4.492	ppb	11.56	1,466.87	1.266E-02	Pulse	0.30	3
	K	39	45	2	19679.765	ppb	0.13	8,960,196.25	7.726E+01	Analog	0.30	3
	Ca	44	45	3	419673.039	ppb	0.71	915,692,626.36	2.030E+02	Analog	0.30	3
	V	51	45	2	2.708	ppb	1.55	21,012.87	1.812E-01	Pulse	0.30	3
	Cr	52	45	2	3.964	ppb	2.33	42,294.17	3.648E-01	Pulse	0.30	3
OLR	Mn	55	45	2	342.957	ppb	0.88	1,756,454.19	1.515E+01	Analog	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-110,557.31	-9.534E-01	Pulse	0.30	3
	Co	59	45	2	0.085	ppb	2.48	1,740.47	1.501E-02	Pulse	0.30	3
	Ni	60	72	2	0.603	ppb	4.77	2,836.44	3.939E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-42,832.81	-5.946E-01	Pulse	0.30	3
	Zn	66	72	2	32.590	ppb	0.97	52,161.89	7.242E-01	Pulse	0.30	3
	As	75	72	2	1.396	ppb	5.21	1,179.51	1.638E-02	Pulse	0.75	3
	Se	78	72	1	1.145	ppb	20.60	461.14	5.801E-03	Pulse	0.30	3
	Mo	95	103	2	27.170	ppb	1.10	127,085.02	6.066E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-4,602.23	-8.443E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,626.35	-4.246E-04	Pulse	0.30	3
	Sb	121	115	3	0.072	ppb	3.75	4,416.37	7.140E-04	Pulse	0.30	3
	Ba	137	159	3	133.557	ppb	0.17	2,081,120.80	2.257E-01	Analog	0.30	3
	Tl	205	209	3	0.808	ppb	0.61	61,258.31	1.483E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-56,037.02	-1.357E-02	Pulse	0.30	3
	U	238	209	3	1.678	ppb	0.80	180,143.11	4.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	799,224.96	1.14	45.8	Analog	0.30	3
2	Sc	45	115,977.44	2.28	102.5	Pulse	0.30	3
3	Sc	45	4,511,163.96	0.48	96.5	Analog	0.30	3
1	Ge	72	79,566.49	0.86	72.1	Pulse	0.30	3
2	Ge	72	72,032.56	1.54	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,094,891.65	0.99	68.0	Analog	0.30	3
3	Rh	103	5,445,070.13	0.80	64.9	Analog	0.30	3
3	In	115	6,185,500.12	0.23	69.8	Analog	0.30	3
3	Tb	159	9,221,126.74	0.59	73.5	Analog	0.30	3
3	Bi	209	4,129,853.17	0.20	56.4	Analog	0.30	3

Quantitation Report

File Name	A0219085.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:46
Sample Name	N022998-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.409E-06	Pulse	0.30	3
Na	23	45	2	252024.167	ppb	0.74	406,919,540.61	3.157E+03	Analog	0.30	3
Mg	26	45	2	5392.943	ppb	0.33	797,576.80	6.188E+00	Pulse	0.30	3
Al	27	45	2	0.787	ppb	35.57	647.17	5.021E-03	Pulse	0.30	3
K	39	45	2	4129.928	ppb	1.18	2,102,004.81	1.631E+01	Analog	0.30	3
Ca	44	45	3	91903.795	ppb	1.16	230,507,834.34	4.445E+01	Analog	0.30	3
V	51	45	2	0.515	ppb	3.16	5,151.02	3.995E-02	Pulse	0.30	3
Cr	52	45	2	0.845	ppb	4.15	11,549.89	8.961E-02	Pulse	0.30	3
Mn	55	45	2	76.921	ppb	0.28	438,242.78	3.400E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-21,437.46	-1.663E-01	Pulse	0.30	3
Co	59	45	2	0.026	ppb	9.59	615.02	4.775E-03	Pulse	0.30	3
Ni	60	72	2	0.109	ppb	3.48	868.78	9.498E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-8,792.91	-9.611E-02	Pulse	0.30	3
Zn	66	72	2	7.081	ppb	2.55	16,591.26	1.813E-01	Pulse	0.30	3
As	75	72	2	0.301	ppb	4.84	333.62	3.647E-03	Pulse	0.75	3
Se	78	72	1	0.201	ppb	15.68	110.00	1.026E-03	Pulse	0.30	3
Mo	95	103	2	5.152	ppb	2.05	31,903.85	1.151E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-176.36	-2.353E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-626.19	-7.493E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,687.94	2.020E-04	Pulse	0.30	3
Ba	137	159	3	28.788	ppb	0.20	589,993.13	4.866E-02	Pulse	0.30	3
Tl	205	209	3	0.196	ppb	1.98	22,721.54	3.769E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,849.56	-1.966E-03	Pulse	0.30	3
U	238	209	3	0.317	ppb	0.81	49,806.17	8.262E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,147.62	0.78	90.1	Analog	0.30	3
2	Sc	45	128,904.21	1.39	113.9	Pulse	0.30	3
3	Sc	45	5,185,418.50	0.61	111.0	Analog	0.30	3
1	Ge	72	107,207.47	0.38	97.1	Pulse	0.30	3
2	Ge	72	91,492.93	1.25	102.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,772,073.43	1.08	90.0	Analog	0.30	3
3	Rh	103	7,485,511.48	0.32	89.2	Analog	0.30	3
3	In	115	8,356,847.23	0.32	94.3	Analog	0.30	3
3	Tb	159	12,125,435.65	0.72	96.7	Analog	0.30	3
3	Bi	209	6,028,346.37	0.41	82.3	Analog	0.30	3

Quantitation Report

~~NOT REPORTED~~
~~IS FAILED~~

File Name	A0219086.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:51
Sample Name	N022998-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	46.93	15.56	3.642E-05	Pulse	0.30	3
Na	23	45	2	2332493.713	ppb	0.62	2,904,249,663.39	2.921E+04	Analog	0.30	3
Mg	26	45	2	17018.596	ppb	1.72	1,940,851.27	1.952E+01	Analog	0.30	3
Al	27	45	2	5.950	ppb	5.55	1,557.71	1.567E-02	Pulse	0.30	3
K	39	45	2	27205.939	ppb	0.83	10,614,157.20	1.068E+02	Analog	0.30	3
Ca	44	45	3	319025.833	ppb	0.58	579,782,595.81	1.543E+02	Analog	0.30	3
V	51	45	2	0.055	ppb	26.52	1,030.08	1.035E-02	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	-269.81	-2.698E-03	Pulse	0.30	3
Mn	55	45	2	802.735	ppb	1.22	3,524,013.55	3.545E+01	Analog	0.30	3
Fe	56	45	2	216.541	ppb	0.67	1,582,909.27	1.592E+01	Analog	0.30	3
Co	59	45	2	0.676	ppb	2.88	11,659.27	1.172E-01	Pulse	0.30	3
Ni	60	72	2	0.354	ppb	4.04	1,464.36	2.435E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-69,917.81	-1.162E+00	Pulse	0.30	3
Zn	66	72	2	44.205	ppb	1.27	58,434.27	9.713E-01	Pulse	0.30	3
As	75	72	2	3.585	ppb	1.92	2,516.64	4.181E-02	Pulse	0.75	3
Se	78	72	1	0.032	ppb	49.73	11.11	1.713E-04	Pulse	0.30	3
Mo	95	103	2	68.992	ppb	0.75	267,195.23	1.540E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-11,106.20	-2.515E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,041.92	-2.044E-04	Pulse	0.30	3
Sb	121	115	3	0.279	ppb	2.38	9,944.64	1.951E-03	Pulse	0.30	3
Ba	137	159	3	144.936	ppb	0.62	1,853,851.17	2.449E-01	Analog	0.30	3
Tl	205	209	3	0.101	ppb	2.14	6,715.15	2.050E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-47,272.59	-1.443E-02	Pulse	0.30	3
U	238	209	3	1.190	ppb	1.41	101,361.32	3.094E-02	Pulse	0.30	3

OLR

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	427,224.38	3.05	24.5	Analog	0.30	3
2	Sc	45	99,435.51	2.73	87.9	Pulse	0.30	3
3	Sc	45	3,757,472.90	0.74	80.4	Analog	0.30	3
1	Ge	72	65,055.92	1.09	58.9	Pulse	0.30	3
2	Ge	72	60,172.70	2.86	67.5	Pulse	0.30	3

Nancy 2/21/2017

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,734,696.15	1.50	56.3	Analog	0.30	3
3	Rh	103	4,415,745.25	0.40	52.6	Analog	0.30	3
3	In	115	5,096,988.63	0.22	57.5	Analog	0.30	3
3	Tb	159	7,569,176.62	0.18	60.4	Analog	0.30	3
3	Bi	209	3,275,840.23	0.23	44.7	Analog	0.30	3

Quantitation Report

File Name	A0219087.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:57
Sample Name	N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	7.78	5.401E-06	Pulse	0.30	3
	Na	23	45	2	485305.442	ppb	0.64	763,074,841.96	6.078E+03	Analog	0.30	3
	Mg	26	45	2	3666.068	ppb	0.77	528,074.70	4.206E+00	Pulse	0.30	3
	Al	27	45	2	0.609	ppb	7.16	584.04	4.653E-03	Pulse	0.30	3
	K	39	45	2	5602.179	ppb	1.16	2,771,649.57	2.208E+01	Analog	0.30	3
	Ca	44	45	3	68005.946	ppb	0.20	168,040,111.94	3.290E+01	Analog	0.30	3
	V	51	45	2	<0.000	ppb	---	606.71	4.825E-03	Pulse	0.30	3
	Cr	52	45	2	<0.000	ppb	---	1,430.39	1.140E-02	Pulse	0.30	3
OLR	Mn	55	45	2	182.429	ppb	0.99	1,011,660.45	8.059E+00	Pulse	0.30	3
	Fe	56	45	2	52.461	ppb	1.06	486,000.13	3.871E+00	Pulse	0.30	3
	Co	59	45	2	0.161	ppb	4.57	3,518.03	2.804E-02	Pulse	0.30	3
	Ni	60	72	2	0.083	ppb	22.83	701.24	7.964E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-17,254.03	-1.963E-01	Pulse	0.30	3
	Zn	66	72	2	9.207	ppb	2.94	19,912.48	2.266E-01	Pulse	0.30	3
	As	75	72	2	0.757	ppb	7.59	786.01	8.945E-03	Pulse	0.75	3
	Se	78	72	1	0.017	ppb	63.73	10.00	9.758E-05	Pulse	0.30	3
	Mo	95	103	2	13.049	ppb	0.98	77,282.31	2.914E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-2,929.12	-4.103E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-219.69	-2.754E-05	Pulse	0.30	3
	Sb	121	115	3	0.029	ppb	2.22	3,673.91	4.602E-04	Pulse	0.30	3
	Ba	137	159	3	30.552	ppb	0.87	595,163.53	5.164E-02	Pulse	0.30	3
	Tl	205	209	3	0.046	ppb	1.03	5,844.75	1.047E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-12,104.29	-2.169E-03	Pulse	0.30	3
	U	238	209	3	0.221	ppb	0.91	32,148.01	5.760E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,441,445.99	2.40	82.6	Analog	0.30	3
2	Sc	45	125,549.90	1.93	110.9	Pulse	0.30	3
3	Sc	45	5,108,160.65	0.57	109.3	Analog	0.30	3
1	Ge	72	102,338.47	0.97	92.7	Pulse	0.30	3
2	Ge	72	87,902.12	1.71	98.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,652,097.74	2.08	86.1	Analog	0.30	3
3	Rh	103	7,139,734.20	0.34	85.0	Analog	0.30	3
3	In	115	7,982,793.49	0.89	90.1	Analog	0.30	3
3	Tb	159	11,525,843.16	0.56	91.9	Analog	0.30	3
3	Bi	209	5,580,950.47	0.79	76.2	Analog	0.30	3

Quantitation Report

File Name	A0219088.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:02
Sample Name	N022998-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	38.83	17.78	8.502E-05	Pulse	0.30	3
Na	23	45	2	3040142.188	ppb	0.93	3,580,141,244.43	3.807E+04	Analog	0.30	3
Mg	26	45	2	9191.126	ppb	0.82	991,705.81	1.054E+01	Analog	0.30	3
Al	27	45	2	7.399	ppb	9.67	1,754.62	1.866E-02	Pulse	0.30	3
K	39	45	2	30287.765	ppb	1.01	11,175,644.00	1.188E+02	Analog	0.30	3
Ca	44	45	3	338749.213	ppb	0.16	570,429,253.72	1.638E+02	Analog	0.30	3
V	51	45	2	2.619	ppb	2.38	16,501.05	1.755E-01	Pulse	0.30	3
Cr	52	45	2	108.644	ppb	0.99	902,761.40	9.601E+00	Pulse	0.30	3
Mn	55	45	2	24.142	ppb	1.25	100,551.01	1.069E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-258,701.77	-2.751E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,698.83	-3.934E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-381.83	-6.731E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-67,983.57	-1.197E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,129.90	-1.784E-01	Pulse	0.30	3
As	75	72	2	9.784	ppb	2.59	6,465.98	1.138E-01	Pulse	0.75	3
Se	78	72	1	0.922	ppb	10.16	285.57	4.672E-03	Pulse	0.30	3
Mo	95	103	2	82.742	ppb	0.78	293,804.32	1.847E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,398.20	-3.527E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,045.39	-2.258E-04	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	13.03	2,161.36	4.670E-04	Pulse	0.30	3
Ba	137	159	3	90.639	ppb	0.49	1,056,352.72	1.532E-01	Pulse	0.30	3
Tl	205	209	3	0.446	ppb	1.50	24,224.93	8.280E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,966.67	-1.537E-02	Pulse	0.30	3
U	238	209	3	0.691	ppb	1.35	52,611.18	1.798E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	211,250.95	4.70	12.1	Analog	0.30	3
2	Sc	45	94,041.43	2.16	83.1	Pulse	0.30	3
3	Sc	45	3,481,531.30	0.44	74.5	Analog	0.30	3
1	Ge	72	61,089.44	0.84	55.3	Pulse	0.30	3
2	Ge	72	56,788.60	2.04	63.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,590,565.97	1.94	51.6	Analog	0.30	3
3	Rh	103	3,961,638.00	0.65	47.2	Analog	0.30	3
3	In	115	4,628,658.71	0.88	52.2	Analog	0.30	3
3	Tb	159	6,896,638.44	0.66	55.0	Analog	0.30	3
3	Bi	209	2,925,885.86	0.56	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219089.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:08
Sample Name	N022998-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.004E-05	Pulse	0.30	3
Na	23	45	2	629971.225	ppb	0.41	981,001,229.83	7.890E+03	Analog	0.30	3
Mg	26	45	2	1973.911	ppb	0.80	281,638.52	2.265E+00	Pulse	0.30	3
Al	27	45	2	1.362	ppb	13.16	771.97	6.207E-03	Pulse	0.30	3
K	39	45	2	6159.258	ppb	0.71	3,016,586.38	2.426E+01	Analog	0.30	3
Ca	44	45	3	72699.643	ppb	0.47	176,801,739.59	3.517E+01	Analog	0.30	3
V	51	45	2	0.480	ppb	2.46	4,690.88	3.773E-02	Pulse	0.30	3
Cr	52	45	2	23.646	ppb	1.18	261,243.47	2.101E+00	Pulse	0.30	3
Mn	55	45	2	5.222	ppb	0.37	29,088.60	2.339E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,161.51	-5.321E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,005.81	-8.089E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-31.02	-3.598E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-16,800.95	-1.974E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,141.39	-2.516E-02	Pulse	0.30	3
As	75	72	2	2.112	ppb	1.32	2,102.44	2.470E-02	Pulse	0.75	3
Se	78	72	1	0.228	ppb	26.16	115.56	1.160E-03	Pulse	0.30	3
Mo	95	103	2	15.618	ppb	1.89	88,700.43	3.487E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,759.65	2.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-244.19	-3.155E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,037.86	1.341E-04	Pulse	0.30	3
Ba	137	159	3	18.798	ppb	0.36	355,881.80	3.178E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	0.65	11,675.00	2.192E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-12,120.93	-2.276E-03	Pulse	0.30	3
U	238	209	3	0.129	ppb	0.58	18,070.22	3.393E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,326,012.39	0.94	76.0	Analog	0.30	3
2	Sc	45	124,337.81	1.49	109.9	Pulse	0.30	3
3	Sc	45	5,027,673.01	0.71	107.6	Analog	0.30	3
1	Ge	72	99,598.14	1.39	90.2	Pulse	0.30	3
2	Ge	72	85,104.90	1.58	95.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,543,136.06	1.47	82.6	Analog	0.30	3
3	Rh	103	6,896,656.49	0.80	82.1	Analog	0.30	3
3	In	115	7,739,034.26	0.58	87.3	Analog	0.30	3
3	Tb	159	11,199,594.69	0.56	89.3	Analog	0.30	3
3	Bi	209	5,324,962.01	0.90	72.7	Analog	0.30	3

Quantitation Report

File Name	A0219090.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:13
Sample Name	CCV6,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.559	ppb	0.62	209,216.77	1.189E-01	Pulse	0.30	3
Na	23	45	2	943.453	ppb	3.32	1,716,232.55	1.270E+01	Analog	0.30	3
Mg	26	45	2	200.372	ppb	2.20	31,173.16	2.307E-01	Pulse	0.30	3
Al	27	45	2	22.534	ppb	1.66	6,742.01	4.989E-02	Pulse	0.30	3
K	39	45	2	234.140	ppb	0.61	140,276.07	1.038E+00	Pulse	0.30	3
Ca	44	45	3	211.813	ppb	0.70	565,699.78	1.067E-01	Pulse	0.30	3
V	51	45	2	20.246	ppb	0.40	177,138.88	1.311E+00	Pulse	0.30	3
Cr	52	45	2	20.028	ppb	0.60	240,812.06	1.782E+00	Pulse	0.30	3
Mn	55	45	2	20.184	ppb	0.43	120,887.06	8.946E-01	Pulse	0.30	3
Fe	56	45	2	20.884	ppb	1.33	209,811.06	1.553E+00	Pulse	0.30	3
Co	59	45	2	20.264	ppb	0.96	473,645.13	3.505E+00	Pulse	0.30	3
Ni	60	72	2	19.951	ppb	0.81	127,283.72	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.672	ppb	0.63	357,413.39	3.398E+00	Pulse	0.30	3
Zn	66	72	2	18.768	ppb	0.46	45,232.39	4.300E-01	Pulse	0.30	3
As	75	72	2	20.059	ppb	0.77	24,532.30	2.332E-01	Pulse	0.75	3
Se	78	72	1	19.455	ppb	1.31	12,983.50	9.836E-02	Pulse	0.30	3
Mo	95	103	2	19.914	ppb	1.16	153,464.34	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.916	ppb	0.15	1,630,755.19	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.508	ppb	1.00	370,305.68	3.815E-02	Pulse	0.30	3
Sb	121	115	3	20.191	ppb	0.32	1,171,821.34	1.207E-01	Pulse	0.30	3
Ba	137	159	3	21.834	ppb	0.72	491,454.82	3.691E-02	Pulse	0.30	3
Tl	205	209	3	20.354	ppb	0.51	2,806,686.52	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.614	ppb	0.09	3,851,988.00	5.057E-01	Analog	0.30	3
U	238	209	3	19.474	ppb	0.35	3,853,229.66	5.059E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,759,648.67	0.93	100.8	Analog	0.30	3
2	Sc	45	135,134.03	0.69	119.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,303,879.37	0.17	113.5	Analog	0.30	3
1	Ge	72	132,014.55	1.20	119.6	Pulse	0.30	3
2	Ge	72	105,186.44	0.86	118.1	Pulse	0.30	3
2	Rh	103	3,451,492.34	0.42	112.0	Analog	0.30	3
3	Rh	103	9,145,450.56	0.92	108.9	Analog	0.30	3
3	In	115	9,706,966.34	0.24	109.5	Analog	0.30	3
3	Tb	159	13,316,526.33	1.01	106.2	Analog	0.30	3
3	Bi	209	7,617,189.75	0.33	104.0	Analog	0.30	3

Quantitation Report

File Name	A0219091.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:19
Sample Name	CCB6,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	9.901E-06	Pulse	0.30	3
Na	23	45	2	589.561	ppb	1.97	1,058,029.52	8.270E+00	Mix	0.30	3
Mg	26	45	2	0.247	ppb	62.02	143.34	1.120E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	372.23	2.911E-03	Pulse	0.30	3
K	39	45	2	20.081	ppb	5.84	25,457.94	1.990E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	18,150.59	3.657E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	600.04	4.690E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,246.82	9.754E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.94	2.391E-03	Pulse	0.30	3
Fe	56	45	2	0.160	ppb	20.04	3,949.44	3.086E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	26.70	2.088E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	32.27	3.205E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	810.97	8.067E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	435.70	4.336E-03	Pulse	0.30	3
As	75	72	2	0.016	ppb	40.45	33.78	3.357E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	80.62	14.45	1.144E-04	Pulse	0.30	3
Mo	95	103	2	0.143	ppb	8.88	1,094.53	3.281E-04	Pulse	0.30	3
Ag	107	103	3	0.435	ppb	13.99	37,897.28	4.321E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-164.24	-1.759E-05	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.08	5,211.08	5.580E-04	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	14.02	247.85	1.931E-05	Pulse	0.30	3
Tl	205	209	3	0.023	ppb	2.95	4,630.92	6.253E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	799.68	1.080E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	3.96	869.68	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,289.30	1.12	96.7	Analog	0.30	3
2	Sc	45	127,946.83	0.87	113.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,963,406.90	0.33	106.2	Analog	0.30	3
1	Ge	72	125,895.30	0.71	114.0	Pulse	0.30	3
2	Ge	72	100,507.12	1.07	112.8	Pulse	0.30	3
2	Rh	103	3,333,215.33	1.31	108.2	Analog	0.30	3
3	Rh	103	8,772,235.77	0.39	104.5	Analog	0.30	3
3	In	115	9,339,569.53	0.34	105.4	Analog	0.30	3
3	Tb	159	12,835,062.73	0.65	102.3	Analog	0.30	3
3	Bi	209	7,406,219.33	0.16	101.1	Analog	0.30	3

Quantitation Report

File Name	A0219092.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:24
Sample Name	N023014-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.000	ppb	187.72	15.55	1.320E-05	Pulse	0.30	3
	Na	23	45	2	506871.449	ppb	1.03	721,417,402.58	6.348E+03	Analog	0.30	3
	Mg	26	45	2	43129.574	ppb	1.11	5,622,928.94	4.948E+01	Analog	0.30	3
	Al	27	45	2	7.314	ppb	5.72	2,101.77	1.849E-02	Pulse	0.30	3
	K	39	45	2	14521.689	ppb	0.84	6,482,267.47	5.704E+01	Analog	0.30	3
	Ca	44	45	3	391355.997	ppb	0.34	866,001,969.32	1.893E+02	Analog	0.30	3
	V	51	45	2	5.917	ppb	0.83	44,081.89	3.879E-01	Pulse	0.30	3
OLR	Cr	52	45	2	31342.306	ppb	0.95	314,261,027.36	2.765E+03	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-8,492.91	-7.474E-02	Pulse	0.30	3
	Fe	56	45	2	4.914	ppb	1.17	43,176.93	3.800E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,162.84	-1.023E-02	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-1,659.61	-2.194E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-21,277.10	-2.813E-01	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-5,590.29	-7.392E-02	Pulse	0.30	3
	As	75	72	2	2.577	ppb	1.81	2,276.67	3.010E-02	Pulse	0.75	3
	Se	78	72	1	15.696	ppb	2.64	7,040.71	7.935E-02	Pulse	0.30	3
	Mo	95	103	2	52.200	ppb	1.74	262,628.35	1.165E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-10,212.12	-1.709E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,151.44	-3.190E-04	Pulse	0.30	3
	Sb	121	115	3	0.017	ppb	4.87	2,619.22	3.884E-04	Pulse	0.30	3
	Ba	137	159	3	33.432	ppb	0.03	566,715.38	5.651E-02	Pulse	0.30	3
	Tl	205	209	3	0.158	ppb	2.77	14,146.15	3.068E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-49,235.79	-1.068E-02	Pulse	0.30	3
	U	238	209	3	1.457	ppb	0.21	174,674.21	3.788E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,179,455.61	1.28	67.6	Analog	0.30	3
2	Sc	45	113,651.30	1.84	100.4	Pulse	0.30	3
3	Sc	45	4,575,024.37	0.31	97.9	Analog	0.30	3
1	Ge	72	88,717.14	0.94	80.3	Pulse	0.30	3
2	Ge	72	75,635.24	1.38	84.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,253,605.66	0.52	73.2	Analog	0.30	3
3	Rh	103	5,974,884.15	0.57	71.2	Analog	0.30	3
3	In	115	6,743,339.47	0.46	76.1	Analog	0.30	3
3	Tb	159	10,029,423.95	0.38	80.0	Analog	0.30	3
3	Bi	209	4,611,359.24	0.64	63.0	Analog	0.30	3

Quantitation Report

File Name	A0219093.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:30
Sample Name	N023014-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	6.67	4.471E-06	Pulse	0.30	3
	Na	23	45	2	108454.258	ppb	0.74	165,717,899.75	1.359E+03	Analog	0.30	3
	Mg	26	45	2	9616.328	ppb	0.29	1,345,378.50	1.103E+01	Analog	0.30	3
	Al	27	45	2	1.078	ppb	20.61	684.78	5.621E-03	Pulse	0.30	3
	K	39	45	2	3102.595	ppb	0.99	1,497,553.69	1.228E+01	Analog	0.30	3
	Ca	44	45	3	86075.374	ppb	0.43	201,934,885.88	4.164E+01	Analog	0.30	3
	V	51	45	2	1.216	ppb	1.83	10,379.24	8.513E-02	Pulse	0.30	3
OLR	Cr	52	45	2	6796.935	ppb	0.34	73,128,570.45	5.997E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,894.41	-1.553E-02	Pulse	0.30	3
	Fe	56	45	2	1.296	ppb	1.83	13,939.17	1.143E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-256.28	-2.103E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-381.71	-4.251E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-4,195.27	-4.671E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-903.16	-1.006E-02	Pulse	0.30	3
	As	75	72	2	0.526	ppb	5.76	562.65	6.262E-03	Pulse	0.75	3
	Se	78	72	1	3.112	ppb	5.81	1,719.06	1.574E-02	Pulse	0.30	3
	Mo	95	103	2	9.895	ppb	1.88	61,776.80	2.210E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,669.34	2.215E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-525.96	-6.298E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,273.44	1.525E-04	Pulse	0.30	3
	Ba	137	159	3	7.136	ppb	0.89	144,873.29	1.207E-02	Pulse	0.30	3
	Tl	205	209	3	0.039	ppb	1.59	5,643.52	9.165E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-7,258.02	-1.179E-03	Pulse	0.30	3
	U	238	209	3	0.273	ppb	0.46	43,862.21	7.123E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,499,277.06	0.95	85.9	Analog	0.30	3
2	Sc	45	121,946.97	1.84	107.7	Pulse	0.30	3
3	Sc	45	4,850,068.40	0.33	103.8	Analog	0.30	3
1	Ge	72	109,229.24	0.25	98.9	Pulse	0.30	3
2	Ge	72	89,823.37	0.95	100.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,795,474.23	0.63	90.8	Analog	0.30	3
3	Rh	103	7,535,085.72	0.12	89.7	Analog	0.30	3
3	In	115	8,351,614.58	0.18	94.2	Analog	0.30	3
3	Tb	159	12,002,685.52	0.65	95.7	Analog	0.30	3
3	Bi	209	6,157,789.84	0.60	84.1	Analog	0.30	3

Quantitation Report

File Name	A0219094.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:36
Sample Name	N023014-001B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.66	3.926E-06	Pulse	0.30	3
Na	23	45	2	2575.222	ppb	1.52	4,276,526.15	3.314E+01	Analog	0.30	3
Mg	26	45	2	203.147	ppb	2.07	30,182.30	2.339E-01	Pulse	0.30	3
Al	27	45	2	1.788	ppb	14.96	913.72	7.086E-03	Pulse	0.30	3
K	39	45	2	77.381	ppb	3.55	54,662.26	4.236E-01	Pulse	0.30	3
Ca	44	45	3	1838.525	ppb	0.31	4,524,378.68	8.934E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	681.15	5.277E-03	Pulse	0.30	3
Cr	52	45	2	149.926	ppb	1.25	1,709,152.44	1.324E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	226.95	1.763E-03	Pulse	0.30	3
Fe	56	45	2	0.320	ppb	5.18	5,502.76	4.263E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	11.12	8.662E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	35.74	3.515E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	890.76	8.752E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	419.80	4.125E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	36.40	31.46	3.094E-04	Pulse	0.75	3
Se	78	72	1	0.061	ppb	40.06	40.00	3.163E-04	Pulse	0.30	3
Mo	95	103	2	0.266	ppb	7.76	1,975.77	6.014E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,683.91	4.147E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,015.87	-1.068E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	835.62	8.784E-05	Pulse	0.30	3
Ba	137	159	3	0.166	ppb	2.04	3,820.81	2.930E-04	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	8.06	2,871.51	3.832E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	535.82	7.148E-05	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.62	995.36	1.329E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,700,049.24	0.40	97.4	Analog	0.30	3
2	Sc	45	129,084.58	2.07	114.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,064,075.20	0.83	108.4	Analog	0.30	3
1	Ge	72	126,690.49	0.84	114.7	Pulse	0.30	3
2	Ge	72	101,769.78	0.62	114.2	Pulse	0.30	3
2	Rh	103	3,283,437.28	1.19	106.6	Analog	0.30	3
3	Rh	103	8,881,628.41	0.48	105.8	Analog	0.30	3
3	In	115	9,513,246.81	0.82	107.3	Analog	0.30	3
3	Tb	159	13,039,422.86	0.70	104.0	Analog	0.30	3
3	Bi	209	7,492,113.64	0.73	102.3	Analog	0.30	3

Quantitation Report

File Name	A0219095.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:41
Sample Name	N023014-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	13.33	1.131E-05	Pulse	0.30	3
	Na	23	45	2	488571.543	ppb	0.58	689,376,665.28	6.119E+03	Analog	0.30	3
	Mg	26	45	2	41548.359	ppb	1.00	5,369,540.96	4.766E+01	Analog	0.30	3
	Al	27	45	2	18.594	ppb	3.99	4,703.31	4.176E-02	Pulse	0.30	3
	K	39	45	2	13965.581	ppb	1.16	6,180,504.77	5.486E+01	Analog	0.30	3
	Ca	44	45	3	380501.970	ppb	0.24	831,878,307.60	1.840E+02	Analog	0.30	3
OLR	V	51	45	2	5.686	ppb	1.15	42,025.41	3.730E-01	Pulse	0.30	3
	Cr	52	45	2	30172.116	ppb	0.76	299,894,758.23	2.662E+03	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-8,279.54	-7.350E-02	Pulse	0.30	3
	Fe	56	45	2	5.589	ppb	4.13	48,389.88	4.296E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,049.29	-9.313E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-825.47	-1.095E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-18,577.81	-2.466E-01	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-5,169.48	-6.863E-02	Pulse	0.30	3
	As	75	72	2	2.426	ppb	4.20	2,134.74	2.835E-02	Pulse	0.75	3
	Se	78	72	1	15.038	ppb	2.52	6,656.11	7.603E-02	Pulse	0.30	3
	Mo	95	103	2	50.738	ppb	0.32	254,557.05	1.133E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-11,198.35	-1.887E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,137.74	-3.159E-04	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,837.97	2.716E-04	Pulse	0.30	3
	Ba	137	159	3	32.721	ppb	0.51	555,302.83	5.530E-02	Pulse	0.30	3
	Tl	205	209	3	0.136	ppb	1.94	12,491.27	2.684E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-46,981.68	-1.009E-02	Pulse	0.30	3
	U	238	209	3	1.409	ppb	0.72	170,515.56	3.663E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,180,360.47	0.48	67.6	Analog	0.30	3
2	Sc	45	112,662.32	1.34	99.5	Pulse	0.30	3
3	Sc	45	4,520,143.55	0.47	96.7	Analog	0.30	3
1	Ge	72	87,552.04	0.82	79.3	Pulse	0.30	3
2	Ge	72	75,326.39	1.41	84.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,247,324.32	0.85	73.0	Analog	0.30	3
3	Rh	103	5,934,612.62	0.45	70.7	Analog	0.30	3
3	In	115	6,766,194.33	0.40	76.3	Analog	0.30	3
3	Tb	159	10,041,123.32	0.40	80.1	Analog	0.30	3
3	Bi	209	4,654,543.78	0.66	63.5	Analog	0.30	3

Quantitation Report

File Name	A0219096.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:47
Sample Name	N023014-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	11.11	7.570E-06	Pulse	0.30	3
	Na	23	45	2	107172.631	ppb	1.18	159,728,238.73	1.343E+03	Analog	0.30	3
	Mg	26	45	2	9379.128	ppb	0.72	1,279,847.35	1.076E+01	Analog	0.30	3
	Al	27	45	2	4.327	ppb	4.19	1,465.84	1.232E-02	Pulse	0.30	3
	K	39	45	2	3074.289	ppb	1.36	1,447,555.36	1.217E+01	Analog	0.30	3
	Ca	44	45	3	85498.034	ppb	0.29	195,257,168.20	4.136E+01	Analog	0.30	3
OLR	V	51	45	2	1.192	ppb	3.49	9,937.92	8.356E-02	Pulse	0.30	3
	Cr	52	45	2	6694.081	ppb	0.43	70,251,092.40	5.906E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,853.00	-1.558E-02	Pulse	0.30	3
	Fe	56	45	2	1.827	ppb	1.13	18,230.95	1.533E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-229.91	-1.932E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-119.76	-1.352E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-3,683.59	-4.174E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-716.31	-8.119E-03	Pulse	0.30	3
	As	75	72	2	0.503	ppb	8.08	529.51	6.002E-03	Pulse	0.75	3
	Se	78	72	1	2.906	ppb	2.80	1,570.15	1.470E-02	Pulse	0.30	3
	Mo	95	103	2	9.722	ppb	1.32	59,824.57	2.171E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-742.14	-1.008E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-436.39	-5.292E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,015.64	1.232E-04	Pulse	0.30	3
	Ba	137	159	3	7.174	ppb	0.66	143,991.96	1.214E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	3.68	4,764.33	7.848E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-8,547.72	-1.408E-03	Pulse	0.30	3
	U	238	209	3	0.269	ppb	1.21	42,528.02	7.005E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,615.66	0.73	84.0	Analog	0.30	3
2	Sc	45	118,949.17	1.68	105.1	Pulse	0.30	3
3	Sc	45	4,721,356.04	0.54	101.0	Analog	0.30	3
1	Ge	72	106,822.75	0.72	96.7	Pulse	0.30	3
2	Ge	72	88,264.98	1.08	99.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,755,769.54	1.25	89.5	Analog	0.30	3
3	Rh	103	7,359,921.07	0.22	87.7	Analog	0.30	3
3	In	115	8,246,325.43	0.11	93.1	Analog	0.30	3
3	Tb	159	11,865,435.38	0.19	94.6	Analog	0.30	3
3	Bi	209	6,070,761.09	0.35	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219097.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:52
Sample Name	N023014-002B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.369E-06	Pulse	0.30	3
Na	23	45	2	2495.838	ppb	1.33	4,047,632.65	3.214E+01	Analog	0.30	3
Mg	26	45	2	199.782	ppb	3.10	28,959.07	2.300E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	381.58	3.031E-03	Pulse	0.30	3
K	39	45	2	75.849	ppb	3.35	52,577.99	4.176E-01	Pulse	0.30	3
Ca	44	45	3	1829.166	ppb	0.23	4,371,852.88	8.889E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	661.16	5.249E-03	Pulse	0.30	3
Cr	52	45	2	147.236	ppb	2.22	1,637,540.92	1.301E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	269.20	2.134E-03	Pulse	0.30	3
Fe	56	45	2	0.367	ppb	3.49	5,806.35	4.611E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	270.57	38.18	3.041E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	42.97	4.329E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	968.74	9.754E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	426.90	4.299E-03	Pulse	0.30	3
As	75	72	2	0.009	ppb	92.14	26.13	2.633E-04	Pulse	0.75	3
Se	78	72	1	0.058	ppb	31.42	37.78	3.020E-04	Pulse	0.30	3
Mo	95	103	2	0.274	ppb	5.91	1,984.66	6.194E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,328.15	2.684E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-940.02	-1.015E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	671.16	7.243E-05	Pulse	0.30	3
Ba	137	159	3	0.135	ppb	1.90	3,080.86	2.419E-04	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	7.51	2,294.72	3.156E-04	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	25.54	2,967.01	4.082E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	7.20	984.94	1.355E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,651,231.94	1.30	94.6	Analog	0.30	3
2	Sc	45	125,956.02	2.53	111.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,918,197.50	0.38	105.2	Analog	0.30	3
1	Ge	72	124,949.01	0.62	113.2	Pulse	0.30	3
2	Ge	72	99,332.40	0.39	111.5	Pulse	0.30	3
2	Rh	103	3,203,868.39	0.35	104.0	Analog	0.30	3
3	Rh	103	8,672,188.97	0.67	103.3	Analog	0.30	3
3	In	115	9,264,049.24	0.41	104.5	Analog	0.30	3
3	Tb	159	12,737,635.78	1.15	101.6	Analog	0.30	3
3	Bi	209	7,271,364.26	1.21	99.3	Analog	0.30	3

Quantitation Report

File Name	A0219098.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:58
Sample Name	N023014-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	10.50	42.22	5.244E-05	Pulse	0.30	3
	Na	23	45	2	1341748.855	ppb	1.26	1,672,927,388.41	1.680E+04	Analog	0.30	3
	Mg	26	45	2	15552.449	ppb	1.09	1,776,483.58	1.784E+01	Analog	0.30	3
	Al	27	45	2	4.937	ppb	3.44	1,352.96	1.358E-02	Pulse	0.30	3
	K	39	45	2	20126.817	ppb	0.97	7,866,711.62	7.901E+01	Analog	0.30	3
	Ca	44	45	3	233437.669	ppb	0.45	461,962,024.23	1.129E+02	Analog	0.30	3
	V	51	45	2	5.350	ppb	0.56	34,999.07	3.514E-01	Pulse	0.30	3
OLR	Cr	52	45	2	479.733	ppb	1.27	4,215,385.26	4.234E+01	Analog	0.30	3
	Mn	55	45	2	4.348	ppb	0.66	19,454.05	1.954E-01	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-119,175.56	-1.197E+00	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,585.06	-1.593E-02	Pulse	0.30	3
	Ni	60	72	2	0.022	ppb	73.08	276.63	4.242E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-11,812.59	-1.814E-01	Pulse	0.30	3
	Zn	66	72	2	0.671	ppb	9.16	2,925.68	4.493E-02	Pulse	0.30	3
	As	75	72	2	2.083	ppb	4.70	1,585.89	2.435E-02	Pulse	0.75	3
	Se	78	72	1	6.075	ppb	5.91	2,319.16	3.072E-02	Pulse	0.30	3
	Mo	95	103	2	33.890	ppb	0.95	144,522.35	7.566E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-8,931.43	-1.751E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-1,043.38	-1.783E-04	Pulse	0.30	3
	Sb	121	115	3	0.019	ppb	4.28	2,329.17	3.982E-04	Pulse	0.30	3
	Ba	137	159	3	32.146	ppb	0.24	472,493.87	5.433E-02	Pulse	0.30	3
	Tl	205	209	3	1.996	ppb	1.17	142,583.76	3.632E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-28,477.02	-7.254E-03	Pulse	0.30	3
	U	238	209	3	5.644	ppb	0.22	575,597.59	1.466E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	804,799.07	0.99	46.1	Analog	0.30	3
2	Sc	45	99,583.62	3.12	88.0	Pulse	0.30	3
3	Sc	45	4,091,539.59	1.33	87.5	Analog	0.30	3
1	Ge	72	75,489.21	0.08	68.4	Pulse	0.30	3
2	Ge	72	65,100.73	1.47	73.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,909,853.96	2.23	62.0	Analog	0.30	3
3	Rh	103	5,099,848.09	0.40	60.7	Analog	0.30	3
3	In	115	5,849,332.26	0.74	66.0	Analog	0.30	3
3	Tb	159	8,696,485.29	0.32	69.3	Analog	0.30	3
3	Bi	209	3,925,638.00	0.38	53.6	Analog	0.30	3

Quantitation Report

File Name	A0219099.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:03
Sample Name	N023014-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	77.03	25.55	1.759E-05	Pulse	0.30	3
Na	23	45	2	290123.328	ppb	0.73	443,223,002.29	3.634E+03	Analog	0.30	3
Mg	26	45	2	3470.851	ppb	0.84	485,714.16	3.983E+00	Pulse	0.30	3
Al	27	45	2	0.429	ppb	89.50	521.60	4.281E-03	Pulse	0.30	3
K	39	45	2	4315.920	ppb	0.02	2,078,136.22	1.704E+01	Analog	0.30	3
Ca	44	45	3	51952.369	ppb	0.13	123,814,909.27	2.513E+01	Analog	0.30	3
V	51	45	2	1.098	ppb	1.29	9,456.41	7.752E-02	Pulse	0.30	3
Cr	52	45	2	109.624	ppb	0.76	1,181,447.50	9.687E+00	Pulse	0.30	3
Mn	55	45	2	0.926	ppb	2.60	5,396.17	4.425E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-28,112.06	-2.305E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-394.45	-3.233E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	220.93	2.501E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,209.11	-1.371E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,579.94	1.795E-02	Pulse	0.30	3
As	75	72	2	0.443	ppb	0.87	466.56	5.297E-03	Pulse	0.75	3
Se	78	72	1	1.329	ppb	14.71	705.61	6.727E-03	Pulse	0.30	3
Mo	95	103	2	6.519	ppb	0.70	39,065.36	1.456E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,152.11	-1.592E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-276.90	-3.421E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,004.52	1.241E-04	Pulse	0.30	3
Ba	137	159	3	6.782	ppb	1.21	133,899.35	1.147E-02	Pulse	0.30	3
Tl	205	209	3	0.415	ppb	0.78	44,456.58	7.718E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,524.37	-9.592E-04	Pulse	0.30	3
U	238	209	3	1.075	ppb	1.10	161,011.22	2.796E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,224.11	0.32	83.2	Analog	0.30	3
2	Sc	45	121,973.90	1.94	107.8	Pulse	0.30	3
3	Sc	45	4,926,648.57	0.44	105.4	Analog	0.30	3
1	Ge	72	104,813.86	0.73	94.9	Pulse	0.30	3
2	Ge	72	88,082.79	2.27	98.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,682,897.60	0.51	87.1	Analog	0.30	3
3	Rh	103	7,236,699.75	0.37	86.2	Analog	0.30	3
3	In	115	8,095,929.85	0.44	91.4	Analog	0.30	3
3	Tb	159	11,671,239.55	0.30	93.1	Analog	0.30	3
3	Bi	209	5,759,924.57	0.91	78.6	Analog	0.30	3

Quantitation Report

File Name	A0219100.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:09
Sample Name	N023014-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	432.94	15.55	1.208E-05	Pulse	0.30	3
Na	23	45	2	466307.779	ppb	0.57	705,129,838.38	5.840E+03	Analog	0.30	3
Mg	26	45	2	30011.227	ppb	1.09	4,156,414.17	3.443E+01	Analog	0.30	3
Al	27	45	2	2.274	ppb	3.04	976.70	8.088E-03	Pulse	0.30	3
K	39	45	2	12252.580	ppb	0.93	5,812,699.91	4.815E+01	Analog	0.30	3
Ca	44	45	3	219164.144	ppb	0.76	534,302,240.93	1.060E+02	Analog	0.30	3
V	51	45	2	1.889	ppb	0.49	15,508.90	1.285E-01	Pulse	0.30	3
Cr	52	45	2	173.939	ppb	1.44	1,854,546.78	1.536E+01	Analog	0.30	3
Mn	55	45	2	111.584	ppb	0.56	595,260.58	4.930E+00	Pulse	0.30	3
Fe	56	45	2	17.831	ppb	0.63	160,401.06	1.329E+00	Pulse	0.30	3
Co	59	45	2	2.790	ppb	0.39	58,282.44	4.828E-01	Pulse	0.30	3
Ni	60	72	2	447.525	ppb	0.85	2,212,853.85	2.708E+01	Analog	0.30	3
Cu	63	72	2	0.739	ppb	4.25	14,830.90	1.815E-01	Pulse	0.30	3
Zn	66	72	2	4.293	ppb	2.36	9,968.98	1.220E-01	Pulse	0.30	3
As	75	72	2	0.596	ppb	6.90	577.77	7.075E-03	Pulse	0.75	3
Se	78	72	1	7.592	ppb	2.77	3,699.48	3.839E-02	Pulse	0.30	3
Mo	95	103	2	32.376	ppb	1.75	175,444.95	7.228E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,573.29	-2.411E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,149.28	-1.554E-04	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.51	4,744.26	6.414E-04	Pulse	0.30	3
Ba	137	159	3	48.101	ppb	0.52	879,796.53	8.129E-02	Pulse	0.30	3
Tl	205	209	3	0.554	ppb	1.02	51,630.82	1.024E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,411.36	-6.033E-03	Pulse	0.30	3
U	238	209	3	7.835	ppb	0.86	1,026,063.95	2.035E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,285,401.22	1.19	73.7	Analog	0.30	3
2	Sc	45	120,735.79	1.91	106.7	Pulse	0.30	3
3	Sc	45	5,040,357.36	0.31	107.9	Analog	0.30	3
1	Ge	72	96,370.53	1.21	87.3	Pulse	0.30	3
2	Ge	72	81,711.30	1.77	91.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,427,167.01	1.51	78.8	Analog	0.30	3
3	Rh	103	6,524,766.78	0.38	77.7	Analog	0.30	3
3	In	115	7,396,487.65	0.26	83.5	Analog	0.30	3
3	Tb	159	10,822,947.61	0.97	86.3	Analog	0.30	3
3	Bi	209	5,041,235.27	1.07	68.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219101.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:14
Sample Name	N023014-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.078E-06	Pulse	0.30	3
Na	23	45	2	99195.581	ppb	0.87	159,022,620.97	1.243E+03	Analog	0.30	3
Mg	26	45	2	6544.700	ppb	0.82	960,556.77	7.509E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	373.12	2.918E-03	Pulse	0.30	3
K	39	45	2	2606.431	ppb	1.67	1,322,207.77	1.034E+01	Analog	0.30	3
Ca	44	45	3	48305.294	ppb	0.59	117,929,081.58	2.337E+01	Analog	0.30	3
V	51	45	2	0.358	ppb	7.31	3,822.83	2.989E-02	Pulse	0.30	3
Cr	52	45	2	38.639	ppb	1.05	438,019.09	3.424E+00	Pulse	0.30	3
Mn	55	45	2	24.132	ppb	1.21	136,744.36	1.069E+00	Pulse	0.30	3
Fe	56	45	2	4.065	ppb	1.61	40,634.66	3.177E-01	Pulse	0.30	3
Co	59	45	2	0.620	ppb	2.32	13,745.25	1.074E-01	Pulse	0.30	3
Ni	60	72	2	97.534	ppb	1.08	560,349.48	5.905E+00	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	4,749.37	5.006E-02	Pulse	0.30	3
Zn	66	72	2	0.269	ppb	21.73	3,451.49	3.638E-02	Pulse	0.30	3
As	75	72	2	0.127	ppb	18.93	154.01	1.625E-03	Pulse	0.75	3
Se	78	72	1	1.507	ppb	7.06	887.84	7.629E-03	Pulse	0.30	3
Mo	95	103	2	6.209	ppb	1.85	40,149.24	1.387E-02	Pulse	0.30	3
Ag	107	103	3	0.183	ppb	8.56	16,125.57	2.071E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-228.93	-2.642E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,485.69	1.715E-04	Pulse	0.30	3
Ba	137	159	3	10.071	ppb	0.37	208,934.97	1.703E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	3.17	13,848.14	2.195E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,236.68	-3.546E-04	Pulse	0.30	3
U	238	209	3	1.488	ppb	0.09	244,055.79	3.869E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,563.69	0.72	90.1	Analog	0.30	3
2	Sc	45	127,934.44	1.53	113.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,046,799.99	0.71	108.0	Analog	0.30	3
1	Ge	72	116,382.30	0.52	105.4	Pulse	0.30	3
2	Ge	72	94,909.89	1.47	106.5	Pulse	0.30	3
2	Rh	103	2,894,829.99	0.90	94.0	Analog	0.30	3
3	Rh	103	7,786,970.03	0.66	92.7	Analog	0.30	3
3	In	115	8,664,184.74	0.31	97.8	Analog	0.30	3
3	Tb	159	12,268,525.10	0.84	97.8	Analog	0.30	3
3	Bi	209	6,308,027.34	0.50	86.1	Analog	0.30	3

Quantitation Report

File Name	A0219102.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:20
Sample Name	CCV7,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.478	ppb	0.84	196,472.55	1.184E-01	Pulse	0.30	3
Na	23	45	2	452.628	ppb	4.63	834,377.27	6.555E+00	Pulse	0.30	3
Mg	26	45	2	201.228	ppb	2.02	29,500.04	2.317E-01	Pulse	0.30	3
Al	27	45	2	22.773	ppb	6.06	6,411.88	5.038E-02	Pulse	0.30	3
K	39	45	2	224.989	ppb	3.38	127,581.25	1.002E+00	Pulse	0.30	3
Ca	44	45	3	213.545	ppb	0.14	527,726.58	1.075E-01	Pulse	0.30	3
V	51	45	2	20.121	ppb	2.62	165,857.39	1.303E+00	Pulse	0.30	3
Cr	52	45	2	20.736	ppb	1.92	234,862.96	1.845E+00	Pulse	0.30	3
Mn	55	45	2	20.196	ppb	2.60	113,961.59	8.951E-01	Pulse	0.30	3
Fe	56	45	2	20.964	ppb	2.87	198,408.73	1.559E+00	Pulse	0.30	3
Co	59	45	2	20.169	ppb	2.21	444,166.05	3.489E+00	Pulse	0.30	3
Ni	60	72	2	19.941	ppb	0.53	119,966.00	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.434	ppb	0.30	333,223.33	3.360E+00	Pulse	0.30	3
Zn	66	72	2	18.715	ppb	0.92	42,539.05	4.289E-01	Pulse	0.30	3
As	75	72	2	19.958	ppb	0.84	23,016.80	2.321E-01	Pulse	0.75	3
Se	78	72	1	18.541	ppb	1.15	11,933.75	9.374E-02	Pulse	0.30	3
Mo	95	103	2	19.809	ppb	2.55	144,135.60	4.423E-02	Pulse	0.30	3
Ag	107	103	3	19.861	ppb	0.61	1,534,716.53	1.778E-01	Analog	0.30	3
Cd	111	115	3	20.488	ppb	0.80	346,856.57	3.811E-02	Pulse	0.30	3
Sb	121	115	3	20.233	ppb	0.29	1,100,951.02	1.210E-01	Pulse	0.30	3
Ba	137	159	3	21.802	ppb	0.26	460,083.67	3.685E-02	Pulse	0.30	3
Tl	205	209	3	20.259	ppb	0.40	2,620,578.95	3.667E-01	Analog	0.30	3
Pb	208	209	3	20.569	ppb	0.81	3,605,611.43	5.046E-01	Analog	0.30	3
U	238	209	3	19.374	ppb	0.57	3,595,979.93	5.032E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,659,315.30	0.86	95.1	Analog	0.30	3
2	Sc	45	127,357.13	2.17	112.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,909,285.90	0.52	105.0	Analog	0.30	3
1	Ge	72	127,308.29	0.20	115.3	Pulse	0.30	3
2	Ge	72	99,182.66	0.36	111.3	Pulse	0.30	3
2	Rh	103	3,259,577.73	1.16	105.8	Analog	0.30	3
3	Rh	103	8,630,667.79	0.31	102.8	Analog	0.30	3
3	In	115	9,101,098.42	0.25	102.7	Analog	0.30	3
3	Tb	159	12,483,892.45	0.15	99.5	Analog	0.30	3
3	Bi	209	7,145,617.53	0.18	97.5	Analog	0.30	3

Quantitation Report

File Name	A0219103.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:25
Sample Name	CCB7,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	82.19	24.44	1.513E-05	Pulse	0.30	3
Na	23	45	2	216.923	ppb	4.23	438,848.81	3.604E+00	Pulse	0.30	3
Mg	26	45	2	0.165	ppb	218.51	125.56	1.026E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	378.90	3.105E-03	Pulse	0.30	3
K	39	45	2	10.748	ppb	15.36	19,780.19	1.624E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,802.47	3.765E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	691.16	5.673E-03	Pulse	0.30	3
Cr	52	45	2	0.664	ppb	13.57	8,962.35	7.366E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	276.93	2.274E-03	Pulse	0.30	3
Fe	56	45	2	0.169	ppb	12.09	3,845.90	3.158E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	183.37	32.88	2.700E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	53.99	5.613E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	905.61	9.446E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	375.23	3.909E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	34.94	28.00	2.917E-04	Pulse	0.75	3
Se	78	72	1	0.013	ppb	100.08	8.89	7.406E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	3.36	882.29	2.797E-04	Pulse	0.30	3
Ag	107	103	3	0.447	ppb	15.12	37,317.99	4.428E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-42.77	-4.791E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.98	4,968.78	5.563E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	20.27	381.20	3.096E-05	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	2.31	2,789.26	3.953E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,133.65	1.607E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	15.01	884.45	1.254E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,613,880.26	0.73	92.5	Analog	0.30	3
2	Sc	45	121,833.74	1.93	107.6	Pulse	0.30	3
3	Sc	45	4,727,838.19	0.64	101.2	Analog	0.30	3
1	Ge	72	120,979.95	1.44	109.6	Pulse	0.30	3
2	Ge	72	95,934.10	1.51	107.7	Pulse	0.30	3
2	Rh	103	3,154,471.80	0.53	102.4	Analog	0.30	3
3	Rh	103	8,430,825.15	0.65	100.4	Analog	0.30	3
3	In	115	8,931,479.90	0.22	100.8	Analog	0.30	3
3	Tb	159	12,309,814.26	0.25	98.2	Analog	0.30	3
3	Bi	209	7,056,532.19	0.15	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219104.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:31
Sample Name	N023014-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.008	ppb	181.19	11.11	5.879E-05	Pulse	0.30	3
Na	23	45	2	3227892.398	ppb	1.24	3,294,084,110.92	4.042E+04	Analog	0.30	3
Mg	26	45	2	5780.483	ppb	1.36	540,438.82	6.632E+00	Pulse	0.30	3
Al	27	45	2	1.087	ppb	21.27	459.46	5.638E-03	Pulse	0.30	3
K	39	45	2	33471.930	ppb	1.34	10,700,973.45	1.313E+02	Analog	0.30	3
Ca	44	45	3	345435.269	ppb	0.42	518,384,076.72	1.671E+02	Analog	0.30	3
V	51	45	2	0.937	ppb	2.82	5,476.70	6.717E-02	Pulse	0.30	3
Cr	52	45	2	0.634	ppb	9.13	5,773.68	7.094E-02	Pulse	0.30	3
Mn	55	45	2	12.955	ppb	1.07	46,890.54	5.754E-01	Pulse	0.30	3
Fe	56	45	2	26.396	ppb	2.43	159,489.35	1.957E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,052.39	-3.748E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,051.76	-4.080E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-76,782.27	-1.527E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-8,733.57	-1.737E-01	Pulse	0.30	3
As	75	72	2	5.879	ppb	3.20	3,443.68	6.847E-02	Pulse	0.75	3
Se	78	72	1	2.162	ppb	9.49	598.93	1.094E-02	Pulse	0.30	3
Mo	95	103	2	66.039	ppb	0.76	205,158.61	1.474E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,918.79	-2.773E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,105.79	-2.631E-04	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	6.37	2,604.77	6.198E-04	Pulse	0.30	3
Ba	137	159	3	42.564	ppb	0.47	452,223.91	7.194E-02	Pulse	0.30	3
Tl	205	209	3	0.032	ppb	9.24	2,120.25	7.924E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,750.80	-1.673E-02	Pulse	0.30	3
U	238	209	3	0.105	ppb	2.28	7,378.26	2.759E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	184,255.08	4.71	10.6	Analog	0.30	3
2	Sc	45	81,511.64	3.39	72.0	Pulse	0.30	3
3	Sc	45	3,102,652.07	1.08	66.4	Analog	0.30	3
1	Ge	72	54,768.40	1.81	49.6	Pulse	0.30	3
2	Ge	72	50,290.53	1.59	56.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,391,496.52	1.49	45.2	Analog	0.30	3
3	Rh	103	3,576,526.75	0.43	42.6	Analog	0.30	3
3	In	115	4,202,316.30	0.47	47.4	Analog	0.30	3
3	Tb	159	6,286,523.38	0.61	50.1	Analog	0.30	3
3	Bi	209	2,674,853.40	0.68	36.5	Analog	0.30	3

Quantitation Report

File Name	A0219105.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:36
Sample Name	N023014-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.064E-05	Pulse	0.30	3
Na	23	45	2	699224.156	ppb	0.45	1,043,565,140.00	8.757E+03	Analog	0.30	3
Mg	26	45	2	1282.017	ppb	0.66	175,360.55	1.472E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	389.21	3.266E-03	Pulse	0.30	3
K	39	45	2	6960.222	ppb	0.49	3,265,476.24	2.740E+01	Analog	0.30	3
Ca	44	45	3	75923.225	ppb	0.57	175,617,275.16	3.673E+01	Analog	0.30	3
V	51	45	2	0.157	ppb	6.03	2,013.55	1.690E-02	Pulse	0.30	3
Cr	52	45	2	0.387	ppb	13.64	5,853.70	4.917E-02	Pulse	0.30	3
Mn	55	45	2	2.845	ppb	1.98	15,367.45	1.290E-01	Pulse	0.30	3
Fe	56	45	2	6.656	ppb	1.66	60,523.59	5.079E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-945.25	-7.932E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-550.25	-6.725E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-23,253.25	-2.843E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,524.66	-1.864E-02	Pulse	0.30	3
As	75	72	2	1.274	ppb	4.10	1,223.10	1.496E-02	Pulse	0.75	3
Se	78	72	1	0.481	ppb	8.46	230.01	2.440E-03	Pulse	0.30	3
Mo	95	103	2	12.358	ppb	2.28	66,625.40	2.760E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,765.79	-5.775E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-367.91	-4.980E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,312.33	1.776E-04	Pulse	0.30	3
Ba	137	159	3	8.931	ppb	1.31	160,105.92	1.510E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	3.30	1,669.06	3.342E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,958.88	-2.795E-03	Pulse	0.30	3
U	238	209	3	0.020	ppb	1.65	2,702.13	5.411E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,252,647.56	0.69	71.8	Analog	0.30	3
2	Sc	45	119,172.02	1.78	105.3	Pulse	0.30	3
3	Sc	45	4,781,971.70	0.63	102.3	Analog	0.30	3
1	Ge	72	94,334.17	1.00	85.4	Pulse	0.30	3
2	Ge	72	81,794.16	0.73	91.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,414,291.34	0.51	78.4	Analog	0.30	3
3	Rh	103	6,520,649.00	0.13	77.7	Analog	0.30	3
3	In	115	7,389,427.28	0.27	83.4	Analog	0.30	3
3	Tb	159	10,600,549.84	0.31	84.5	Analog	0.30	3
3	Bi	209	4,994,216.00	0.21	68.2	Analog	0.30	3

Quantitation Report

File Name	A0219106.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:42
Sample Name	N023014-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	25.19	27.78	4.027E-05	Pulse	0.30	3
Na	23	45	2	1614842.095	ppb	1.48	2,145,665,870.25	2.022E+04	Analog	0.30	3
Mg	26	45	2	31768.329	ppb	1.29	3,866,795.25	3.644E+01	Analog	0.30	3
Al	27	45	2	4.309	ppb	9.76	1,303.41	1.229E-02	Pulse	0.30	3
K	39	45	2	14960.434	ppb	0.81	6,235,405.74	5.876E+01	Analog	0.30	3
Ca	44	45	3	394622.878	ppb	0.23	787,228,246.04	1.909E+02	Analog	0.30	3
V	51	45	2	1.435	ppb	1.71	10,533.79	9.926E-02	Pulse	0.30	3
Cr	52	45	2	29.181	ppb	1.73	274,751.93	2.590E+00	Pulse	0.30	3
Mn	55	45	2	1.724	ppb	1.06	8,436.07	7.949E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-167,097.99	-1.575E+00	Pulse	0.30	3
Co	59	45	2	0.072	ppb	12.77	1,347.85	1.267E-02	Pulse	0.30	3
Ni	60	72	2	0.185	ppb	16.93	899.12	1.414E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-40,466.02	-6.356E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-972.68	-1.525E-02	Pulse	0.30	3
As	75	72	2	1.612	ppb	0.49	1,202.25	1.888E-02	Pulse	0.75	3
Se	78	72	1	3.641	ppb	4.64	1,325.67	1.842E-02	Pulse	0.30	3
Mo	95	103	2	26.230	ppb	1.56	110,281.24	5.856E-02	Pulse	0.30	3
Ag	107	103	3	0.022	ppb	40.71	3,054.43	6.290E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,955.70	-3.477E-04	Pulse	0.30	3
Sb	121	115	3	0.127	ppb	0.55	5,876.88	1.045E-03	Pulse	0.30	3
Ba	137	159	3	133.784	ppb	0.30	1,874,250.81	2.261E-01	Analog	0.30	3
Tl	205	209	3	0.210	ppb	1.84	14,439.82	4.006E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-43,786.72	-1.215E-02	Pulse	0.30	3
U	238	209	3	2.529	ppb	0.49	236,825.64	6.571E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,877.13	2.88	39.5	Analog	0.30	3
2	Sc	45	106,122.10	2.51	93.8	Pulse	0.30	3
3	Sc	45	4,124,458.10	0.57	88.3	Analog	0.30	3
1	Ge	72	71,992.86	0.77	65.2	Pulse	0.30	3
2	Ge	72	63,668.20	1.71	71.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,883,239.43	1.32	61.1	Analog	0.30	3
3	Rh	103	4,856,122.98	0.29	57.8	Analog	0.30	3
3	In	115	5,625,429.60	0.08	63.5	Analog	0.30	3
3	Tb	159	8,290,372.24	0.25	66.1	Analog	0.30	3
3	Bi	209	3,604,031.23	0.46	49.2	Analog	0.30	3

Quantitation Report

File Name	A0219107.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:47
Sample Name	N023014-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.849E-06	Pulse	0.30	3
Na	23	45	2	346363.949	ppb	1.20	548,409,569.61	4.338E+03	Analog	0.30	3
Mg	26	45	2	7131.799	ppb	1.14	1,034,315.93	8.182E+00	Pulse	0.30	3
Al	27	45	2	0.152	ppb	23.85	469.11	3.710E-03	Pulse	0.30	3
K	39	45	2	3189.927	ppb	1.24	1,595,859.85	1.262E+01	Analog	0.30	3
Ca	44	45	3	88724.012	ppb	1.22	216,430,787.88	4.292E+01	Analog	0.30	3
V	51	45	2	0.291	ppb	0.77	3,229.34	2.554E-02	Pulse	0.30	3
Cr	52	45	2	6.737	ppb	1.65	77,037.28	6.094E-01	Pulse	0.30	3
Mn	55	45	2	0.375	ppb	5.18	2,520.67	1.995E-02	Pulse	0.30	3
Fe	56	45	2	11.773	ppb	0.28	111,711.30	8.836E-01	Pulse	0.30	3
Co	59	45	2	0.022	ppb	33.55	517.78	4.109E-03	Pulse	0.30	3
Ni	60	72	2	0.010	ppb	203.14	311.33	3.534E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-9,140.99	-1.036E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	461.53	5.229E-03	Pulse	0.30	3
As	75	72	2	0.334	ppb	7.96	356.46	4.040E-03	Pulse	0.75	3
Se	78	72	1	0.865	ppb	10.72	461.14	4.383E-03	Pulse	0.30	3
Mo	95	103	2	5.045	ppb	2.18	29,967.89	1.127E-02	Pulse	0.30	3
Ag	107	103	3	0.040	ppb	4.93	5,707.07	7.943E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-451.23	-5.603E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,253.60	2.799E-04	Pulse	0.30	3
Ba	137	159	3	29.083	ppb	0.40	566,725.90	4.916E-02	Pulse	0.30	3
Tl	205	209	3	0.038	ppb	3.84	5,041.08	9.057E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,266.64	-1.126E-03	Pulse	0.30	3
U	238	209	3	0.485	ppb	1.16	70,309.60	1.263E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,413,743.64	1.52	81.0	Analog	0.30	3
2	Sc	45	126,426.61	1.89	111.7	Pulse	0.30	3
3	Sc	45	5,043,411.59	0.94	107.9	Analog	0.30	3
1	Ge	72	105,256.89	0.73	95.3	Pulse	0.30	3
2	Ge	72	88,193.88	0.70	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,659,160.39	0.55	86.3	Analog	0.30	3
3	Rh	103	7,185,744.96	0.32	85.6	Analog	0.30	3
3	In	115	8,051,105.41	0.90	90.8	Analog	0.30	3
3	Tb	159	11,528,907.88	0.22	91.9	Analog	0.30	3
3	Bi	209	5,566,675.19	0.56	76.0	Analog	0.30	3

Quantitation Report

File Name	A0219108.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:53
Sample Name	N023014-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.011	ppb	53.02	22.22	7.563E-05	Pulse	0.30	3
Na	23	45	2	2892056.926	ppb	0.65	3,268,205,889.08	3.622E+04	Analog	0.30	3
Mg	26	45	2	2875.486	ppb	0.58	297,744.74	3.300E+00	Pulse	0.30	3
Al	27	45	2	9.955	ppb	3.34	2,160.55	2.393E-02	Pulse	0.30	3
K	39	45	2	28923.234	ppb	0.62	10,242,224.01	1.135E+02	Analog	0.30	3
Ca	44	45	3	250940.447	ppb	0.51	411,343,198.31	1.214E+02	Analog	0.30	3
V	51	45	2	2.476	ppb	0.43	15,008.46	1.663E-01	Pulse	0.30	3
Cr	52	45	2	6.658	ppb	1.23	54,370.68	6.025E-01	Pulse	0.30	3
Mn	55	45	2	8.992	ppb	0.77	36,132.10	4.004E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-256,032.19	-2.837E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,555.44	-3.940E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,092.66	-5.515E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-77,196.04	-1.377E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,013.97	-1.786E-01	Pulse	0.30	3
As	75	72	2	13.523	ppb	1.84	8,818.50	1.573E-01	Pulse	0.75	3
Se	78	72	1	0.200	ppb	14.95	63.34	1.021E-03	Pulse	0.30	3
Mo	95	103	2	84.148	ppb	1.03	292,843.14	1.879E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,195.65	-2.328E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-688.64	-1.498E-04	Pulse	0.30	3
Sb	121	115	3	0.090	ppb	6.29	3,767.27	8.194E-04	Pulse	0.30	3
Ba	137	159	3	35.501	ppb	0.68	410,405.64	6.000E-02	Pulse	0.30	3
Tl	205	209	3	0.886	ppb	0.88	47,441.23	1.625E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-40,232.16	-1.378E-02	Pulse	0.30	3
U	238	209	3	0.097	ppb	2.68	7,410.80	2.539E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	295,611.35	5.47	16.9	Analog	0.30	3
2	Sc	45	90,246.18	2.45	79.7	Pulse	0.30	3
3	Sc	45	3,389,115.33	0.95	72.5	Analog	0.30	3
1	Ge	72	62,073.30	0.96	56.2	Pulse	0.30	3
2	Ge	72	56,077.30	2.54	62.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,558,976.87	1.88	50.6	Analog	0.30	3
3	Rh	103	3,949,366.92	0.16	47.0	Analog	0.30	3
3	In	115	4,597,737.30	0.26	51.9	Analog	0.30	3
3	Tb	159	6,840,109.76	0.57	54.5	Analog	0.30	3
3	Bi	209	2,919,651.24	0.85	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219109.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:58
Sample Name	N023014-007B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.653E-06	Pulse	0.30	3
Na	23	45	2	613797.360	ppb	0.67	940,111,265.99	7.687E+03	Analog	0.30	3
Mg	26	45	2	622.938	ppb	1.09	87,498.54	7.155E-01	Pulse	0.30	3
Al	27	45	2	1.436	ppb	19.43	776.88	6.359E-03	Pulse	0.30	3
K	39	45	2	5961.690	ppb	0.67	2,872,687.18	2.349E+01	Analog	0.30	3
Ca	44	45	3	54515.605	ppb	0.04	129,708,830.29	2.637E+01	Analog	0.30	3
V	51	45	2	0.486	ppb	2.44	4,661.98	3.813E-02	Pulse	0.30	3
Cr	52	45	2	1.661	ppb	2.37	19,757.56	1.616E-01	Pulse	0.30	3
Mn	55	45	2	1.959	ppb	2.47	10,993.64	8.988E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,406.28	-5.431E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,004.33	-8.213E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-842.51	-9.923E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,316.66	-2.512E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,404.65	-2.834E-02	Pulse	0.30	3
As	75	72	2	2.901	ppb	3.77	2,873.82	3.386E-02	Pulse	0.75	3
Se	78	72	1	0.069	ppb	30.99	35.56	3.600E-04	Pulse	0.30	3
Mo	95	103	2	15.882	ppb	1.55	89,988.74	3.546E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,965.84	-4.317E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-126.00	-1.629E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,501.25	1.941E-04	Pulse	0.30	3
Ba	137	159	3	7.459	ppb	0.64	139,929.90	1.262E-02	Pulse	0.30	3
Tl	205	209	3	0.201	ppb	2.09	20,174.41	3.848E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,978.31	-2.094E-03	Pulse	0.30	3
U	238	209	3	0.019	ppb	1.36	2,708.99	5.167E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,284,644.87	0.45	73.6	Analog	0.30	3
2	Sc	45	122,301.83	1.87	108.1	Pulse	0.30	3
3	Sc	45	4,918,538.12	0.69	105.2	Analog	0.30	3
1	Ge	72	98,779.20	0.90	89.5	Pulse	0.30	3
2	Ge	72	84,868.21	1.39	95.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,537,415.34	1.06	82.4	Analog	0.30	3
3	Rh	103	6,869,704.00	0.63	81.8	Analog	0.30	3
3	In	115	7,736,148.10	0.25	87.3	Analog	0.30	3
3	Tb	159	11,090,674.84	0.50	88.4	Analog	0.30	3
3	Bi	209	5,242,717.42	0.63	71.6	Analog	0.30	3

Quantitation Report

File Name	A0219110.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:04
Sample Name	N023014-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	62.01	18.89	2.734E-05	Pulse	0.30	3
Na	23	45	2	1763170.463	ppb	0.81	2,335,980,302.97	2.208E+04	Analog	0.30	3
Mg	26	45	2	6355.799	ppb	1.27	771,408.90	7.292E+00	Pulse	0.30	3
Al	27	45	2	3.110	ppb	9.42	1,037.60	9.812E-03	Pulse	0.30	3
K	39	45	2	20335.529	ppb	1.01	8,445,090.43	7.983E+01	Analog	0.30	3
Ca	44	45	3	137294.209	ppb	0.19	273,456,709.26	6.641E+01	Analog	0.30	3
V	51	45	2	0.050	ppb	20.10	1,057.86	1.001E-02	Pulse	0.30	3
Cr	52	45	2	0.323	ppb	14.91	4,597.24	4.352E-02	Pulse	0.30	3
Mn	55	45	2	97.054	ppb	1.17	453,691.80	4.289E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-100,900.18	-9.538E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,146.07	-2.029E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-659.43	-9.485E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-52,781.00	-7.576E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-6,276.99	-9.011E-02	Pulse	0.30	3
As	75	72	2	7.151	ppb	0.96	5,800.59	8.325E-02	Pulse	0.75	3
Se	78	72	1	0.045	ppb	38.78	18.89	2.391E-04	Pulse	0.30	3
Mo	95	103	2	50.936	ppb	0.78	218,732.41	1.137E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,319.55	-1.845E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-283.47	-4.876E-05	Pulse	0.30	3
Sb	121	115	3	0.078	ppb	8.33	4,368.57	7.514E-04	Pulse	0.30	3
Ba	137	159	3	35.915	ppb	0.10	515,433.16	6.070E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	4.88	1,469.03	3.938E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,523.28	-8.182E-03	Pulse	0.30	3
U	238	209	3	0.807	ppb	1.36	78,318.81	2.100E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,828.66	0.93	39.5	Analog	0.30	3
2	Sc	45	105,806.16	2.65	93.5	Pulse	0.30	3
3	Sc	45	4,117,790.04	0.51	88.1	Analog	0.30	3
1	Ge	72	79,070.46	0.45	71.6	Pulse	0.30	3
2	Ge	72	69,672.78	1.73	78.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,923,421.10	1.43	62.4	Analog	0.30	3
3	Rh	103	5,050,540.24	0.74	60.2	Analog	0.30	3
3	In	115	5,814,812.67	0.62	65.6	Analog	0.30	3
3	Tb	159	8,491,478.28	0.50	67.7	Analog	0.30	3
3	Bi	209	3,730,482.51	0.78	50.9	Analog	0.30	3

Quantitation Report

File Name	A0219111.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:09
Sample Name	N023014-008B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	186.61	21.11	1.512E-05	Pulse	0.30	3
Na	23	45	2	371214.083	ppb	0.97	588,450,777.90	4.650E+03	Analog	0.30	3
Mg	26	45	2	1358.967	ppb	0.80	197,413.97	1.560E+00	Pulse	0.30	3
Al	27	45	2	0.758	ppb	29.43	628.13	4.960E-03	Pulse	0.30	3
K	39	45	2	4232.244	ppb	1.37	2,114,714.71	1.671E+01	Analog	0.30	3
Ca	44	45	3	29698.248	ppb	0.13	72,403,884.48	1.437E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	584.48	4.617E-03	Pulse	0.30	3
Cr	52	45	2	0.204	ppb	14.82	4,179.70	3.304E-02	Pulse	0.30	3
Mn	55	45	2	21.446	ppb	0.94	120,274.48	9.503E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-10,807.36	-8.539E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-539.79	-4.264E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-136.00	-1.525E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,298.19	-1.380E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-988.16	-1.110E-02	Pulse	0.30	3
As	75	72	2	1.623	ppb	3.90	1,694.64	1.902E-02	Pulse	0.75	3
Se	78	72	1	0.012	ppb	125.17	7.78	7.210E-05	Pulse	0.30	3
Mo	95	103	2	9.628	ppb	1.88	58,382.83	2.150E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,918.66	-2.613E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-61.67	-7.473E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,584.59	1.922E-04	Pulse	0.30	3
Ba	137	159	3	7.571	ppb	0.58	149,450.27	1.281E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	27.28	1,395.68	2.461E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,657.21	2.922E-04	Pulse	0.30	3
U	238	209	3	0.154	ppb	1.28	22,791.28	4.019E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,396,847.13	1.04	80.0	Analog	0.30	3
2	Sc	45	126,570.00	1.31	111.8	Pulse	0.30	3
3	Sc	45	5,039,171.28	0.24	107.8	Analog	0.30	3
1	Ge	72	108,137.28	0.36	97.9	Pulse	0.30	3
2	Ge	72	89,110.64	2.12	100.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,715,346.59	0.86	88.1	Analog	0.30	3
3	Rh	103	7,343,753.09	0.25	87.5	Analog	0.30	3
3	In	115	8,242,228.70	0.67	93.0	Analog	0.30	3
3	Tb	159	11,670,752.74	0.69	93.1	Analog	0.30	3
3	Bi	209	5,670,735.89	0.51	77.4	Analog	0.30	3

Quantitation Report

File Name	A0219112.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:15
Sample Name	N023028-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	153.14	22.23	1.587E-05	Pulse	0.30	3
Na	23	45	2	401589.121	ppb	0.38	632,393,341.69	5.030E+03	Analog	0.30	3
Mg	26	45	2	28216.689	ppb	0.58	4,069,981.92	3.237E+01	Analog	0.30	3
Al	27	45	2	2.185	ppb	13.65	993.10	7.904E-03	Pulse	0.30	3
K	39	45	2	9679.882	ppb	0.75	4,785,476.56	3.806E+01	Analog	0.30	3
Ca	44	45	3	104027.434	ppb	0.43	263,332,391.63	5.032E+01	Analog	0.30	3
V	51	45	2	13.379	ppb	0.47	109,200.31	8.685E-01	Pulse	0.30	3
Cr	52	45	2	151.734	ppb	0.51	1,684,985.33	1.340E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-4,351.30	-3.462E-02	Pulse	0.30	3
Fe	56	45	2	0.118	ppb	32.10	3,489.04	2.778E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-271.48	-2.164E-03	Pulse	0.30	3
Ni	60	72	2	2.934	ppb	2.44	15,690.65	1.805E-01	Pulse	0.30	3
Cu	63	72	2	0.165	ppb	6.33	7,735.41	8.895E-02	Pulse	0.30	3
Zn	66	72	2	3.059	ppb	4.68	8,324.79	9.576E-02	Pulse	0.30	3
As	75	72	2	1.694	ppb	2.08	1,725.25	1.984E-02	Pulse	0.75	3
Se	78	72	1	4.563	ppb	3.75	2,368.06	2.307E-02	Pulse	0.30	3
Mo	95	103	2	3.883	ppb	2.23	22,495.49	8.676E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,500.33	-9.314E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-678.77	-8.579E-05	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	58.77	2,482.53	3.137E-04	Pulse	0.30	3
Ba	137	159	3	51.910	ppb	0.46	991,696.85	8.773E-02	Pulse	0.30	3
Tl	205	209	3	0.060	ppb	3.91	6,971.95	1.308E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,404.12	-1.952E-03	Pulse	0.30	3
U	238	209	3	2.744	ppb	0.18	379,947.99	7.129E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,399,349.92	0.49	80.2	Analog	0.30	3
2	Sc	45	125,727.18	1.53	111.1	Pulse	0.30	3
3	Sc	45	5,233,399.40	0.70	112.0	Analog	0.30	3
1	Ge	72	102,608.28	0.72	92.9	Pulse	0.30	3
2	Ge	72	86,953.39	1.40	97.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,592,480.40	1.40	84.2	Analog	0.30	3
3	Rh	103	6,979,270.17	0.33	83.1	Analog	0.30	3
3	In	115	7,912,349.83	0.38	89.3	Analog	0.30	3
3	Tb	159	11,304,411.36	0.86	90.1	Analog	0.30	3
3	Bi	209	5,329,466.03	0.76	72.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219113.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:20
Sample Name	N023028-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	5.039E-06	Pulse	0.30	3
Na	23	45	2	83954.391	ppb	0.74	135,758,765.75	1.052E+03	Analog	0.30	3
Mg	26	45	2	6047.734	ppb	1.34	895,142.63	6.939E+00	Pulse	0.30	3
Al	27	45	2	0.278	ppb	78.18	511.87	3.970E-03	Pulse	0.30	3
K	39	45	2	2120.102	ppb	1.10	1,087,626.47	8.431E+00	Pulse	0.30	3
Ca	44	45	3	22554.528	ppb	0.38	55,383,530.28	1.091E+01	Analog	0.30	3
V	51	45	2	2.765	ppb	2.52	23,856.87	1.849E-01	Pulse	0.30	3
Cr	52	45	2	33.045	ppb	1.05	378,078.26	2.931E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-646.83	-5.012E-03	Pulse	0.30	3
Fe	56	45	2	0.453	ppb	3.78	6,763.25	5.242E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-59.07	-4.527E-04	Pulse	0.30	3
Ni	60	72	2	0.592	ppb	3.03	3,713.06	3.875E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,011.93	3.143E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,687.52	2.806E-02	Pulse	0.30	3
As	75	72	2	0.337	ppb	9.11	389.77	4.066E-03	Pulse	0.75	3
Se	78	72	1	1.096	ppb	8.31	672.27	5.553E-03	Pulse	0.30	3
Mo	95	103	2	0.751	ppb	1.17	5,005.44	1.684E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-196.77	-2.444E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-104.41	-1.176E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	943.40	1.062E-04	Pulse	0.30	3
Ba	137	159	3	10.719	ppb	0.86	226,105.63	1.813E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	8.94	2,542.54	3.929E-04	Pulse	0.30	3
Pb	208	209	3	0.051	ppb	3.10	10,005.83	1.546E-03	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.96	86,784.15	1.341E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,542,502.03	0.13	88.4	Analog	0.30	3
2	Sc	45	129,027.17	1.75	114.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,074,952.49	0.44	108.6	Analog	0.30	3
1	Ge	72	121,131.73	0.94	109.7	Pulse	0.30	3
2	Ge	72	95,809.43	0.82	107.5	Pulse	0.30	3
2	Rh	103	2,972,250.44	2.01	96.5	Analog	0.30	3
3	Rh	103	8,053,164.95	0.53	95.9	Analog	0.30	3
3	In	115	8,882,169.90	0.73	100.2	Analog	0.30	3
3	Tb	159	12,474,863.70	0.92	99.5	Analog	0.30	3
3	Bi	209	6,472,215.88	0.95	88.4	Analog	0.30	3

Quantitation Report

File Name	A0219114.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:26
Sample Name	CCV8,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.741	ppb	0.96	187,946.23	1.200E-01	Pulse	0.30	3
Na	23	45	2	564.972	ppb	3.59	1,025,810.35	7.962E+00	Pulse	0.30	3
Mg	26	45	2	199.841	ppb	1.16	29,650.18	2.301E-01	Pulse	0.30	3
Al	27	45	2	22.149	ppb	1.65	6,326.29	4.909E-02	Pulse	0.30	3
K	39	45	2	226.815	ppb	3.01	130,044.74	1.009E+00	Pulse	0.30	3
Ca	44	45	3	212.353	ppb	0.30	527,394.23	1.069E-01	Pulse	0.30	3
V	51	45	2	20.078	ppb	1.25	167,517.74	1.300E+00	Pulse	0.30	3
Cr	52	45	2	19.985	ppb	1.11	229,149.77	1.778E+00	Pulse	0.30	3
Mn	55	45	2	20.105	ppb	1.93	114,819.82	8.911E-01	Pulse	0.30	3
Fe	56	45	2	20.857	ppb	0.28	199,853.18	1.551E+00	Pulse	0.30	3
Co	59	45	2	20.057	ppb	1.24	447,057.12	3.469E+00	Pulse	0.30	3
Ni	60	72	2	19.333	ppb	0.90	119,678.53	1.173E+00	Pulse	0.30	3
Cu	63	72	2	19.889	ppb	1.27	333,859.17	3.272E+00	Pulse	0.30	3
Zn	66	72	2	18.426	ppb	0.79	43,143.25	4.228E-01	Pulse	0.30	3
As	75	72	2	19.636	ppb	1.40	23,298.55	2.283E-01	Pulse	0.75	3
Se	78	72	1	18.769	ppb	2.33	12,192.86	9.489E-02	Pulse	0.30	3
Mo	95	103	2	19.884	ppb	0.53	145,414.09	4.440E-02	Pulse	0.30	3
Ag	107	103	3	19.599	ppb	1.68	1,526,826.62	1.755E-01	Analog	0.30	3
Cd	111	115	3	20.337	ppb	1.14	348,796.22	3.783E-02	Pulse	0.30	3
Sb	121	115	3	20.076	ppb	1.28	1,106,673.03	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.075	ppb	0.33	467,978.24	3.731E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.27	2,634,397.32	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.598	ppb	0.26	3,628,985.79	5.053E-01	Analog	0.30	3
U	238	209	3	19.194	ppb	0.31	3,580,603.05	4.986E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,566,261.89	1.34	89.7	Analog	0.30	3
2	Sc	45	128,876.49	1.54	113.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,932,690.83	0.08	105.5	Analog	0.30	3
1	Ge	72	128,507.40	0.59	116.4	Pulse	0.30	3
2	Ge	72	102,061.14	2.16	114.6	Pulse	0.30	3
2	Rh	103	3,275,355.30	0.71	106.3	Analog	0.30	3
3	Rh	103	8,700,448.90	0.09	103.6	Analog	0.30	3
3	In	115	9,220,431.27	1.02	104.0	Analog	0.30	3
3	Tb	159	12,541,595.78	0.17	100.0	Analog	0.30	3
3	Bi	209	7,181,777.74	0.22	98.0	Analog	0.30	3

Quantitation Report

File Name	A0219115.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:31
Sample Name	CCB8,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	115.10	30.00	1.983E-05	Pulse	0.30	3
Na	23	45	2	328.081	ppb	4.69	608,400.43	4.996E+00	Pulse	0.30	3
Mg	26	45	2	0.068	ppb	321.68	111.12	9.150E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	360.01	2.956E-03	Pulse	0.30	3
K	39	45	2	13.301	ppb	17.27	20,996.30	1.724E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,957.13	3.616E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	672.27	5.522E-03	Pulse	0.30	3
Cr	52	45	2	0.169	ppb	13.71	3,645.50	2.994E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	250.95	2.062E-03	Pulse	0.30	3
Fe	56	45	2	0.172	ppb	9.09	3,867.48	3.175E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	128.36	46.04	3.799E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	44.93	4.647E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	658.26	6.791E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	393.64	4.060E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	54.19	29.33	3.035E-04	Pulse	0.75	3
Se	78	72	1	0.012	ppb	164.84	8.89	7.135E-05	Pulse	0.30	3
Mo	95	103	2	0.111	ppb	3.69	820.06	2.567E-04	Pulse	0.30	3
Ag	107	103	3	0.441	ppb	14.82	37,022.16	4.372E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-70.36	-7.843E-06	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	5.39	5,124.39	5.712E-04	Pulse	0.30	3
Ba	137	159	3	0.005	ppb	37.96	276.88	2.240E-05	Pulse	0.30	3
Tl	205	209	3	0.004	ppb	13.46	2,001.33	2.838E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	911.39	1.294E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	6.54	860.93	1.221E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,516,802.55	1.05	86.9	Analog	0.30	3
2	Sc	45	121,847.03	1.86	107.7	Pulse	0.30	3
3	Sc	45	4,689,828.44	0.90	100.4	Analog	0.30	3
1	Ge	72	123,467.14	1.09	111.8	Pulse	0.30	3
2	Ge	72	96,874.49	1.52	108.7	Pulse	0.30	3
2	Rh	103	3,195,317.66	0.57	103.7	Analog	0.30	3
3	Rh	103	8,471,889.18	0.54	100.9	Analog	0.30	3
3	In	115	8,970,901.86	0.49	101.2	Analog	0.30	3
3	Tb	159	12,356,158.57	0.43	98.5	Analog	0.30	3
3	Bi	209	7,052,494.69	1.03	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219116.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:37
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.484	ppb	4.35	4,907.58	2.952E-03	Pulse	0.30	3
Na	23	45	2	234.890	ppb	7.28	516,660.84	3.829E+00	Pulse	0.30	3
Mg	26	45	2	3.603	ppb	22.20	671.15	4.971E-03	Pulse	0.30	3
Al	27	45	2	12.341	ppb	6.05	3,895.00	2.886E-02	Pulse	0.30	3
K	39	45	2	11.393	ppb	16.16	22,264.67	1.649E-01	Pulse	0.30	3
Ca	44	45	3	7.832	ppb	2.96	40,997.02	7.999E-03	Pulse	0.30	3
V	51	45	2	0.951	ppb	2.38	9,189.58	6.805E-02	Pulse	0.30	3
Cr	52	45	2	1.131	ppb	3.31	15,498.39	1.148E-01	Pulse	0.30	3
Mn	55	45	2	0.538	ppb	10.16	3,659.73	2.713E-02	Pulse	0.30	3
Fe	56	45	2	11.097	ppb	2.90	112,610.10	8.340E-01	Pulse	0.30	3
Co	59	45	2	0.477	ppb	1.91	11,176.96	8.275E-02	Pulse	0.30	3
Ni	60	72	2	0.936	ppb	4.77	6,299.74	5.956E-02	Pulse	0.30	3
Cu	63	72	2	0.740	ppb	0.22	19,235.24	1.818E-01	Pulse	0.30	3
Zn	66	72	2	8.678	ppb	1.11	22,784.73	2.153E-01	Pulse	0.30	3
As	75	72	2	0.103	ppb	23.85	142.23	1.347E-03	Pulse	0.75	3
Se	78	72	1	0.474	ppb	7.60	327.80	2.404E-03	Pulse	0.30	3
Mo	95	103	2	0.547	ppb	4.31	4,317.45	1.228E-03	Pulse	0.30	3
Ag	107	103	3	0.450	ppb	1.40	41,746.34	4.454E-03	Pulse	0.30	3
Cd	111	115	3	0.504	ppb	1.49	9,384.90	9.441E-04	Pulse	0.30	3
Sb	121	115	3	0.508	ppb	1.27	32,966.50	3.317E-03	Pulse	0.30	3
Ba	137	159	3	1.207	ppb	0.94	28,262.20	2.052E-03	Pulse	0.30	3
Tl	205	209	3	0.474	ppb	0.87	68,702.17	8.794E-03	Pulse	0.30	3
Pb	208	209	3	1.033	ppb	0.75	200,161.67	2.562E-02	Pulse	0.30	3
U	238	209	3	0.498	ppb	1.22	101,245.89	1.296E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,662,026.18	0.67	95.2	Analog	0.30	3
2	Sc	45	135,093.53	2.84	119.4	Pulse	0.30	3
3	Sc	45	5,125,353.71	0.93	109.7	Analog	0.30	3
1	Ge	72	136,373.75	0.56	123.5	Pulse	0.30	3
2	Ge	72	105,814.22	1.62	118.8	Pulse	0.30	3
2	Rh	103	3,515,155.57	1.04	114.1	Analog	0.30	3
3	Rh	103	9,373,627.01	0.47	111.6	Analog	0.30	3
3	In	115	9,940,187.47	0.40	112.2	Analog	0.30	3
3	Tb	159	13,771,201.18	0.41	109.8	Analog	0.30	3
3	Bi	209	7,812,185.78	0.41	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219117.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:42
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	64.19	37.78	2.443E-05	Pulse	0.30	3
Na	23	45	2	91492.489	ppb	1.29	152,917,538.83	1.147E+03	Analog	0.30	3
Mg	26	45	2	89925.157	ppb	1.25	13,757,935.07	1.032E+02	Analog	0.30	3
Al	27	45	2	0.799	ppb	78.82	674.76	5.046E-03	Pulse	0.30	3
K	39	45	2	99061.880	ppb	0.85	51,803,852.01	3.884E+02	Analog	0.30	3
Ca	44	45	3	97176.367	ppb	0.56	252,512,122.90	4.700E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.775E-03	Pulse	0.30	3
Cr	52	45	2	0.286	ppb	9.03	5,370.26	4.027E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-13,304.13	-9.975E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,660.87	-2.747E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	83.22	73.37	5.471E-04	Pulse	0.30	3
Ni	60	72	2	0.356	ppb	2.60	2,352.43	2.446E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,367.70	-2.459E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,297.02	-1.349E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-0.38	-4.220E-06	Pulse	0.75	3
Se	78	72	1	0.011	ppb	29.05	7.78	6.611E-05	Pulse	0.30	3
Mo	95	103	2	0.056	ppb	13.68	383.36	1.320E-04	Pulse	0.30	3
Ag	107	103	3	0.077	ppb	11.56	9,041.20	1.124E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-539.43	-6.105E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,611.27	1.824E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-22,620.56	-1.816E-03	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	6.76	2,154.70	3.647E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,787.93	-3.027E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	41.96	327.21	5.544E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,915.50	1.02	88.8	Analog	0.30	3
2	Sc	45	133,390.42	2.62	117.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,372,314.88	1.51	115.0	Analog	0.30	3
1	Ge	72	117,667.98	0.44	106.6	Pulse	0.30	3
2	Ge	72	96,164.67	1.28	107.9	Pulse	0.30	3
2	Rh	103	2,899,354.16	1.56	94.1	Analog	0.30	3
3	Rh	103	8,043,522.52	0.74	95.8	Analog	0.30	3
3	In	115	8,833,900.06	0.59	99.7	Analog	0.30	3
3	Tb	159	12,457,496.34	0.57	99.3	Analog	0.30	3
3	Bi	209	5,907,875.82	0.72	80.7	Analog	0.30	3

Quantitation Report

File Name	A0219118.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:45
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.538	ppb	0.40	171,834.60	1.188E-01	Pulse	0.30	3
Na	23	45	2	90502.545	ppb	0.53	136,587,116.85	1.134E+03	Analog	0.30	3
Mg	26	45	2	89935.079	ppb	0.50	12,424,179.12	1.032E+02	Analog	0.30	3
Al	27	45	2	20.755	ppb	2.39	5,565.90	4.622E-02	Pulse	0.30	3
K	39	45	2	95057.269	ppb	0.51	44,886,463.77	3.727E+02	Analog	0.30	3
Ca	44	45	3	95944.403	ppb	0.77	235,239,052.05	4.641E+01	Analog	0.30	3
V	51	45	2	20.264	ppb	0.24	158,004.73	1.312E+00	Pulse	0.30	3
Cr	52	45	2	19.326	ppb	0.26	207,169.69	1.720E+00	Pulse	0.30	3
Mn	55	45	2	16.455	ppb	0.30	87,907.90	7.299E-01	Pulse	0.30	3
Fe	56	45	2	20.277	ppb	0.72	181,602.31	1.508E+00	Pulse	0.30	3
Co	59	45	2	18.391	ppb	0.60	383,069.47	3.181E+00	Pulse	0.30	3
Ni	60	72	2	19.860	ppb	0.85	101,780.59	1.205E+00	Pulse	0.30	3
Cu	63	72	2	19.323	ppb	1.06	268,694.46	3.180E+00	Pulse	0.30	3
Zn	66	72	2	17.383	ppb	0.42	33,846.69	4.006E-01	Pulse	0.30	3
As	75	72	2	19.519	ppb	0.36	19,178.25	2.270E-01	Pulse	0.75	3
Se	78	72	1	16.788	ppb	3.33	8,117.93	8.488E-02	Pulse	0.30	3
Mo	95	103	2	23.302	ppb	0.55	136,114.44	5.202E-02	Pulse	0.30	3
Ag	107	103	3	19.168	ppb	1.81	1,295,380.23	1.716E-01	Mix	0.30	3
Cd	111	115	3	19.162	ppb	0.60	295,460.63	3.565E-02	Pulse	0.30	3
Sb	121	115	3	21.120	ppb	0.54	1,046,507.57	1.263E-01	Pulse	0.30	3
Ba	137	159	3	24.624	ppb	0.52	496,512.08	4.162E-02	Pulse	0.30	3
Tl	205	209	3	22.381	ppb	0.96	2,310,706.86	4.051E-01	Analog	0.30	3
Pb	208	209	3	22.204	ppb	0.21	3,106,742.54	5.447E-01	Analog	0.30	3
U	238	209	3	22.570	ppb	0.61	3,343,945.50	5.863E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,446,746.35	0.85	82.9	Analog	0.30	3
2	Sc	45	120,431.94	2.82	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,069,210.37	1.54	108.5	Analog	0.30	3
1	Ge	72	95,685.19	2.61	86.7	Pulse	0.30	3
2	Ge	72	84,497.29	3.29	94.8	Pulse	0.30	3
2	Rh	103	2,616,310.26	2.80	84.9	Analog	0.30	3
3	Rh	103	7,547,390.37	0.56	89.9	Analog	0.30	3
3	In	115	8,288,957.74	0.97	93.5	Analog	0.30	3
3	Tb	159	11,929,437.74	1.33	95.1	Analog	0.30	3
3	Bi	209	5,703,728.04	0.51	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219119.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:51
Sample Name	N023028-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	60.72	38.89	3.298E-05	Pulse	0.30	3
Na	23	45	2	251754.599	ppb	1.25	339,904,674.93	3.154E+03	Analog	0.30	3
Mg	26	45	2	18339.489	ppb	0.96	2,267,833.86	2.104E+01	Analog	0.30	3
Al	27	45	2	3.869	ppb	16.63	1,226.17	1.138E-02	Pulse	0.30	3
K	39	45	2	7327.301	ppb	1.97	3,108,226.80	2.884E+01	Analog	0.30	3
Ca	44	45	3	108212.092	ppb	0.82	230,855,545.45	5.234E+01	Analog	0.30	3
V	51	45	2	8.854	ppb	1.52	62,215.00	5.771E-01	Pulse	0.30	3
Cr	52	45	2	59.510	ppb	1.10	567,540.06	5.266E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,844.71	-2.640E-02	Pulse	0.30	3
Fe	56	45	2	0.285	ppb	21.96	4,323.02	4.007E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-318.85	-2.954E-03	Pulse	0.30	3
Ni	60	72	2	0.385	ppb	3.84	2,069.07	2.620E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,903.81	2.411E-02	Pulse	0.30	3
Zn	66	72	2	0.588	ppb	10.79	3,409.48	4.317E-02	Pulse	0.30	3
As	75	72	2	1.408	ppb	4.66	1,304.83	1.651E-02	Pulse	0.75	3
Se	78	72	1	4.069	ppb	2.67	2,061.33	2.058E-02	Pulse	0.30	3
Mo	95	103	2	6.122	ppb	2.20	32,500.74	1.367E-02	Pulse	0.30	3
Ag	107	103	3	0.267	ppb	5.88	18,101.86	2.822E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-577.38	-7.912E-05	Pulse	0.30	3
Sb	121	115	3	0.084	ppb	4.00	5,727.96	7.848E-04	Pulse	0.30	3
Ba	137	159	3	45.693	ppb	0.18	816,209.21	7.722E-02	Pulse	0.30	3
Tl	205	209	3	0.075	ppb	0.40	8,178.15	1.571E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,788.50	-1.688E-03	Pulse	0.30	3
U	238	209	3	0.767	ppb	0.58	103,921.53	1.996E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,176,484.16	1.26	67.4	Analog	0.30	3
2	Sc	45	107,802.85	2.33	95.3	Pulse	0.30	3
3	Sc	45	4,410,721.29	1.02	94.4	Analog	0.30	3
1	Ge	72	100,173.11	0.20	90.7	Pulse	0.30	3
2	Ge	72	78,989.24	1.28	88.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,633.89	0.85	77.2	Analog	0.30	3
3	Rh	103	6,414,411.22	0.23	76.4	Analog	0.30	3
3	In	115	7,299,317.54	0.52	82.4	Analog	0.30	3
3	Tb	159	10,569,395.88	0.39	84.3	Analog	0.30	3
3	Bi	209	5,205,623.08	0.84	71.1	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219120.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:59
Sample Name	N023028-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	269.18	20.00	1.369E-05	Pulse	0.30	3
Na	23	45	2	54485.114	ppb	0.68	81,735,534.34	6.832E+02	Analog	0.30	3
Mg	26	45	2	4052.593	ppb	0.79	556,291.69	4.650E+00	Pulse	0.30	3
Al	27	45	2	0.146	ppb	113.62	442.33	3.698E-03	Pulse	0.30	3
K	39	45	2	1626.032	ppb	0.39	776,933.39	6.494E+00	Pulse	0.30	3
Ca	44	45	3	23619.723	ppb	1.23	53,394,839.76	1.143E+01	Analog	0.30	3
V	51	45	2	1.814	ppb	1.57	14,790.52	1.236E-01	Pulse	0.30	3
Cr	52	45	2	12.806	ppb	0.72	136,972.11	1.145E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-299.06	-2.499E-03	Pulse	0.30	3
Fe	56	45	2	0.377	ppb	7.63	5,601.01	4.681E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-72.29	-6.035E-04	Pulse	0.30	3
Ni	60	72	2	0.046	ppb	5.52	525.93	5.690E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,444.03	1.562E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,301.72	1.408E-02	Pulse	0.30	3
As	75	72	2	0.298	ppb	2.71	334.78	3.622E-03	Pulse	0.75	3
Se	78	72	1	0.843	ppb	8.72	496.70	4.273E-03	Pulse	0.30	3
Mo	95	103	2	1.151	ppb	5.57	7,432.03	2.578E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,889.70	3.749E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,753.30	-2.324E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	831.17	9.779E-05	Pulse	0.30	3
Ba	137	159	3	8.364	ppb	1.31	170,809.74	1.415E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	12.19	2,488.11	3.885E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-36,009.54	-5.622E-03	Pulse	0.30	3
U	238	209	3	0.145	ppb	1.48	24,267.82	3.789E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,464,198.83	0.75	83.9	Analog	0.30	3
2	Sc	45	119,639.90	0.80	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,672,455.63	0.70	100.0	Analog	0.30	3
1	Ge	72	116,210.17	0.40	105.2	Pulse	0.30	3
2	Ge	72	92,438.88	1.08	103.8	Pulse	0.30	3
2	Rh	103	2,882,119.02	0.75	93.6	Analog	0.30	3
3	Rh	103	7,708,244.19	0.11	91.8	Analog	0.30	3
3	In	115	8,499,661.34	0.08	95.9	Analog	0.30	3
3	Tb	159	12,075,336.76	0.92	96.3	Analog	0.30	3
3	Bi	209	6,404,642.54	0.31	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219121.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:04
Sample Name	N023028-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	98.13	26.67	2.100E-05	Pulse	0.30	3
Na	23	45	2	355637.411	ppb	1.32	506,904,654.67	4.455E+03	Analog	0.30	3
Mg	26	45	2	18171.945	ppb	1.04	2,372,426.51	2.085E+01	Analog	0.30	3
Al	27	45	2	5.370	ppb	13.85	1,644.73	1.448E-02	Pulse	0.30	3
K	39	45	2	9474.039	ppb	1.25	4,239,726.43	3.726E+01	Analog	0.30	3
Ca	44	45	3	111344.528	ppb	0.84	254,148,727.32	5.386E+01	Analog	0.30	3
V	51	45	2	16.854	ppb	1.41	124,305.88	1.092E+00	Pulse	0.30	3
Cr	52	45	2	152.724	ppb	0.74	1,535,193.70	1.349E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-861.99	-7.598E-03	Pulse	0.30	3
Fe	56	45	2	2.478	ppb	6.42	22,866.40	2.011E-01	Pulse	0.30	3
Co	59	45	2	0.469	ppb	3.01	9,251.43	8.131E-02	Pulse	0.30	3
Ni	60	72	2	1.546	ppb	4.86	7,735.69	9.649E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,825.13	-4.771E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,417.68	3.016E-02	Pulse	0.30	3
As	75	72	2	2.643	ppb	2.95	2,474.01	3.086E-02	Pulse	0.75	3
Se	78	72	1	5.402	ppb	3.00	2,692.55	2.732E-02	Pulse	0.30	3
Mo	95	103	2	22.393	ppb	1.10	120,631.63	5.000E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-5,502.91	-8.395E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-486.15	-6.532E-05	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	11.31	4,265.21	5.731E-04	Pulse	0.30	3
Ba	137	159	3	49.417	ppb	0.18	901,528.54	8.352E-02	Pulse	0.30	3
Tl	205	209	3	0.052	ppb	2.42	5,961.48	1.157E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,417.52	-2.216E-03	Pulse	0.30	3
U	238	209	3	0.887	ppb	0.44	118,927.01	2.308E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,268,925.46	0.36	72.7	Analog	0.30	3
2	Sc	45	113,818.60	2.45	100.6	Pulse	0.30	3
3	Sc	45	4,718,931.35	0.53	101.0	Analog	0.30	3
1	Ge	72	98,596.81	1.36	89.3	Pulse	0.30	3
2	Ge	72	80,173.65	2.00	90.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,412,679.01	1.13	78.3	Analog	0.30	3
3	Rh	103	6,555,189.83	0.54	78.1	Analog	0.30	3
3	In	115	7,441,813.81	0.43	84.0	Analog	0.30	3
3	Tb	159	10,794,708.31	0.58	86.1	Analog	0.30	3
3	Bi	209	5,152,465.79	0.73	70.3	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219122.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:10
Sample Name	N023028-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.125E-06	Pulse	0.30	3
Na	23	45	2	76132.719	ppb	1.41	113,612,202.75	9.543E+02	Analog	0.30	3
Mg	26	45	2	3941.378	ppb	1.81	538,365.31	4.522E+00	Pulse	0.30	3
Al	27	45	2	0.494	ppb	27.05	525.23	4.415E-03	Pulse	0.30	3
K	39	45	2	2105.719	ppb	1.61	996,940.60	8.374E+00	Pulse	0.30	3
Ca	44	45	3	24696.623	ppb	0.28	55,299,806.95	1.195E+01	Analog	0.30	3
V	51	45	2	3.534	ppb	1.69	27,912.26	2.345E-01	Pulse	0.30	3
Cr	52	45	2	33.659	ppb	1.32	355,347.29	2.985E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-25.22	-2.038E-04	Pulse	0.30	3
Fe	56	45	2	0.509	ppb	10.71	6,724.76	5.651E-02	Pulse	0.30	3
Co	59	45	2	0.103	ppb	2.60	2,142.83	1.800E-02	Pulse	0.30	3
Ni	60	72	2	0.282	ppb	4.44	1,806.11	2.000E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-63.11	-6.929E-04	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	914.99	1.014E-02	Pulse	0.30	3
As	75	72	2	0.563	ppb	1.32	604.63	6.695E-03	Pulse	0.75	3
Se	78	72	1	1.183	ppb	9.92	676.71	5.989E-03	Pulse	0.30	3
Mo	95	103	2	4.256	ppb	1.15	26,861.22	9.508E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,087.05	2.769E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-57.45	-6.856E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,350.12	1.611E-04	Pulse	0.30	3
Ba	137	159	3	10.200	ppb	0.34	203,891.77	1.725E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	18.78	2,082.45	3.356E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,345.45	-2.168E-04	Pulse	0.30	3
U	238	209	3	0.168	ppb	1.34	27,311.22	4.401E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,453,250.81	0.22	83.3	Analog	0.30	3
2	Sc	45	119,079.94	2.37	105.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,627,986.29	0.42	99.0	Analog	0.30	3
1	Ge	72	112,973.86	0.38	102.3	Pulse	0.30	3
2	Ge	72	90,324.85	1.36	101.4	Pulse	0.30	3
2	Rh	103	2,825,190.13	1.23	91.7	Analog	0.30	3
3	Rh	103	7,536,101.55	0.41	89.8	Analog	0.30	3
3	In	115	8,379,560.23	0.45	94.6	Analog	0.30	3
3	Tb	159	11,820,955.52	0.42	94.3	Analog	0.30	3
3	Bi	209	6,205,194.42	0.71	84.7	Analog	0.30	3

Quantitation Report

File Name	A0219123.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:15
Sample Name	N023029-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	85.97	31.11	3.410E-05	Pulse	0.30	3
Na	23	45	2	1101147.648	ppb	1.26	1,451,554,733.92	1.379E+04	Analog	0.30	3
Mg	26	45	2	18629.195	ppb	1.57	2,249,386.88	2.137E+01	Analog	0.30	3
Al	27	45	2	3.835	ppb	12.34	1,191.33	1.131E-02	Pulse	0.30	3
K	39	45	2	13745.990	ppb	0.63	5,684,733.73	5.400E+01	Analog	0.30	3
Ca	44	45	3	170747.591	ppb	0.62	348,026,212.59	8.259E+01	Analog	0.30	3
V	51	45	2	0.734	ppb	3.26	5,693.44	5.411E-02	Pulse	0.30	3
Cr	52	45	2	1.673	ppb	1.27	17,125.20	1.627E-01	Pulse	0.30	3
Mn	55	45	2	1.451	ppb	2.00	7,099.67	6.743E-02	Pulse	0.30	3
Fe	56	45	2	5.661	ppb	14.76	45,749.44	4.348E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,194.50	-1.135E-02	Pulse	0.30	3
Ni	60	72	2	1.112	ppb	3.97	4,826.59	7.019E-02	Pulse	0.30	3
Cu	63	72	2	1.801	ppb	0.43	24,279.88	3.529E-01	Pulse	0.30	3
Zn	66	72	2	8.993	ppb	1.14	15,272.77	2.220E-01	Pulse	0.30	3
As	75	72	2	1.365	ppb	5.06	1,101.76	1.602E-02	Pulse	0.75	3
Se	78	72	1	0.766	ppb	5.22	314.46	3.885E-03	Pulse	0.30	3
Mo	95	103	2	19.652	ppb	1.02	89,075.30	4.388E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-4,994.64	-9.118E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-645.92	-1.029E-04	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	2.02	2,604.77	4.148E-04	Pulse	0.30	3
Ba	137	159	3	30.618	ppb	0.18	473,501.87	5.175E-02	Pulse	0.30	3
Tl	205	209	3	0.430	ppb	2.43	32,320.58	8.003E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,992.61	-3.465E-03	Pulse	0.30	3
U	238	209	3	7.152	ppb	0.02	750,317.17	1.858E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	919,661.92	2.13	52.7	Analog	0.30	3
2	Sc	45	105,283.51	3.09	93.0	Pulse	0.30	3
3	Sc	45	4,214,091.54	0.87	90.2	Analog	0.30	3
1	Ge	72	80,948.57	0.14	73.3	Pulse	0.30	3
2	Ge	72	68,798.92	2.52	77.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,030,032.30	1.08	65.9	Analog	0.30	3
3	Rh	103	5,477,689.08	0.35	65.2	Analog	0.30	3
3	In	115	6,279,343.66	0.35	70.9	Analog	0.30	3
3	Tb	159	9,149,644.72	0.21	73.0	Analog	0.30	3
3	Bi	209	4,038,479.42	0.32	55.1	Analog	0.30	3

Quantitation Report

File Name	A0219124.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:21
Sample Name	N023029-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.228E-06	Pulse	0.30	3
Na	23	45	2	235213.335	ppb	0.93	358,395,910.22	2.946E+03	Analog	0.30	3
Mg	26	45	2	4166.701	ppb	0.56	581,532.88	4.781E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	388.70	3.193E-03	Pulse	0.30	3
K	39	45	2	2916.213	ppb	0.74	1,405,039.08	1.155E+01	Analog	0.30	3
Ca	44	45	3	37165.260	ppb	0.19	86,174,067.61	1.798E+01	Analog	0.30	3
V	51	45	2	0.133	ppb	9.26	1,871.30	1.539E-02	Pulse	0.30	3
Cr	52	45	2	0.391	ppb	1.40	6,029.18	4.957E-02	Pulse	0.30	3
Mn	55	45	2	0.205	ppb	9.29	1,509.89	1.242E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-16,887.74	-1.389E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-273.25	-2.243E-03	Pulse	0.30	3
Ni	60	72	2	0.211	ppb	5.96	1,387.08	1.572E-02	Pulse	0.30	3
Cu	63	72	2	0.205	ppb	7.77	8,419.75	9.546E-02	Pulse	0.30	3
Zn	66	72	2	1.357	ppb	6.28	5,251.77	5.954E-02	Pulse	0.30	3
As	75	72	2	0.271	ppb	5.20	291.15	3.300E-03	Pulse	0.75	3
Se	78	72	1	0.180	ppb	27.71	102.23	9.191E-04	Pulse	0.30	3
Mo	95	103	2	3.769	ppb	1.30	22,768.13	8.421E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,834.62	2.505E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-121.13	-1.479E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	974.52	1.189E-04	Pulse	0.30	3
Ba	137	159	3	6.378	ppb	0.37	125,269.01	1.079E-02	Pulse	0.30	3
Tl	205	209	3	0.077	ppb	2.25	9,188.80	1.611E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,636.49	-2.869E-04	Pulse	0.30	3
U	238	209	3	1.340	ppb	0.08	198,790.97	3.484E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,384,499.19	0.93	79.3	Analog	0.30	3
2	Sc	45	121,643.44	1.09	107.5	Pulse	0.30	3
3	Sc	45	4,792,868.99	0.37	102.6	Analog	0.30	3
1	Ge	72	111,184.06	0.86	100.7	Pulse	0.30	3
2	Ge	72	88,207.21	0.98	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,703,645.52	0.87	87.8	Analog	0.30	3
3	Rh	103	7,324,808.43	0.42	87.2	Analog	0.30	3
3	In	115	8,196,349.78	0.45	92.5	Analog	0.30	3
3	Tb	159	11,609,373.58	0.83	92.6	Analog	0.30	3
3	Bi	209	5,705,297.21	0.29	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219125.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:27
Sample Name	N023029-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.005	ppb	65.74	36.67	3.946E-05	Pulse	0.30	3
	Na	23	45	2	971379.398	ppb	0.52	1,338,769,446.72	1.217E+04	Analog	0.30	3
	Mg	26	45	2	23742.485	ppb	0.76	2,997,520.76	2.724E+01	Analog	0.30	3
	Al	27	45	2	6.303	ppb	8.92	1,804.61	1.640E-02	Pulse	0.30	3
	K	39	45	2	16071.034	ppb	0.56	6,945,741.56	6.311E+01	Analog	0.30	3
	Ca	44	45	3	195087.655	ppb	0.62	419,080,313.75	9.436E+01	Analog	0.30	3
	V	51	45	2	1.056	ppb	3.78	8,235.76	7.484E-02	Pulse	0.30	3
OLR	Cr	52	45	2	508.626	ppb	0.77	4,940,107.88	4.489E+01	Analog	0.30	3
	Mn	55	45	2	0.584	ppb	10.14	3,209.58	2.917E-02	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-65,700.48	-5.970E-01	Pulse	0.30	3
	Co	59	45	2	0.215	ppb	5.92	4,125.12	3.749E-02	Pulse	0.30	3
	Ni	60	72	2	2.826	ppb	1.18	12,755.91	1.739E-01	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	3,890.53	5.309E-02	Pulse	0.30	3
	Zn	66	72	2	16.878	ppb	1.72	28,597.92	3.898E-01	Pulse	0.30	3
	As	75	72	2	1.272	ppb	3.07	1,095.51	1.493E-02	Pulse	0.75	3
	Se	78	72	1	3.636	ppb	9.83	1,605.70	1.839E-02	Pulse	0.30	3
	Mo	95	103	2	13.785	ppb	0.38	65,366.02	3.078E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-7,615.14	-1.328E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-596.27	-9.082E-05	Pulse	0.30	3
	Sb	121	115	3	0.031	ppb	6.97	3,088.21	4.704E-04	Pulse	0.30	3
	Ba	137	159	3	36.467	ppb	1.00	587,844.70	6.163E-02	Pulse	0.30	3
	Tl	205	209	3	0.029	ppb	5.85	3,187.17	7.393E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-29,738.23	-6.897E-03	Pulse	0.30	3
	U	238	209	3	5.340	ppb	0.81	598,079.41	1.387E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	925,644.96	1.32	53.0	Analog	0.30	3
2	Sc	45	110,047.31	0.83	97.2	Pulse	0.30	3
3	Sc	45	4,441,439.31	1.31	95.0	Analog	0.30	3
1	Ge	72	87,329.96	0.47	79.1	Pulse	0.30	3
2	Ge	72	73,351.69	1.39	82.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,123,620.92	1.51	68.9	Analog	0.30	3
3	Rh	103	5,731,907.55	0.76	68.3	Analog	0.30	3
3	In	115	6,565,351.74	0.33	74.1	Analog	0.30	3
3	Tb	159	9,538,062.71	0.50	76.1	Analog	0.30	3
3	Bi	209	4,311,691.67	1.13	58.9	Analog	0.30	3

Quantitation Report

File Name	A0219126.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:32
Sample Name	N023029-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	294.91	18.89	1.341E-05	Pulse	0.30	3
Na	23	45	2	208009.439	ppb	1.56	325,096,455.16	2.606E+03	Analog	0.30	3
Mg	26	45	2	5244.480	ppb	0.94	750,787.70	6.017E+00	Pulse	0.30	3
Al	27	45	2	0.813	ppb	33.33	632.95	5.073E-03	Pulse	0.30	3
K	39	45	2	3413.496	ppb	0.90	1,684,420.01	1.350E+01	Analog	0.30	3
Ca	44	45	3	42886.400	ppb	0.32	101,623,728.49	2.075E+01	Analog	0.30	3
V	51	45	2	0.192	ppb	8.30	2,388.06	1.915E-02	Pulse	0.30	3
Cr	52	45	2	112.120	ppb	1.25	1,236,072.84	9.907E+00	Analog	0.30	3
Mn	55	45	2	0.085	ppb	15.40	887.60	7.119E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-6,911.84	-5.545E-02	Pulse	0.30	3
Co	59	45	2	0.050	ppb	6.17	1,104.54	8.855E-03	Pulse	0.30	3
Ni	60	72	2	0.591	ppb	2.40	3,521.20	3.870E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,699.96	2.967E-02	Pulse	0.30	3
Zn	66	72	2	3.066	ppb	4.93	8,721.29	9.590E-02	Pulse	0.30	3
As	75	72	2	0.289	ppb	9.31	319.98	3.518E-03	Pulse	0.75	3
Se	78	72	1	0.742	ppb	9.09	425.58	3.761E-03	Pulse	0.30	3
Mo	95	103	2	2.676	ppb	2.68	16,455.68	5.981E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	245.27	3.301E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-66.33	-7.975E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,274.55	1.533E-04	Pulse	0.30	3
Ba	137	159	3	7.657	ppb	0.23	152,239.73	1.295E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	57.16	1,403.45	2.397E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,251.43	-8.971E-04	Pulse	0.30	3
U	238	209	3	1.016	ppb	1.23	154,707.50	2.643E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,404,559.08	1.07	80.5	Analog	0.30	3
2	Sc	45	124,781.85	1.73	110.3	Pulse	0.30	3
3	Sc	45	4,898,323.02	0.52	104.8	Analog	0.30	3
1	Ge	72	113,187.71	0.44	102.5	Pulse	0.30	3
2	Ge	72	90,966.55	1.08	102.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,751,614.30	0.78	89.3	Analog	0.30	3
3	Rh	103	7,430,870.58	0.07	88.5	Analog	0.30	3
3	In	115	8,312,694.19	0.19	93.8	Analog	0.30	3
3	Tb	159	11,754,432.88	0.48	93.7	Analog	0.30	3
3	Bi	209	5,854,281.37	0.38	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219127.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:38
Sample Name	N023029-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	58.94	56.67	4.717E-05	Pulse	0.30	3
Na	23	45	2	533303.574	ppb	1.04	786,768,663.83	6.679E+03	Analog	0.30	3
Mg	26	45	2	15261.790	ppb	1.66	2,062,155.44	1.751E+01	Analog	0.30	3
Al	27	45	2	3.472	ppb	7.18	1,244.47	1.056E-02	Pulse	0.30	3
K	39	45	2	9888.898	ppb	0.70	4,580,343.09	3.888E+01	Analog	0.30	3
Ca	44	45	3	145501.290	ppb	0.18	343,249,212.66	7.038E+01	Analog	0.30	3
V	51	45	2	5.026	ppb	1.06	38,937.80	3.305E-01	Pulse	0.30	3
Cr	52	45	2	164.624	ppb	1.19	1,712,712.82	1.454E+01	Analog	0.30	3
Mn	55	45	2	0.963	ppb	1.00	5,408.60	4.591E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-24,796.75	-2.105E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-427.48	-3.627E-03	Pulse	0.30	3
Ni	60	72	2	0.606	ppb	5.40	3,169.14	3.959E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,727.27	3.405E-02	Pulse	0.30	3
Zn	66	72	2	0.070	ppb	244.47	2,575.65	3.216E-02	Pulse	0.30	3
As	75	72	2	2.153	ppb	2.20	2,014.42	2.517E-02	Pulse	0.75	3
Se	78	72	1	12.319	ppb	2.03	5,958.01	6.229E-02	Pulse	0.30	3
Mo	95	103	2	75.338	ppb	0.81	399,377.73	1.682E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,767.64	-1.046E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.25	-9.694E-07	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,826.85	2.486E-04	Pulse	0.30	3
Ba	137	159	3	27.631	ppb	0.38	491,926.05	4.670E-02	Pulse	0.30	3
Tl	205	209	3	0.137	ppb	2.39	12,995.12	2.692E-03	Pulse	0.30	3
Pb	208	209	3	0.030	ppb	6.61	5,079.58	1.052E-03	Pulse	0.30	3
U	238	209	3	7.712	ppb	0.93	967,268.37	2.003E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,594.04	0.95	68.9	Analog	0.30	3
2	Sc	45	117,802.95	1.97	104.1	Pulse	0.30	3
3	Sc	45	4,877,213.57	0.38	104.4	Analog	0.30	3
1	Ge	72	95,657.32	0.69	86.6	Pulse	0.30	3
2	Ge	72	79,999.65	2.05	89.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,374,490.36	1.39	77.1	Analog	0.30	3
3	Rh	103	6,471,892.61	0.85	77.1	Analog	0.30	3
3	In	115	7,348,295.81	0.37	82.9	Analog	0.30	3
3	Tb	159	10,532,939.01	0.23	84.0	Analog	0.30	3
3	Bi	209	4,827,949.55	0.75	65.9	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219128.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:43
Sample Name	N023029-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	67.14	24.44	1.681E-05	Pulse	0.30	3
Na	23	45	2	112703.845	ppb	1.46	176,992,959.58	1.412E+03	Analog	0.30	3
Mg	26	45	2	3208.298	ppb	1.00	461,389.08	3.681E+00	Pulse	0.30	3
Al	27	45	2	0.053	ppb	276.81	439.57	3.507E-03	Pulse	0.30	3
K	39	45	2	2154.280	ppb	1.38	1,073,351.21	8.564E+00	Pulse	0.30	3
Ca	44	45	3	31702.671	ppb	0.47	75,157,484.99	1.534E+01	Analog	0.30	3
V	51	45	2	1.018	ppb	1.59	9,067.30	7.235E-02	Pulse	0.30	3
Cr	52	45	2	36.081	ppb	0.99	400,872.18	3.198E+00	Pulse	0.30	3
Mn	55	45	2	0.197	ppb	5.35	1,515.37	1.209E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	750.45	6.013E-03	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-93.37	-7.463E-04	Pulse	0.30	3
Ni	60	72	2	0.145	ppb	5.93	1,111.22	1.173E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,681.85	2.833E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	993.96	1.050E-02	Pulse	0.30	3
As	75	72	2	0.433	ppb	2.46	491.97	5.191E-03	Pulse	0.75	3
Se	78	72	1	2.519	ppb	5.83	1,506.80	1.274E-02	Pulse	0.30	3
Mo	95	103	2	14.232	ppb	1.67	91,471.52	3.178E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	491.47	6.369E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.11	1.301E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	766.72	8.992E-05	Pulse	0.30	3
Ba	137	159	3	5.661	ppb	0.77	114,751.84	9.579E-03	Pulse	0.30	3
Tl	205	209	3	0.022	ppb	2.18	3,770.63	6.170E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,325.02	-3.807E-04	Pulse	0.30	3
U	238	209	3	1.428	ppb	0.51	226,807.31	3.712E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,455,513.36	0.72	83.4	Analog	0.30	3
2	Sc	45	125,346.52	1.83	110.8	Pulse	0.30	3
3	Sc	45	4,900,259.86	0.63	104.9	Analog	0.30	3
1	Ge	72	118,315.81	1.32	107.2	Pulse	0.30	3
2	Ge	72	94,758.81	1.47	106.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,878,459.68	0.78	93.4	Analog	0.30	3
3	Rh	103	7,710,232.73	0.32	91.8	Analog	0.30	3
3	In	115	8,528,079.49	0.31	96.2	Analog	0.30	3
3	Tb	159	11,980,439.40	0.98	95.5	Analog	0.30	3
3	Bi	209	6,110,457.82	1.20	83.4	Analog	0.30	3

Quantitation Report

File Name	A0219129.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:49
Sample Name	CCV9,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.619	ppb	0.47	184,896.98	1.193E-01	Pulse	0.30	3
Na	23	45	2	421.406	ppb	4.13	771,077.25	6.164E+00	Pulse	0.30	3
Mg	26	45	2	198.238	ppb	2.72	28,555.13	2.283E-01	Pulse	0.30	3
Al	27	45	2	21.395	ppb	0.74	5,949.58	4.754E-02	Pulse	0.30	3
K	39	45	2	228.308	ppb	2.36	127,014.07	1.015E+00	Pulse	0.30	3
Ca	44	45	3	213.725	ppb	0.32	516,491.33	1.076E-01	Pulse	0.30	3
V	51	45	2	20.151	ppb	1.57	163,253.75	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.136	ppb	1.64	224,170.89	1.792E+00	Pulse	0.30	3
Mn	55	45	2	20.275	ppb	1.58	112,439.54	8.986E-01	Pulse	0.30	3
Fe	56	45	2	20.898	ppb	1.29	194,414.08	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.083	ppb	1.99	434,632.49	3.474E+00	Pulse	0.30	3
Ni	60	72	2	19.430	ppb	1.20	116,583.90	1.179E+00	Pulse	0.30	3
Cu	63	72	2	20.242	ppb	0.92	329,258.45	3.329E+00	Pulse	0.30	3
Zn	66	72	2	18.500	ppb	1.42	41,975.69	4.243E-01	Pulse	0.30	3
As	75	72	2	19.844	ppb	1.00	22,824.54	2.307E-01	Pulse	0.75	3
Se	78	72	1	19.031	ppb	1.05	12,215.06	9.622E-02	Pulse	0.30	3
Mo	95	103	2	20.057	ppb	1.19	142,601.66	4.478E-02	Pulse	0.30	3
Ag	107	103	3	19.798	ppb	1.01	1,513,893.35	1.773E-01	Analog	0.30	3
Cd	111	115	3	20.284	ppb	0.82	344,585.10	3.773E-02	Pulse	0.30	3
Sb	121	115	3	19.943	ppb	0.41	1,088,942.21	1.192E-01	Pulse	0.30	3
Ba	137	159	3	22.121	ppb	0.83	460,387.76	3.739E-02	Pulse	0.30	3
Tl	205	209	3	20.314	ppb	0.45	2,588,625.45	3.677E-01	Analog	0.30	3
Pb	208	209	3	20.507	ppb	0.69	3,541,296.43	5.031E-01	Analog	0.30	3
U	238	209	3	19.073	ppb	0.55	3,487,421.75	4.954E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,550,335.31	1.08	88.8	Analog	0.30	3
2	Sc	45	125,149.04	2.05	110.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,800,901.29	0.13	102.7	Analog	0.30	3
1	Ge	72	126,961.29	0.92	115.0	Pulse	0.30	3
2	Ge	72	98,921.40	1.11	111.0	Pulse	0.30	3
2	Rh	103	3,184,420.58	0.96	103.4	Analog	0.30	3
3	Rh	103	8,540,545.22	0.54	101.7	Analog	0.30	3
3	In	115	9,132,531.14	0.26	103.1	Analog	0.30	3
3	Tb	159	12,312,521.76	0.12	98.2	Analog	0.30	3
3	Bi	209	7,039,289.06	0.04	96.1	Analog	0.30	3

Quantitation Report

File Name	A0219130.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:54
Sample Name	CCB9,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	5.871E-06	Pulse	0.30	3
Na	23	45	2	195.030	ppb	5.92	395,064.68	3.329E+00	Pulse	0.30	3
Mg	26	45	2	0.172	ppb	191.47	123.34	1.034E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	330.01	2.783E-03	Pulse	0.30	3
K	39	45	2	12.387	ppb	12.65	20,037.23	1.688E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,736.89	3.637E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	668.93	5.635E-03	Pulse	0.30	3
Cr	52	45	2	0.077	ppb	7.30	2,591.03	2.183E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	262.33	2.214E-03	Pulse	0.30	3
Fe	56	45	2	0.176	ppb	5.46	3,806.29	3.206E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	47.44	52.92	4.451E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	56.25	5.873E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	589.91	6.181E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	305.33	3.201E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	49.24	28.00	2.929E-04	Pulse	0.75	3
Se	78	72	1	0.005	ppb	59.80	4.44	3.678E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	8.90	867.84	2.791E-04	Pulse	0.30	3
Ag	107	103	3	0.468	ppb	12.58	38,359.09	4.613E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-36.14	-4.089E-06	Pulse	0.30	3
Sb	121	115	3	0.047	ppb	8.17	4,989.88	5.647E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	58.02	298.83	2.463E-05	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	17.08	1,811.30	2.634E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,010.55	1.470E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.28	924.65	1.345E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,514,115.14	1.29	86.8	Analog	0.30	3
2	Sc	45	118,731.78	2.06	104.9	Pulse	0.30	3
3	Sc	45	4,601,726.01	0.37	98.5	Analog	0.30	3
1	Ge	72	120,860.13	0.33	109.5	Pulse	0.30	3
2	Ge	72	95,396.60	1.44	107.1	Pulse	0.30	3
2	Rh	103	3,107,962.00	1.11	100.9	Analog	0.30	3
3	Rh	103	8,315,913.42	0.22	99.0	Analog	0.30	3
3	In	115	8,836,257.13	0.63	99.7	Analog	0.30	3
3	Tb	159	12,137,000.79	0.68	96.8	Analog	0.30	3
3	Bi	209	6,876,463.02	0.40	93.9	Analog	0.30	3

Quantitation Report

File Name	A0219131.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:00
Sample Name	N023029-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	145.79	18.89	1.407E-05	Pulse	0.30	3
Na	23	45	2	263840.212	ppb	0.99	391,900,856.38	3.305E+03	Analog	0.30	3
Mg	26	45	2	4169.413	ppb	1.36	567,250.93	4.784E+00	Pulse	0.30	3
Al	27	45	2	5.148	ppb	4.94	1,663.59	1.402E-02	Pulse	0.30	3
K	39	45	2	4277.316	ppb	1.48	2,002,212.56	1.689E+01	Analog	0.30	3
Ca	44	45	3	21192.795	ppb	0.88	49,354,934.27	1.025E+01	Analog	0.30	3
V	51	45	2	13.034	ppb	0.88	100,361.13	8.463E-01	Pulse	0.30	3
Cr	52	45	2	0.823	ppb	1.60	10,391.69	8.764E-02	Pulse	0.30	3
Mn	55	45	2	119.745	ppb	1.10	627,356.78	5.291E+00	Pulse	0.30	3
Fe	56	45	2	4.064	ppb	1.90	37,656.44	3.175E-01	Pulse	0.30	3
Co	59	45	2	0.300	ppb	2.95	6,185.72	5.213E-02	Pulse	0.30	3
Ni	60	72	2	0.679	ppb	2.30	3,804.94	4.401E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,454.37	1.681E-02	Pulse	0.30	3
Zn	66	72	2	2.232	ppb	4.43	6,756.60	7.817E-02	Pulse	0.30	3
As	75	72	2	8.593	ppb	4.17	8,644.72	1.000E-01	Pulse	0.75	3
Se	78	72	1	0.856	ppb	3.06	455.58	4.339E-03	Pulse	0.30	3
Mo	95	103	2	45.285	ppb	1.12	265,033.04	1.011E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,768.63	-2.480E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	8.87	511.87	6.382E-05	Pulse	0.30	3
Sb	121	115	3	0.081	ppb	9.01	6,144.78	7.662E-04	Pulse	0.30	3
Ba	137	159	3	36.471	ppb	0.41	703,088.89	6.164E-02	Pulse	0.30	3
Tl	205	209	3	0.087	ppb	0.49	9,893.65	1.783E-03	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	21.14	2,267.97	4.086E-04	Pulse	0.30	3
U	238	209	3	2.069	ppb	0.19	298,452.97	5.377E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,344,050.85	0.93	77.0	Analog	0.30	3
2	Sc	45	118,602.16	2.83	104.8	Pulse	0.30	3
3	Sc	45	4,813,416.84	1.57	103.0	Analog	0.30	3
1	Ge	72	105,005.02	0.69	95.1	Pulse	0.30	3
2	Ge	72	86,454.51	0.94	97.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,621,428.95	1.78	85.1	Analog	0.30	3
3	Rh	103	7,131,635.52	0.61	84.9	Analog	0.30	3
3	In	115	8,020,463.51	0.34	90.5	Analog	0.30	3
3	Tb	159	11,406,179.41	0.74	90.9	Analog	0.30	3
3	Bi	209	5,550,297.49	0.91	75.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219132.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:05
Sample Name	N023029-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.544E-06	Pulse	0.30	3
Na	23	45	2	56689.251	ppb	0.34	85,944,958.72	7.108E+02	Analog	0.30	3
Mg	26	45	2	909.077	ppb	1.54	126,182.31	1.044E+00	Pulse	0.30	3
Al	27	45	2	0.705	ppb	21.38	586.34	4.852E-03	Pulse	0.30	3
K	39	45	2	952.007	ppb	1.05	465,708.06	3.852E+00	Pulse	0.30	3
Ca	44	45	3	4569.598	ppb	0.32	10,473,836.09	2.214E+00	Analog	0.30	3
V	51	45	2	2.725	ppb	1.18	22,046.65	1.823E-01	Pulse	0.30	3
Cr	52	45	2	0.205	ppb	3.19	4,006.88	3.314E-02	Pulse	0.30	3
Mn	55	45	2	25.999	ppb	1.58	139,193.07	1.151E+00	Pulse	0.30	3
Fe	56	45	2	1.084	ppb	13.83	11,928.64	9.877E-02	Pulse	0.30	3
Co	59	45	2	0.068	ppb	4.31	1,460.95	1.209E-02	Pulse	0.30	3
Ni	60	72	2	0.103	ppb	12.88	865.20	9.155E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	722.95	7.645E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,057.77	2.177E-02	Pulse	0.30	3
As	75	72	2	1.818	ppb	4.23	2,011.78	2.128E-02	Pulse	0.75	3
Se	78	72	1	0.175	ppb	7.59	106.67	8.953E-04	Pulse	0.30	3
Mo	95	103	2	8.599	ppb	1.38	56,460.31	1.920E-02	Pulse	0.30	3
Ag	107	103	3	0.023	ppb	25.88	5,092.49	6.435E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-20,448.99	-2.361E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,937.99	2.237E-04	Pulse	0.30	3
Ba	137	159	3	6.391	ppb	0.73	131,111.49	1.081E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	7.84	2,875.96	4.455E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-37,534.28	-5.816E-03	Pulse	0.30	3
U	238	209	3	0.392	ppb	0.64	65,941.03	1.022E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,467,606.69	0.38	84.1	Analog	0.30	3
2	Sc	45	120,916.71	1.63	106.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,729,980.49	0.58	101.2	Analog	0.30	3
1	Ge	72	119,095.37	1.00	107.9	Pulse	0.30	3
2	Ge	72	94,547.78	1.10	106.1	Pulse	0.30	3
2	Rh	103	2,939,954.51	0.76	95.4	Analog	0.30	3
3	Rh	103	7,914,194.67	0.11	94.3	Analog	0.30	3
3	In	115	8,662,203.43	0.69	97.7	Analog	0.30	3
3	Tb	159	12,126,910.38	0.73	96.7	Analog	0.30	3
3	Bi	209	6,453,789.00	0.84	88.1	Analog	0.30	3

Quantitation Report

File Name	A0219133.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:11
Sample Name	N023029-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.575E-06	Pulse	0.30	3
Na	23	45	2	243502.096	ppb	0.59	346,701,110.39	3.050E+03	Analog	0.30	3
Mg	26	45	2	3778.112	ppb	0.91	492,738.55	4.335E+00	Pulse	0.30	3
Al	27	45	2	5.361	ppb	3.11	1,643.25	1.446E-02	Pulse	0.30	3
K	39	45	2	3936.906	ppb	0.54	1,767,731.50	1.555E+01	Analog	0.30	3
Ca	44	45	3	19020.898	ppb	0.17	42,362,231.59	9.204E+00	Analog	0.30	3
V	51	45	2	10.562	ppb	0.96	78,093.02	6.871E-01	Pulse	0.30	3
Cr	52	45	2	3.617	ppb	0.41	37,982.74	3.342E-01	Pulse	0.30	3
Mn	55	45	2	114.942	ppb	0.38	577,255.48	5.079E+00	Pulse	0.30	3
Fe	56	45	2	4.781	ppb	1.09	42,079.80	3.702E-01	Pulse	0.30	3
Co	59	45	2	0.125	ppb	9.24	2,483.13	2.186E-02	Pulse	0.30	3
Ni	60	72	2	0.119	ppb	18.74	827.30	1.015E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,154.56	-6.335E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,551.39	1.906E-02	Pulse	0.30	3
As	75	72	2	8.448	ppb	2.76	7,998.39	9.831E-02	Pulse	0.75	3
Se	78	72	1	0.541	ppb	4.94	276.68	2.747E-03	Pulse	0.30	3
Mo	95	103	2	46.458	ppb	0.82	262,845.17	1.037E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,849.27	-2.696E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	14.81	488.07	6.343E-05	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	4.02	4,156.28	5.404E-04	Pulse	0.30	3
Ba	137	159	3	33.228	ppb	0.31	614,251.48	5.616E-02	Pulse	0.30	3
Tl	205	209	3	0.067	ppb	2.42	7,583.38	1.430E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-163.51	-3.092E-05	Pulse	0.30	3
U	238	209	3	2.528	ppb	1.45	348,290.89	6.569E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,301,756.33	1.19	74.6	Analog	0.30	3
2	Sc	45	113,665.89	1.35	100.4	Pulse	0.30	3
3	Sc	45	4,602,661.18	0.81	98.5	Analog	0.30	3
1	Ge	72	100,713.22	0.40	91.2	Pulse	0.30	3
2	Ge	72	81,379.35	1.91	91.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,534,183.29	0.86	82.3	Analog	0.30	3
3	Rh	103	6,859,699.34	0.18	81.7	Analog	0.30	3
3	In	115	7,690,858.18	0.58	86.8	Analog	0.30	3
3	Tb	159	10,937,514.14	0.24	87.2	Analog	0.30	3
3	Bi	209	5,302,572.39	0.61	72.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219134.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:16
Sample Name	N023029-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.825E-06	Pulse	0.30	3
Na	23	45	2	49535.252	ppb	2.31	75,163,043.88	6.212E+02	Analog	0.30	3
Mg	26	45	2	771.339	ppb	1.23	107,189.09	8.857E-01	Pulse	0.30	3
Al	27	45	2	0.845	ppb	37.70	622.68	5.141E-03	Pulse	0.30	3
K	39	45	2	835.016	ppb	1.92	410,602.52	3.393E+00	Pulse	0.30	3
Ca	44	45	3	3963.874	ppb	0.41	8,927,714.03	1.921E+00	Analog	0.30	3
V	51	45	2	2.097	ppb	1.16	17,169.56	1.419E-01	Pulse	0.30	3
Cr	52	45	2	0.750	ppb	6.05	9,822.80	8.122E-02	Pulse	0.30	3
Mn	55	45	2	23.443	ppb	2.30	125,654.29	1.039E+00	Pulse	0.30	3
Fe	56	45	2	1.344	ppb	2.64	14,258.91	1.178E-01	Pulse	0.30	3
Co	59	45	2	0.028	ppb	11.50	606.53	5.004E-03	Pulse	0.30	3
Ni	60	72	2	0.004	ppb	313.50	296.41	3.180E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-417.50	-4.471E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	693.24	7.424E-03	Pulse	0.30	3
As	75	72	2	1.656	ppb	4.82	1,810.48	1.939E-02	Pulse	0.75	3
Se	78	72	1	0.096	ppb	33.54	58.89	4.965E-04	Pulse	0.30	3
Mo	95	103	2	8.657	ppb	1.19	56,559.64	1.933E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,192.99	4.093E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,866.32	-2.093E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,532.37	1.795E-04	Pulse	0.30	3
Ba	137	159	3	5.657	ppb	1.21	113,932.73	9.572E-03	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	11.76	2,204.70	3.460E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,279.06	-4.595E-03	Pulse	0.30	3
U	238	209	3	0.455	ppb	0.73	75,545.38	1.186E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,887.20	0.18	83.2	Analog	0.30	3
2	Sc	45	121,044.24	2.76	107.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,646,537.36	0.50	99.4	Analog	0.30	3
1	Ge	72	118,321.30	1.43	107.2	Pulse	0.30	3
2	Ge	72	93,340.32	0.92	104.8	Pulse	0.30	3
2	Rh	103	2,925,532.67	0.31	95.0	Analog	0.30	3
3	Rh	103	7,798,408.57	0.62	92.9	Analog	0.30	3
3	In	115	8,534,959.87	0.25	96.3	Analog	0.30	3
3	Tb	159	11,902,968.85	0.41	94.9	Analog	0.30	3
3	Bi	209	6,371,840.53	0.44	87.0	Analog	0.30	3

Quantitation Report

File Name	A0219135.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:22
Sample Name	CCV10,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.449	ppb	1.01	175,531.24	1.182E-01	Pulse	0.30	3
Na	23	45	2	334.027	ppb	3.27	610,297.83	5.070E+00	Pulse	0.30	3
Mg	26	45	2	195.959	ppb	1.93	27,162.81	2.256E-01	Pulse	0.30	3
Al	27	45	2	21.263	ppb	2.61	5,689.61	4.726E-02	Pulse	0.30	3
K	39	45	2	221.919	ppb	1.76	119,201.03	9.901E-01	Pulse	0.30	3
Ca	44	45	3	212.628	ppb	1.14	490,638.08	1.071E-01	Pulse	0.30	3
V	51	45	2	20.193	ppb	0.97	157,407.25	1.307E+00	Pulse	0.30	3
Cr	52	45	2	19.914	ppb	0.65	213,350.13	1.772E+00	Pulse	0.30	3
Mn	55	45	2	20.248	ppb	1.70	108,035.62	8.974E-01	Pulse	0.30	3
Fe	56	45	2	20.831	ppb	1.45	186,453.87	1.549E+00	Pulse	0.30	3
Co	59	45	2	20.048	ppb	1.06	417,484.03	3.468E+00	Pulse	0.30	3
Ni	60	72	2	19.425	ppb	1.14	112,305.47	1.178E+00	Pulse	0.30	3
Cu	63	72	2	20.097	ppb	0.73	315,038.72	3.305E+00	Pulse	0.30	3
Zn	66	72	2	18.622	ppb	1.50	40,694.39	4.269E-01	Pulse	0.30	3
As	75	72	2	19.977	ppb	0.99	22,140.05	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.809	ppb	0.34	11,663.56	9.509E-02	Pulse	0.30	3
Mo	95	103	2	20.080	ppb	1.11	139,789.50	4.483E-02	Pulse	0.30	3
Ag	107	103	3	19.915	ppb	0.12	1,471,455.91	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.392	ppb	0.32	335,103.89	3.793E-02	Pulse	0.30	3
Sb	121	115	3	20.069	ppb	0.52	1,060,011.52	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.157	ppb	0.28	448,415.57	3.745E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.73	2,525,334.01	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.504	ppb	0.42	3,462,871.04	5.030E-01	Analog	0.30	3
U	238	209	3	19.108	ppb	0.18	3,417,069.84	4.963E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,484,656.67	0.40	85.1	Analog	0.30	3
2	Sc	45	120,403.88	1.44	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,583,282.43	0.29	98.1	Analog	0.30	3
1	Ge	72	122,655.79	1.06	111.1	Pulse	0.30	3
2	Ge	72	95,316.16	0.90	107.0	Pulse	0.30	3
2	Rh	103	3,118,021.97	0.12	101.2	Analog	0.30	3
3	Rh	103	8,252,382.80	0.42	98.3	Analog	0.30	3
3	In	115	8,834,186.70	0.17	99.7	Analog	0.30	3
3	Tb	159	11,972,495.79	0.14	95.5	Analog	0.30	3
3	Bi	209	6,884,641.63	0.23	94.0	Analog	0.30	3

Quantitation Report

File Name	A0219136.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:27
Sample Name	CCB10,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	31.74	32.22	2.218E-05	Pulse	0.30	3
Na	23	45	2	128.739	ppb	6.02	286,743.52	2.499E+00	Pulse	0.30	3
Mg	26	45	2	0.038	ppb	493.42	101.11	8.800E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	317.79	2.766E-03	Pulse	0.30	3
K	39	45	2	11.060	ppb	14.37	18,775.71	1.636E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,439.95	3.727E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	573.37	4.997E-03	Pulse	0.30	3
Cr	52	45	2	0.061	ppb	16.07	2,341.08	2.039E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.08	2.294E-03	Pulse	0.30	3
Fe	56	45	2	0.163	ppb	9.95	3,568.20	3.110E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	80.02	43.03	3.757E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	48.58	5.289E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	749.15	8.171E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	312.31	3.401E-03	Pulse	0.30	3
As	75	72	2	0.018	ppb	19.83	33.33	3.636E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	162.08	7.78	6.518E-05	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	7.00	841.17	2.757E-04	Pulse	0.30	3
Ag	107	103	3	0.446	ppb	14.92	35,748.23	4.417E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21.75	-2.528E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	7.48	4,816.50	5.599E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	32.53	374.77	3.164E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	21.49	1,641.27	2.444E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,120.01	1.668E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	5.12	919.62	1.369E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,162.11	0.52	83.2	Analog	0.30	3
2	Sc	45	114,769.78	1.19	101.4	Pulse	0.30	3
3	Sc	45	4,411,184.62	0.36	94.4	Analog	0.30	3
1	Ge	72	118,692.16	0.91	107.5	Pulse	0.30	3
2	Ge	72	91,727.15	0.80	103.0	Pulse	0.30	3
2	Rh	103	3,051,295.47	0.53	99.1	Analog	0.30	3
3	Rh	103	8,096,550.85	0.54	96.4	Analog	0.30	3
3	In	115	8,602,761.25	0.16	97.1	Analog	0.30	3
3	Tb	159	11,841,870.10	0.43	94.4	Analog	0.30	3
3	Bi	209	6,715,519.00	0.78	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219137.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:33
Sample Name	LLCCV3,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.475	ppb	1.90	4,523.02	2.899E-03	Pulse	0.30	3
Na	23	45	2	86.916	ppb	10.25	249,977.90	1.975E+00	Pulse	0.30	3
Mg	26	45	2	3.807	ppb	17.40	657.82	5.204E-03	Pulse	0.30	3
Al	27	45	2	12.118	ppb	6.09	3,594.93	2.840E-02	Pulse	0.30	3
K	39	45	2	9.015	ppb	17.37	19,701.18	1.556E-01	Pulse	0.30	3
Ca	44	45	3	8.292	ppb	2.13	39,533.60	8.221E-03	Pulse	0.30	3
V	51	45	2	0.978	ppb	1.57	8,841.61	6.981E-02	Pulse	0.30	3
Cr	52	45	2	1.044	ppb	1.09	13,574.65	1.071E-01	Pulse	0.30	3
Mn	55	45	2	0.531	ppb	1.79	3,396.44	2.681E-02	Pulse	0.30	3
Fe	56	45	2	11.175	ppb	2.65	106,320.95	8.397E-01	Pulse	0.30	3
Co	59	45	2	0.484	ppb	2.47	10,630.24	8.395E-02	Pulse	0.30	3
Ni	60	72	2	0.928	ppb	1.92	5,987.61	5.909E-02	Pulse	0.30	3
Cu	63	72	2	0.717	ppb	1.98	18,036.78	1.780E-01	Pulse	0.30	3
Zn	66	72	2	8.468	ppb	0.80	21,366.83	2.109E-01	Pulse	0.30	3
As	75	72	2	0.123	ppb	8.13	160.00	1.579E-03	Pulse	0.75	3
Se	78	72	1	0.498	ppb	25.64	332.24	2.527E-03	Pulse	0.30	3
Mo	95	103	2	0.528	ppb	5.22	3,959.54	1.187E-03	Pulse	0.30	3
Ag	107	103	3	0.451	ppb	2.48	39,425.28	4.465E-03	Pulse	0.30	3
Cd	111	115	3	0.510	ppb	1.76	8,984.28	9.553E-04	Pulse	0.30	3
Sb	121	115	3	0.514	ppb	1.57	31,484.73	3.348E-03	Pulse	0.30	3
Ba	137	159	3	1.208	ppb	1.27	26,693.05	2.055E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.21	64,534.66	8.743E-03	Pulse	0.30	3
Pb	208	209	3	1.038	ppb	1.11	190,132.50	2.576E-02	Pulse	0.30	3
U	238	209	3	0.496	ppb	0.89	95,343.12	1.292E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,560,219.25	1.07	89.4	Analog	0.30	3
2	Sc	45	126,677.50	2.85	111.9	Pulse	0.30	3
3	Sc	45	4,808,535.76	0.67	102.9	Analog	0.30	3
1	Ge	72	131,425.07	0.74	119.0	Pulse	0.30	3

2	Ge	72	101,333.27	0.81	113.7	Pulse	0.30	3
2	Rh	103	3,334,095.40	0.80	108.2	Analog	0.30	3
3	Rh	103	8,828,599.59	0.55	105.2	Analog	0.30	3
3	In	115	9,405,032.15	0.43	106.1	Analog	0.30	3
3	Tb	159	12,989,240.22	0.43	103.6	Analog	0.30	3
3	Bi	209	7,381,330.23	0.66	100.8	Analog	0.30	3

Quantitation Report

File Name	A0219138.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:38
Sample Name	ICSA4,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	43.41	30.00	2.046E-05	Pulse	0.30	3
Na	23	45	2	90294.415	ppb	1.27	144,442,735.63	1.132E+03	Analog	0.30	3
Mg	26	45	2	89564.640	ppb	0.87	13,115,646.89	1.027E+02	Analog	0.30	3
Al	27	45	2	0.636	ppb	68.64	601.02	4.708E-03	Pulse	0.30	3
K	39	45	2	100024.117	ppb	0.69	50,065,768.14	3.922E+02	Analog	0.30	3
Ca	44	45	3	96884.226	ppb	0.35	239,884,394.20	4.686E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	620.04	4.851E-03	Pulse	0.30	3
Cr	52	45	2	0.223	ppb	4.08	4,435.35	3.475E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,578.01	-9.852E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-2,992.67	-2.344E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	39.16	77.91	6.094E-04	Pulse	0.30	3
Ni	60	72	2	0.336	ppb	4.65	2,147.59	2.324E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,413.52	-2.611E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,259.17	-1.365E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.67	-5.141E-05	Pulse	0.75	3
Se	78	72	1	0.013	ppb	89.38	8.89	7.741E-05	Pulse	0.30	3
Mo	95	103	2	0.059	ppb	9.72	390.02	1.392E-04	Pulse	0.30	3
Ag	107	103	3	0.080	ppb	17.04	8,924.18	1.152E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-517.23	-6.110E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,585.71	1.873E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,907.62	-1.735E-03	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	15.88	1,746.85	3.086E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,695.51	-2.994E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	324.53	5.738E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,208.18	0.31	84.0	Analog	0.30	3
2	Sc	45	127,664.11	2.27	112.8	Pulse	0.30	3
3	Sc	45	5,118,899.89	1.14	109.5	Analog	0.30	3
1	Ge	72	114,636.66	0.51	103.8	Pulse	0.30	3
2	Ge	72	92,473.74	3.05	103.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,803,239.16	1.23	91.0	Analog	0.30	3
3	Rh	103	7,754,783.56	1.26	92.4	Analog	0.30	3
3	In	115	8,465,249.80	0.75	95.5	Analog	0.30	3
3	Tb	159	12,050,089.26	0.63	96.1	Analog	0.30	3
3	Bi	209	5,658,665.05	1.25	77.2	Analog	0.30	3

Quantitation Report

File Name	A0219139.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:45
Sample Name	ICSAB4,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.213	ppb	0.40	175,944.89	1.168E-01	Pulse	0.30	3
Na	23	45	2	91946.778	ppb	0.18	140,542,459.01	1.152E+03	Analog	0.30	3
Mg	26	45	2	91187.920	ppb	1.03	12,756,973.00	1.046E+02	Analog	0.30	3
Al	27	45	2	21.020	ppb	3.76	5,701.67	4.676E-02	Pulse	0.30	3
K	39	45	2	96106.649	ppb	0.40	45,959,730.43	3.768E+02	Analog	0.30	3
Ca	44	45	3	96392.206	ppb	0.16	240,609,789.75	4.663E+01	Analog	0.30	3
V	51	45	2	20.491	ppb	0.63	161,803.52	1.327E+00	Pulse	0.30	3
Cr	52	45	2	19.339	ppb	1.39	209,902.35	1.721E+00	Pulse	0.30	3
Mn	55	45	2	16.568	ppb	1.13	89,642.04	7.349E-01	Pulse	0.30	3
Fe	56	45	2	20.317	ppb	1.60	184,251.47	1.511E+00	Pulse	0.30	3
Co	59	45	2	18.511	ppb	0.55	390,506.34	3.202E+00	Pulse	0.30	3
Ni	60	72	2	20.065	ppb	1.54	102,857.70	1.217E+00	Pulse	0.30	3
Cu	63	72	2	19.432	ppb	0.65	270,322.87	3.198E+00	Pulse	0.30	3
Zn	66	72	2	17.489	ppb	0.73	34,057.95	4.028E-01	Pulse	0.30	3
As	75	72	2	19.414	ppb	0.77	19,081.16	2.257E-01	Pulse	0.75	3
Se	78	72	1	16.673	ppb	3.18	8,368.08	8.430E-02	Pulse	0.30	3
Mo	95	103	2	22.979	ppb	2.00	135,822.92	5.130E-02	Pulse	0.30	3
Ag	107	103	3	19.334	ppb	0.32	1,325,589.61	1.731E-01	Pulse	0.30	3
Cd	111	115	3	19.064	ppb	0.11	298,923.16	3.546E-02	Pulse	0.30	3
Sb	121	115	3	20.638	ppb	0.44	1,040,052.53	1.234E-01	Pulse	0.30	3
Ba	137	159	3	24.730	ppb	0.53	502,731.63	4.180E-02	Pulse	0.30	3
Tl	205	209	3	22.537	ppb	0.78	2,329,064.51	4.080E-01	Analog	0.30	3
Pb	208	209	3	22.375	ppb	0.67	3,133,526.71	5.489E-01	Analog	0.30	3
U	238	209	3	22.784	ppb	0.36	3,378,945.65	5.918E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,374.79	0.45	86.3	Analog	0.30	3
2	Sc	45	121,966.73	2.29	107.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,160,483.47	0.68	110.4	Analog	0.30	3
1	Ge	72	99,274.20	1.34	89.9	Pulse	0.30	3
2	Ge	72	84,537.82	2.68	94.9	Pulse	0.30	3
2	Rh	103	2,647,253.97	1.36	85.9	Analog	0.30	3
3	Rh	103	7,657,026.00	0.53	91.2	Analog	0.30	3
3	In	115	8,429,339.12	0.59	95.1	Analog	0.30	3
3	Tb	159	12,026,964.54	0.73	95.9	Analog	0.30	3
3	Bi	209	5,709,311.86	0.86	77.9	Analog	0.30	3

RAW DATA

INJECTION LOG: 170220A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0220001.D	RINSE	RINSE	1	02/20/17 11:58 AM
A0220002.D	Cal Blank	IBLK	1	02/20/17 12:03 PM
A0220003.D	Std1-0.1/1 ppb	ICAL	1	02/20/17 12:09 PM
A0220004.D	Std2-0.5/5 ppb	ICAL	1	02/20/17 12:14 PM
A0220005.D	Std3-5/50 ppb	ICAL	1	02/20/17 12:20 PM
A0220006.D	Std4-10/100 ppb	ICAL	1	02/20/17 12:25 PM
A0220007.D	Std5-20/200 ppb	ICAL	1	02/20/17 12:31 PM
A0220008.D	Std6-40/400 ppb	ICAL	1	02/20/17 12:37 PM
A0220009.D	Std7-100/1000 ppb	ICAL	1	02/20/17 12:42 PM
A0220010.D	Std8-200/2000 ppb	ICAL	1	02/20/17 12:48 PM
A0220011.D	ICV	ICV	1	02/20/17 12:53 PM
A0220012.D	ICB	ICB	1	02/20/17 12:59 PM
A0220013.D	LLICV	CCV1	1	02/20/17 1:06 PM
A0220014.D	ICSA1	ICSA	1	02/20/17 1:11 PM
A0220015.D	ICSAB1	ICSAB	1	02/20/17 1:31 PM
A0220016.D	LLICV	CCV1	1	02/20/17 1:37 PM
A0220017.D	N022998-003B	SAMP	25	02/20/17 1:42 PM
A0220018.D	N022966-014B	SAMP	1	02/20/17 1:48 PM
A0220019.D	CCV1	CCV	1	02/20/17 1:53 PM
A0220020.D	CCB1	CCB	1	02/20/17 2:00 PM
A0220021.D	LLCCV1	CCV2	1	02/20/17 2:05 PM
A0220022.D	ICSA2	ICSA	1	02/20/17 2:10 PM
A0220023.D	ICSAB2	ICSAB	1	02/20/17 2:16 PM

Nancy 2/21/2017

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0220001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0220002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0220003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0220004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0220005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0220006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0220007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0220008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0220009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0220010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0220011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0220012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0220013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0220014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0220015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0220016	LLICV,CCV1,1	2MWST- 170107G	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4101	A0220017	N022998-003B,SAMP,25		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	4102	A0220018	N022966-014B,SAMP,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0220019	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0220020	CCB1,CCB,1		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0220021	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0220022	ICSA2,ICSA,1	2MWST- 170107H	1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0220023	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				

Quantitation Report

File Name	A0220002.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:03
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.000	ppb	---	294.50	3.054E-03	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	4,899.02	6.825E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	96,486.94	1.22	100.0	Pulse	0.30	3
3	Rh	103	7,177,887.25	0.02	100.0	Analog	0.30	3

Quantitation Report

NOT USED
FOR AS ONLY

File Name	A0220003.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:09
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.175	ppb	6.95	1,045.24	1.100E-02	Pulse	0.30	3
Ag	107	103	3	0.013	ppb	30.35	5,668.48	7.952E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	95,022.62	1.47	98.5	Pulse	0.30	3
3	Rh	103	7,128,820.45	0.39	99.3	Analog	0.30	3

Quantitation Report

File Name	A0220004.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:14
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.584	ppb	7.12	2,791.38	2.953E-02	Pulse	0.30	3
Ag	107	103	3	0.337	ppb	3.67	25,821.80	3.682E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	94,537.90	1.63	98.0	Pulse	0.30	3
3	Rh	103	7,011,290.73	0.75	97.7	Analog	0.30	3

Quantitation Report

File Name	A0220005.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:20
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	5.097	ppb	1.38	22,023.99	2.343E-01	Pulse	0.30	3
Ag	107	103	3	4.923	ppb	1.63	310,815.00	4.455E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	93,997.08	1.09	97.4	Pulse	0.30	3
3	Rh	103	6,977,400.73	0.46	97.2	Analog	0.30	3

Quantitation Report

File Name	A0220006.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:25
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	10.157	ppb	1.91	43,573.09	4.640E-01	Pulse	0.30	3
Ag	107	103	3	10.180	ppb	0.12	635,507.68	9.139E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	93,944.99	2.41	97.4	Pulse	0.30	3
3	Rh	103	6,953,770.17	0.31	96.9	Analog	0.30	3

Quantitation Report

File Name	A0220007.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:31
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	20.398	ppb	2.11	86,085.46	9.286E-01	Pulse	0.30	3
Ag	107	103	3	20.555	ppb	0.32	1,259,774.05	1.838E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	92,721.26	1.36	96.1	Pulse	0.30	3
3	Rh	103	6,852,879.34	0.10	95.5	Analog	0.30	3

Quantitation Report

File Name	A0220008.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:37
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	41.008	ppb	2.07	187,758.02	1.864E+00	Pulse	0.30	3
Ag	107	103	3	40.117	ppb	1.09	2,538,486.10	3.581E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	100,759.93	2.06	104.4	Pulse	0.30	3
3	Rh	103	7,088,332.88	0.46	98.8	Analog	0.30	3

Quantitation Report

File Name	A0220009.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:42
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	100.429	ppb	0.48	431,920.99	4.560E+00	Pulse	0.30	3
Ag	107	103	3	99.829	ppb	0.91	6,000,679.79	8.902E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	94,720.58	1.07	98.2	Pulse	0.30	3
3	Rh	103	6,741,176.50	0.23	93.9	Analog	0.30	3

Quantitation Report

File Name	A0220010.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:48
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	199.534	ppb	0.52	826,082.65	9.057E+00	Pulse	0.30	3
Ag	107	103	3	180.109	ppb	0.34	10,601,309.27	1.605E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	91,211.70	1.01	94.5	Pulse	0.30	3
3	Rh	103	6,603,296.71	0.39	92.0	Analog	0.30	3

Quantitation Report

File Name	A0220011.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:53
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	101.350	ppb	2.06	445,198.35	4.602E+00	Pulse	0.30	3
Ag	107	103	3	10.403	ppb	0.18	696,204.65	9.338E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	96,786.34	3.34	100.3	Pulse	0.30	3
3	Rh	103	7,455,981.91	0.23	103.9	Analog	0.30	3

Quantitation Report

File Name	A0220012.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 12:59
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	<0.000	ppb	---	163.06	1.908E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,279.01	3.565E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	85,554.35	1.22	88.7	Pulse	0.30	3
3	Rh	103	6,393,997.40	0.62	89.1	Analog	0.30	3

Quantitation Report

File Name	A0220013.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:06
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.491	ppb	2.76	2,534.79	2.534E-02	Pulse	0.30	3
Ag	107	103	3	0.543	ppb	2.69	41,869.74	5.517E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	100,004.73	2.33	103.6	Pulse	0.30	3
3	Rh	103	7,589,450.72	0.70	105.7	Analog	0.30	3

Quantitation Report

File Name	A0220014.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:11
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	<0.000	ppb	---	-9,539.60	-9.015E-02	Pulse	0.30	3
Ag	107	103	3	0.163	ppb	10.70	14,772.94	2.132E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	105,851.39	2.51	109.7	Pulse	0.30	3
3	Rh	103	6,931,719.41	0.70	96.6	Analog	0.30	3

Quantitation Report

File Name	A0220015.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:31
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	17.235	ppb	2.23	83,017.15	7.851E-01	Pulse	0.30	3
Ag	107	103	3	19.318	ppb	0.26	1,203,852.80	1.728E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	105,775.83	2.73	109.6	Pulse	0.30	3
3	Rh	103	6,966,482.81	0.82	97.1	Analog	0.30	3

Quantitation Report

File Name	A0220016.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:37
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

not reported

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.524	ppb	3.56	3,013.30	2.681E-02	Pulse	0.30	3
Ag	107	103	3	0.897	ppb	8.67	69,945.47	8.675E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	112,418.94	0.89	116.5	Pulse	0.30	3
3	Rh	103	8,060,464.19	0.62	112.3	Analog	0.30	3

Quantitation Report

File Name	A0220017.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:42
Sample Name	N022998-003B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	40.440	ppb	0.51	142,889.58	1.838E+00	Pulse	0.30	3
Ag	107	103	3	0.516	ppb	20.17	30,277.30	5.283E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	77,741.80	0.92	80.6	Pulse	0.30	3
3	Rh	103	5,729,738.45	0.49	79.8	Analog	0.30	3

Quantitation Report

File Name	A0220018.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:48
Sample Name	N022966-014B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	<0.000	ppb	---	128.73	1.607E-03	Pulse	0.30	3
Ag	107	103	3	0.058	ppb	14.23	7,486.07	1.197E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	79,936.36	2.08	82.8	Pulse	0.30	3
3	Rh	103	6,257,908.10	0.77	87.2	Analog	0.30	3

Quantitation Report

File Name	A0220019.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 13:53
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	20.630	ppb	2.80	76,860.22	9.391E-01	Pulse	0.30	3
Ag	107	103	3	20.604	ppb	0.01	1,171,549.59	1.843E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,882.53	2.75	84.9	Pulse	0.30	3
3	Rh	103	6,357,956.16	0.27	88.6	Analog	0.30	3

Quantitation Report

File Name	A0220020.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 14:00
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.002	ppb	419.67	288.00	3.147E-03	Pulse	0.30	3
Ag	107	103	3	0.211	ppb	15.22	17,840.24	2.563E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	91,413.42	2.84	94.7	Pulse	0.30	3
3	Rh	103	6,957,235.17	0.84	96.9	Analog	0.30	3

Quantitation Report

File Name	A0220021.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 14:05
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	0.528	ppb	0.96	2,452.04	2.701E-02	Pulse	0.30	3
Ag	107	103	3	0.436	ppb	3.05	32,643.37	4.565E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,796.25	1.13	94.1	Pulse	0.30	3
3	Rh	103	7,150,871.07	1.01	99.6	Analog	0.30	3

Quantitation Report

File Name	A0220022.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 14:10
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	<0.000	ppb	---	-7,636.84	-9.326E-02	Pulse	0.30	3
Ag	107	103	3	0.079	ppb	12.60	8,005.48	1.382E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	81,901.88	3.48	84.9	Pulse	0.30	3
3	Rh	103	5,792,788.18	0.95	80.7	Analog	0.30	3

Quantitation Report

File Name	A0220023.D
File Path	C:\ICPMH\1\DATA\170220A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 14:16
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 19:37
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Mn	55	45	2	17.466	ppb	0.63	71,977.88	7.956E-01	Pulse	0.30	3
Ag	107	103	3	19.670	ppb	0.08	1,053,848.77	1.759E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Sc	45	90,476.77	2.46	93.8	Pulse	0.30	3
3	Rh	103	5,989,840.33	0.21	83.4	Analog	0.30	3

RAW DATA

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	B0221001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	B0221002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	B0221003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	B0221004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	B0221005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	B0221006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	B0221007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	B0221008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	B0221009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	B0221010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	B0221011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	B0221012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	B0221013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	B0221014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	B0221015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	B0221016	N022998-002B,SAMP,1		1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	B0221017	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	B0221018	CCB1,CCB,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	B0221019	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	B0221020	ICSA2,ICSA,1	2MWST- 170107H	1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	B0221021	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				

Nancy 2/21/2017

616

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 21 Feb 2017 02:03:03 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	54022.10	0.00	
24 Mg	371279.00	0.00	
25 Mg	50114.00	0.00	
26 Mg	58911.10	0.00	
59 Co	671438.00	0.00	
115 In	1452170.00	0.00	
206 Pb	407216.00	0.00	
207 Pb	354111.00	0.00	
208 Pb	871703.00	0.00	

RSD (%)

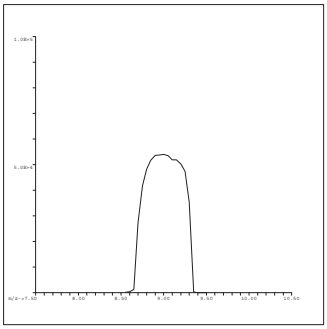
Element	Actual	Required	Flag
9 Be	1.38	5.00	
24 Mg	0.74	5.00	
25 Mg	2.15	5.00	
26 Mg	1.28	5.00	
59 Co	0.58	5.00	
115 In	0.35	5.00	
206 Pb	0.82	5.00	
207 Pb	0.66	5.00	
208 Pb	0.92	5.00	

Ion Ratio

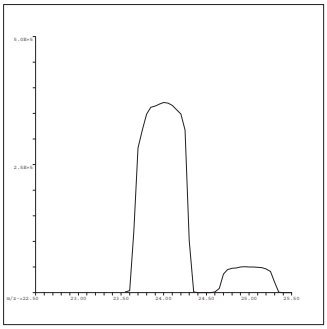
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

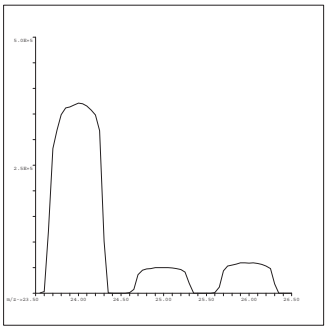
Element	Actual	Required	Flag



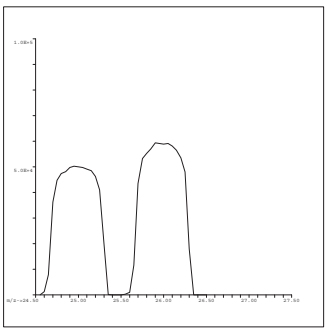
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



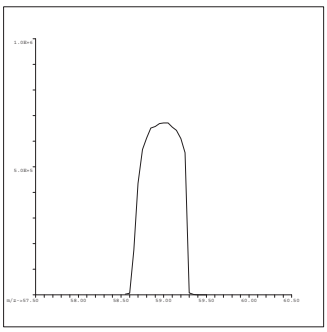
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

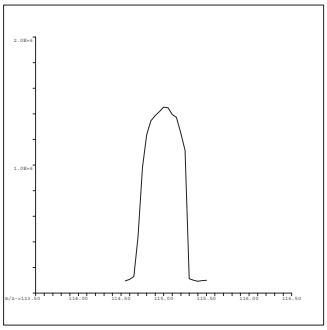


26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

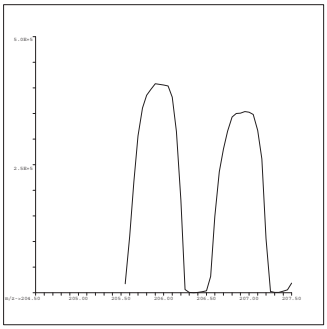


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

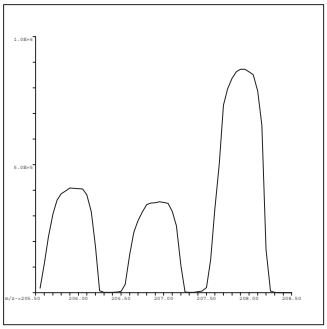
C:\ICPMH\1\7500\qctune.d



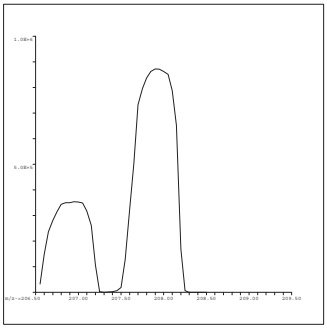
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

Quantitation Report

File Name	B0221002.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 14:41
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	0.000	ppb	---	12,823.18	1.497E-02	Pulse	0.30	3
Se	78	72	1	0.000	ppb	---	3.33	4.038E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	856,707.31	0.49	100.0	Mix	0.30	3
1	Ge	72	82,090.78	0.49	100.0	Pulse	0.30	3

Quantitation Report

File Name	B0221003.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 14:46
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

As only
not used

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	0.629	ppb	15.08	15,329.13	1.824E-02	Pulse	0.30	3
Se	78	72	1	0.067	ppb	111.62	22.22	3.414E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	840,246.16	0.57	98.1	Pulse	0.30	3
1	Ge	72	45,078.57	88.38	54.9	Pulse	0.30	3

Quantitation Report

File Name	B0221004.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 14:50
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	5.037	ppb	1.20	33,942.78	4.119E-02	Pulse	0.30	3
Se	78	72	1	0.588	ppb	5.13	211.12	2.674E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	824,036.21	0.12	96.2	Pulse	0.30	3
1	Ge	72	78,952.02	0.77	96.2	Pulse	0.30	3

Quantitation Report

File Name	B0221005.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 14:56
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	49.524	ppb	0.90	220,669.97	2.728E-01	Pulse	0.30	3
Se	78	72	1	5.166	ppb	6.61	1,819.07	2.316E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	808,906.31	0.18	94.4	Pulse	0.30	3
1	Ge	72	78,560.34	0.89	95.7	Pulse	0.30	3

Quantitation Report

File Name	B0221006.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:01
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	98.492	ppb	1.74	416,454.83	5.277E-01	Pulse	0.30	3
Se	78	72	1	10.056	ppb	1.83	3,506.08	4.504E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	789,164.96	0.47	92.1	Pulse	0.30	3
1	Ge	72	77,844.60	0.66	94.8	Pulse	0.30	3

Quantitation Report

File Name	B0221007.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:07
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	196.885	ppb	0.21	804,271.68	1.040E+00	Pulse	0.30	3
Se	78	72	1	20.555	ppb	2.51	6,950.69	9.203E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	773,348.09	0.21	90.3	Pulse	0.30	3
1	Ge	72	75,525.04	0.23	92.0	Pulse	0.30	3

Quantitation Report

File Name	B0221008.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:13
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	406.006	ppb	1.81	1,588,077.16	2.129E+00	Analog	0.30	3
Se	78	72	1	40.227	ppb	2.14	13,254.82	1.801E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	746,065.78	0.46	87.1	Pulse	0.30	3
1	Ge	72	73,617.45	0.89	89.7	Pulse	0.30	3

Quantitation Report

File Name	B0221009.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:18
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	1001.572	ppb	1.16	3,842,478.61	5.229E+00	Analog	0.30	3
Se	78	72	1	100.241	ppb	1.93	32,533.48	4.487E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	734,811.20	0.39	85.8	Pulse	0.30	3
1	Ge	72	72,522.30	0.94	88.3	Pulse	0.30	3

Quantitation Report

File Name	B0221010.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:24
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	1998.412	ppb	0.37	7,548,699.92	1.042E+01	Analog	0.30	3
Se	78	72	1	199.771	ppb	1.00	64,036.89	8.941E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	724,506.95	0.26	84.6	Pulse	0.30	3
1	Ge	72	71,622.00	0.66	87.2	Pulse	0.30	3

Quantitation Report

File Name	B0221011.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:37
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	2079.404	ppb	0.94	7,887,081.31	1.084E+01	Analog	0.30	3
Se	78	72	1	10.445	ppb	0.57	3,075.99	4.678E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	727,530.00	0.56	84.9	Pulse	0.30	3
1	Ge	72	65,748.85	1.03	80.1	Pulse	0.30	3

Quantitation Report

File Name	B0221012.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:43
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	22.058	ppb	7.93	98,047.76	1.298E-01	Pulse	0.30	3
Se	78	72	1	0.018	ppb	116.38	8.89	1.232E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	755,222.49	0.34	88.2	Pulse	0.30	3
1	Ge	72	72,261.32	0.28	88.0	Pulse	0.30	3

Quantitation Report

File Name	B0221013.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:48
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	59.240	ppb	0.77	243,429.35	3.234E-01	Pulse	0.30	3
Se	78	72	1	0.479	ppb	14.91	158.90	2.182E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	752,750.87	0.63	87.9	Pulse	0.30	3
1	Ge	72	72,804.85	0.37	88.7	Pulse	0.30	3

Quantitation Report

File Name	B0221014.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:54
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	2.464	ppb	9.63	24,235.13	2.780E-02	Pulse	0.30	3
Se	78	72	1	0.005	ppb	312.63	4.44	6.379E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	872,302.63	1.70	101.8	Mix	0.30	3
1	Ge	72	70,135.56	1.05	85.4	Pulse	0.30	3

Quantitation Report

File Name	B0221015.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 15:59
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	1923.124	ppb	0.59	9,265,273.97	1.003E+01	Analog	0.30	3
Se	78	72	1	19.480	ppb	1.77	6,891.77	8.722E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	924,028.36	1.69	107.9	Analog	0.30	3
1	Ge	72	79,025.20	0.77	96.3	Pulse	0.30	3

Quantitation Report

File Name	B0221016.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:05
Sample Name	N022998-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	1187.596	ppb	1.69	3,207,823.65	6.198E+00	Analog	0.30	3
Se	78	72	1	1.186	ppb	14.59	313.35	5.350E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	517,655.60	1.61	60.4	Analog	0.30	3
1	Ge	72	58,602.55	0.80	71.4	Pulse	0.30	3

Quantitation Report

File Name	B0221017.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:10
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	211.075	ppb	1.69	1,025,611.92	1.114E+00	Analog	0.30	3
Se	78	72	1	20.292	ppb	2.52	7,612.06	9.085E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	920,887.90	1.17	107.5	Analog	0.30	3
1	Ge	72	83,783.86	0.22	102.1	Pulse	0.30	3

Quantitation Report

File Name	B0221018.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:16
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	9.422	ppb	9.23	56,385.67	6.402E-02	Pulse	0.30	3
Se	78	72	1	0.052	ppb	27.67	22.22	2.724E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	880,514.26	0.77	102.8	Analog	0.30	3
1	Ge	72	81,670.13	0.93	99.5	Pulse	0.30	3

Quantitation Report

File Name	B0221019.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:21
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	53.594	ppb	0.44	249,521.37	2.940E-01	Pulse	0.30	3
Se	78	72	1	0.534	ppb	11.63	190.01	2.430E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	848,732.17	0.25	99.1	Pulse	0.30	3
1	Ge	72	78,254.50	1.09	95.3	Pulse	0.30	3

Quantitation Report

File Name	B0221020.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:27
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	<0.000	ppb	---	11,456.96	1.250E-02	Pulse	0.30	3
Se	78	72	1	0.034	ppb	43.13	14.44	1.937E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	917,939.74	1.73	107.1	Analog	0.30	3
1	Ge	72	74,380.76	1.08	90.6	Pulse	0.30	3

Quantitation Report

File Name	B0221021.D
File Path	C:\ICPMH\1\DATA\170221B.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/21/2017 16:32
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/21/2017 15:26
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
B	11	6	3	1927.897	ppb	1.58	9,630,728.73	1.005E+01	Analog	0.30	3
Se	78	72	1	19.488	ppb	1.95	7,006.27	8.726E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	958,222.84	1.37	111.8	Analog	0.30	3
1	Ge	72	80,298.40	0.39	97.8	Pulse	0.30	3

STANDARDS LOG

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-121025B	7500 Series PA Tuning 1	2.5, 5.0, 10, 50 ppm	Agilent	19-64VYY2	10/25/12	11/1/12	12/31/2013		MI
↓ C	7500 Series PA Tuning 2	5, 10 ppm	↓	19-62VYY2	↓	11/1/12	↓		↓
↓ D	Germanium	1000 ppm	High Purity Stds	1215310	10/25/12	11/6/12	4/15/2014		MI
2MSST-130301A	ICPMS major cations	50 ppm	ERA	750412	3/1/13	8/7/13	6/2015		MI
↓ B	ICPMS Trace Metals	10 ppm	↓	740412	↓	8/7/13	10/2014		↓
↓ C	ICPMS IS 1	10 ppm	High Purity Std	1211618	3/1/13	4/25/13	1/14/14		MI
2MSST-130329A	ICPMS Tuning Solution	10 ppm	ERA	140309	3/29/13	3/29/13	4/2014		MI
↓	ICPMS IS 1	10 ppm	High Purity Std	1301405	↓	5/26/13	3/20/14		↓
2MSST-130603A	ICPMS IS 1	10 ppm	High Purity Std	1301405	6/3/13	8/7/13	5/29/14		WS
2MSST-130910C ~~2MSST-130910A~~ MC 2/14/14	Hg - STD (1°) mercury	1000 ppm	High Purity Std	1316504	9/10/13	9/11/13	3/4/15		MC
2MSST-130910A	ICPMS Trace Metals	10 ppm	ERA	740412	9/10/13	1/7/14	10/2014		HSG
2MSST-130910B	ICPMS Major Cations	50 ppm	↓	750412	9/10/13	↓	6/2015		HSG
2MSST-130913A	ICPMS IS 1	10 ppm	High Purity Std	1301405	9/13/13	↓	9/9/14		HSC
2MSST-131220A	7500 Series PA Tuning 1	Multi concentration of Analytes	Agilent	20-47VYY2	12/20/13	1/2/14	02/28/15		MI
↓ B	7500 Series PA Tuning 2	↓	↓	20-45VYY2	↓	1/2/14	02/28/15		MI
2MSST-140113A	Hg 2° Standard Mercury	1000 ppm	Ultra Scientific	P00139	MC 3/4/14 ~~14~~ 01/13/14	MC 3/4/14 ~~R~~ 2/10/14	3/31/19		MC
2MSST-140217B	ICPMS IS 1	10 ppm	High Purity Stds	1333708	2/17/14	4/15/14	2/10/15	→ exp: 3/18/15 MI 3/18/14	PLN
2MSST ~~2MSST~~ - 140317A MI 3/17/14	Uranium	1000 ppm	High Purity Stds	1326239	3/17/14	3/18/14	9/11/15		MI
2MSST-140404A	Germanium	1000 ppm	High Purity Stds	1309919	4/4/14	4/15/14 ~~9/28/15~~ MI 4/4/14	9/28/15		MI

Advanced Technology Laboratories-Las Vegas
Logbool #1

3/6/14 9/24/13 3/28/13 9/29

ICP Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
6/21/13	Magnesium	MSST-130621C	10,000 ppm	High Purity Standards	1301003	6/21/13	7/25/13	12/14/14	WES
7/31/13	Yttrium	MSST-130731A	1000 ppm	High Purity standards	1305206	7/31/13	8/1/13	1/25/15	AM
7/31/13	Scandium	MSST-130731B	1000 ppm	High Purity Standards	1231735	7/31/13	8/1/13	1/25/15	AM
9/13/13	Boron 1°	MSST-130913A	5000 ppm	High Purity Standards	1221604	9/13/13	9/16/13	3/9/15	AM
↓	Molybdenum 1°	MSST-130913B	1000 ppm	↓	1222707	9/13/13	9/16/13	↓	↓
↓	Chromium 1°	MSST-130913C	1000 ppm	↓	1230012	9/13/13	9/16/13	↓	↓
↓	Aluminum 1°	MSST-130913D	10000 ppm	↓	1318241	9/13/13	~~9/16/13~~ rec 9/17/13	↓	↓
9/13/13	Antimony 2°	MSST-130913E	1000 ppm	Ultra Scientific	L012826	9/13/13		12/31/17	MI
11/26/13	Aluminum 2°	MSST-131126A	10000 ppm	Ultra Scientific	M002666B	11/26/13		4/30/17	AM
12/9/13	Yttrium	MSST-131209A	1000 ppm	High Purity Standards	1222829	12/9/13	3/24/14	~~5/27/15~~ 3/24/14	AM
12/9/13	Scandium	MSST-131209B	1000 ppm	High Purity Standards	1309122	12/9/13	3/24/14	~~5/27/15~~ 3/24/14	AM
12/23/13	Calcium 1°	MSST-131223A	10,000 ppm	High Purity Standards	1320711	12/23/13	1/6/14	6/13/15	AM
12/23/13	Magnesium 1°	MSST-131223B	↓	↓	1330907	↓	1/6/14	↓	AM
12/23/13	Manganese 1°	MSST-131223C	↓	↓	1331633	↓	1/6/14	↓	AM
AM 1/10/14	Aluminum 1°	MSST-140110A	10000 ppm	High Purity Standards	1334617	1/10/14	~~7/7/15~~ AM 1/10/14	7/7/15	AM
1/20/14	Nickel 2° AM 1/21/14	MSST-140120A	1000 ppm	~~High Purity Standards~~ Ultra Scientific	M008666	1/20/14		9/30/18	AM
↓	Sodium 2°	MSST-140120B	10000 ppm	AM 1/20/14 ↓	R01257	↓		12/31/20	↓
↓	Beryllium 2°	MSST-140120C	1000 ppm	↓	R00202	↓		4/30/20	↓
1/21/14	Strontium 2°	MSST-140121A	1000 ppm	CPI International	14A095	1/21/14	1/21/14	7/16/2015	MI

ICP Stock Standard Logbook

G 3/25/14

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/21/14	Tin 2°	MSST-140121B	1000 ppm	CPI International	1340860	1/21/14	1/21/14	7/16/2015	MI
↓	Titanium 2°	MSST-140121C	1000 ppm	CPI International	126230	1/21/14	1/21/14	7/16/2015	MI
2/18/14	Wave Cal Solution	MSST-140218A	1/20/100 ppm	Perkin Elmer Pure	10-133-YPX1	2/18/14		3/30/2015	MI
	Optima Family Multi-Element Standard	B	1/10/50 ppm		10-134YPX1			6/30/2015	
	VIS Wavecal Solution	C	1/10/50 ppm		10-71YPT1			6/30/2015	
	Instrument Calibration Standard 4	D	50/100 ppm		10-117YPY1			6/30/2015	
	Solution - Optimal Blank	E	—	Perkin Elmer Pure Plus	1-76KFX1			6/30/2015	
4/4/14	Magnesium 2°	MSST-140404A	10,000 ppm	Ultra Scientific	R00244	4/4/14	4/4/14	4/30/2020	MI
STF 5/28/14 4/5/28/14	Bismuth 1000ppm (1°)	MSST-140528A	1000ppm	High Purity Standards	1404513	5/28/14	5/28/14	11/27/2015	STF
5/28/14	Lithium 1000ppm (1°)	MSST-140528B	1000ppm		1231934	5/28/14	5/28/14	11/27/2015	STF
5/30/14	Calcium (Ca) 1°	MSST-140530A	10000 ppm	High Purity Standards	1404943	5/30/14	6/13/14	11/23/15	STF
	Iron (Fe) 1°	B	10000ppm		1324617		6/16/14	11/23/15	STF
	Magnesium (Mg) 1°	C	10,000ppm		1409813		6/13/14	11/23/15	STF
	Strontium (Sr) 1°	D	1000ppm		1401301		6/13/14	11/23/15	STF
6/3/14	Magnesium (Mg) 2°	MSST-140603A	10,000ppm	Ultra Scientific	R00244	6/3/14	STF 6/13/14	4/30/2020	STF
6/11/14	Copper	MSST-140611A	1000 ppm	High Purity Standards	1403501	6/11/14	6/12/14	12-5-15	MC
	Cobalt	B	1000ppm		1303712				
	Barium	C			1323402				
	Silver	D			1401302				

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
1/15/15	Strontium 1°	MSST-150115D	1000 ppm	High Purity Stds	1412501	1/15/15	2/10/15	6/10/16	MEJ
↓	Scandium E	↓	1000 ppm m 1/15/15	↓	1414317	↓	1/20/15	↓	↓
↓	Yttrium F	↓	↓	↓	1423204	↓	1/20/15	↓	↓
1/12/15	Arsenic 2°	MISS-150112A	1000 ppm	Ultra Scientific	R005993	1/12/15		9/30/2020	MEJ
↓	Copper 2° B	↓	↓	↓	BH02515 ~~RF058487~~ m 1/14/15	↓		6/30/2021	↓
↓	Antimony 2° C	↓	↓	↓	RM058187	↓		9/30/2021	↓
↓	Chromium 2° D	↓	↓	↓	BH013V5	↓	1/30/15	12/31/2019	↓
↓	Molybdenum 2° E	↓	↓	↓	RM07695	↓	1/30/15	1/31/2022	↓
↓	Thallium 2° F	↓	↓	↓	BH02110	↓	1/30/15	7/31/2020	↓
3/9/15	Chromium 1°	MSST-150309A	1000 ppm	High Purity Standards	1320011	3/9/15	3/9/15	9/3/16	MEJ
↓	Molybdenum 1° B	↓	↓	↓	1420609	↓	↓	↓	↓
↓	Boron 1° C	↓	5000	↓	1421703	↓	↓	↓	↓
3/10/15	Mercury 1°	MSST-150310A	1000 ppm	High Purity Standards	14343	3/10/15	4/5/15	9/10/16	[illegible]
5/14/15	Cadmium 2°	MSST-150514A	1000 ppm	Ultra Scientific	CL-2608	5/14/15		8/31/21	[illegible]
5/14/15	Zinc 2°	MSST-150514B	1000 ppm	Ultra Scientific	TU0108	5/14/15		2/28/21	[illegible]
5/18/15	Manganese 1°	MSST-150518A	10000 ppm	High Purity Standards	1413613	5/18/15	6/1/15	11/8/16	[illegible]
6/15/15	Barium 2°	MISS-150615A	1000 ppm	Ultra Scientific	CM-2359	6/15/15	6/15/15	6/30/22	MJ
↓	Lead 2° B	↓	↓	↓	CL-4072	↓	↓	11/30/21 ~~10/16/22~~ m 6/16/15	↓
↓	Silicon 2° C	↓	10000	↓	CL-2940	↓	↓	8/31/2021	↓

ICP Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
6/15/15	tin 2°	MSST-150615D	1000 ppm	CPI	13H086	6/15/15		12/15/16	MI
	Titanium 2°	↓ E	↓	↓	14K176	↓		↓	↓
7/2/15	Aluminum	MSST-150702A	10000 ppm	High Purity Standards	1516016	7/2/15	11/23/15	12/25/16	HSG
	Calcium	↓ B	↓	↓	1511140	↓	↓	↓	↓
	Magnesium	↓ C	↓	↓	1510445	↓	↓	↓	↓
7/17/15	Strontium 2°	MSST-150717A	1000	CPI	15F052	7/17/15	9/10/15	01/14/17	HSG
9/9/15	Selenium 2°	MSST-150909A	1000 ppm	Ultra Scientific	R00180	9/9/15	9/10/15	4/30/20	AA
9/23/15	Scandium primary	MSST-150923A	1000 ppm	High Purity Standards	1506438	9/23/15	9/28/15	3/17/17	AM
9/23/15	Yttrium primary	MSST-150923B	1000 ppm	High Purity Standards	1507112	9/23/15	9/28/15	3/17/17	AM
9/28/15	Lead secondary	MSST-150928A	1000 ppm	Ultra Scientific	CM-3389	9/28/15		7/3/22	AM
10/29/15	Calcium	MSST-151029A	10000 ppm	Ultra Scientific	CM-4634	10/29/15 ~~9/30/22~~	11/2/15	9/30/22	Am
10/29/15	Manganese	MSST-151029B	1000 ppm	Ultra Scientific	CM-2432	10/29/15	10/29/15	6/30/22	Am
10/29/15	Thallium	MSST-151029C	1000	Ultra Scientific	CM-1100	10/29/15		4/30/22	Am
11/10/15	Iron	MSST-151102A	10000 ppm	High Purity Standards	1524703	11/2/15	11/23/15	4/28/17	Am
11/10/15	Strontium	MSST-151102B	1000 ppm	High Purity Standards	1429002	11/2/15	↓	4/28/17	Am
11/10/15	Bismuth	MSST-151102C	1000 ppm	High Purity Standards	1404513	11/2/15	11/23/15	4/28/17	Am
11/10/15	Lithium	MSST-151102D	1000 ppm	High Purity Standards	1516729	11/2/15	↓	↓	
12/11/15	Titanium	MSST-151207A	1000 ppm	High purity standards	1510001	12/7/15	4/5/16	6/1/17	Am
12/11/15	Cadmium	MSST-151207B	1000 ppm	High purity standards	1512903	12/7/15	↓	6/1/17	Am

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
12/11/15	Arsenic	MSST-151207C	1000 ppm	High Purity Standards	1500712	12/7/15	12/5/15	6/1/18	AM
	Cobalt	MSST-151207D	1000 ppm		1425215	12/7/15		6/1/18	
	Zinc	MSST-151207E			1403401			6/1/17	
	Beryllium	MSST-151207F			1412111				
	Nickel	MSST-151207G			1512402				
	Barium	MSST-151207H			1431507				
	Antimony	-151207I			1520412				
	Copper	-151207J			1403501				
	Selenium	151207K			1427632				
	Silver	151207L			~~1527709~~ 1527902 AM 12/8/15				
	Tin	151207M			1516806				
	lead	151207N			1513919				
	Vanadium	151207O			1420604				
	Thallium	151207P			1523215				
	Silicon	151208Q			1528501				
	Potassium	151207R	10000 ppm		1512614				
	Sodium	151207S			1526616				
	Aluminum	151207T			1526032				
	Calcium	151207U			1527523				

Advanced Technology Laboratories-Las Vegas 3151-3153 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax 702-307-2691

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact	Initials
2/11/15	Magnesium	MSST-1512076	10000 ppm	High Purity Standards	1510445	12/7/15	6/5/15	6/1/17	Am
1/29/16	Boron (2°)	MSST-160129A	10000 ppm	Ultra Scientific ~~Ultra Grade~~ MI 1/29/16	[illegible]124A	1/29/16	2/1/16	12/31/21	MI
↓	Vanadium (2°)	MSST-160129B	10000 ppm	Ultra Scientific	[illegible]	1/29/16	2/1/16 ~~11/30/22~~ MI 2/1/16	11/30/22	MI
1/23/16	Boron (1°)	MSST-160323A	5000 ppm	High Purity Standards	15[illegible]	3/23/16	6/6/16	9/16/17	MI
↓	Scandium (1°)	↓ B	1000 ppm	↓	1609311	↓	3/23/16	↓	↓
↓	Yttrium (1°)	↓ C	↓	↓	1524022	↓	↓	↓	↓
4/20/16	Calcium (1°)	MSST-160420A	10000 ppm	High Purity Standards	1606907	4/20/16	5/23/16	10/18/17	MO
↓	Magnesium (1°)	↓ B	↓	↓	1531412	↓	5/3/16	↓	↓
↓	Aluminum (1°)	↓ C	↓	↓	1605734	↓	5/23/16	↓	↓
↓	Cadmium (1°)	↓ D	1000 ppm	↓	1582227	↓	6/6/16	↓	↓
↓	Boron (1°)	↓ E	5000 ppm	↓	1524618	↓		↓	↓
4/25/16	Magnesium (2°)	MSST-160425A	10000 ppm	Ultra Scientific	CM-4445	4/25/16	5/30/16	7/30/22	MO
↓	Chromium (2°)	↓ B	1000 ppm	↓	RO1377	4/25/16	↓	1/31/21	↓
5/30/16	Molybdenum (2°)	MSST-160530A MI 5/30/16	1000 ppm	Ultra Scientific	RM07695	5/30/16 ~~4/21/23~~ MO 5/30/16	5/30/16	1/31/23	MO
↓	Zinc (2°)	MSST-160530B	1000	↓	RM07777	↓	↓	8/31/22	↓
↓	Arsenic (2°)	MSST-160530C	1000	↓	CM-3990	↓	↓	8/31/22	↓
↓	Cadmium (2°)	MSST-160530D	↓	↓	RM-07888	↓	↓	8/31/21	↓
↓	Copper (2°)	MSST-160530E	↓	↓	CP-1013	↓	↓	4/30/23	↓
↓	Silver (2°)	MSST-160530F	↓	↓	CM-1594	↓	↓	5/31/22	↓

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
8/16	Tellurium (1°)	MSST-160608A	1000 ppm	High Purity Standards	1528101	6/8/16	6/8/16	12/7/17	AM
8/16	Tellurium (2°)	MSST-160608B	1000 ppm	CPI International	165110	6/8/16	6/8/16	12/6/17	AM
29/16	Cobalt (2°)	MSST-160629A	1000 ppm	Ultra Scientific	T00692	6/29/16	7/1/16	7/31/21	MET
1/16	Gallium (2°)	MSST-160701A	1000 ppm	Ultra Scientific	CM-60789	7/1/16		12/31/22	MET
↓	Scandium (2°)	↓ B	↓	↓	CL-3201	7/1/16		9/30/2021	↓
5/16	Scandium (1°)	MSST-160705A	1000 ppm	High Purity Standards	16133333	7/5/16		12/28/17	MG
	Gallium (1°)	MSST-160705B	↓	↓	1517715	↓		12/28/17	↓
6/16	Molybdenum	MSST-160906A	1000 ppm	High Purity Standards	1609722	9/6/16	9/9/16	~~2/28/18~~ 2/28/18	MG
	Chromium	MSST-160906B	1000 ppm		1530127		9/6/16	2/28/18	
	Silver	MSST-160906C			1621839			2/28/18	
	Scandium	MSST-160906D			16133333			2/28/18	
	Yttrium	MSST-160906E			1620524			2/28/18	
	Magnesium	MSST-160906F	10,000 ppm		1510445		12/6/16	2/28/18	
	Iron	MSST-160906G			1618214			2/28/18	
	Aluminum	MSST-160906H			1619320			2/28/18	
	Calcium	MSST-160906I			1620901			2/28/18	
9/30/16	Calcium	MSST-160930A	10000 ppm	Ultra Scientific	CP 4462	9/30/16	12/1/16	9/30/2023	MI
12/2/16 ↓	Bismuth	MSST-160931B	1000 ppm	↓	CP 4838	↓		10/31/2023	↓
20/16	~~Iron~~ ~~15~~ 1 Manganese	MSST-161020A	10000 ppm	High Purity Stds	1614132	10/20/16	10/09/16	4/19/18	MG

MG 10/20/16

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-140530A	Cerium - 10 ppm	10 ppm	High Purity Stds	1321107	5/3/14	11/4/14	5/23/2015		mi
2MSST-140530B	ICP-MS Internal Standard 1	10 ppm	↓	1333708	5/30/14	6/13/14	5/23/2015		mi
2MSST-140630A	ICP-MS Major Cations	50 ppm	ERA	111013	6/30/14	11/1/14	4/2016	~~Exp 11/1/16~~ 6/30/14	mi
2MSST ~~2MSS~~ mi 9/9/14 -140801A	ICP-MS Internal Standard 1	10 ppm	High Purity Stds	1333708	8/18/14	11/1/14	7/29/15		mi
2MSST-141025A	ICP-MS trace metals	10 ppm	ERA	170913	10/23/14	11/1/14	3/2016	~~Exp 11/1/15~~ 10/25/14	mi
2MSST-150310A	Mercury	1000 ppm	High Purity Stds	1434315	3/10/15	4/15/15	9/10/16		mi
2MSST-150413A	Tune Solution AA tuning 1	multi-element analyte	Agilent	21-1047112	4/13/15	4/13/15	7/31/16		mi
↓ B	↓ 2	↓	↓	↓	↓	↓	↓		↓
2MSST-150601A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	6/1/15	6/1/15	5/26/16		mi
2MSST-150907A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	9/7/15	9/7/15	9/29/16		mi
↓ B	Europium	1000 ppm	High Purity Std	1506202	↓	↓	1/7/17		↓
2MSST-151019A	Uranium - 1000 ppm	1000 ppm	High Purity Std	1410530	10/~~20~~ 19/15 mi 10/19/15	10/19/15	4/16/17		mi
2MSST-151207A	ICP-MS Internal Standard 1	10 ppm	High Purity Std.	1509020	12/7/15	4/1/16	12/1/16		Am
2MSST-151207B	Cerium	10 ppm	High Purity Std	1504927	12/7/15	5/3/16	7/7/16		mei
2MSST-151207C	ICP-MS Major Cations	50 ppm	ERA	140714	12/7/15	4/1/16	1/2017		mei
↓ D	ICP-MS Trace Metals	10 ppm	↓	351214	↓	↓	7/2017		↓
2MSST-160420A	ICPMS Internal Standard 1	10 ppm	High Purity Stds	19 1509020 mei 4/20/16	4/20/16	4/20/16	4/18/17		mei
2MSST-160906A	ICPMS Major Cations	50 ppm	ERA	140714	9/6/16	12/6/16	8/2017		MG
2MSST-160906B	ICPMS Trace Metals	10 ppm	ERA	201215	9/6/16	12/6/16	7/2018		MG

Advanced Technology Laboratories-Las Vegas
Logbook #1

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-160906C	Mercury	1000 ppm	High Purity Standard	1612621	9/6/16	9/12/16	2/28/16		MG
2MSST-161020A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	10/20/16	12/14/16	10/19/17		MG
2MSST-170103A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	1/3/17	1/7/17	12/27/17		MG
2MSST-170103B	Germanium	1000 ppm	High Purity Stds	1623822	1/3/17	1/7/17	6/27/18		MG

Advanced Technology Laboratories-Las Vegas
Logbool #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)	
9/12/16	LLICV / LLCCV Solution A	2MWST - 160906C	MSST - 151207N (Pb)	1000 ppm	1.0 ml	1
↓	↓	↓	2MSST - 151019A (U)	↓	0.5 ml	
			MSST - 150518A (Mo)	10000 ppm	0.05 ml	
			MSST - 151207O (V)	1000 ppm	1.0 ml	
			↓ E (Zn)	↓	10. ml	5
			MSST - 160420C (Al)	10000 ppm	1 ml	
			MSST - 151102A (Fe)	↓	↓	
	LLICV / LLCCV Working Solution	2MWST - 160906D	2MWST - 160906C	0.1/0.5/1.0/10 ppm	1 ml	
	↓	↓	2MWST - 160801B	1/50 ppm	↓	
↓	↓	↓	2MWST - 160602A	10 ppm	5 ml	10
9/12/16	Hg 500 ppb (1°)	2MWST - 160912A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	2MWST - 160912B	2MSST - 140113A	↓	↓	
10/1/16	ICSA (100 ppm NaKCaMg)	2MWST - 161001A	2MWST - 160606A	1000 ppm	5 ml	
10/1/16	ICSA (100 ppm NaKCaMg)		MSST - 160420A/B (Ca/Mg)	10000 ppm	10 ml	
↓	↓	↓	MSST - 151207R/S Na/K	↓	↓	15
10/12/16	Hg 500 ppb (1°)	2MWST - 161012A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	2MWST - 161012B	2MSST - 140113A	↓	↓	
11/08/16	Hg 500 ppb (1°)	2MWST - 161108A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	↓ B	2MSST - 140113A	↓	↓	
11/9/16	ICV / LCS / MS / MSD / LCSD Solution A	2MWST - 161109A	MSST - 160720D (Cd)	1000 ppm	1.0 ml	20

MCJ 11/9/16 MCJ 11/9/16

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1 ppm	2.5% HNO_3	omnitrace	55259	11/8/16	6/1/17		MET
↓	0.5 ppm	↓	↓	↓	↓	4/16/17		↓
↓	↓	↓	↓	↓	↓	11/8/16		↓
↓	1 ppm	↓	↓	↓	↓	6/1/17		↓
↓	10 ppm	↓	↓	↓	↓	↓		↓
↓	↓	↓	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	4/28/17		↓
1000 ml	0.1/0.5/1.0/10/50 ppb	1% HNO_3 0.5% HCl	omnitrace	55259/55006	11/8/16	11/8/16		↓
↓	↓	↓	↓	↓	↓	2/1/17		↓
↓	50 ppb	↓	↓	↓	↓	12/6/16		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS ~~Baker~~ MT 9/16/16	56032/56120	10/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
1000 ml	50 ppb	1% HNO_3 / 0.5% HCl	omnitrace	55259/55006	12/6/16	12/6/16		MET
↓	100 ppm	1% HNO_3 0.5% HCl	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	10/1/17		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS	56032/56120	11/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
MT 11/8/16 100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS		12/08/16	2/28/18		MET
↓	↓	↓	↓		↓	3/31/19		↓
1000 ml	1/10 ppb	1% HNO_3, 0.5% HCl	omnitrace	55259/55006	4/28/18 ~~11/8/16~~ ~~5/9/17~~ MET 11/9/16	10/18/17		MET

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc.

Logbook #2
ICPMS &Hg WK Std Log

83 of 101

652

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	10V/LS/LSD/MS/MSD Solution A	2MSST-161109A	MSST-151207C (Ts)	1000 ppm	1 mL
			D (Co)		
			E (Zn)		
			F (Be)		
			G (Ni)		
			H (Ba)		
			J (Cu)		
			K (Se)		
			P (Th)		
			N (Pb)		
			O (V)		
			I (Sb)		
			MSST-160907A (Cr)		
			B (Mo)		
			MSST-160420A (Mn)	10000 ppm	
			MSST-151207B (Na)		
			I (K)		
			MSST-160420C (Al)		
			MSST-160420A (Ca)		
			MSST-160420B (Mg)		

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
1000 ml	1/10 ppm	1% HNO_3 0.5% HCl	Omnitrace	55259/55000	4/28/17 ~~6/9/17~~ 11/9/16	10/18/17		MT
						6/1/17		
						10/28/18		
						4/19/18		
						6/1/17		
						10/18/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Logbook #2
ICPMS &Hg WK Std Log

Advanced Technology Laboratories, Inc. 3151 W. Post Rd. Las Vegas, NV 89118 Tel 702-307-2659 Fax 702-307-2691

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	ICV/LCS/MS/MSD/LCSD Solution A	2MUST-161109A	MSST-151102A (Fe)	10000 ppm	1 ml
	ICV 10/100 ppb	2MUST-161109B	2MUST-161109A	1/10 ppm	5 ml
			2MUST-160606D	1	
			F	1	
			2MUST-160501A	10/100	10 ml
			2MUST-~~1602~~ 160606A	10 ppm	5 ml
	LLICV/LLCW Solution A	2MUST-161109C	MOT 11/9/16 MSST-151207C (As)	1000 ppm	0.10 ml
			F (Be)		0.50 ml
			O (Co)		
			K (Se)		
			MSST-160906A (Mo)		
			MSST-151207L (Ag)		
			MSST-160420D (Cd)		
			MSST-151207I (Sb)		
			P (Tl)		
			MSST-160906B (Cr)		1.0 ml
			MSST-~~1~~151207G (Ni)		
			MOT 11/9/16 H (Ba)		
			J (Cu)		
			MSST-151207N (Pb)		

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1/10 ppm	1% HNO3 0.5% HCl	Omnitrace	55259/55000	4/28/17	4/28/17		MEJ
500 ml ~~ppm~~ MEJ 11/9/16	10/100 ppb				12/6/16	4/28/17		
						12/6/16		
						2/1/17		
	50 ppb	~~0.1 ppm~~ MEJ 11/9/16				12/6/16		
1000	0.1 ppm	~~0.1 ppm~~			4/16/17 ~~4/28/17~~ MEJ 11/9/16	6/1/~~17~~ 17 MEJ 11/9/16		
	0.5 ppm							
						2/28/18		
						6/1/17		
						10/18/17		
						6/1/17		
	1.0 ppm					2/28/18		
						6/1/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc. 3151 W. Post Rd. Las Vegas, NV 89118 Tel 702-307-2659 Fax 702-307-2691

87 of 101

Logbook #2
ICPMS &Hg WK Std Log

656

1. Act | 2. InAct

INDEX

8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID
8558	NITRIC ACID
8557	HYDROGEN PER
8556	Silica Gel Cartrid
8555	Silica Gel Cartrid
8554	Silica Gel Cartrid
8553	Silica Gel Cartrid
8552	
8551	BOILING STONE
8543	NITRIC ACID
8542	NITRIC ACID
8541	Potassium Persu
8540	SAND
8539	SAND
8535	STANNOUS CHL

3487 Records

Bottle #: 8570 Chemical: HYDROCHLORIC ACID ☑ Active

Received:	8/15/2016	Expires:	12/6/2018
Synonyms:	MURIATIC ACID	Status:	New
Formula:	HCL	CAS #:	7647-01-0
Location:	Inorganics	Formula Wt:	36.46
8 Vendor:	OmniTrace	Lot #:	52250
		Catalog #	HX0607-4
		Conc/Purity:	34-37%
		Amount:	2.5
		Units:	L
		Notes:	

1 of 1. RECEIVED ON 8/15/16

Merck Index:

Add to Reagents database

1. Act | 2. InAct

INDEX

8736	NITRIC ACID
8735	Sodium Sulfate, A
8734	DICHLOROMETH
8733	DICHLOROMETH
8732	DICHLOROMETH
8731	DICHLOROMETH
8730	DICHLOROMETH
8729	DICHLOROMETH
8728	DICHLOROMETH
8727	DICHLOROMETH
8726	DICHLOROMETH
8725	DICHLOROMETH
8724	DICHLOROMETH
8723	DICHLOROMETH
8722	SODIUM HYDRO
8721	DICHLOROMETH
8720	DICHLOROMETH
8719	DICHLOROMETH
8718	DICHLOROMETH
8717	DICHLOROMETH
8716	DICHLOROMETH
8715	DICHLOROMETH
8714	DICHLOROMETH
8713	DICHLOROMETH
8712	DICHLOROMETH
8711	DICHLOROMETH

3487 Records

Bottle #: 8736 Chemical: NITRIC ACID ☑ Active

Received:	11/23/2016	Expires:	12/6/2018
Synonyms:		Status:	New
Formula:	HNO3	CAS #:	7697-37-2
Location:	Inorganics	Formula Wt:	63.01
8 Vendor:	Emd	Lot #:	56176
		Catalog #	NX0407-02
		Conc/Purity:	68.0-70.0%
		Amount:	2.5
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

1 of 2, Opened:12/6/16

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
/16	LLICV / LLCCV Solution A	2MUST-161109C	2MSST-151079A (U)	1000 ppm	0.5 ml
			MSST-161020A (Mn)	10000 ppm	0.05 ml
			MSST-151201Q (V)	1000 ppm	1.0 ml
			↓ E (Zn)	↓	10 ml
			MSST-160420C (Al)	10000 ppm	1.0 ml
			MSST-151102A (Fe)	↓	↓ ml
	LLICV / LLCCV Working Solution	2MUST-161109D	2MUST-161104C	0.1/0.5/1.0/10 ppm	1 ml
	LLICV / LLCCV Working Solution		2MUST-160801B	1/50 ppm	↓
			2MUST-160606A	10 ppm	5 ml
/16 MC 11/9/16	~~ICSAB~~ 11/9/16				
/16	MIX Internal Standard A	2MUST-161206A	2MSST-161020A	10000 ppb	500 ml
				1000 ppm	5
	50 ppb IS in 2000 ml 1/20	2MUST-161206B	2MUST-161206A	~10 ppm	12.5
	ICAL (Si Sn Ti Sr B)	2MUST-161206C	MSST-151207Q	10000 ppm	10
			M		
			A		
			MSST-151102B		
			MSST-160723A MC 12/6/16	5000	20
	ICAL (200/2000 ppb)	2MUST-161206D	2MSST-160906A/B	50/10 ppm	40/20
			2MUST-161206C	10/100	20 ml

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	0.5 ppm	1% HNO_3, 0.5% HCl ~~Omnitrace~~ MEJ 11/9/16	Omnitrace	53259/53009/6 MEJ 11/9/16	4/16/17	4/16/17		MEJ
						4/19/18		
	1 ppm					6/1/17		
	10 ppm							
						10/18/17		
						4/28/17		
1000 ml	0.1/1.0/0.5 10/50 ppb				12/6/16	4/16/17		
						2/1/17		
						12/6/16		
500 ml	~ 10 ppm				1/7/17	10/19/17		MEJ
						1/7/17		
2000	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	53250/56176	MEJ 12/6/16 1/7/17	1/7/17		
1000	100				4/28/17	6/1/17		
	10							
						4/28/17		
						9/16/17		
1000	200/2000				1/7/17	7/2018, 8/2017		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc. 3151 B Pro Ln Las Vegas NV 89118 Tel 702-307-2659 Fax 702-307-2691

89 of 101

Logbook #2
ICPMS &Hg WK Std Log

660

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/6/16	ICAL (200/2000 ppb)	2MWST-161206D	2MWST-161206A	10 ppm	5 ml
	ICV/LCS/LCSD/MS/MSD Solution C	2MWST-161206E	~~2~~ MSST-151207L (A) MT 12/6/16	10000 MT 12/6/16	1.0
	ICV/LCS/LCSD/MS/MSD Solution D	2MWST-161206F	2MSST-151019A (U)	↓	↓
	ICV	2MWST-161206G	2MWST-161109A	1/10 ppm	5 ml
	↓	↓	2MWST-160801A	↓	10
			2MWST-161206E		5
			↓ F	↓	↓
	↓	↓	2MWST-161206A	10 ppm	↓
	LLICV/LLCV Working Solution	2MWST-161206H	2MWST-161109C	0.1/0.5/1.0/10 ppm	1 ml
	↓	↓	2MWST-160801B	1/50 ppm	
	↓	↓	2MWST-161206A	10 ppm	5 ml
	ICSA	2MWST-161206I	MSST-160906F/~~G/H~~/I MT 12/6/16	10,000	10
	↓	↓	MSST-151207R/S		
	↓	↓	2MWST-161206A	10 ppm	5
	ICSAB	2MWST-161206J	MSST-160906F/I	10,000	10
	↓	↓	MSST-151207R/S	↓	↓
			2MWST-161206A	10	5
			2MSST-160906B	10/100	2 ml
↓	↓	↓	2MWST-161206C	↓	↓

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000	50ppb	1% HNO_3 / 0.5% HCl	Omnitrace	52250/56174	1/7/17	1/7/17		MET
1000	1 ppm				6/6/17	6/1/17		
1000	1 ppm				4/16/17	4/16/17		
500	10/100				1/7/17	4/28/17		
						2/1/17		
						6/1/17		
						4/16/17		
	50					1/7/17		
1000	0.1/0.5/1.0 10/50 ppb				1/7/17	4/16/17		
						2/1/17		
	50ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
	20/200					7/2018		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/5/16	Hg Std ppb (2°)	2MWST-161203B	2MSST 140113A	1000 ppm	0.05 mL
1/7/17	Mix Internal Standard A	2MWST-170107A	2MSST-170103A	10000 ppm	500 mL
↓	↓	↓	↓ B	1000 ppm	5 mL
	50 ppb IS in 2000 mL H_2O	2MWST-170107B	2MWST-170107A	10 ppm	12.5 mL
	ICAL (200/2000 ppb)	2MWST-170107C	2MSST-160906A/B	50/10 ppm	40/20
	↓	↓	2MWST-161206C	10/100	20
	↓	↓	2MWST-170107A	10 ppm	5 mL
	ICV/LCS/LCSD/MS/MSD Solution B	2MWST-170107D	MSST-151207M (Sn)	1000 ppm	10 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	↓
	↓	↓	MSST-160129A (B)	10000	mL
	LLICV/LLCCV Solution B	2MWST-170107E	MSST-151207M (Sn)	1000 ppm	1 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	5 mL
	↓	↓	MSST-160129A (B)	10000	↓
	ICV (10/100 ppb)	2MWST-170107F	2MWST-161109A	1/10 100 ppm	5 mL
	↓	↓	2MWST-170107D	↓	10 mL
	↓	↓	2MWST-161206E	↓	5 mL
	↓	↓	2MWST-161206F	↓	
↓	↓	↓	~~2MSST~~ 2MWST-170107A MEI 1/7/17	10 ppm	MEI 1/7/17 ↓

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
100 ml	500 ppb	2% HNO_3 4% HCl	GR ACS	56032/56120	1/8/17	3/31/19		MEM
500 ml	~ 10 ppm				7/7/17	12/27/17		MEM
↓	↓					6/27/18		
2000 ml	50 ppb	~~2%~~ 0.5% HNO_3 ~~4%~~ HCl MEM 1/7/17	~~GR ACS~~ Omnitrace 1/7/17 MEM	56032/56120	7/7/17	7/7/17		
1000	200/2000				4/28/17	7/2018 / 8/2017		
	↓					4/28/17		
	50 ppb					7/7/17		
1000	10/100 ppm	2.5% HNO_3			6/1/17	6/1/17		
						12/31/21		
1000	1 ppm	2.5% HNO_3			6/1/17	6/1/17		
	50 ppm					12/31/21		
500	10/100 ppb	1% HNO_3, 0.5% HCl			4/16/17	4/28/17		
						6/1/17		
						6/6/17		
						4/16/17		
						7/7/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
1/7/17	LLCV/ LLCCV Working Solution	2MWST-170107 G	2MWST-1601109C	0.1/0.5/1/10 ppm	1 ml
			MET 1/7/17 2MWST-170107 E	1/50	
			2MWST-170107 A	10	5 ml
	ICSA	2MWST-170107 H	MSST-160906 F/I	10000 ppm	10
			MSST-151207 R/S		
			2MWST-170107 A	10 ppm	5
	ICSAB	2MWST-170107 I	MSST-~~170107A~~ 160906 F/I	10000 ppm	10
			MET 1/7/17 MSST-151207 R/S		
			2MWST-170107 A	10 ppm	5
			2MSST-160906 B	10/100	2 ml
			2MWST-161206 C		

PREPARATION INFORMATION								
Final Vol.	Final Conc.	Solvent			Exp Date *			
(ml)	(ug/ml)	Solvent	Supplier	Lot #	Working STD	Manufacturer	Comments	Initial
1000	0.1/0.5/1.0 10/50ppb	0.5% HCl, 1% HNO3	Omnitrace	5C032/5C120	4/16/17	4/16/17		MEI
						6/1/17		
						7/7/17		
1000	100 ppm				6/1/17	2/28/18		
						6/1/17		
	50 ppb					7/7/17		
1000	100 ppm				4/28/17	2/28/18		
						6/1/17		
	50 ppm					7/7/17		
	20/200					7/20/18		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022999

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N022999

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N022999-002B-MS2 and N022999-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N022999
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022999-001A	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001B	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001C	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001D	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-002A	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002B	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002C	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002D	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-003A	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003B	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003C	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003D	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	4600	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022995-001ADUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113370**
Client ID: **ZZZZZZ** Batch ID: **R113370** TestNo: **EPA 120.1** Analysis Date: **2/8/2017** SeqNo: **2559383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	64.400	0.10						63.70	1.09	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022999-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113369**
Client ID: **ZZZZZZ** Batch ID: **R113369** TestNo: **SM4500-H+B** Analysis Date: **2/8/2017** SeqNo: **2559376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.610	0.10						7.580	0.395	10	H
Temp. at time of pH Analysis	18.700	0.10						18.30	2.16	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2700	33	33		mg/L	1	2/8/2017 12:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	2/8/2017 12:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	2/8/2017 12:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-61208** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **LCSW** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	962.000	10	1000	0	96.2	80	120				

Sample ID **MB-61208** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **PBW** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N022999-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **ZZZZZZ** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4590.000	50						4660	1.51	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**				PrepDate	**2/10/2017**	Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	2/14/2017 05:22 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:22 PM
Magnesium	24000	4.4	100		µg/L	1	2/14/2017 05:22 PM
Sodium	850000	2900	120000		µg/L	250	2/15/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**			PrepDate	**2/10/2017**		Analyst: **CEI**
Calcium	210000	28	500		µg/L	1	2/14/2017 05:50 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:50 PM
Magnesium	31000	4.4	100		µg/L	1	2/14/2017 05:50 PM
Sodium	1700000	1200	50000		µg/L	100	2/15/2017 09:57 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**			PrepDate	**2/10/2017**		Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	2/14/2017 05:55 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:55 PM
Magnesium	25000	4.4	100		µg/L	1	2/14/2017 05:55 PM
Sodium	830000	580	25000		µg/L	50	2/15/2017 10:19 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-61225** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **PBW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-61225** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **LCSW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9047.641	500	10000	0	90.5	85	115				
Iron	100.334	20	100.0	0	100	85	115				
Magnesium	8993.799	100	10000	0	89.9	85	115				

Sample ID **N022999-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	128600.313	500	10000	117400	112	75	125				
Iron	96.848	20	100.0	0	96.8	75	125				
Magnesium	33340.719	100	10000	24090	92.5	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	127988.107	500	10000	117400	106	75	125	128600	0.477	20	
Iron	96.250	20	100.0	0	96.2	75	125	96.85	0.619	20	
Magnesium	33454.132	100	10000	24090	93.6	75	125	33340	0.340	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-61225** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **PBW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-61225** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **LCSW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20999.785	500	20000	0	105	85	115				

Sample ID **N022999-002B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1500316.382	50000	20000	1653000	-763	75	125				S

Sample ID **N022999-002B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1504092.518	50000	20000	1653000	-744	75	125	1500000	0.251	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	94	0.056	0.50		µg/L	1	2/14/2017 06:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	11	0.056	0.50		µg/L	1	2/14/2017 07:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	92	0.056	0.50		µg/L	1	2/14/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-61226** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **PBW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-61226** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **LCSW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.137	0.50	100.0	0	106	85	115				

Sample ID **N022999-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	178.376	0.50	100.0	94.15	84.2	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	178.503	0.50	100.0	94.15	84.4	75	125	178.4	0.0715	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.9	0.066	0.20		µg/L	1	2/10/2017 08:39 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226**				PrepDate	**2/10/2017**		Analyst: **CEI**
Chromium	1.8	0.019	1.0		µg/L	1	2/13/2017 04:17 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	600	6.6	20		µg/L	100	2/10/2017 08:58 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226**				PrepDate	**2/10/2017**		Analyst: **CEI**
Chromium	630	0.096	5.0		µg/L	5	2/13/2017 05:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.9	0.066	0.20		µg/L	1	2/10/2017 10:42 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226** PrepDate **2/10/2017**							Analyst: **CEI**
Chromium	1.9	0.019	1.0		µg/L	1	2/13/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-61226** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **PBW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61226** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **LCSW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.727	1.0	10.00	0	97.3	85	115				

Sample ID **N022999-001B-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.605	1.0	10.00	1.784	88.2	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.552	1.0	10.00	1.784	87.7	75	125	10.61	0.503	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113441** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **PBW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113441** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **LCSW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	90	110				

Sample ID **N022985-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.360	1.0	25.00	17.77	98.4	90	110				

Sample ID **N022985-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.549	1.0	25.00	17.77	99.1	90	110	42.36	0.445	20	

Sample ID **N022985-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.531	1.0	25.00	44.86	98.7	90	110				

Sample ID **N022985-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.515	1.0	25.00	43.77	103	90	110				

Sample ID **N022966-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	104	90	110				

Sample ID **N022999-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.909	0.20	1.000	1.883	103	90	110				

Sample ID **N022999-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1094.710	20	500.0	598.7	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.960	1.0						43.77	0.427	20	

Sample ID **N022999-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.888	0.20	1.000	1.889	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R113339** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **LCSW** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.740	5.0	100.0	0	103	85	115				

Sample ID **MB-R113399** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **PBW** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N022999-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	230.594	5.0						228.3	0.995	30	

Sample ID **N022999-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	260.274	5.0	100.0	159.8	100	75	125				

Sample ID **N022999-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	257.991	5.0	100.0	159.8	98.2	75	125	260.3	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Chloride	1200	0.72	100		mg/L	200	2/13/2017 10:08 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Sulfate	400	0.64	25		mg/L	50	2/13/2017 10:23 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Chloride	2300	1.8	250		mg/L	500	2/13/2017 10:38 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Sulfate	520	1.3	50		mg/L	100	2/13/2017 10:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Chloride	1200	0.72	100		mg/L	200	2/13/2017 11:09 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Sulfate	400	0.64	25		mg/L	50	2/13/2017 11:24 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R113515_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.169	0.50									

Sample ID **LCS-R113515_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.058	0.50	2.000	0	103	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1607.660	100	400.0	1173	109	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1593.400	100	400.0	1173	105	80	120	1608	0.891	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	721.740	100						724.1	0.324	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R113515_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R113515_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.002	0.50	4.000	0	100	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	616.385	25	200.0	402.3	107	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	608.870	25	200.0	402.3	103	80	120	616.4	1.23	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	244.785	25						245.4	0.263	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702 307 2659 F: 702.307 2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562 219 7435 F: 562.219 7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email:	Address:	Sample Receipt Condition (Y / N): 1 Chilled ✓; 2 Headspace; 3. Container Intact; 4 Seal Present; 5 IR number 2
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville CA 95661	Email to: / P.O #	Global ID / Specify State
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200 / Fax:	6 Method of Cooling: ICE
Title: Geologist 1	Phone: 916-786-3302 / Fax:		Sample Temp: 2.1°C
Signature: / Date: 2/7/17	Sampled By: Jordan Towne		Courier / Tracking No
I hereby authorize ASSET Labs to perform the tests checked below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - PMP	Signature: / Date: 2/7/17		
Project Number: RC000753.801A			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (EPA 218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH (250 mL poly)	Total dissolved Chromium (EPA 200.8) FF, HNO3 (500 mL poly)	Dissolved metals (EPA 200.8) Mn; FF, HNO3 (500 mL poly)	Dissolved metals (EPA 200.7) FF, HNO3 Ca, Mg, Na, Fe (1 L poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0): Chloride, Sulfate (1 L poly)	Specific Conductance (E120.1) (1 L poly)	pH (SM4500-HB) (1 L poly)	TDS (SM2540C) (1 L poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 L poly)	TSS (SM2540) (1 L poly)	Nitrate/Nitrite as Nitrogen(SM4500-NO3F), H2SO4 (1 L poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022999 - 01	PE-01-0217	2/7/2017	1010		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
2	- 02	TW-03D-0217	2/7/2017	1020		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
3	- 03	MW-929-Q117	2/7/2017	1030		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Jordan Towne	2/7/17 1605		2/7/17 1605
	2/7/17 2350		2/7/17 2350

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years, upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35 % 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable samples
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2017	Workorder:	N022999
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/9/2017

Reviewed By: 2/20/17

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-001A	PE-01-0217	2/7/2017 10:10:00 AM	2/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-001B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-001C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N022999-001D			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-002A	TW-03D-0217	2/7/2017 10:20:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-002B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-002C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-002C	TW-03D-0217	2/7/2017 10:20:00 AM	2/21/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N022999-002D			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-003A	MW-929-Q117	2/7/2017 10:30:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-003B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-003C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-003D	MW-929-Q117	2/7/2017 10:30:00 AM	2/21/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-004A	FOLDER	2/21/2017	2/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801A

ASSET Laboratories Work Order: N022999

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N022999

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-46
Sample Receiving Items	47-52
List of Analysts	53
Raw Data	
EPA 120.1	54-57
SM 4500H+B	58-61
SM 2540C	62-71
EPA 200.7_Dissolved	72-114
EPA 200.8_Dissolved	115-164
EPA 218.6	165-315
SM 2320B	316-325
EPA 300.0	326-357
SM 4500-NO3F	358-371

February 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N022999

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N022999

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N022999-002B-MS2 and N022999-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N022999
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N022999-001A	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001B	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001C	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-001D	PE-01-0217	Groundwater	2/7/2017 10:10:00 AM	2/7/2017	2/21/2017
N022999-002A	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002B	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002C	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-002D	TW-03D-0217	Groundwater	2/7/2017 10:20:00 AM	2/7/2017	2/21/2017
N022999-003A	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003B	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003C	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017
N022999-003D	MW-929-Q117	Groundwater	2/7/2017 10:30:00 AM	2/7/2017	2/21/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	4600	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170208B**	QC Batch: **R113370**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	2/8/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *21-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N022995-001ADUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113370**
Client ID: **ZZZZZZ** Batch ID: **R113370** TestNo: **EPA 120.1** Analysis Date: **2/8/2017** SeqNo: **2559383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	64.400	0.10						63.70	1.09	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170208A**	QC Batch: **R113369**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/8/2017 10:30 AM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/8/2017 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N022999-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113369**
Client ID: **ZZZZZZ** Batch ID: **R113369** TestNo: **SM4500-H+B** Analysis Date: **2/8/2017** SeqNo: **2559376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.610	0.10						7.580	0.395	10	H
Temp. at time of pH Analysis	18.700	0.10						18.30	2.16	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2700	33	33		mg/L	1	2/8/2017 12:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4700	50	50		mg/L	1	2/8/2017 12:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170208G**	QC Batch: **61208**				PrepDate	**2/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	2/8/2017 12:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-61208** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **LCSW** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	962.000	10	1000	0	96.2	80	120				

Sample ID **MB-61208** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **PBW** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N022999-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/8/2017** RunNo: **113408**
Client ID: **ZZZZZZ** Batch ID: **61208** TestNo: **SM2540C** Analysis Date: **2/8/2017** SeqNo: **2561565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4590.000	50						4660	1.51	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**				PrepDate	**2/10/2017**	Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	2/14/2017 05:22 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:22 PM
Magnesium	24000	4.4	100		µg/L	1	2/14/2017 05:22 PM
Sodium	850000	2900	120000		µg/L	250	2/15/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**			PrepDate	**2/10/2017**		Analyst: **CEI**
Calcium	210000	28	500		µg/L	1	2/14/2017 05:50 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:50 PM
Magnesium	31000	4.4	100		µg/L	1	2/14/2017 05:50 PM
Sodium	1700000	1200	50000		µg/L	100	2/15/2017 09:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170214B**	QC Batch: **61225**			PrepDate	**2/10/2017**		Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	2/14/2017 05:55 PM
Iron	ND	1.8	20		µg/L	1	2/14/2017 05:55 PM
Magnesium	25000	4.4	100		µg/L	1	2/14/2017 05:55 PM
Sodium	830000	580	25000		µg/L	50	2/15/2017 10:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-61225** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **PBW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-61225** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **LCSW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9047.641	500	10000	0	90.5	85	115				
Iron	100.334	20	100.0	0	100	85	115				
Magnesium	8993.799	100	10000	0	89.9	85	115				

Sample ID **N022999-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	128600.313	500	10000	117400	112	75	125				
Iron	96.848	20	100.0	0	96.8	75	125				
Magnesium	33340.719	100	10000	24090	92.5	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	127988.107	500	10000	117400	106	75	125	128600	0.477	20	
Iron	96.250	20	100.0	0	96.2	75	125	96.85	0.619	20	
Magnesium	33454.132	100	10000	24090	93.6	75	125	33340	0.340	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-61225** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **PBW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-61225** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **LCSW** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20999.785	500	20000	0	105	85	115				

Sample ID **N022999-002B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1500316.382	50000	20000	1653000	-763	75	125				S

Sample ID **N022999-002B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113542**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1504092.518	50000	20000	1653000	-744	75	125	1500000	0.251	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	94	0.056	0.50		µg/L	1	2/14/2017 06:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	11	0.056	0.50		µg/L	1	2/14/2017 07:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170214A** QC Batch: **61226** PrepDate **2/10/2017** Analyst: **CEI**							
Manganese	92	0.056	0.50		µg/L	1	2/14/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-61226** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **PBW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-61226** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **LCSW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.137	0.50	100.0	0	106	85	115				

Sample ID **N022999-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	178.376	0.50	100.0	94.15	84.2	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	178.503	0.50	100.0	94.15	84.4	75	125	178.4	0.0715	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.9	0.066	0.20		µg/L	1	2/10/2017 08:39 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226**				PrepDate	**2/10/2017**		Analyst: **CEI**
Chromium	1.8	0.019	1.0		µg/L	1	2/13/2017 04:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	600	6.6	20		µg/L	100	2/10/2017 08:58 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226**				PrepDate	**2/10/2017**		Analyst: **CEI**
Chromium	630	0.096	5.0		µg/L	5	2/13/2017 05:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170209A** QC Batch: **R113441** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.9	0.066	0.20		µg/L	1	2/10/2017 10:42 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_170213E** QC Batch: **61226** PrepDate **2/10/2017**							Analyst: **CEI**
Chromium	1.9	0.019	1.0		µg/L	1	2/13/2017 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-61226** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **PBW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61226** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **LCSW** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.727	1.0	10.00	0	97.3	85	115				

Sample ID **N022999-001B-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.605	1.0	10.00	1.784	88.2	75	125				

Sample ID **N022999-001B-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **2/10/2017** RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.552	1.0	10.00	1.784	87.7	75	125	10.61	0.503	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113441** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **PBW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113441** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **LCSW** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	90	110				

Sample ID **N022985-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.360	1.0	25.00	17.77	98.4	90	110				

Sample ID **N022985-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.549	1.0	25.00	17.77	99.1	90	110	42.36	0.445	20	

Sample ID **N022985-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022985-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.531	1.0	25.00	44.86	98.7	90	110				

Sample ID **N022985-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.515	1.0	25.00	43.77	103	90	110				

Sample ID **N022966-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	104	90	110				

Sample ID **N022999-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.909	0.20	1.000	1.883	103	90	110				

Sample ID **N022999-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1094.710	20	500.0	598.7	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N022985-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	ZZZZZZ	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.960	1.0						43.77	0.427	20	

Sample ID	N022999-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	ZZZZZZ	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563057

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.888	0.20	1.000	1.889	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170208E**	QC Batch: **R113399**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	2/8/2017 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R113339** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **LCSW** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.740	5.0	100.0	0	103	85	115				

Sample ID **MB-R113399** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **PBW** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N022999-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	230.594	5.0						228.3	0.995	30	

Sample ID **N022999-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	260.274	5.0	100.0	159.8	100	75	125				

Sample ID **N022999-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113399**
Client ID: **ZZZZZZ** Batch ID: **R113399** TestNo: **SM 2320 B** Analysis Date: **2/8/2017** SeqNo: **2561311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	257.991	5.0	100.0	159.8	98.2	75	125	260.3	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170213A** QC Batch: **R113515**				PrepDate			Analyst: **RAB**
Chloride	1200	0.72	100		mg/L	200	2/13/2017 10:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170213A** QC Batch: **R113515**				PrepDate			Analyst: **RAB**
Sulfate	400	0.64	25		mg/L	50	2/13/2017 10:23 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170213A** QC Batch: **R113515**				PrepDate			Analyst: **RAB**
Chloride	2300	1.8	250		mg/L	500	2/13/2017 10:38 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170213A** QC Batch: **R113515**				PrepDate			Analyst: **RAB**
Sulfate	520	1.3	50		mg/L	100	2/13/2017 10:54 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Chloride	1200	0.72	100		mg/L	200	2/13/2017 11:09 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate Analyst: **RAB**							
Sulfate	400	0.64	25		mg/L	50	2/13/2017 11:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R113515_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.169	0.50									

Sample ID **LCS-R113515_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.058	0.50	2.000	0	103	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1607.660	100	400.0	1173	109	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1593.400	100	400.0	1173	105	80	120	1608	0.891	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	721.740	100						724.1	0.324	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R113515_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R113515_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.002	0.50	4.000	0	100	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	616.385	25	200.0	402.3	107	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	608.870	25	200.0	402.3	103	80	120	616.4	1.23	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	244.785	25						245.4	0.263	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0217
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	3.1	0.11	0.25		mg/L	5	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-929-Q117
Lab Order:	N022999	**Collection Date:**	2/7/2017 10:30:00 AM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N022999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702 307 2659 F: 702.307 2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562 219 7435 F: 562.219 7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email:	Address:	Sample Receipt Condition (Y / N): 1 Chilled ✓; 2 Headspace; 3. Container Intact; 4 Seal Present; 5 IR number 2
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville CA 95661	Email to: / P.O #	Global ID / Specify State
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200 / Fax:	6 Method of Cooling: ICE
Title: Geologist 1	Phone: 916-786-3302 / Fax:		Sample Temp: 2.1°C
Signature: Date: 2/7/17	Sampled By: Jordan Towne		Courier / Tracking No
I hereby authorize ASSET Labs to perform the tests checked below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - PMP	Signature: / Date: 2/7/17		
Project Number: RC000753.801A			

Matrix: Ground (x); Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH (250 mL poly)	Total dissolved Chromium (EPA 200.8) FF, HNO3 (500 mL poly)	Dissolved metals (EPA 200.8) Mn; FF, HNO3 (500 mL poly)	Dissolved metals (EPA 200.7) FF, HNO3 Ca, Mg, Na, Fe (1 L poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0): Chloride, Sulfate (1 L poly)	Specific Conductance (E120.1) (1 L poly)	pH (SM4500-HB) (1 L poly)	TDS (SM2540C) (1 L poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 L poly)	TSS (SM2540) (1 L poly)	Nitrate/Nitrite as Nitrogen(SM4500-NO3F), H2SO4 (1 L poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N022999 - 01	PE-01-0217	2/7/2017	1010		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
2	- 02	TW-03D-0217	2/7/2017	1020		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
3	- 03	MW-929-Q117	2/7/2017	1030		X		X	X	X		X	X	X	X	X		X	E	4	P	BNS	
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Jordan Towne	2/7/17 1105		2/7/17 1605
	2/7/17 2350		2/7/17 2350

Turn Around Time (TAT):
- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years, upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200%; Next Day = 100%; 2 Workdays = 50%; 3 Workdays = 35 %; 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2017	Workorder:	N022999
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/9/2017

Reviewed By: 2/20/17

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-001A	PE-01-0217	2/7/2017 10:10:00 AM	2/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-001B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-001C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N022999-001D			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-002A	TW-03D-0217	2/7/2017 10:20:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-002B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-002C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-002C	TW-03D-0217	2/7/2017 10:20:00 AM	2/21/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N022999-002D			2/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-003A	MW-929-Q117	2/7/2017 10:30:00 AM	2/21/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N022999-003B			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N022999-003C			2/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			2/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			2/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/21/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Feb-17

WorkOrder: N022999

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N022999-003D	MW-929-Q117	2/7/2017 10:30:00 AM	2/21/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N022999-004A	FOLDER	2/21/2017	2/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N022999**

NAME	TEST METHOD
Claire Ignacio	EPA 200.8, EPA 200.7
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113370 **Analyst:** LSR

ASSET #: N022999 **Date Analyzed:** 2/10/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/14/2017

2nd Level Reviewer Nancy 2/20/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/8/17 1010

Analyst: KR

Standard	Std ID	Reading	Comments
10.43 mS/cm	CMW-161025C	10.20 mS/cm @21.9°C	% Rec: (90-110%)
1413	161214B	1419 @21.8°C	
10643	161220I	10040 @21.8°C	
99938	161220J	100200 @21.7°C	

	Sample ID	Matrix	Reading	Comments
1	N022995-001A	H_2O	63.7 @20.2°C	
2	1A DUP		64.4 @19.7°C	
3	N022999-001C		4620 @19.1°C	
4	2C		7840 @18.9°C	
5	3C		14520 @19.3°C	
6				
7				
8				
9	1413 mS/cm	CMW-160929A	1474 mS/cm @20.9°C	
10	10053	160909C	10120 @21.2°C	
Dup	99899	161104A	98000 @21.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 2/13/2017

Date:

Analyst:

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113369 **Instrument ID:** pH meter

ASSET #: N022999 **Analyst:** LSR

Date Analyzed: 2/8/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Lilia Ramit Date: 2/8/2017

2nd Level Reviewer 2/20/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/7/17 1605
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.01 @ 22.4°C	SLOPE: 98.7%
Buffer 7	161025A	7.00 @ 22.5°C	
Buffer 10	161214A	10.01 @ 22.5°C	

	Sample ID	Matrix	pH	Comments
1	N022990-001A	H_2O	7.65 @ 20.2°C	
2	N022993-001A		7.17 @ 21.2°C	
3	1A DUP		7.18 @ 21.2°C	
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINV-161010A	6.98 @ 23.0°C	Accept: +/-0.1 pH units from expected value

Date: 2/8/17 1030
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.00 @ 22.1°C	SLOPE: 97.8%
Buffer 7	161025A	7.00 @ 22.1°C	
Buffer 10	161214A	10.03 @ 22.2°C	

	Sample ID	Matrix	pH	Comments
1	N022999-001C	H_2O	7.58 @ 18.3°C	
2	2C		7.29 @ 18.6°C	
3	3C		7.59 @ 18.9°C	
4	1C DUP		7.61 @ 18.7°C	
5				
6				
7				
8				
9			Julia Ramit	2/8/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINV-161010A	6.99 @ 21.3°C	Accept: +/-0.1 pH units from expected value

Logbook #10

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61208 **Analyst:** LSR

ASSET #: N022999 **Date Analyzed:** 2/8/2017

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/9/2017

2nd Level Reviewer 2/20/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N022999-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.4289 - 60.3483)*1000000}{30}$$
$$= 2686.6667 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2700 mg/L

Julia Ramit 2/9/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2017 12:45:13 P**
Prep End Date: **2/9/2017 10:50:00 A**

Reviewed/ Date: 2/20/2017

Initials/ Date: Lilia Ramit 2/9/2017

Prep Batch **61208** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61208	Water		100	☐	0	0	100	1.000		
MB-61208	Water		100	☐	0	0	100	1.000		
N022999-001C	Groundwater		30	☐	0	0	100	3.333		
N022999-002C	Groundwater		20	☐	0	0	100	5.000		
N022999-002C-DU	Groundwater		20	☐	2	0	100	5.000		
N022999-003C	Groundwater		30	☐	0	0	100	3.333		
N023000-001A	Water		20	☐	0	0	100	5.000		
N023003-009F	Water		60	☐	0	0	100	1.667		
N023003-010F	Water		30	☐	0	0	100	3.333		
N023003-013E	Water		75	☐	0	0	100	1.333		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8833	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2017 12:45:13 P**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 2/9/2017

Prep Factor Units
mL / mL

Prep Batch **61208** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Sample ID	Matrix	~~pH~~ Cond	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61208	Water	WST170118B	100	☐	0	0	100	1.000		
MB-61208	Water		100	☐	0	0	100	1.000		
N022999-001C	Groundwater	4620	100 /30	☐	0	0	100	1.000		
N022999-002C	Groundwater	7840	100 /20	☐	0	0	100	1.000		
N022999-002C-DU	Groundwater	↓	100 /20	☐	0	0	100	1.000		
N022999-003C	Groundwater	4520	100 /30	☐	0	0	100	1.000		
N023000-001A	Water	7180	100 /20	☐	0	0	100	1.000		
N023003-009F	Water	2060	100 /60	☐	0	0	100	1.000		
N023003-010F	Water	4050	100 /30	☐	0	0	100	1.000		
N023003-013E	Water	1852	100 /75	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8833

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/8/17 1245 L7	MB 61208	100	77.0517 77.0515	77.0513 77.0514	
L3	LCS 61208	180	75.6612 75.6609	75.7568 75.7571	
SA	N022999-001C	30	60.3484 60.3483	60.4288 60.4289	
7	2C	20	60.4691 60.4689	60.5622 60.5621	
CC	2C DUP	20	61.3188 61.3185	61.4101 61.4103	
MM	3C	30	60.6912 60.6912	60.7708 60.7706	
DD	N023000-001A	20	60.7661 60.7663	60.8524 60.8524	
8	N023003-009F	60	54.5636 54.5633	54.6391 54.6395	
MH	10F	30	61.7302 61.7300	61.8405 61.8403	
A	13E	75	55.5449 55.5446	55.6419 55.6420	

Julia Ramit 2/9/2017

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
2/9/2017									
MB-61208	100	77.0515	77.0514	-1	1	-1			MBLK
LCS-61208	100	75.6609	75.7571	962	1	962			LCS
N022999-001C	30	60.3483	60.4289	806	3.33333333	2686.66667	4620	0.582	SAMP
N022999-002C	20	60.4689	60.5621	932	5	4660	7840	0.594	SAMP
N022999-002CDUP	20	61.3185	61.4103	918	5	4590	7840	0.585	DUP
N022999-003C	30	60.6912	60.7706	794	3.33333333	2646.66667	4520	0.586	SAMP
N023000-001A	20	60.7663	60.8524	861	5	4305	7180	0.600	SAMP
N023003-009F	60	54.5633	54.6395	762	1.66666667	1270	2060	0.617	SAMP
N023003-010F	30	61.73	61.8403	1103	3.33333333	3676.66667	4050	0.908	SAMP
N023003-013E	75	55.5446	55.642	974	1.33333333	1298.66667	1852	0.701	SAMP

Silia Ramit 2/9/2017

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61225 **Instrument ID:** ICP-02
ASSET #: N022999 **Analyst:** CEI
Method: **Date Analyzed:** 2/14/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution test failed for Mg. However PS, passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date:

2nd Level Reviewer 2/21/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61225 **Instrument ID:** ICP-02
ASSET #: N022999 **Analyst:** CEI
Method: **Date Analyzed:** 2/15/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N022999-002B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date: —
2nd Level Reviewer 2/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N022999-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 117.354 * 1 * (25/25) * 1000

Calcium , ug/L = 117354

Reporting results in two significant figures,

Calcium , ug/L = 120000

% RSD SUMMARY

RSD SUMMARY: 170214A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	11.072	15	PASS
Standard1	ICAL	1	Ca	0.2	13.78	15	PASS
Standard2	ICAL	1	Ca	1	2.1	15	PASS
Standard3	ICAL	1	Ca	2	2.21	15	PASS
Standard4	ICAL	1	Ca	5	0.3	15	PASS
Standard5	ICAL	1	Ca	7.5	0.22	15	PASS
Standard6	ICAL	1	Ca	10	1.47	15	PASS
Standard7	ICAL	1	Ca	20	0.34	15	PASS
ICV	ICV	1	Ca	9.9	0.41	15	PASS
ICB	ICB	1	Ca	-0.0048	737.58	15	<PQL
ICB	ICB	1	Ca	0.013	163.83	15	<PQL
LLICV	CCV1	1	Ca	0.21	0.43	20	PASS
LLICV	CCV1	1	Ca	0.18	28.027	20	<PQL
ICSA1	ICSA	1	Ca	459.33	0.22	15	PASS
ICSAB1	ICSAB	1	Ca	543.7	0.46	15	PASS
CCV1	CCV	1	Ca	9.78	0.62	15	PASS
CCB1	CCB	1	Ca	0.0032	1828.6	15	<PQL
MB-61225	MBLK	1	Ca	-0.0034	529.56	15	<PQL
LCS1-61225	LCS	1	Ca	9.048	0.88	15	PASS
N022999-001B	SAMP	1	Ca	117.35	0.57	15	PASS
N022999-001B	SAMP	5	Ca	24.64	0.81	15	PASS
N022999-001B-PS	PS	1	Ca	126.73	0.73	15	PASS
N022999-001B-MS1	MS	1	Ca	128.6	0.29	15	PASS
N022999-001B-MSD1	MSD	1	Ca	127.99	0.35	15	PASS
N022999-002B	SAMP	1	Ca	205.38	0.71	15	PASS
N022999-003B	SAMP	1	Ca	117.85	0.37	15	PASS
N023007-001B	SAMP	1	Ca	112.52	0.41	15	PASS
CCV2	CCV	1	Ca	9.82	0.61	15	PASS
CCB2	CCB	1	Ca	-0.0082	366.69	15	<PQL
N023007-002B	SAMP	1	Ca	123.77	0.96	15	PASS
N023007-003B	SAMP	1	Ca	37.46	0.57	15	PASS
LLCCV1	CCV2	1	Ca	0.16	14.88	20	PASS
CCV3	CCV	1	Ca	9.87	0.28	15	PASS
CCB3	CCB	1	Ca	-0.024	70.81	15	<PQL
ICSA2	ICSA	1	Ca	455.9	0.14	15	PASS
ICSAB2	ICSAB	1	Ca	533.28	0.26	15	PASS
CalBlk	IBLK	1	Fe	0	12.9	15	PASS
Standard1	ICAL	1	Fe	0.02	3.26	15	PASS
Standard2	ICAL	1	Fe	0.05	0.92	15	PASS
Standard3	ICAL	1	Fe	2	0.24	15	PASS
Standard4	ICAL	1	Fe	5	0.2	15	PASS
Standard5	ICAL	1	Fe	7.5	1.49	15	PASS

RSD SUMMARY: 170214A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard6	ICAL	1	Fe	10	1.12	15	PASS
Standard7	ICAL	1	Fe	20	0.71	15	PASS
ICV	ICV	1	Fe	9.84	0.86	15	PASS
ICB	ICB	1	Fe	0.0099	46.4	15	<PQL
ICB	ICB	1	Fe	0.0037	22.29	15	<PQL
LLICV	CCV1	1	Fe	0.024	1.59	20	PASS
LLICV	CCV1	1	Fe	0.02	10.89	20	PASS
ICSA1	ICSA	1	Fe	183.24	0.58	15	PASS
ICSAB1	ICSAB	1	Fe	180.17	0.11	15	PASS
CCV1	CCV	1	Fe	9.87	0.84	15	PASS
CCB1	CCB	1	Fe	0.001	19.24	15	<PQL
MB-61225	MBLK	1	Fe	0.00028	96.46	15	<PQL
LCS1-61225	LCS	1	Fe	0.1	0.33	15	PASS
N022999-001B	SAMP	1	Fe	-0.00025	163.11	15	<PQL
N022999-001B	SAMP	5	Fe	-0.00008	703.79	15	<PQL
N022999-001B-PS	PS	1	Fe	0.097	1.32	15	PASS
N022999-001B-MS1	MS	1	Fe	0.097	0.93	15	PASS
N022999-001B-MSD1	MSD	1	Fe	0.096	0.88	15	PASS
N022999-002B	SAMP	1	Fe	0.0075	11.1	15	PASS
N022999-003B	SAMP	1	Fe	-0.00026	141.35	15	<PQL
N023007-001B	SAMP	1	Fe	0.27	0.72	15	PASS
CCV2	CCV	1	Fe	10.12	0.73	15	PASS
CCB2	CCB	1	Fe	0.0014	41.22	15	<PQL
N023007-002B	SAMP	1	Fe	0.11	0.78	15	PASS
N023007-003B	SAMP	1	Fe	1.058	0.55	15	PASS
LLCCV1	CCV2	1	Fe	0.019	7.41	20	PASS
CCV3	CCV	1	Fe	10.053	0.44	15	PASS
CCB3	CCB	1	Fe	-0.00049	203.2	15	<PQL
ICSA2	ICSA	1	Fe	186.47	0.28	15	PASS
ICSAB2	ICSAB	1	Fe	183.09	0.049	15	PASS
CalBlk	IBLK	1	Mg	0	5.41	15	PASS
Standard1	ICAL	1	Mg	0.1	1.036	15	PASS
Standard2	ICAL	1	Mg	1	1.074	15	PASS
Standard3	ICAL	1	Mg	2	0.11	15	PASS
Standard4	ICAL	1	Mg	5	0.13	15	PASS
Standard5	ICAL	1	Mg	7.5	1.6	15	PASS
Standard6	ICAL	1	Mg	10	1.19	15	PASS
Standard7	ICAL	1	Mg	20	0.64	15	PASS
ICV	ICV	1	Mg	9.77	0.97	15	PASS
ICB	ICB	1	Mg	-0.00002	647.88	15	<PQL
ICB	ICB	1	Mg	-0.0001	723.31	15	<PQL
LLICV	CCV1	1	Mg	0.1	0.91	20	PASS

RSD SUMMARY: 170214A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLICV	CCV1	1	Mg	0.088	1.22	20	PASS
ICSA1	ICSA	1	Mg	447.04	0.61	15	PASS
ICSAB1	ICSAB	1	Mg	493.67	0.13	15	PASS
CCV1	CCV	1	Mg	9.68	0.82	15	PASS
CCB1	CCB	1	Mg	0.00072	56.95	15	<PQL
MB-61225	MBLK	1	Mg	0.0016	30.94	15	<PQL
LCS1-61225	LCS	1	Mg	8.99	0.078	15	PASS
N022999-001B	SAMP	1	Mg	24.095	0.46	15	PASS
N022999-001B	SAMP	5	Mg	5.34	0.58	15	PASS
N022999-001B-PS	PS	1	Mg	33.046	0.43	15	PASS
N022999-001B-MS1	MS	1	Mg	33.34	0.29	15	PASS
N022999-001B-MSD1	MSD	1	Mg	33.45	0.35	15	PASS
N022999-002B	SAMP	1	Mg	30.71	0.39	15	PASS
N022999-003B	SAMP	1	Mg	24.85	0.39	15	PASS
N023007-001B	SAMP	1	Mg	27.6	0.096	15	PASS
CCV2	CCV	1	Mg	9.93	0.68	15	PASS
CCB2	CCB	1	Mg	0.00063	98.84	15	<PQL
N023007-002B	SAMP	1	Mg	29.61	0.057	15	PASS
N023007-003B	SAMP	1	Mg	13.15	0.52	15	PASS
LLCCV1	CCV2	1	Mg	0.084	1.61	20	PASS
CCV3	CCV	1	Mg	9.81	0.49	15	PASS
CCB3	CCB	1	Mg	0.00068	58.21	15	<PQL
ICSA2	ICSA	1	Mg	450.13	0.32	15	PASS
ICSAB2	ICSAB	1	Mg	496.42	0.044	15	PASS

RSD SUMMARY: 170215A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	3.78	15	PASS
Standard1	ICAL	1	Na	0.1	5.32	15	PASS
Standard2	ICAL	1	Na	1	1.32	15	PASS
Standard3	ICAL	1	Na	5	0.28	15	PASS
Standard4	ICAL	1	Na	10	0.24	15	PASS
Standard5	ICAL	1	Na	20	0.1	15	PASS
Standard6	ICAL	1	Na	40	0.24	15	PASS
ICV	ICV	1	Na	9.76	0.27	15	PASS
ICB	ICB	1	Na	-0.062	27.94	15	<PQL
ICSA1	ICSA	1	Na	-0.089	6.35	15	PASS
ICSAB1	ICSAB	1	Na	9.88	0.036	15	PASS
MB-61225	MBLK	1	Na	-0.1	2.11	15	PASS
LCS2-61225	LCS	1	Na	21	0.32	15	PASS
N022999-001B	SAMP	1	Na	827.89	0.96	15	PASS
N022999-001B	SAMP	5	Na	169.94	1.75	15	PASS
N022999-002B	SAMP	1	Na	1480.4	0.33	15	PASS
N022999-003B	SAMP	1	Na	836.12	0.58	15	PASS
N023007-001B	SAMP	1	Na	47.032	0.26	15	PASS
N023007-002B	SAMP	1	Na	44.98	0.17	15	PASS
N023007-003B	SAMP	1	Na	43.91	0.12	15	PASS
N023007-001B	SAMP	5	Na	10.3	1.097	15	PASS
CCV1	CCV	1	Na	10.12	0.19	15	PASS
CCB1	CCB	1	Na	-0.025	80.9	15	<PQL
N023007-002B	SAMP	5	Na	12.098	1.037	15	PASS
N023007-003B	SAMP	5	Na	11.56	5.45	15	PASS
N022999-001B	SAMP	250 50	Na	3.39	0.4	15	PASS
N022999-002B	SAMP	5	Na	311.76	1.23	15	PASS
N022999-002B-PS	PS	1	Na	1501.3	0.8	15	PASS
N022999-002B-MS2	MS	1	Na	1532.4	0.69	15	PASS
N022999-002B-MSD2	MSD	1	Na	1527.8	0.85	15	PASS
N022999-002B	SAMP	100	Na	16.53	0.46	15	PASS
N022999-002B	SAMP	500	Na	3.37	0.29	15	PASS
N022999-002B-PS	PS	100	Na	15.75	0.2	15	PASS
CCV2	CCV	1	Na	10.48	0.57	15	PASS
CCB2	CCB	1	Na	0.15	16.72	15	<PQL
N022999-002B-MS2	MS	100	Na	15.003	0.44	15	PASS
N022999-002B-MSD2	MSD	100	Na	15.041	0.14	15	PASS
N022999-003B	SAMP	50	Na	16.65	0.22	15	PASS
CCV3	CCV	1	Na	254.67	119.88	15	NR!
CCV3	CCV	1	Na	9.98	0.8	15	PASS
CCB3	CCB	1	Na	0.078	21.97	15	<PQL
ICSA2	ICSA	1	Na	0.076	10.26	15	PASS

RSD SUMMARY: 170215A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB2	ICSAB	1	Na	10.13	0.3	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170214A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/14/2017	02:34:58 PM
2	Standard1	ICAL	1	02/14/2017	02:39:34 PM
3	Standard2	ICAL	1	02/14/2017	02:44:06 PM
4	Standard3	ICAL	1	02/14/2017	02:48:39 PM
5	Standard4	ICAL	1	02/14/2017	02:53:14 PM
6	Standard5	ICAL	1	02/14/2017	02:58:53 PM
7	Standard6	ICAL	1	02/14/2017	03:04:28 PM
8	Standard7	ICAL	1	02/14/2017	03:10:04 PM
9	ICV	ICV	1	02/14/2017	03:14:38 PM
1	ICB	ICB	1	02/14/2017	03:20:16 PM
1	ICB	ICB	1	02/14/2017	03:25:24 PM
2	LLICV	CCV1	1	02/14/2017	03:32:31 PM
2	LLICV	CCV1	1	02/14/2017	03:41:38 PM
4	ICSA1	ICSA	1	02/14/2017	03:49:16 PM
5	ICSAB1	ICSAB	1	02/14/2017	03:55:03 PM
98	MB-61243	MBLK	1	02/14/2017	04:12:37 PM
99	LCS-61243	LCS	1	02/14/2017	04:17:12 PM
100	N022922-005B	SAMP	1	02/14/2017	04:22:48 PM
101	N022922-005B	SAMP	5	02/14/2017	04:28:24 PM
102	N022922-005B-PS	PS	1	02/14/2017	04:33:59 PM
103	N022922-005B-MS	MS	1	02/14/2017	04:39:35 PM
104	N022922-005B-MSD	MSD	1	02/14/2017	04:45:10 PM
100	N022922-005B	SAMP	1	02/14/2017	04:50:12 PM
101	N022922-005B	SAMP	5	02/14/2017	04:55:47 PM
7	CCV1	CCV	1	02/14/2017	05:01:21 PM
1	CCB1	CCB	1	02/14/2017	05:07:25 PM
105	MB-61225	MBLK	1	02/14/2017	05:11:55 PM
106	LCS1-61225	LCS	1	02/14/2017	05:16:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
107	N022999-001B	SAMP	1	02/14/2017	05:22:05 PM
108	N022999-001B	SAMP	5	02/14/2017	05:27:41 PM
109	N022999-001B-PS	PS	1	02/14/2017	05:33:16 PM
110	N022999-001B-MS1	MS	1	02/14/2017	05:38:53 PM
111	N022999-001B-MSD1	MSD	1	02/14/2017	05:44:29 PM
112	N022999-002B	SAMP	1	02/14/2017	05:50:05 PM
113	N022999-003B	SAMP	1	02/14/2017	05:55:40 PM
114	N023007-001B	SAMP	1	02/14/2017	06:01:29 PM
7	CCV2	CCV	1	02/14/2017	06:07:04 PM
1	CCB2	CCB	1	02/14/2017	06:12:42 PM
115	N023007-002B	SAMP	1	02/14/2017	06:17:12 PM
116	N023007-003B	SAMP	1	02/14/2017	06:22:49 PM
2	LLCCV1	CCV2	1	02/14/2017	06:28:25 PM
7	CCV3	CCV	1	02/14/2017	06:32:57 PM
1	CCB3	CCB	1	02/14/2017	06:38:33 PM
4	ICSA2	ICSA	1	02/14/2017	06:43:04 PM
5	ICSAB2	ICSAB	1	02/14/2017	06:48:53 PM

INJECTION LOG: 170215A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161209A,0.025<50mL
Standard2	MWST-161209A,0.25<50mL
Standard3	MWST-161209A,1.25<50mL
Standard4	MWST-161209A,2.5<50mL
Standard5	MWST-161209A,5<50mL
Standard6	MWST-161209A,10<50mL
ICV	MWST-161209B
CCV	MWST-161209A,2.5<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161209C
Int. Std. (Sc):	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/15/2017	08:07:48 AM
26	Standard1	ICAL	1	02/15/2017	08:11:19 AM
27	Standard2	ICAL	1	02/15/2017	08:14:19 AM
28	Standard3	ICAL	1	02/15/2017	08:17:19 AM
29	Standard4	ICAL	1	02/15/2017	08:20:50 AM
30	Standard5	ICAL	1	02/15/2017	08:24:22 AM
31	Standard6	ICAL	1	02/15/2017	08:27:54 AM
32	ICV	ICV	1	02/15/2017	08:30:58 AM
1	ICB	ICB	1	02/15/2017	08:34:30 AM
33	ICSA1	ICSA	1	02/15/2017	08:37:29 AM
34	ICSAB1	ICSAB	1	02/15/2017	08:40:30 AM
105	MB-61225	MBLK	1	02/15/2017	08:44:03 AM
106	LCS2-61225	LCS	1	02/15/2017	08:47:06 AM
107	N022999-001B	SAMP	1	02/15/2017	08:50:41 AM
108	N022999-001B	SAMP	5	02/15/2017	08:55:19 AM
112	N022999-002B	SAMP	1	02/15/2017	08:59:53 AM
113	N022999-003B	SAMP	1	02/15/2017	09:05:03 AM
114	N023007-001B	SAMP	1	02/15/2017	09:09:41 AM
115	N023007-002B	SAMP	1	02/15/2017	09:13:15 AM
116	N023007-003B	SAMP	1	02/15/2017	09:16:49 AM
122	N023007-001B	SAMP	5	02/15/2017	09:19:52 AM
29	CCV1	CCV	1	02/15/2017	09:22:57 AM
1	CCB1	CCB	1	02/15/2017	09:26:29 AM
123	N023007-002B	SAMP	5	02/15/2017	09:29:28 AM
124	N023007-003B	SAMP	5	02/15/2017	09:32:32 AM
125	N022999-001B	SAMP	50	02/15/2017	09:35:36 AM
126	N022999-002B	SAMP	5	02/15/2017	09:38:39 AM
127	N022999-002B-PS	PS	1	02/15/2017	09:43:15 AM
128	N022999-002B-MS2	MS	1	02/15/2017	09:47:58 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
129	N022999-002B-MSD2	MSD	1	02/15/2017	09:52:42 AM
130	N022999-002B	SAMP	100	02/15/2017	09:57:25 AM
131	N022999-002B	SAMP	500	02/15/2017	10:00:29 AM
132	N022999-002B-PS	PS	100	02/15/2017	10:03:33 AM
29	CCV2	CCV	1	02/15/2017	10:06:36 AM
1	CCB2	CCB	1	02/15/2017	10:10:08 AM
133	N022999-002B-MS2	MS	100	02/15/2017	10:13:06 AM
134	N022999-002B-MSD2	MSD	100	02/15/2017	10:16:11 AM
135	N022999-003B	SAMP	50	02/15/2017	10:19:15 AM
29	CCV3	CCV	1	02/15/2017	10:22:19 AM
29	CCV3	CCV	1	02/15/2017	10:24:44 AM
1	CCB3	CCB	1	02/15/2017	10:28:17 AM
33	ICSA2	ICSA	1	02/15/2017	10:31:15 AM
34	ICSAB2	ICSAB	1	02/15/2017	10:34:15 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/10/2017 8:00:00**
Prep End Date: **2/10/2017 1:00:00**

Reviewed/ Date: 2/21/2017

Initials/ Date: for 2/21/2017

Prep Batch **61225** Prep Code: **200.7_PR** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-43**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61225	Aqueous		25	☐	0	0	25	1.000		
LCS1-61225	Aqueous		25	☐	0	0	25	1.000		
LCS2-61225	Aqueous		25	☐	0	0	25	1.000		
MB-61225	Aqueous		25	☐	0	0	25	1.000		
N022999-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023007-001B	Water	<2	25	☐	0	0	25	1.000		
N023007-002B	Water	<2	25	☐	0	0	25	1.000		
N023007-003B	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8742	HYDROCHLORIC ACID
8749	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170214A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	02/14/2017	02:34:58 PM	Mg	279.079	68	0.00	mg/L	
Standard1	02/14/2017	02:39:34 PM	Mg	279.079	1175	0.1000	mg/L	
Standard2	02/14/2017	02:44:06 PM	Mg	279.079	10680	1.000	mg/L	
Standard3	02/14/2017	02:48:39 PM	Mg	279.079	21822	2.000	mg/L	
Standard4	02/14/2017	02:53:14 PM	Mg	279.079	56134	5.000	mg/L	
Standard5	02/14/2017	02:58:53 PM	Mg	279.079	84211	7.500	mg/L	
Standard6	02/14/2017	03:04:28 PM	Mg	279.079	109700	10.000	mg/L	
Standard7	02/14/2017	03:10:04 PM	Mg	279.079	224810	20.000	mg/L	1.0000
Calcium								
CalBlk	02/14/2017	02:34:58 PM	Ca	227.546	-73	0.00	mg/L	
Standard1	02/14/2017	02:39:34 PM	Ca	227.546	39	0.2000	mg/L	
Standard2	02/14/2017	02:44:06 PM	Ca	227.546	173	1.000	mg/L	
Standard3	02/14/2017	02:48:39 PM	Ca	227.546	365	2.000	mg/L	
Standard4	02/14/2017	02:53:14 PM	Ca	227.546	922	5.000	mg/L	
Standard5	02/14/2017	02:58:53 PM	Ca	227.546	1388	7.500	mg/L	
Standard6	02/14/2017	03:04:28 PM	Ca	227.546	1824	10.000	mg/L	
Standard7	02/14/2017	03:10:04 PM	Ca	227.546	3720	20.000	mg/L	1.0000
Iron								
CalBlk	02/14/2017	02:34:58 PM	Fe	273.953	-81	0.00	mg/L	
Standard1	02/14/2017	02:39:34 PM	Fe	273.953	408	0.0200	mg/L	
Standard2	02/14/2017	02:44:06 PM	Fe	273.953	1322	0.050	mg/L	
Standard3	02/14/2017	02:48:39 PM	Fe	273.953	33959	2.000	mg/L	
Standard4	02/14/2017	02:53:14 PM	Fe	273.953	86268	5.000	mg/L	
Standard5	02/14/2017	02:58:53 PM	Fe	273.953	129232	7.500	mg/L	
Standard6	02/14/2017	03:04:28 PM	Fe	273.953	168673	10.000	mg/L	
Standard7	02/14/2017	03:10:04 PM	Fe	273.953	343581	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170215A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	02/15/2017	08:07:48 AM	Na	589.594	905	0.00	mg/L	
Standard1	02/15/2017	08:11:19 AM	Na	589.594	241	0.1000	mg/L	
Standard2	02/15/2017	08:14:19 AM	Na	589.594	2758	1.000	mg/L	
Standard3	02/15/2017	08:17:19 AM	Na	589.594	12446	5.000	mg/L	
Standard4	02/15/2017	08:20:50 AM	Na	589.594	25795	10.000	mg/L	
Standard5	02/15/2017	08:24:22 AM	Na	589.594	51073	20.000	mg/L	
Standard6	02/15/2017	08:27:54 AM	Na	589.594	102067	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICV** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9899.763	500	10000	0	99.0	90	110				
Iron	9843.754	20	10000	0	98.4	90	110				
Magnesium	9771.015	100	10000	0	97.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	175.858	500	200.0	0	87.9	80	120				
Iron	19.944	20	20.00	0	99.7	80	120				
Magnesium	87.826	100	100.0	0	87.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCV** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9776.323	500	10000	0	97.8	90	110				
Iron	9870.921	20	10000	0	98.7	90	110				
Magnesium	9677.766	100	10000	0	96.8	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCV** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9818.299	500	10000	0	98.2	90	110				
Iron	10115.829	20	10000	0	101	90	110				
Magnesium	9931.236	100	10000	0	99.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	156.678	500	200.0	0	78.3	70	130				
Iron	19.019	20	20.00	0	95.1	70	130				
Magnesium	83.867	100	100.0	0	83.9	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCV** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9874.782	500	10000	0	98.7	90	110				
Iron	10052.911	20	10000	0	101	90	110				
Magnesium	9807.478	100	10000	0	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ICV** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9763.700	500	10000	0	97.6	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **CCV** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10114.572	500	10000	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **CCV** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10476.900	500	10000	0	105	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **CCV** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9981.777	500	10000	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	12.611	500									
Iron	3.691	20									
Magnesium	-0.101319	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	3.168	500									
Iron	1.025	20									
Magnesium	0.724	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-8.185669	500									
Iron	1.392	20									
Magnesium	0.633	100									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **CCB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-23.521117	500									
Iron	-0.487849	20									
Magnesium	0.684	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	ICB	SampType:	ICB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	113542
Client ID:	ICB	Batch ID:	R113542	TestNo:	EPA 200.7			Analysis Date:	2/15/2017	SeqNo:	2567488

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-61.610486	500									

Sample ID	CCB1	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	113542
Client ID:	CCB	Batch ID:	R113542	TestNo:	EPA 200.7			Analysis Date:	2/15/2017	SeqNo:	2567502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-25.459685	500									

Sample ID	CCB2	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	113542
Client ID:	CCB	Batch ID:	R113542	TestNo:	EPA 200.7			Analysis Date:	2/15/2017	SeqNo:	2567514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	149.997	500									

Sample ID	CCB3	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	113542
Client ID:	CCB	Batch ID:	R113542	TestNo:	EPA 200.7			Analysis Date:	2/15/2017	SeqNo:	2567520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	77.531	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICSA** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	461556.124	50	500000	0	92.3	80	120				
Calcium	459332.283	500	500000	0	91.9	80	120				
Iron	183241.377	20	200000	0	91.6	80	120				
Magnesium	447042.379	100	500000	0	89.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICSAB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538110.886	50	500000	0	108	80	120				
Calcium	543697.840	500	500000	0	109	80	120				
Iron	180165.721	20	200000	0	90.1	80	120				
Magnesium	493671.203	100	500000	0	98.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICSA** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	467076.897	50	500000	0	93.4	80	120				
Calcium	455901.607	500	500000	0	91.2	80	120				
Iron	186472.239	20	200000	0	93.2	80	120				
Magnesium	450129.060	100	500000	0	90.0	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ICSAB** Batch ID: **R113511** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543222.812	50	500000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	113511
Client ID:	ICSAB	Batch ID:	R113511	TestNo:	EPA 200.7			Analysis Date:	2/14/2017	SeqNo:	2565933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	533277.667	500	500000	0	107	80	120				
Iron	183093.762	20	200000	0	91.5	80	120				
Magnesium	496420.472	100	500000	0	99.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ICSA** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-88.850708	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ICSAB** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9884.052	500	10000	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ICSA** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	76.301	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ICSAB** Batch ID: **R113542** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10135.252	500	10000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170214A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.025	102.5	65-125	PASS
Standard2	ICAL	1	1.038	103.78	65-125	PASS
Standard3	ICAL	1	1.11	111.15	65-125	PASS
Standard4	ICAL	1	1.0036	100.36	65-125	PASS
Standard5	ICAL	1	1	99.58	65-125	PASS
Standard6	ICAL	1	0.99	98.7	65-125	PASS
Standard7	ICAL	1	0.96	95.81	65-125	PASS
ICV	ICV	1	0.99	98.67	65-125	PASS
ICB	ICB	1	1.02	101.99	65-125	PASS
ICB	ICB	1	1.017	101.72	65-125	PASS
LLICV	CCV1	1	1.04	104.05	65-125	PASS
LLICV	CCV1	1	1.022	102.25	65-125	PASS
ICSA1	ICSA	1	1.16	115.75	65-125	PASS
ICSAB1	ICSAB	1	0.85	84.87	65-125	PASS
CCV1	CCV	1	1.033	103.32	65-125	PASS
CCB1	CCB	1	1.051	105.14	65-125	PASS
MB-61225	MBLK	1	1.04	103.96	65-125	PASS
LCS1-61225	LCS	1	0.98	98.38	65-125	PASS
N022999-001B	SAMP	1	0.98	97.51	65-125	PASS
N022999-001B	SAMP	5	1.013	101.26	65-125	PASS
N022999-001B-PS	PS	1	1.0031	100.31	65-125	PASS
N022999-001B-MS1	MS	1	1.0039	100.39	65-125	PASS
N022999-001B-MSD1	MSD	1	1	99.94	65-125	PASS
N022999-002B	SAMP	1	0.97	96.89	65-125	PASS
N022999-003B	SAMP	1	1	99.97	65-125	PASS
N023007-001B	SAMP	1	1.087	108.69	65-125	PASS
CCV2	CCV	1	1.07	107	65-125	PASS
CCB2	CCB	1	1.1	110.36	65-125	PASS
N023007-002B	SAMP	1	1.097	109.66	65-125	PASS
N023007-003B	SAMP	1	1.12	112.07	65-125	PASS
LLCCV1	CCV2	1	1.1	110.18	65-125	PASS
CCV3	CCV	1	1.062	106.19	65-125	PASS
CCB3	CCB	1	1.091	109.1	65-125	PASS
ICSA2	ICSA	1	1.24	123.65	65-125	PASS
ICSAB2	ICSAB	1	0.92	91.63	65-125	PASS

INTERNAL STANDARD: 170215A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.78	65-125	PASS
Standard2	ICAL	1	1	99.69	65-125	PASS
Standard3	ICAL	1	1	99.73	65-125	PASS
Standard4	ICAL	1	1.0032	100.32	65-125	PASS
Standard5	ICAL	1	1.003	100.3	65-125	PASS
Standard6	ICAL	1	1.0091	100.91	65-125	PASS
ICV	ICV	1	1.015	101.51	65-125	PASS
ICB	ICB	1	1.0081	100.81	65-125	PASS
ICSA1	ICSA	1	1.012	101.25	65-125	PASS
ICSAB1	ICSAB	1	1.0078	100.78	65-125	PASS
MB-61225	MBLK	1	1.035	103.53	65-125	PASS
LCS2-61225	LCS	1	1.072	107.22	65-125	PASS
N022999-001B	SAMP	1	1.019	101.91	65-125	PASS
N022999-001B	SAMP	5	1.011	101.07	65-125	PASS
N022999-002B	SAMP	1	1.041	104.07	65-125	PASS
N022999-003B	SAMP	1	1.039	103.9	65-125	PASS
N023007-001B	SAMP	1	1.082	108.23	65-125	PASS
N023007-002B	SAMP	1	1.1	110.15	65-125	PASS
N023007-003B	SAMP	1	1.11	111.36	65-125	PASS
N023007-001B	SAMP	5	1.026	102.65	65-125	PASS
CCV1	CCV	1	1.02	102	65-125	PASS
CCB1	CCB	1	1.019	101.88	65-125	PASS
N023007-002B	SAMP	5	1.039	103.86	65-125	PASS
N023007-003B	SAMP	5	1.036	103.63	65-125	PASS
N022999-001B	SAMP	~~50~~ 250	1.011	101.11	65-125	PASS
N022999-002B	SAMP	5	0.99	99.34	65-125	PASS
N022999-002B-PS	PS	1	0.97	97.45	65-125	PASS
N022999-002B-MS2	MS	1	0.99	98.88	65-125	PASS
N022999-002B-MSD2	MSD	1	0.99	98.88	65-125	PASS
N022999-002B	SAMP	100	0.99	98.59	65-125	PASS
N022999-002B	SAMP	500	1.0001	100.01	65-125	PASS
N022999-002B-PS	PS	100	1	99.61	65-125	PASS
CCV2	CCV	1	0.99	99.21	65-125	PASS
CCB2	CCB	1	1.0078	100.78	65-125	PASS
N022999-002B-MS2	MS	100	0.99	98.52	65-125	PASS
N022999-002B-MSD2	MSD	100	0.98	98.046	65-125	PASS
N022999-003B	SAMP	50	0.98	98.13	65-125	PASS
CCV3	CCV	1	0.28	28.41	65-125	NR!
CCV3	CCV	1	1	99.72	65-125	PASS
CCB3	CCB	1	1.0027	100.27	65-125	PASS

Nancy 2/21/2017

INTERNAL STANDARD: 170215A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSA2	ICSA	1	0.99	99.063	65-125	PASS
ICSAB2	ICSAB	1	0.99	98.75	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022999
Test Method: EPA 200.7
Analysis Date: 2/14/2017

Matrix: Groundwater
Batch No.: 61225

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022999-001B DT 5X	Calcium	ug/L	123221.2	PASS	117353.5	5.00%	10
N022999-001B DT 5X	Iron	ug/L	0	NA	0		10
N022999-001B DT 5X	Magnesium	ug/L	26686.56	FAIL	24094.84	10.76%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N022999
Test Method: EPA 200.7
Analysis Date: 2/15/2017

Matrix: Groundwater
Batch No.: 61225

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Na. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022999-002B DT 500X	Sodium	ug/L	1683015	PASS	1652921	1.82%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N022999-001B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113511**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/14/2017** SeqNo: **2565919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	126732.806	500	10000	117400	93.8	80	120				
Iron	97.086	20	100.0	0	97.1	80	120				
Magnesium	33045.889	100	10000	24090	89.5	80	120				

Sample ID **N022999-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **113542**
Client ID: **ZZZZZZ** Batch ID: **61225** TestNo: **EPA 200.7** Analysis Date: **2/15/2017** SeqNo: **2567512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1574960.896	50000	20000	1653000	-390	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61226
ASSET #: N022999

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/13/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X				
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Mn in LLICV failed, bias high. Mn for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date: —

2nd Level Reviewer 2/21/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61226
ASSET #: N022999
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/14/2017

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:
For Mn rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/21/2017 Date: —
2nd Level Reviewer 2/21/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N022999-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.78358 * 1 * (25/25)

Chromium , ug/L = 1.78358

Reporting results in two significant figures,

Chromium , ug/L = 1.8

% RSD SUMMARY

PERCENT RSD SUMMARY: 170213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	3.46	15	PASS	0.11	11.8	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	0.48	15	PASS	0.49	6.26	15	PASS
Std3-5/50 ppb	ICAL	1	4.99	0.21	15	PASS	4.98	0.85	15	PASS
Std4-10/100 ppb	ICAL	1	9.93	0.81	15	PASS	9.81	0.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.043	1.25	15	PASS	19.93	0.56	15	PASS
Std6-40/400 ppb	ICAL	1	40.2	0.83	15	PASS	40.12	1.088	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	1.55	15	PASS	98.63	1.46	15	PASS
Std8-200/2000 ppb	ICAL	1	199.69	0.31	15	PASS	200.68	0.21	15	PASS
ICV	ICV	1	9.64	2.071	15	PASS	104.86	1.31	15	PASS
ICB	ICB	1	0.017	32.39	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.97	1.47	20	PASS	0.64	7.75	20	PASS
ICSA1	ICSA	1	0.13	2.77	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.81	0.7	15	PASS	19.065	0.19	15	PASS
LLICV	CCV1	1	1.0022	0.39	20	PASS	0.66	2.74	20	PASS
CCV1	CCV	1	19.84	0.069	15	PASS	19.55	0.59	15	PASS
CCB1	CCB	1	0.00096	473.67	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.95	0.26	15	PASS	19.44	1.56	15	PASS
CCB2	CCB	1	0.0028	158.11	15	<PQL	<0.000	N/A	15	<PQL
MB-61226	MBLK	1	0.018	24.32	15	<PQL	0.0028	137.17	15	<PQL
LCS-61226	LCS	1	9.73	1.13	15	PASS	103.56	1.56	15	PASS
N022944-012B	SAMP	1	399.62	1.43	15	PASS	<0.000	N/A	15	<PQL
N022945-001B	SAMP	1	417.23	0.8	15	PASS	<0.000	N/A	15	<PQL
N022999-001B	SAMP	1	1.78	0.5	15	PASS	91.23	0.88	15	PASS
N022999-001B	SAMP	5	0.38	0.37	15	PASS	19.95	0.097	15	PASS
CCV3	CCV	1	19.72	1.99	15	PASS	19.47	1.84	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N022999-001B-PS	PS	1	10.59	1.78	15	PASS	178.81	1.84	15	PASS
N022999-001B-MS	MS	1	10.61	0.72	15	PASS	173.11	1.44	15	PASS
N022999-001B-MSD	MSD	1	10.55	0.42	15	PASS	175	1.07	15	PASS
N022999-002B	SAMP	1	572.52	0.14	15	PASS	11.0063	0.54	15	PASS
N022999-003B	SAMP	1	1.87	1.37	15	PASS	91.23	0.3	15	PASS
N023007-001B	SAMP	1	0.3	2.44	15	PASS	131.61	0.087	15	PASS
N023007-002B	SAMP	1	0.095	10.53	15	PASS	15.25	0.34	15	PASS
N023007-003B	SAMP	1	0.098	12.47	15	PASS	170.76	0.41	15	PASS
N022999-001B	SAMP	25	0.077	10.84	15	PASS	4.087	2.032	15	PASS
N022999-001B-PS	PS	5	2.33	1.74	15	PASS	38.66	1.47	15	PASS
CCV4	CCV	1	19.65	1.085	15	PASS	19.53	0.98	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N022999-001B-MS	MS	5	2.31	1.83	15	PASS	37.2	0.2	15	PASS
N022999-001B-MSD	MSD	5	2.26	1.74	15	PASS	37.52	2.066	15	PASS

PERCENT RSD SUMMARY: 170213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022999-002B	SAMP	5	126.11	0.96	15	PASS	2.47	1.46	15	PASS
N023007-002B	SAMP	5	0.038	61.65	15	<PQL	3.23	1.95	15	PASS
CCV5	CCV	1	19.86	1.97	15	PASS	19.55	1.72	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.98	2.64	20	PASS	0.61	0.59	20	PASS
ICSA2	ICSA	1	0.15	3.87	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.96	1.63	15	PASS	19.57	1.22	15	PASS

PERCENT RSD SUMMARY: 170214A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	3.2	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.51	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	1.79	15	PASS
Std4-10/100 ppb	ICAL	1	10.063	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	19.96	0.2	15	PASS
Std6-40/400 ppb	ICAL	1	40.067	1.81	15	PASS
Std7-100/1000 ppb	ICAL	1	100.29	1.062	15	PASS
Std8-200/2000 ppb	ICAL	1	199.84	0.98	15	PASS
ICV	ICV	1	106.55	1.35	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.62	2.64	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.23	0.32	15	PASS
LLICV	CCV1	1	0.55	1.26	20	PASS
MB-61226	MBLK	1	<0.000	N/A	15	<PQL
LCS-61226	LCS	1	106.14	0.7	15	PASS
N022999-001B	SAMP	1	94.15	1.35	15	PASS
N022999-001B	SAMP	5	20.014	1.51	15	PASS
N022999-001B-PS	PS	1	179.82	0.61	15	PASS
N022999-001B-MS	MS	1	178.38	0.27	15	PASS
N022999-001B-MSD	MSD	1	178.5	0.35	15	PASS
N022999-002B	SAMP	1	11.15	0.39	15	PASS
N022999-003B	SAMP	1	92.29	0.39	15	PASS
CCV1	CCV	1	20.21	0.77	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.82	0.66	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.86	1.14	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.21	1.48	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.14	0.66	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.56	3.3	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.23	1.25	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0213001.D	RINSE	RINSE	1	02/13/17 11:44 AM
A0213002.D	Cal Blank	IBLK	1	02/13/17 11:49 AM
A0213003.D	Std1-0.1/1 ppb	ICAL	1	02/13/17 11:55 AM
A0213004.D	Std2-0.5/5 ppb	ICAL	1	02/13/17 12:00 PM
A0213005.D	Std3-5/50 ppb	ICAL	1	02/13/17 12:06 PM
A0213006.D	Std4-10/100 ppb	ICAL	1	02/13/17 12:12 PM
A0213007.D	Std5-20/200 ppb	ICAL	1	02/13/17 12:17 PM
A0213008.D	Std6-40/400 ppb	ICAL	1	02/13/17 12:23 PM
A0213009.D	Std7-100/1000 ppb	ICAL	1	02/13/17 12:28 PM
A0213010.D	Std8-200/2000 ppb	ICAL	1	02/13/17 12:34 PM
A0213011.D	ICV	ICV	1	02/13/17 12:39 PM
A0213012.D	ICB	ICB	1	02/13/17 12:45 PM
A0213013.D	LLICV	CCV1	1	02/13/17 12:50 PM
A0213014.D	ICSA1	ICSA	1	02/13/17 12:56 PM
A0213015.D	ICSAB1	ICSAB	1	02/13/17 1:02 PM
A0213016.D	LLICV	CCV1	1	02/13/17 1:07 PM
A0213017.D	MB-61236	MBLK	1	02/13/17 1:13 PM
A0213018.D	LCS-61236	LCS	1	02/13/17 1:18 PM
A0213019.D	N023061-001B	SAMP	1	02/13/17 1:25 PM
A0213020.D	N023061-001B	SAMP	5	02/13/17 1:30 PM
A0213021.D	N023061-001B-PS	PS	1	02/13/17 1:36 PM
A0213022.D	N023061-001B-MS	MS	1	02/13/17 1:42 PM
A0213023.D	N023061-001B-MSD	MSD	1	02/13/17 1:47 PM
A0213024.D	MB-61210	MBLK	1	02/13/17 1:53 PM
A0213025.D	LCS-61210	LCS	1	02/13/17 1:59 PM
A0213026.D	N022992-001D	SAMP	1	02/13/17 2:05 PM
A0213027.D	CCV1	CCV	1	02/13/17 2:11 PM
A0213028.D	CCB1	CCB	1	02/13/17 2:16 PM
A0213029.D	N022992-001D-DUP	DUP	1	02/13/17 2:22 PM
A0213030.D	N022966-013B	SAMP	1	02/13/17 2:27 PM
A0213031.D	N022966-013B	SAMP	5	02/13/17 2:33 PM
A0213032.D	N022966-013B-PS	PS	1	02/13/17 2:38 PM
A0213033.D	N022966-013B-MS	MS	1	02/13/17 2:44 PM
A0213034.D	N022966-013B-MSD	MSD	1	02/13/17 2:50 PM
A0213035.D	N022966-014B	SAMP	1	02/13/17 2:56 PM
A0213036.D	N023002-005B	SAMP	1	02/13/17 3:02 PM
A0213037.D	N023002-006B	SAMP	1	02/13/17 3:07 PM
A0213038.D	N022931-002E	SAMP	1	02/13/17 3:13 PM
A0213039.D	CCV2	CCV	1	02/13/17 3:18 PM
A0213040.D	CCB2	CCB	1	02/13/17 3:24 PM
A0213041.D	N022908-009A	SAMP	1	02/13/17 3:30 PM
A0213042.D	N022908-009A	SAMP	1	02/13/17 3:35 PM

INJECTION LOG: 170213A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0213043.D	N022910-006B	SAMP	1	02/13/17 3:42 PM
A0213044.D	N022910-006A	SAMP	1	02/13/17 3:47 PM
A0213045.D	MB-61226	MBLK	1	02/13/17 3:53 PM
A0213046.D	LCS-61226	LCS	1	02/13/17 3:59 PM
A0213047.D	N022944-012B	SAMP	1	02/13/17 4:05 PM
A0213048.D	N022945-001B	SAMP	1	02/13/17 4:11 PM
A0213049.D	N022999-001B	SAMP	1	02/13/17 4:17 PM
A0213050.D	N022999-001B	SAMP	5	02/13/17 4:22 PM
A0213051.D	CCV3	CCV	1	02/13/17 4:28 PM
A0213052.D	CCB3	CCB	1	02/13/17 4:33 PM
A0213053.D	N022999-001B-PS	PS	1	02/13/17 4:39 PM
A0213054.D	N022999-001B-MS	MS	1	02/13/17 4:44 PM
A0213055.D	N022999-001B-MSD	MSD	1	02/13/17 4:50 PM
A0213056.D	N022999-002B	SAMP	1	02/13/17 4:55 PM
A0213057.D	N022999-003B	SAMP	1	02/13/17 5:01 PM
A0213058.D	N023007-001B	SAMP	1	02/13/17 5:07 PM
A0213059.D	N023007-002B	SAMP	1	02/13/17 5:12 PM
A0213060.D	N023007-003B	SAMP	1	02/13/17 5:18 PM
A0213061.D	N022999-001B	SAMP	25	02/13/17 5:23 PM
A0213062.D	N022999-001B-PS	PS	5	02/13/17 5:29 PM
A0213063.D	CCV4	CCV	1	02/13/17 5:34 PM
A0213064.D	CCB4	CCB	1	02/13/17 5:40 PM
A0213065.D	N022999-001B-MS	MS	5	02/13/17 5:45 PM
A0213066.D	N022999-001B-MSD	MSD	5	02/13/17 5:51 PM
A0213067.D	N022999-002B	SAMP	5	02/13/17 5:56 PM
A0213068.D	N023007-002B	SAMP	5	02/13/17 6:02 PM
A0213069.D	CCV5	CCV	1	02/13/17 6:08 PM
A0213070.D	CCB5	CCB	1	02/13/17 6:14 PM
A0213071.D	LLCCV1	CCV2	1	02/13/17 6:19 PM
A0213072.D	ICSA2	ICSA	1	02/13/17 6:25 PM
A0213073.D	ICSAB2	ICSAB	1	02/13/17 6:30 PM

INJECTION LOG: 170214A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0214001.D	RINSE	RINSE	1	02/14/17 4:56 PM
A0214002.D	Cal Blank	IBLK	1	02/14/17 5:01 PM
A0214003.D	Std1-0.1/1 ppb	ICAL	1	02/14/17 5:07 PM
A0214004.D	Std2-0.5/5 ppb	ICAL	1	02/14/17 5:12 PM
A0214005.D	Std3-5/50 ppb	ICAL	1	02/14/17 5:18 PM
A0214006.D	Std4-10/100 ppb	ICAL	1	02/14/17 5:23 PM
A0214007.D	Std5-20/200 ppb	ICAL	1	02/14/17 5:29 PM
A0214008.D	Std6-40/400 ppb	ICAL	1	02/14/17 5:34 PM
A0214009.D	Std7-100/1000 ppb	ICAL	1	02/14/17 5:40 PM
A0214010.D	Std8-200/2000 ppb	ICAL	1	02/14/17 5:46 PM
A0214011.D	ICV	ICV	1	02/14/17 5:51 PM
A0214012.D	ICB	ICB	1	02/14/17 5:57 PM
A0214013.D	LLICV	CCV1	1	02/14/17 6:02 PM
A0214014.D	ICSA1	ICSA	1	02/14/17 6:08 PM
A0214015.D	ICSAB1	ICSAB	1	02/14/17 6:13 PM
A0214016.D	LLICV	CCV1	1	02/14/17 6:25 PM
A0214017.D	MB-61226	MBLK	1	02/14/17 6:31 PM
A0214018.D	LCS-61226	LCS	1	02/14/17 6:36 PM
A0214019.D	N022999-001B	SAMP	1	02/14/17 6:42 PM
A0214020.D	N022999-001B	SAMP	5	02/14/17 6:48 PM
A0214021.D	N022999-001B-PS	PS	1	02/14/17 6:53 PM
A0214022.D	N022999-001B-MS	MS	1	02/14/17 6:59 PM
A0214023.D	N022999-001B-MSD	MSD	1	02/14/17 7:04 PM
A0214024.D	N022999-002B	SAMP	1	02/14/17 7:10 PM
A0214025.D	N022999-003B	SAMP	1	02/14/17 7:15 PM
A0214026.D	MB-61213	MBLK	1	02/14/17 7:21 PM
A0214027.D	CCV1	CCV	1	02/14/17 7:27 PM
A0214028.D	CCB1	CCB	1	02/14/17 7:33 PM
A0214029.D	LCS-61213	LCS	1	02/14/17 7:39 PM
A0214030.D	N022944-001B	SAMP	1	02/14/17 7:44 PM
A0214031.D	N022944-001B	SAMP	5	02/14/17 7:50 PM
A0214032.D	N022944-001B-PS	PS	1	02/14/17 7:55 PM
A0214033.D	N022944-001B-MS	MS	1	02/14/17 8:01 PM
A0214034.D	N022944-001B-MSD	MSD	1	02/14/17 8:06 PM
A0214035.D	N022944-002B	SAMP	1	02/14/17 8:12 PM
A0214036.D	N022944-003B	SAMP	1	02/14/17 8:18 PM
A0214037.D	N022944-004B	SAMP	1	02/14/17 8:23 PM
A0214038.D	N022944-005B	SAMP	1	02/14/17 8:29 PM
A0214039.D	CCV2	CCV	1	02/14/17 8:34 PM
A0214040.D	CCB2	CCB	1	02/14/17 8:40 PM
A0214041.D	N022944-006B	SAMP	1	02/14/17 8:45 PM
A0214042.D	N022944-007B	SAMP	1	02/14/17 8:51 PM

INJECTION LOG: 170214A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0214043.D	N022944-008B	SAMP	1	02/14/17 8:56 PM
A0214044.D	N022944-009B	SAMP	1	02/14/17 9:02 PM
A0214045.D	N022944-010B	SAMP	1	02/14/17 9:08 PM
A0214046.D	N022944-012B	SAMP	1	02/14/17 9:13 PM
A0214047.D	N022945-001B	SAMP	1	02/14/17 9:19 PM
A0214048.D	N022945-002B	SAMP	1	02/14/17 9:24 PM
A0214049.D	N022945-003B	SAMP	1	02/14/17 9:30 PM
A0214050.D	N022945-004B	SAMP	1	02/14/17 9:35 PM
A0214051.D	CCV3	CCV	1	02/14/17 9:41 PM
A0214052.D	CCB3	CCB	1	02/14/17 9:46 PM
A0214053.D	N022945-005B	SAMP	1	02/14/17 9:52 PM
A0214054.D	N022945-006B	SAMP	1	02/14/17 9:58 PM
A0214055.D	N022945-008B	SAMP	1	02/14/17 10:03 PM
A0214056.D	N022945-009B	SAMP	1	02/14/17 10:09 PM
A0214057.D	N022944-003B	SAMP	5	02/14/17 10:14 PM
A0214058.D	N022944-006B	SAMP	10	02/14/17 10:20 PM
A0214059.D	N022944-007B	SAMP	25	02/14/17 10:25 PM
A0214060.D	N022944-008B	SAMP	5	02/14/17 10:31 PM
A0214061.D	N022944-012B	SAMP	5	02/14/17 10:36 PM
A0214062.D	N022945-001B	SAMP	5	02/14/17 10:42 PM
A0214063.D	CCV4	CCV	1	02/14/17 10:48 PM
A0214064.D	CCB4	CCB	1	02/14/17 10:53 PM
A0214065.D	N022945-002B	SAMP	5	02/14/17 10:59 PM
A0214066.D	N022945-005B	SAMP	5	02/14/17 11:04 PM
A0214067.D	N022945-006B	SAMP	5	02/14/17 11:10 PM
A0214068.D	N022945-008B	SAMP	5	02/14/17 11:15 PM
A0214069.D	CCV5	CCV	1	02/14/17 11:21 PM
A0214070.D	CCB5	CCB	1	02/14/17 11:27 PM
A0214071.D	LLCCV1	CCV2	1	02/14/17 11:32 PM
A0214072.D	ICSA2	ICSA	1	02/14/17 11:38 PM
A0214073.D	ICSAB2	ICSAB	1	02/14/17 11:43 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/10/2017 7:52:01**
Prep End Date: **2/10/2017 12:30:00**

Reviewed/ Date: 2/21/2017
Initials/ Date: 2/21/2017

Prep Batch **61226** Prep Code: **200.8_PR** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61226	Aqueous		25	☐	0	0	25	1.000		
MB-61226	Aqueous		25	☐	0	0	25	1.000		
N022944-012B	Groundwater		25	☐	0	0	25	1.000		
N022945-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022999-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023007-001B	Water	<2	25	☐	0	0	25	1.000		
N023007-002B	Water	<2	25	☐	0	0	25	1.000		
N023007-003B	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Feb 2017 09:23:14 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	214160.00	0.00	
24 Mg	1035060.00	0.00	
25 Mg	138861.00	0.00	
26 Mg	161592.00	0.00	
59 Co	1382490.00	0.00	
115 In	2171270.00	0.00	
206 Pb	601036.00	0.00	
207 Pb	527331.00	0.00	
208 Pb	1288310.00	0.00	

RSD (%)

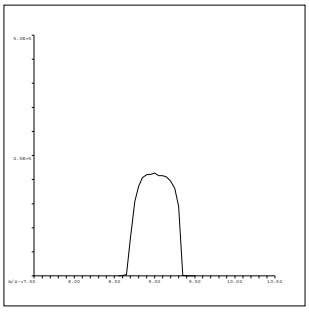
Element	Actual	Required	Flag
9 Be	1.24	5.00	
24 Mg	0.99	5.00	
25 Mg	1.27	5.00	
26 Mg	1.22	5.00	
59 Co	0.95	5.00	
115 In	1.00	5.00	
206 Pb	0.79	5.00	
207 Pb	0.81	5.00	
208 Pb	0.56	5.00	

Ion Ratio

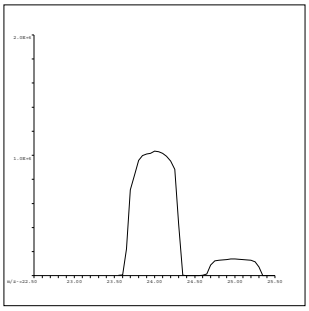
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

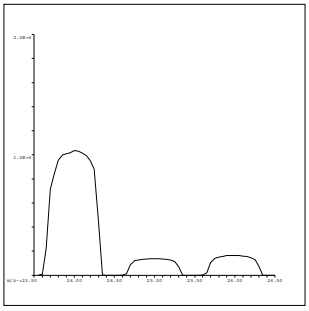
Element	Actual	Required	Flag



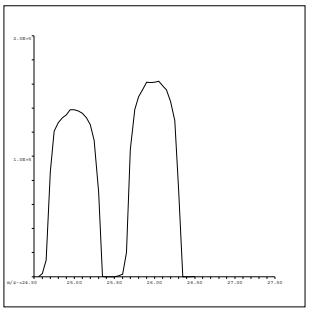
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



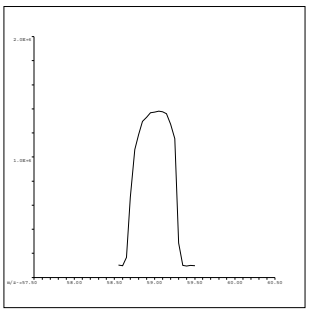
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



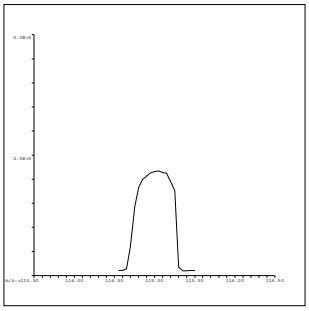
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



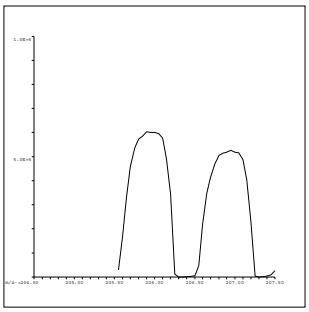
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



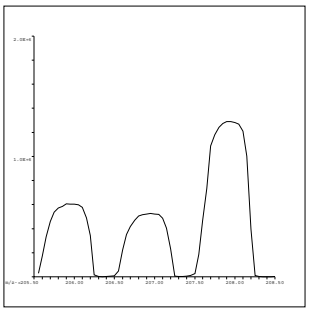
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



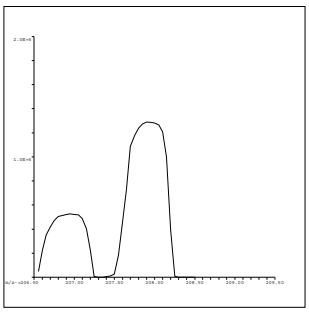
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 14 Feb 2017 04:46:30 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	146164.00	0.00	
24 Mg	699859.00	0.00	
25 Mg	94675.40	0.00	
26 Mg	108755.00	0.00	
59 Co	1161320.00	0.00	
115 In	1974640.00	0.00	
206 Pb	465194.00	0.00	
207 Pb	407424.00	0.00	
208 Pb	1005840.00	0.00	

RSD (%)

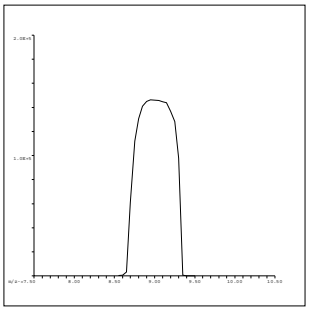
Element	Actual	Required	Flag
9 Be	0.38	5.00	
24 Mg	3.38	5.00	
25 Mg	3.47	5.00	
26 Mg	0.82	5.00	
59 Co	0.72	5.00	
115 In	0.83	5.00	
206 Pb	0.65	5.00	
207 Pb	0.58	5.00	
208 Pb	0.40	5.00	

Ion Ratio

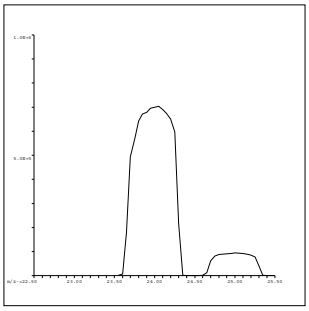
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

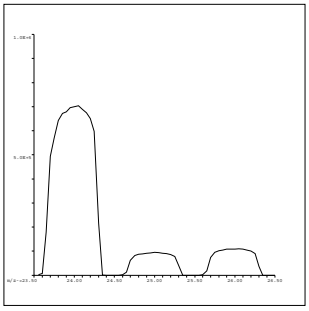
Element	Actual	Required	Flag



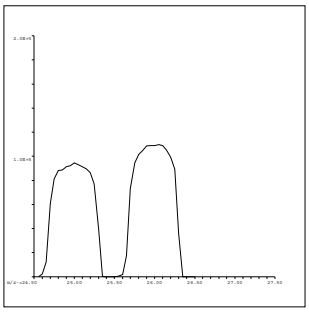
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



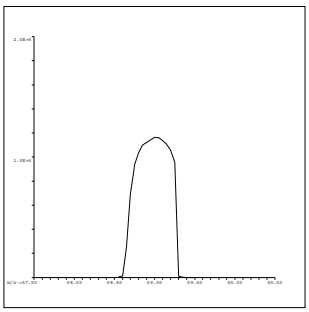
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



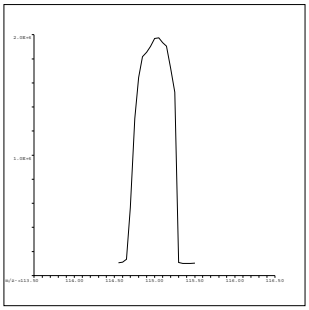
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



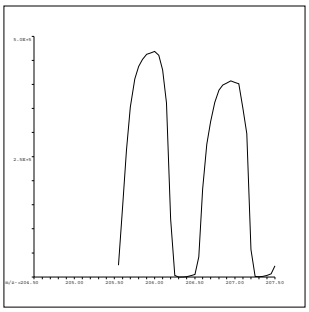
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



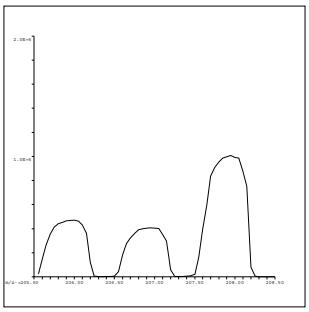
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



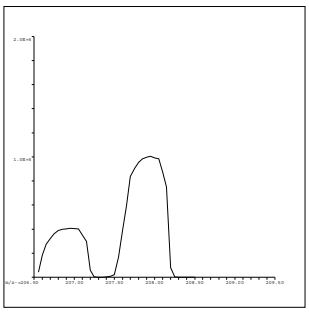
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170213A

Instrument ID: ICPMS-02

Analyte	Data File	A0213002.D	A0213004.D	A0213005.D	A0213006.D	A0213007.D	A0213008.D	A0213009.D	A0213010.D	
	Acq. Date-Time	02/13/2017 11:49 AM	02/13/2017 12:00 PM	02/13/2017 12:06 PM	02/13/2017 12:12 PM	02/13/2017 12:17 PM	02/13/2017 12:23 PM	02/13/2017 12:28 PM	02/13/2017 12:34 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	159190	157146.6	157309.2	157138.8	153832.5	151975.8	149851.1	149286.2	
55 Mn [2]	CPS	300	3693.9	34752.6	68139.8	135257	268664.4	650773.3	1319004	1.0000
52 Cr [2]	CPS	642.2	7356.2	67480.4	133571.9	263183.4	520876.5	1283631.1	2539459.8	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170214A

Instrument ID: ICPMS-02

Analyte	Data File	A0214002.D	A0214004.D	A0214005.D	A0214006.D	A0214007.D	A0214008.D	A0214009.D	A0214010.D	
	Acq. Date-Time	02/14/2017 05:01 PM	02/14/2017 05:12 PM	02/14/2017 05:18 PM	02/14/2017 05:23 PM	02/14/2017 05:29 PM	02/14/2017 05:34 PM	02/14/2017 05:40 PM	02/14/2017 05:46 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	143123.3	143420.8	143972.6	143384.6	140621.1	139009.2	131923.2	129688.6	
55 Mn [2]	CPS	361.3	3452.9	31454.3	63021	122235	242198.4	574888.2	1125887.6	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.550	0.50	100.0	0	107	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.553	0.50	0.5000	0	111	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.214	0.50	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.824	0.50	20.00	0	99.1	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.865	0.50	20.00	0	99.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.208	0.50	20.00	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCV** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.139	0.50	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.559	0.50	0.5000	0	112	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ICV** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2564987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.638	1.0	10.00	0	96.4	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2564989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.973	1.0	1.000	0	97.3	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **CCV** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.836	1.0	20.00	0	99.2	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **CCV** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.954	1.0	20.00	0	99.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **CCV** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.717	1.0	20.00	0	98.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	113485
Client ID:	CCV	Batch ID:	R113485	TestNo:	EPA 200.8			Analysis Date:	2/13/2017	SeqNo:	2565039

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.652	1.0	20.00	0	98.3	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	113485
Client ID:	CCV	Batch ID:	R113485	TestNo:	EPA 200.8			Analysis Date:	2/13/2017	SeqNo:	2565045

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.863	1.0	20.00	0	99.3	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	113485
Client ID:	ZZZZZZ	Batch ID:	R113485	TestNo:	EPA 200.8			Analysis Date:	2/13/2017	SeqNo:	2565047

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.980	1.0	1.000	0	98.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **CCB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	CCB5	SampType:	CCB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	113535
Client ID:	CCB	Batch ID:	R113535	TestNo:	EPA 200.8			Analysis Date:	2/14/2017	SeqNo:	2567159

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**200.8DIS_Cr**	**µg/L**		**113485**
Client ID: **ICB**	Batch ID: **R113485**	TestNo: **EPA 200.8**		Analysis Date: **2/13/2017**	SeqNo: **2564988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB1	**CCB**	**200.8DIS_Cr**	**µg/L**		**113485**
Client ID: **CCB**	Batch ID: **R113485**	TestNo: **EPA 200.8**		Analysis Date: **2/13/2017**	SeqNo: **2565004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB2	**CCB**	**200.8DIS_Cr**	**µg/L**		**113485**
Client ID: **CCB**	Batch ID: **R113485**	TestNo: **EPA 200.8**		Analysis Date: **2/13/2017**	SeqNo: **2565016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB3	**CCB**	**200.8DIS_Cr**	**µg/L**		**113485**
Client ID: **CCB**	Batch ID: **R113485**	TestNo: **EPA 200.8**		Analysis Date: **2/13/2017**	SeqNo: **2565028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB4	**CCB**	**200.8DIS_Cr**	**µg/L**		**113485**
Client ID: **CCB**	Batch ID: **R113485**	TestNo: **EPA 200.8**		Analysis Date: **2/13/2017**	SeqNo: **2565040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **CCB** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICSA** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICSAB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.228	0.50	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICSA** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ICSAB** Batch ID: **R113535** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.235	0.50	20.00	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ICSA** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2564990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.134	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ICSAB** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2564991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.808	1.0	20.00	0	99.0	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ICSA** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.147	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ICSAB** Batch ID: **R113485** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.959	1.0	20.00	0	99.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	159190	159190	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	157745.9	159190	99.093	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	157146.6	159190	98.72	PASS	70-125
Std3-5/50 ppb	ICAL	1	157309.2	159190	98.82	PASS	70-125
Std4-10/100 ppb	ICAL	1	157138.8	159190	98.71	PASS	70-125
Std5-20/200 ppb	ICAL	1	153832.5	159190	96.63	PASS	70-125
Std6-40/400 ppb	ICAL	1	151975.8	159190	95.47	PASS	70-125
Std7-100/1000 ppb	ICAL	1	149851.1	159190	94.13	PASS	70-125
Std8-200/2000 ppb	ICAL	1	149286.2	159190	93.78	PASS	70-125
ICV	ICV	1	148265.2	159190	93.14	PASS	70-125
ICB	ICB	1	159998.9	159190	100.51	PASS	70-125
LLICV	CCV1	1	151546.5	159190	95.2	PASS	70-125
ICSA1	ICSA	1	197771.6	159190	124.24	PASS	70-125
ICSAB1	ICSAB	1	178526.3	159190	112.15	PASS	70-125
LLICV	CCV1	1	180331.6	159190	113.28	PASS	70-125
CCV1	CCV	1	165477.1	159190	103.95	PASS	70-125
CCB1	CCB	1	152380	159190	95.72	PASS	70-125
CCV2	CCV	1	166391.9	159190	104.52	PASS	70-125
CCB2	CCB	1	162027.2	159190	101.78	PASS	70-125
MB-61226	MBLK	1	159250.3	159190	100.04	PASS	70-125
LCS-61226	LCS	1	156047.6	159190	98.026	PASS	70-125
N022944-012B	SAMP	1	136523.7	159190	85.76	PASS	70-125
N022945-001B	SAMP	1	157071.6	159190	98.67	PASS	70-125
N022999-001B	SAMP	1	156385.1	159190	98.24	PASS	70-125
N022999-001B	SAMP	5	180482.3	159190	113.38	PASS	70-125
CCV3	CCV	1	192144.4	159190	120.7	PASS	70-125
CCB3	CCB	1	184601.5	159190	115.96	PASS	70-125
N022999-001B-PS	PS	1	170826	159190	107.31	PASS	70-125
N022999-001B-MS	MS	1	175550.1	159190	110.28	PASS	70-125
N022999-001B-MSD	MSD	1	178868.3	159190	112.36	PASS	70-125
N022999-002B	SAMP	1	164424.4	159190	103.29	PASS	70-125
N022999-003B	SAMP	1	174785	159190	109.8	PASS	70-125
N023007-001B	SAMP	1	183263.3	159190	115.12	PASS	70-125
N023007-002B	SAMP	1	168416.7	159190	105.8	PASS	70-125
N023007-003B	SAMP	1	172164.4	159190	108.15	PASS	70-125
N022999-001B	SAMP	25	173814.6	159190	109.19	PASS	70-125
N022999-001B-PS	PS	5	170729.8	159190	107.25	PASS	70-125
CCV4	CCV	1	185429.7	159190	116.48	PASS	70-125
CCB4	CCB	1	183301.2	159190	115.15	PASS	70-125
N022999-001B-MS	MS	5	174960.5	159190	109.91	PASS	70-125
N022999-001B-MSD	MSD	5	177491.3	159190	111.5	PASS	70-125

INTERNAL STANDARD: 170213A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N022999-002B	SAMP	5	177692.3	159190	111.62	PASS	70-125
N023007-002B	SAMP	5	178418.3	159190	112.08	PASS	70-125
CCV5	CCV	1	180885.2	159190	113.63	PASS	70-125
CCB5	CCB	1	172361.5	159190	108.27	PASS	70-125
LLCCV1	CCV2	1	168976.4	159190	106.15	PASS	70-125
ICSA2	ICSA	1	183631.4	159190	115.35	PASS	70-125
ICSAB2	ICSAB	1	162105.9	159190	101.83	PASS	70-125

INTERNAL STANDARD: 170214A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	143123.3	143123.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	150338.8	143123.3	105.04	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	143420.8	143123.3	100.21	PASS	70-125
Std3-5/50 ppb	ICAL	1	143972.6	143123.3	100.59	PASS	70-125
Std4-10/100 ppb	ICAL	1	143384.6	143123.3	100.18	PASS	70-125
Std5-20/200 ppb	ICAL	1	140621.1	143123.3	98.25	PASS	70-125
Std6-40/400 ppb	ICAL	1	139009.2	143123.3	97.13	PASS	70-125
Std7-100/1000 ppb	ICAL	1	131923.2	143123.3	92.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	129688.6	143123.3	90.61	PASS	70-125
ICV	ICV	1	127833.8	143123.3	89.32	PASS	70-125
ICB	ICB	1	129290.7	143123.3	90.34	PASS	70-125
LLICV	CCV1	1	131961.2	143123.3	92.2	PASS	70-125
ICSA1	ICSA	1	148833.6	143123.3	103.99	PASS	70-125
ICSAB1	ICSAB	1	172897.3	143123.3	120.8	PASS	70-125
LLICV	CCV1	1	142635.6	143123.3	99.66	PASS	70-125
MB-61226	MBLK	1	139964.2	143123.3	97.79	PASS	70-125
LCS-61226	LCS	1	137021.6	143123.3	95.74	PASS	70-125
N022999-001B	SAMP	1	139698.7	143123.3	97.61	PASS	70-125
N022999-001B	SAMP	5	147687.3	143123.3	103.19	PASS	70-125
N022999-001B-PS	PS	1	150953.4	143123.3	105.47	PASS	70-125
N022999-001B-MS	MS	1	157479	143123.3	110.03	PASS	70-125
N022999-001B-MSD	MSD	1	158987.8	143123.3	111.08	PASS	70-125
N022999-002B	SAMP	1	155144.7	143123.3	108.4	PASS	70-125
N022999-003B	SAMP	1	162536.2	143123.3	113.56	PASS	70-125
CCV1	CCV	1	111673.1	143123.3	78.026	PASS	70-125
CCB1	CCB	1	170861.9	143123.3	119.38	PASS	70-125
CCV2	CCV	1	157038.5	143123.3	109.72	PASS	70-125
CCB2	CCB	1	145381.7	143123.3	101.58	PASS	70-125
CCV3	CCV	1	150391.7	143123.3	105.08	PASS	70-125
CCB3	CCB	1	138158	143123.3	96.53	PASS	70-125
CCV4	CCV	1	125795.5	143123.3	87.89	PASS	70-125
CCB4	CCB	1	119116.6	143123.3	83.23	PASS	70-125
CCV5	CCV	1	112996.7	143123.3	78.95	PASS	70-125
CCB5	CCB	1	106327.7	143123.3	74.29	PASS	70-125
LLCCV1	CCV2	1	111459.4	143123.3	77.88	PASS	70-125
ICSA2	ICSA	1	117205.5	143123.3	81.89	PASS	70-125
ICSAB2	ICSAB	1	135149.6	143123.3	94.43	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N022999
Test Method: EPA 200.8
Analysis Date: 2/13/2017 & 2/14/2017

Matrix: Groundwater
Batch No.: 61226

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022999-001B DT 5X	Chromium	ug/L	1.876644	NA	1.783582	5.22%	10
N022999-001B DT 5X	Manganese	ug/L	100.0722	PASS	94.14547	6.30%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N022999-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **113535**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/14/2017** SeqNo: **2567110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	179.816	0.50	100.0	94.15	85.7	80	120	94.15	62.5	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N022999-001B-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **113485**
Client ID: **ZZZZZZ** Batch ID: **61226** TestNo: **EPA 200.8** Analysis Date: **2/13/2017** SeqNo: **2565029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.591	1.0	10.00	1.784	88.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113441
ASSET #: N022999

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/9/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/14/2017

2nd Level Reviewer Nancy 2/20/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N022999-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 1.8827 * 1$$

$$Cr^{+6}, \mu g/L = 1.88$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 1.9}$$

rba 2/14/2017

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/09/17 11:07 PM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/09/17 11:18 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/09/17 11:28 PM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/09/17 11:37 PM	Reported
14	MB-R113441	MBLK	1	Hexavalent Chromium	02/09/17 11:47 PM	Reported
15	LCS-R113441	LCS	1	Hexavalent Chromium	02/09/17 11:56 PM	Reported
16	N023040-006D	SAMP	1	Hexavalent Chromium	02/10/17 12:08 AM	Reported
17	N023041-006B	SAMP	1	Hexavalent Chromium	02/10/17 12:19 AM	Reported
18	N023040-004D	SAMP	1	Hexavalent Chromium	02/10/17 12:29 AM	Reported
19	N023040-008C	SAMP	1	Hexavalent Chromium	02/10/17 12:38 AM	Reported
20	N023040-009C	SAMP	100	Hexavalent Chromium	02/10/17 12:48 AM	Not Reported
21	N023040-003D	SAMP	1	Hexavalent Chromium	02/10/17 12:57 AM	Reported
22	N023041-003C	SAMP	1	Hexavalent Chromium	02/10/17 1:08 AM	Not Reported
23	N023040-009C	SAMP	5	Hexavalent Chromium	02/10/17 1:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/10/17 1:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/10/17 1:38 AM	Reported
26	N023040-010D	SAMP	1	Hexavalent Chromium	02/10/17 1:48 AM	Reported
27	N023040-011D	SAMP	1	Hexavalent Chromium	02/10/17 1:57 AM	Reported
28	N023041-005D	SAMP	1	Hexavalent Chromium	02/10/17 2:06 AM	Reported
29	N023041-007C	SAMP	10	Hexavalent Chromium	02/10/17 2:16 AM	Reported
30	N023041-003C	SAMP	5	Hexavalent Chromium	02/10/17 2:25 AM	Reported
31	N023040-006DREP	DUP	1	Hexavalent Chromium	02/10/17 2:35 AM	Reported
32	N023041-006BREP	DUP	1	Hexavalent Chromium	02/10/17 2:44 AM	Reported
33	N023040-004DREP	DUP	1	Hexavalent Chromium	02/10/17 2:54 AM	Reported
34	N023040-008CREP	DUP	1	Hexavalent Chromium	02/10/17 3:03 AM	Reported
35	N023040-009CREP	DUP	5	Hexavalent Chromium	02/10/17 3:13 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/10/17 3:22 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/10/17 3:32 AM	Reported
38	N023040-003DREP	DUP	1	Hexavalent Chromium	02/10/17 3:41 AM	Reported
39	N023041-003CREP	DUP	5	Hexavalent Chromium	02/10/17 3:51 AM	Reported
40	N023040-010DREP	DUP	1	Hexavalent Chromium	02/10/17 4:00 AM	Reported
41	N023040-011DREP	DUP	1	Hexavalent Chromium	02/10/17 4:09 AM	Reported
42	N023041-005DREP	DUP	1	Hexavalent Chromium	02/10/17 4:19 AM	Reported

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023041-007CREP	DUP	10	Hexavalent Chromium	02/10/17 4:28 AM	Reported
44	N023040-010DMS	MS	1	Hexavalent Chromium	02/10/17 4:38 AM	Reported
45	N023041-005DMS	MS	1	Hexavalent Chromium	02/10/17 4:47 AM	Reported
46	N023040-010D	SAMP	2	Hexavalent Chromium	02/10/17 5:05 AM	Not Reported
47	N023040-010DMS	MS	2	Hexavalent Chromium	02/10/17 5:16 AM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/10/17 5:25 AM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/10/17 5:35 AM	Reported
50	N023040-010DREP	DUP	2	Hexavalent Chromium	02/10/17 5:44 AM	Not Reported
51	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 5:54 AM	Not Reported
52	N022985-001A	SAMP	5	Hexavalent Chromium	02/10/17 6:03 AM	Reported
53	N022985-001AMS	MS	5	Hexavalent Chromium	02/10/17 6:13 AM	Reported
54	N022985-001AMSD	MSD	5	Hexavalent Chromium	02/10/17 6:22 AM	Reported
55	N022985-002A	SAMP	1	Hexavalent Chromium	02/10/17 6:31 AM	Reported
56	N022985-002AMS	MS	1	Hexavalent Chromium	02/10/17 6:41 AM	Reported
57	N022985-003A	SAMP	5	Hexavalent Chromium	02/10/17 6:54 AM	Reported
58	N022985-003AMS	MS	5	Hexavalent Chromium	02/10/17 7:05 AM	Reported
59	N022985-004A	SAMP	5	Hexavalent Chromium	02/10/17 7:14 AM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/10/17 7:24 AM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:33 AM	Not Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:59 AM	Reported
63	N022985-004AMS	MS	5	Hexavalent Chromium	02/10/17 8:10 AM	Reported
64	N022966-013A	SAMP	1	Hexavalent Chromium	02/10/17 8:20 AM	Reported
65	N022966-013AMS	MS	1	Hexavalent Chromium	02/10/17 8:29 AM	Reported
66	N022999-001A	SAMP	1	Hexavalent Chromium	02/10/17 8:39 AM	Reported
67	N022999-001AMS	MS	1	Hexavalent Chromium	02/10/17 8:48 AM	Reported
68	N022999-002A	SAMP	100	Hexavalent Chromium	02/10/17 8:58 AM	Reported
69	N022999-002AMS	MS	100	Hexavalent Chromium	02/10/17 9:07 AM	Reported
70	N022999-003A	SAMP	100	Hexavalent Chromium	02/10/17 9:17 AM	Not Reported
71	N022999-003AMS	MS	100	Hexavalent Chromium	02/10/17 9:26 AM	Not Reported
72	N022985-004ADUP	DUP	5	Hexavalent Chromium	02/10/17 9:35 AM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/10/17 9:45 AM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/10/17 9:54 AM	Reported
75	N022908-009A	SAMP	1	Hexavalent Chromium	02/10/17 10:04 AM	Not Reported
76	N022908-009AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:13 AM	Not Reported
77	N022910-006A	SAMP	1	Hexavalent Chromium	02/10/17 10:23 AM	Not Reported
78	N022910-006AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:32 AM	Not Reported
79	N022999-003A	SAMP	1	Hexavalent Chromium	02/10/17 10:42 AM	Reported
80	N022999-003AMS	MS	1	Hexavalent Chromium	02/10/17 10:51 AM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	02/10/17 11:01 AM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	02/10/17 11:10 AM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 11:20 AM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170209A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**10/Feb/17 11:50:23**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	2	1000	Unknown		02/09/2017 23:07	Finished	
11	CCV-1,CCV,1,	3	1000	Unknown		02/09/2017 23:18	Finished	CCV @5ppb, IWST-161114C
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/09/2017 23:28	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/09/2017 23:37	Finished	CCB R170123B
14	MB-H2O,MBLK,1	6	1000	Unknown		02/09/2017 23:47	Finished	MB R170123B
15	LCS-H2O,LCS,1	7	1000	Unknown		02/09/2017 23:56	Finished	LCS, IWST-161114D
16	N023040-006D,SAMP	9	1000	Unknown		02/10/2017 00:08	Finished	SAMP, 10mL
17	N023041-006B,SAMP	10	1000	Unknown		02/10/2017 00:19	Finished	SAMP, 10mL
18	N023040-004D,SAMP	11	1000	Unknown		02/10/2017 00:29	Finished	SAMP, 10mL
19	N023040-008C,SAMP	12	1000	Unknown		02/10/2017 00:38	Finished	SAMP, 10mL
20	N023040-009C,SAMP	13	1000	Unknown		02/10/2017 00:48	Finished	SAMP, 0.1>10mL
21	N023040-003D,SAMP	14	1000	Unknown		02/10/2017 00:57	Finished	SAMP, 10mL
22	N023041-003C,SAMP	16	1000	Unknown		02/10/2017 01:08	Finished	SAMP, 10mL
23	N023040-009C,SAMP	17	1000	Unknown		02/10/2017 01:19	Finished	SAMP, 2>10mL
24	CCV-2,CCV1,1,	18	1000	Unknown		02/10/2017 01:29	Finished	CCV @10ppb, IWST-161114C
25	CCB-2,CCB,1,	19	1000	Unknown		02/10/2017 01:38	Finished	CCB R170123B
26	N023040-010D,SAMP	20	1000	Unknown		02/10/2017 01:48	Finished	SAMP, 10mL
27	N023040-011D,SAMP	21	1000	Unknown		02/10/2017 01:57	Finished	SAMP, 10mL
28	N023041-005D,SAMP	22	1000	Unknown		02/10/2017 02:06	Finished	SAMP, 10mL
29	N023041-007C,SAMP	23	1000	Unknown		02/10/2017 02:16	Finished	SAMP, 1>10mL
30	N023041-003C,SAMP	24	1000	Unknown		02/10/2017 02:25	Finished	SAMP, 2>10mL
31	N023040-006DREP,D	25	1000	Unknown		02/10/2017 02:35	Finished	REP, 10mL
32	N023041-006BREP,D	26	1000	Unknown		02/10/2017 02:44	Finished	REP, 10mL
33	N023040-004DREP,D	27	1000	Unknown		02/10/2017 02:54	Finished	REP, 10mL
34	N023040-008CREP,D	28	1000	Unknown		02/10/2017 03:03	Finished	REP, 10mL
35	N023040-009CREP,D	29	1000	Unknown		02/10/2017 03:13	Finished	REP, 2>10mL
36	CCV-3,CCV,1,	30	1000	Unknown		02/10/2017 03:22	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	31	1000	Unknown		02/10/2017 03:32	Finished	CCB R170123B
38	N023040-003DREP,D	32	1000	Unknown		02/10/2017 03:41	Finished	REP, 10mL
39	N023041-003CREP,D	33	1000	Unknown		02/10/2017 03:51	Finished	REP, 2>10mL
40	N023040-010DREP,D	34	1000	Unknown		02/10/2017 04:00	Finished	REP, 10mL
41	N023040-011DREP,D	35	1000	Unknown		02/10/2017 04:09	Finished	REP, 10mL
42	N023041-005DREP,D	36	1000	Unknown		02/10/2017 04:19	Finished	REP, 10mL
43	N023041-007CREP,D	37	1000	Unknown		02/10/2017 04:28	Finished	REP, 1>10mL
44	N023040-010DMS,MS	38	1000	Unknown		02/10/2017 04:38	Finished	MS (5ppb), IWST-161114D,10
45	N023041-005DMS,MS	39	1000	Unknown		02/10/2017 04:47	Finished	MS (5ppb), IWST-161114D,10
46	N023040-010D,SAMP	40	1000	Unknown		02/10/2017 05:05	Finished	SAMP, 5>10mL
47	N023040-010DMS,MS	41	1000	Unknown		02/10/2017 05:16	Finished	MS (5ppb), IWST-161114D,5>1
48	CCV-4,CCV1,1,	42	1000	Unknown		02/10/2017 05:25	Finished	CCV @10ppb, IWST-161114C
49	CCB-4,CCB,1,	43	1000	Unknown		02/10/2017 05:35	Finished	CCB R170123B
50	N023040-010DREP,D	44	1000	Unknown		02/10/2017 05:44	Finished	REP,5>10mL
51	BLANK	45	1000	Unknown		02/10/2017 05:54	Finished	BLANK
52	N022985-001A,SAMP	46	1000	Unknown		02/10/2017 06:03	Finished	SAMP,2>10mL
53	N022985-001AMS,MS	47	1000	Unknown		02/10/2017 06:13	Finished	MS (5ppb), IWST-161114D,2>1
54	N022985-001AMSD,M	48	1000	Unknown		02/10/2017 06:22	Finished	MSD (5ppb), IWST-161114D,2
55	N022985-002A,SAMP	49	1000	Unknown		02/10/2017 06:31	Finished	SAMP, 10mL
56	N022985-002AMS,MS	50	1000	Unknown		02/10/2017 06:41	Finished	MS (1ppb), IWST-161114D,10
57	N022985-003A,SAMP	1	1000	Unknown		02/10/2017 06:54	Finished	SAMP,2>10mL
58	N022985-003AMS,MS	2	1000	Unknown		02/10/2017 07:05	Finished	MS (5ppb), IWST-161114D,2>1
59	N022985-004A,SAMP	3	1000	Unknown		02/10/2017 07:14	Finished	SAMP,2>10mL
60	CCV-5,CCV,1,	4	1000	Unknown		02/10/2017 07:24	Finished	CCV @5ppb, IWST-161114C

61	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:33	Finished	CCB R170123B
62	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:59	Finished	CCB R170123B
63	N022985-004AMS,MS	6	1000	Unknown		02/10/2017 08:10	Finished	MS (5ppb), IWST-161114D,2>1
64	N022966-013A,SAMP	7	1000	Unknown		02/10/2017 08:20	Finished	SAMP, 10mL
65	N022966-013AMS,MS,1	8	1000	Unknown		02/10/2017 08:29	Finished	MS (1ppb), IWST-161114D,10
66	N022999-001A,SAMP	9	1000	Unknown		02/10/2017 08:39	Finished	SAMP, 10mL
67	N022999-001AMS,MS	10	1000	Unknown		02/10/2017 08:48	Finished	MS (1ppb), IWST-161114D,10
68	N022999-002A,SAMP	11	1000	Unknown		02/10/2017 08:58	Finished	SAMP, 0.1>10mL
69	N022999-002AMS,MS	12	1000	Unknown		02/10/2017 09:07	Finished	MS (5ppb), IWST-161114D,0.1
70	N022999-003A,SAMP	13	1000	Unknown		02/10/2017 09:17	Finished	SAMP, 0.1>10mL
71	N022999-003AMS,MS	14	1000	Unknown		02/10/2017 09:26	Finished	MS (5ppb), IWST-161114D,0.1
72	N022985-004ADUP,D	15	1000	Unknown		02/10/2017 09:35	Finished	DUP, 2>10mL
73	CCV-6,CCV1,1,	16	1000	Unknown		02/10/2017 09:45	Finished	CCV @10ppb, IWST-161114C
74	CCB-6,CCB,1,	17	1000	Unknown		02/10/2017 09:54	Finished	CCB R170123B
75	N022908-009A,SAMP	18	1000	Unknown		02/10/2017 10:04	Finished	SAMP, 10mL
76	N022908-009AMS,SA	19	1000	Unknown		02/10/2017 10:13	Finished	MS (1ppb), IWST-161114D,10
77	N022910-006A,SAMP	20	1000	Unknown		02/10/2017 10:23	Finished	SAMP, 10mL
78	N022910-006AMS,SA	21	1000	Unknown		02/10/2017 10:32	Finished	SAMP, 10mL
79	N022999-003A,SAMP	22	1000	Unknown		02/10/2017 10:42	Finished	SAMP, 10mL
80	N022999-003AMS,MS	23	1000	Unknown		02/10/2017 10:51	Finished	SAMP, 10mL
81	CCV-7,CCV,1,	24	1000	Unknown		02/10/2017 11:01	Finished	CCV @5ppb, IWST-161114C
82	CCB-7,CCB,1,	25	1000	Unknown		02/10/2017 11:10	Finished	CCB R170123B
83	BLANK	26	1000	Unknown		02/10/2017 11:20	Finished	BLANK
84	SHUTDOWN	27	1000	Unknown		02/10/2017 11:29	Finished	
85	Eluent: R170209B	28	1000	Unknown		n.a.	Finished	Eluent
86	PCR: R170209C	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/7/17
Time Prepared: 0820H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLW-161012A
NH4OH + NH4SO4 eluent: M170207A
NH4OH + NH4SO4 buffer: R0123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M23003-021D	8.15	9.29			0.2ml (10ml PV)	sample
2)							
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/8/17
Time Prepared: 0941H
Prepared By: NBA

slope: 97.8%
pH 4: 4.00 @22.1°C
7: 7.00 @22.1°C
10: 10.03 @22.2°C
LLS: 7.00 @22.2°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLW-161012A
NH4OH + NH4SO4 eluent: R170209B
NH4OH + NH4SO4 buffer: M170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M022998-001A	9.56	–	250mL	~250mL		M170123B
2)	2A	9.61	–				
3)	3A	9.58	–				
4)	4A	9.62	–				
5)	5A	9.69	–				
6)	M022999-1A	9.46	–				
7)	2A	9.48	–				
8)	3A	9.52	–				
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

nba 2/14/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ICV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2562998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2562999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.158	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.881	0.20	5.000	0	97.6	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.124	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	0.20	5.000	0	101	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ZZZZZZ** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.201	0.20	10.00	0	102	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCV** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.048	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **ICB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2562997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/9/2017** SeqNo: **2563000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113441**
Client ID: **CCB** Batch ID: **R113441** TestNo: **EPA 218.6** Analysis Date: **2/10/2017** SeqNo: **2563034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563045

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-7	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113441
Client ID:	CCB	Batch ID:	R113441	TestNo:	EPA 218.6			Analysis Date:	2/10/2017	SeqNo:	2563059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
MB-R113441	N.A.	N.A.
LCS-R113441	4.223	PASS
N023040-006D	4.206	PASS
N023041-006B	4.190	PASS
N023040-004D	N.A.	N.A.
N023040-008C	N.A.	N.A.
N023040-009C	4.215	PASS
N023040-003D	4.206	PASS
N023041-003C	4.206	PASS
N023040-009C	4.215	PASS
N023040-010D	N.A.	N.A.
N023040-011D	4.198	PASS
N023041-005D	N.A.	N.A.
N023041-007C	4.215	PASS
N023041-003C	4.215	PASS
N023040-006DREP	4.206	PASS
N023041-006BREP	4.190	PASS
N023040-004DREP	N.A.	N.A.
N023040-008CREP	N.A.	N.A.
N023040-009CREP	4.215	PASS
N023040-003DREP	4.198	PASS
N023041-003CREP	4.215	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
N023040-010DREP	N.A.	N.A.
N023040-011DREP	4.198	PASS
N023041-005DREP	N.A.	N.A.
N023041-007CREP	4.215	PASS
N023040-010DMS	4.165	PASS
N023041-005DMS	4.181	PASS
N023040-010D	4.056	PASS
N023040-010DMS	4.190	PASS
N023040-010DREP	4.081	PASS
N022985-001A	4.181	PASS
N022985-001AMS	4.173	PASS
N022985-001AMSD	4.181	PASS
N022985-002A	N.A.	N.A.
N022985-002AMS	4.206	PASS
N022985-003A	4.165	PASS
N022985-003AMS	4.165	PASS
N022985-004A	4.165	PASS
N022985-004AMS	4.165	PASS
N022966-013A	N.A.	N.A.
N022966-013AMS	4.206	PASS
N022999-001A	4.148	PASS
N022999-001AMS	4.148	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.223	
CCV-2	4.215	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
Average	4.216	
Actual RT Window	4.136 - 4.296	
Applied RT Window	4.016 - 4.416	
N022999-002A	4.215	PASS
N022999-002AMS	4.206	PASS
N022999-003A	N.A.	N.A.
N022999-003AMS	4.215	PASS
N022985-004ADUP	4.156	PASS
N022908-009A	N.A.	N.A.
N022908-009AMS	4.206	PASS
N022910-006A	4.206	PASS
N022910-006AMS	4.215	PASS
N022999-003A	4.148	PASS
N022999-003AMS	4.148	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

IC7 RBA 2/6/2017 3:25 PM

Nancy 2/14/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

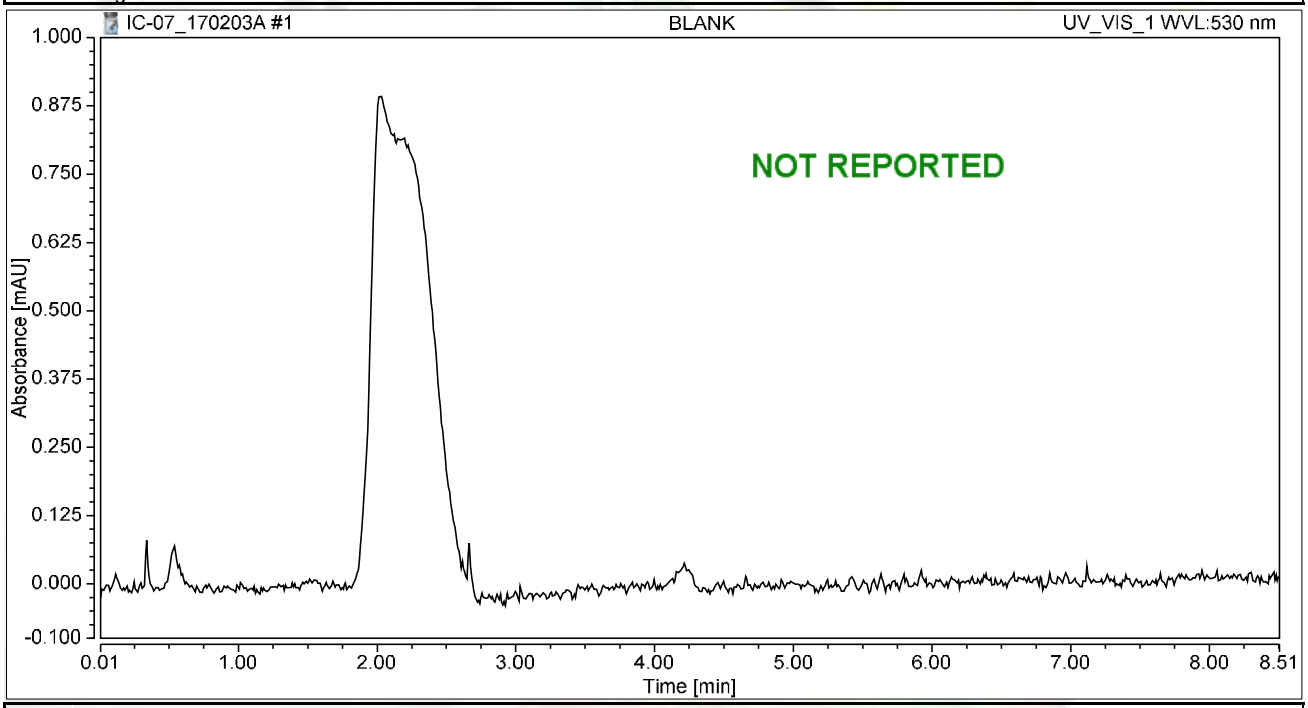
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

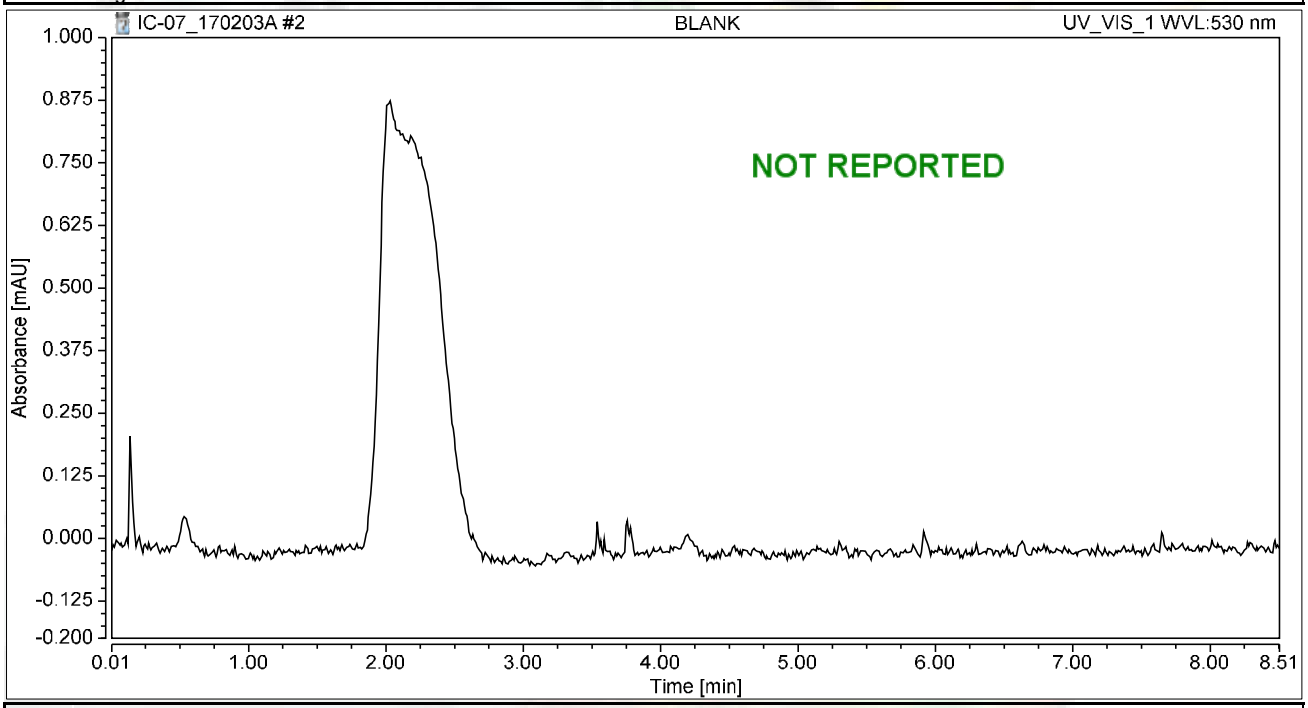
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

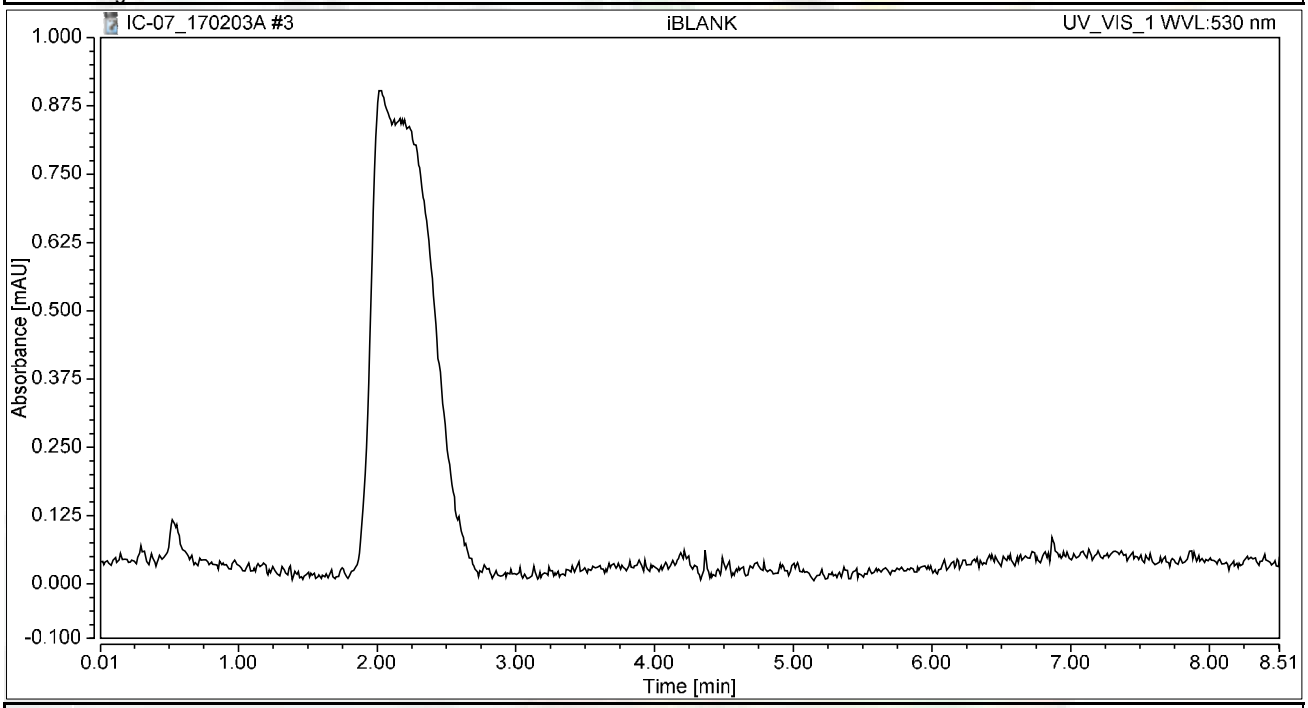
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

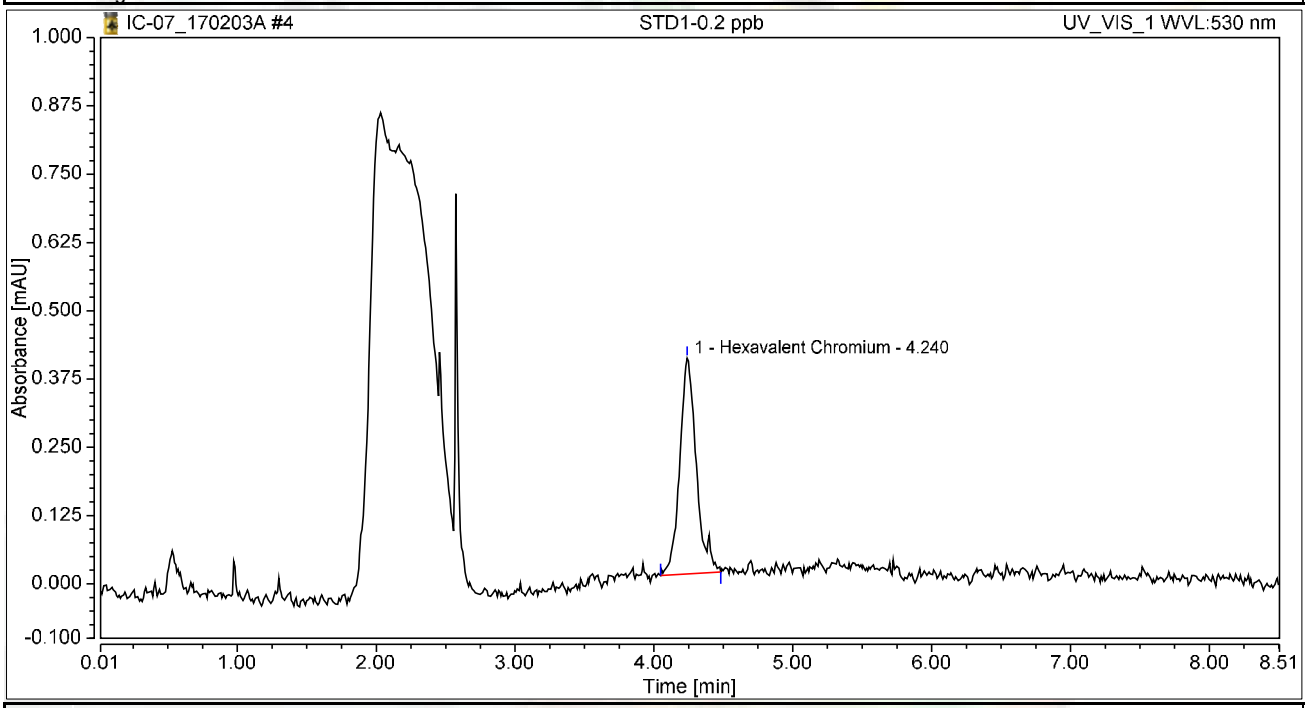
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

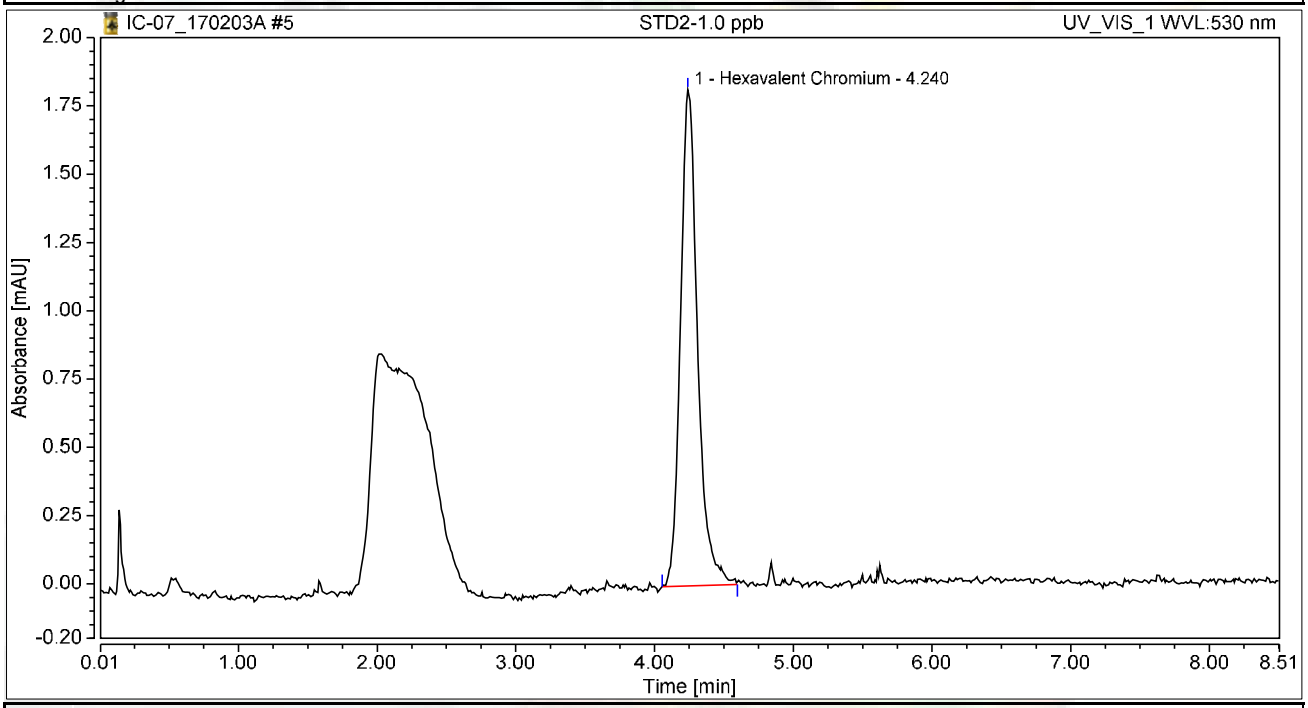
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

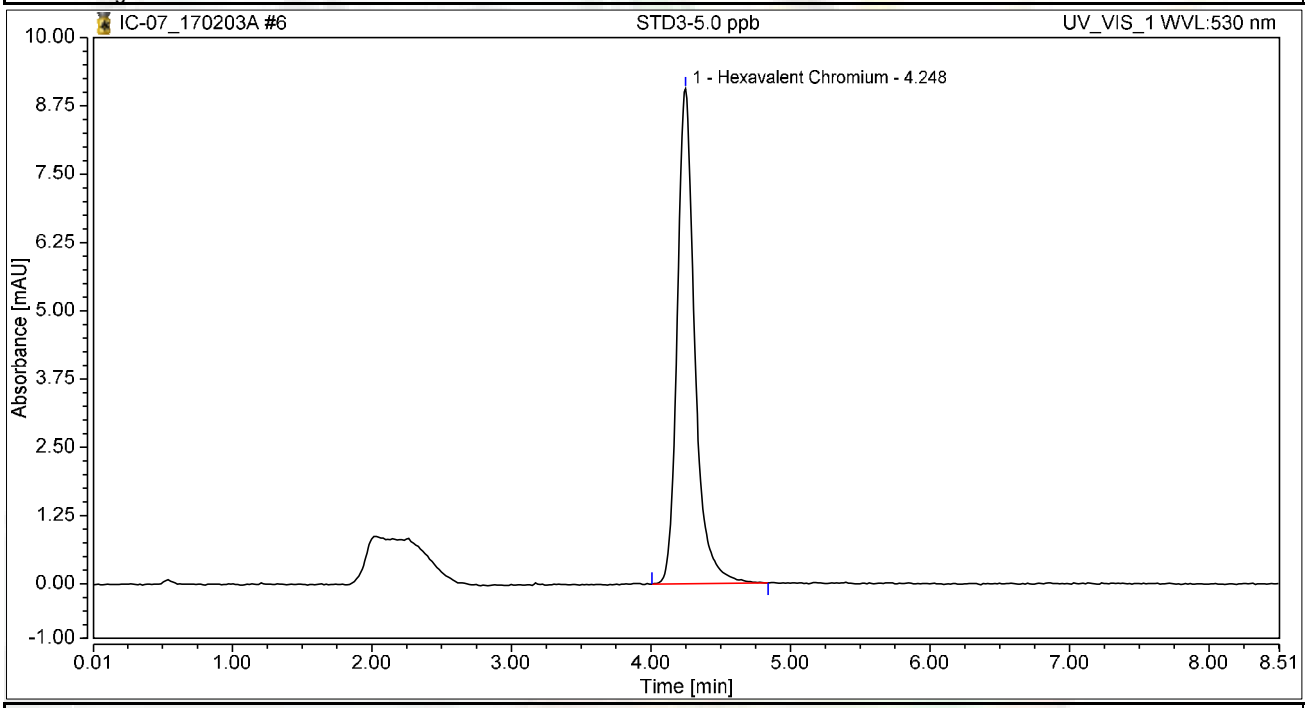
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

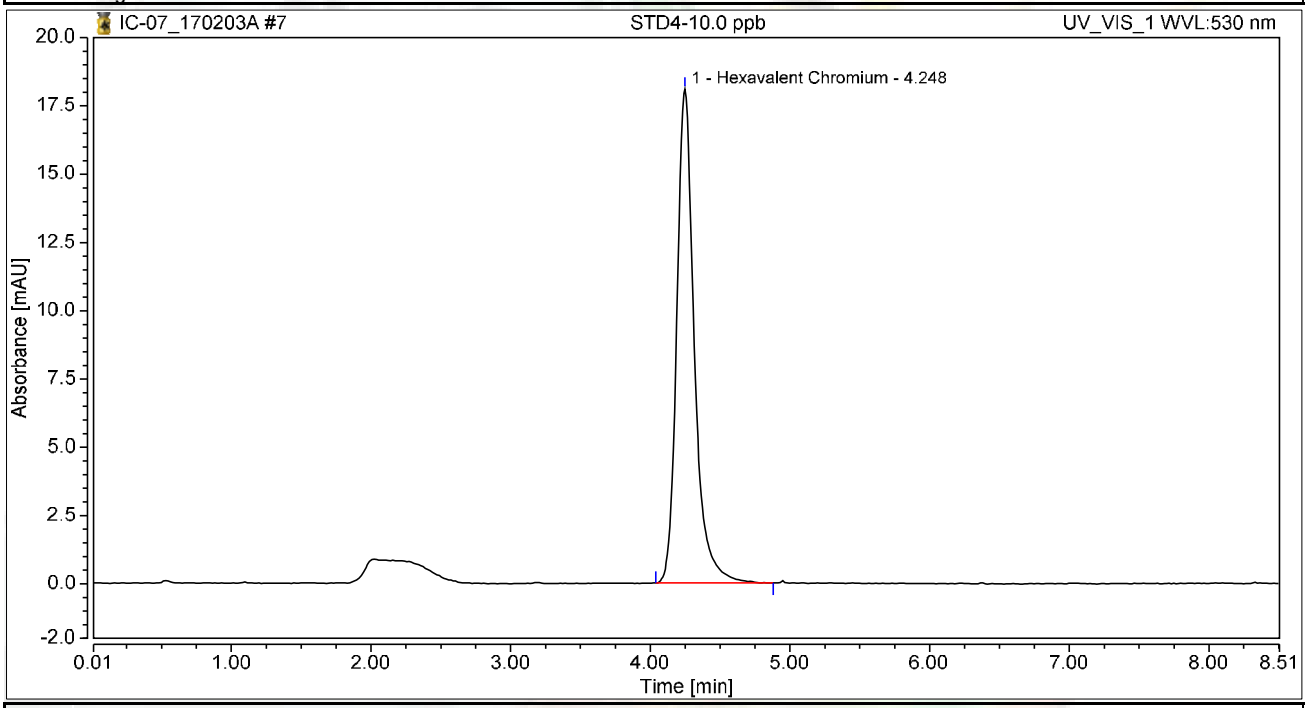
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

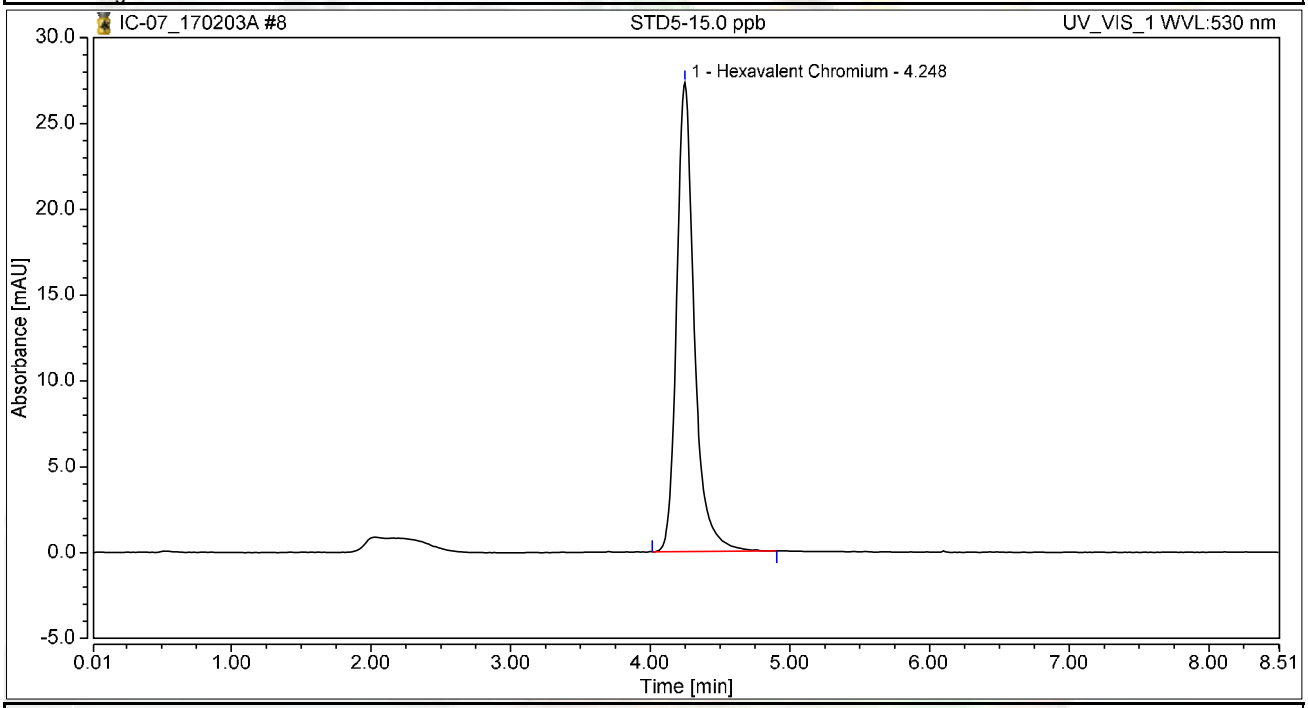
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

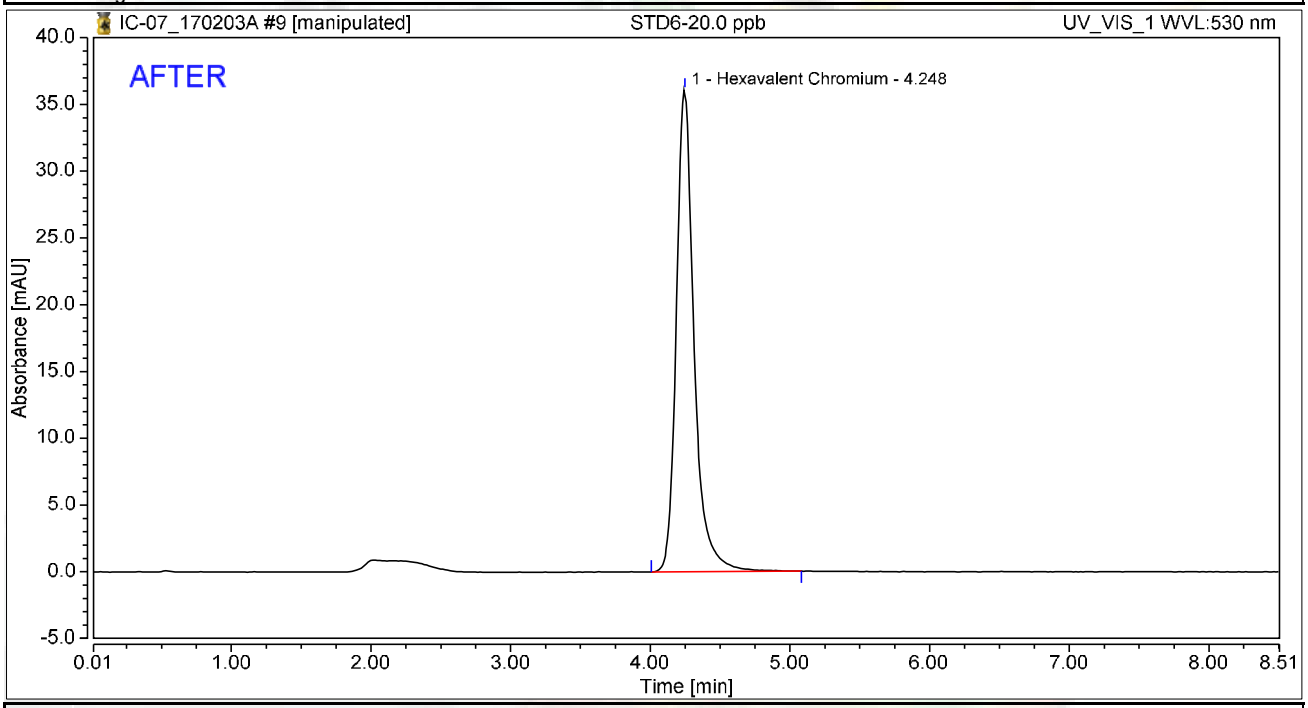
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

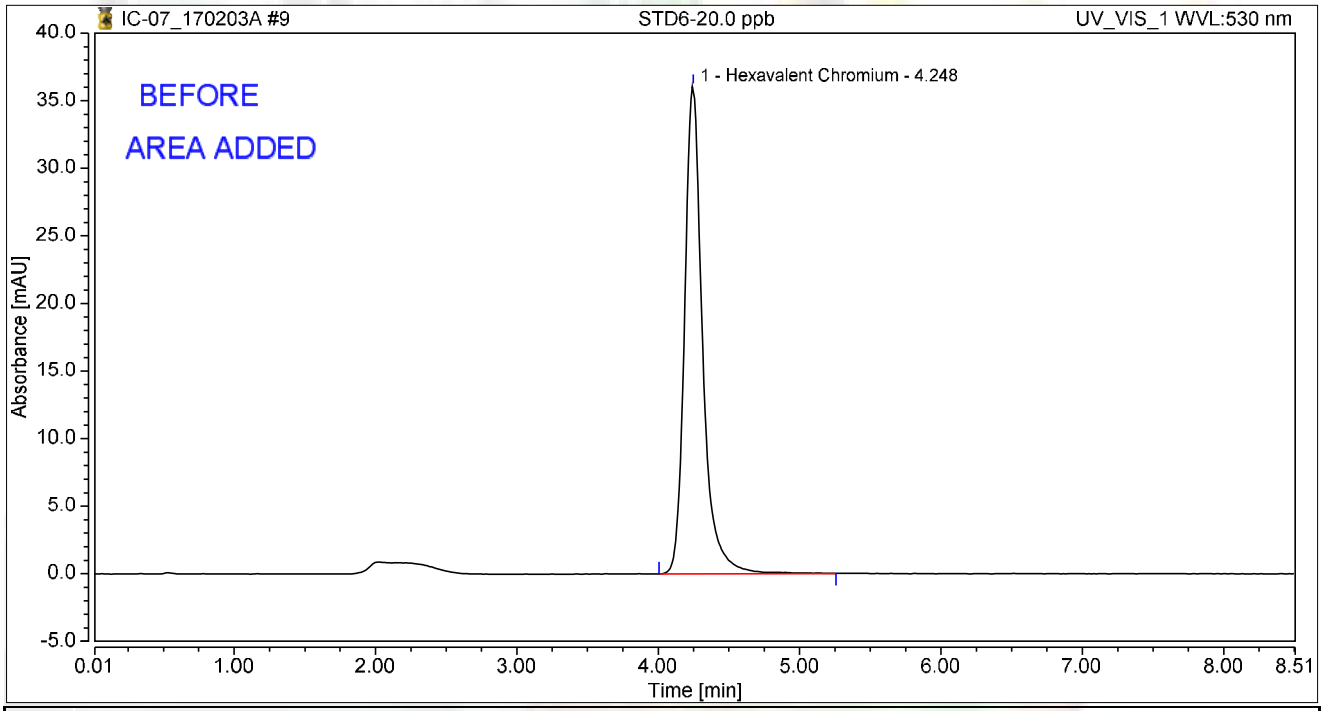
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

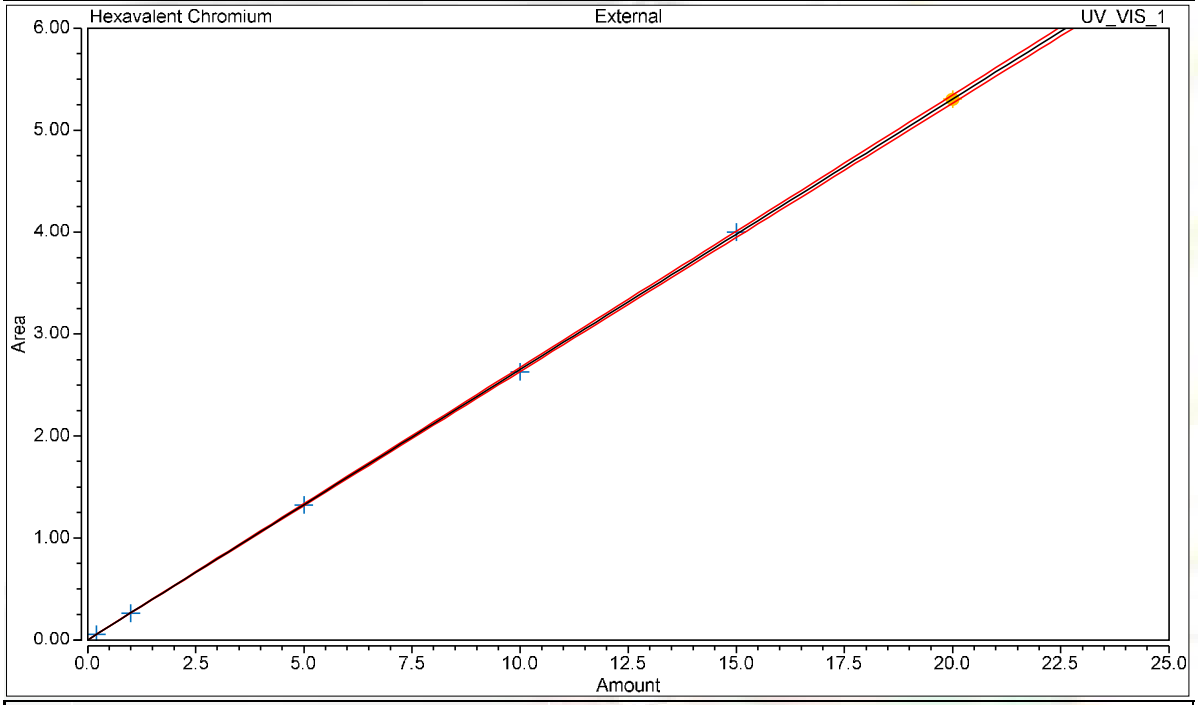
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

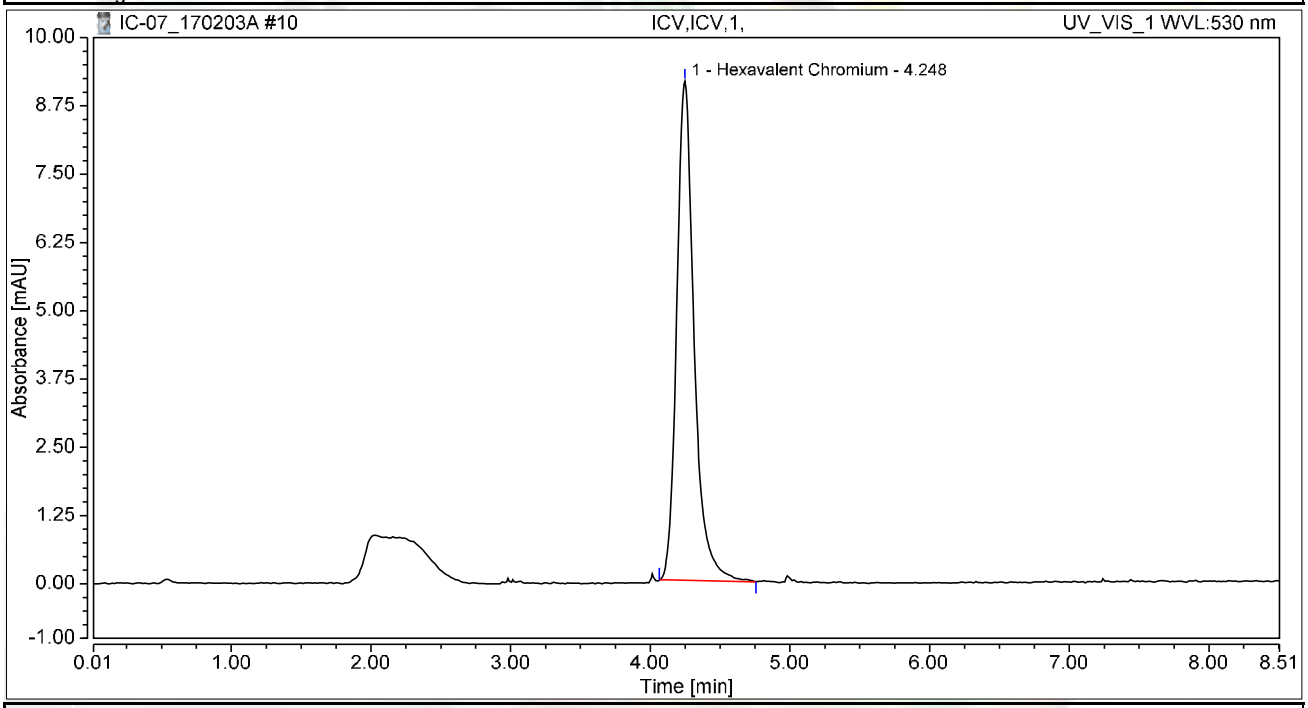
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
	Hexavalent Chromium		UV_VIS_1	VIS_1	UV_VIS_1	
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

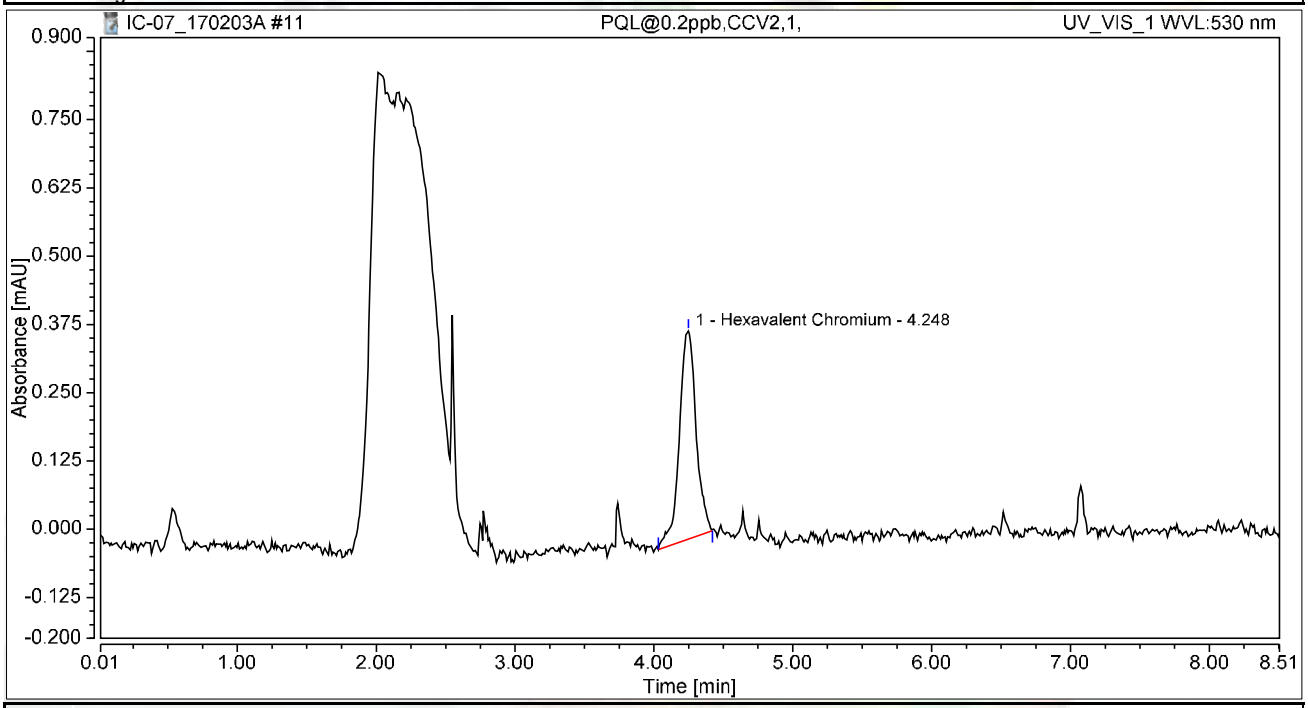
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

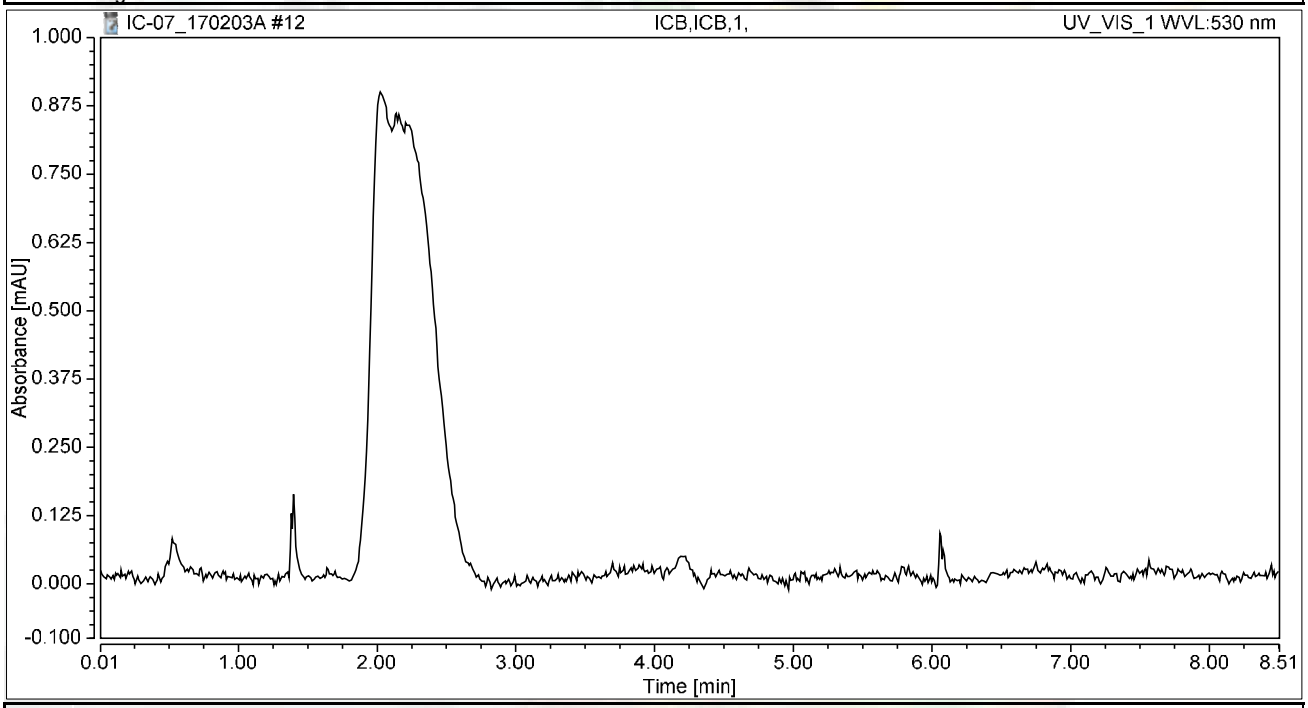
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/09/17 11:07 PM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/09/17 11:18 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/09/17 11:28 PM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/09/17 11:37 PM	Reported
14	MB-R113441	MBLK	1	Hexavalent Chromium	02/09/17 11:47 PM	Reported
15	LCS-R113441	LCS	1	Hexavalent Chromium	02/09/17 11:56 PM	Reported
16	N023040-006D	SAMP	1	Hexavalent Chromium	02/10/17 12:08 AM	Reported
17	N023041-006B	SAMP	1	Hexavalent Chromium	02/10/17 12:19 AM	Reported
18	N023040-004D	SAMP	1	Hexavalent Chromium	02/10/17 12:29 AM	Reported
19	N023040-008C	SAMP	1	Hexavalent Chromium	02/10/17 12:38 AM	Reported
20	N023040-009C	SAMP	100	Hexavalent Chromium	02/10/17 12:48 AM	Not Reported
21	N023040-003D	SAMP	1	Hexavalent Chromium	02/10/17 12:57 AM	Reported
22	N023041-003C	SAMP	1	Hexavalent Chromium	02/10/17 1:08 AM	Not Reported
23	N023040-009C	SAMP	5	Hexavalent Chromium	02/10/17 1:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/10/17 1:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/10/17 1:38 AM	Reported
26	N023040-010D	SAMP	1	Hexavalent Chromium	02/10/17 1:48 AM	Reported
27	N023040-011D	SAMP	1	Hexavalent Chromium	02/10/17 1:57 AM	Reported
28	N023041-005D	SAMP	1	Hexavalent Chromium	02/10/17 2:06 AM	Reported
29	N023041-007C	SAMP	10	Hexavalent Chromium	02/10/17 2:16 AM	Reported
30	N023041-003C	SAMP	5	Hexavalent Chromium	02/10/17 2:25 AM	Reported
31	N023040-006DREP	DUP	1	Hexavalent Chromium	02/10/17 2:35 AM	Reported
32	N023041-006BREP	DUP	1	Hexavalent Chromium	02/10/17 2:44 AM	Reported
33	N023040-004DREP	DUP	1	Hexavalent Chromium	02/10/17 2:54 AM	Reported
34	N023040-008CREP	DUP	1	Hexavalent Chromium	02/10/17 3:03 AM	Reported
35	N023040-009CREP	DUP	5	Hexavalent Chromium	02/10/17 3:13 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/10/17 3:22 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/10/17 3:32 AM	Reported
38	N023040-003DREP	DUP	1	Hexavalent Chromium	02/10/17 3:41 AM	Reported
39	N023041-003CREP	DUP	5	Hexavalent Chromium	02/10/17 3:51 AM	Reported
40	N023040-010DREP	DUP	1	Hexavalent Chromium	02/10/17 4:00 AM	Reported
41	N023040-011DREP	DUP	1	Hexavalent Chromium	02/10/17 4:09 AM	Reported
42	N023041-005DREP	DUP	1	Hexavalent Chromium	02/10/17 4:19 AM	Reported

INJECTION LOG: 170209A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023041-007CREP	DUP	10	Hexavalent Chromium	02/10/17 4:28 AM	Reported
44	N023040-010DMS	MS	1	Hexavalent Chromium	02/10/17 4:38 AM	Reported
45	N023041-005DMS	MS	1	Hexavalent Chromium	02/10/17 4:47 AM	Reported
46	N023040-010D	SAMP	2	Hexavalent Chromium	02/10/17 5:05 AM	Not Reported
47	N023040-010DMS	MS	2	Hexavalent Chromium	02/10/17 5:16 AM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/10/17 5:25 AM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/10/17 5:35 AM	Reported
50	N023040-010DREP	DUP	2	Hexavalent Chromium	02/10/17 5:44 AM	Not Reported
51	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 5:54 AM	Not Reported
52	N022985-001A	SAMP	5	Hexavalent Chromium	02/10/17 6:03 AM	Reported
53	N022985-001AMS	MS	5	Hexavalent Chromium	02/10/17 6:13 AM	Reported
54	N022985-001AMSD	MSD	5	Hexavalent Chromium	02/10/17 6:22 AM	Reported
55	N022985-002A	SAMP	1	Hexavalent Chromium	02/10/17 6:31 AM	Reported
56	N022985-002AMS	MS	1	Hexavalent Chromium	02/10/17 6:41 AM	Reported
57	N022985-003A	SAMP	5	Hexavalent Chromium	02/10/17 6:54 AM	Reported
58	N022985-003AMS	MS	5	Hexavalent Chromium	02/10/17 7:05 AM	Reported
59	N022985-004A	SAMP	5	Hexavalent Chromium	02/10/17 7:14 AM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/10/17 7:24 AM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:33 AM	Not Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/10/17 7:59 AM	Reported
63	N022985-004AMS	MS	5	Hexavalent Chromium	02/10/17 8:10 AM	Reported
64	N022966-013A	SAMP	1	Hexavalent Chromium	02/10/17 8:20 AM	Reported
65	N022966-013AMS	MS	1	Hexavalent Chromium	02/10/17 8:29 AM	Reported
66	N022999-001A	SAMP	1	Hexavalent Chromium	02/10/17 8:39 AM	Reported
67	N022999-001AMS	MS	1	Hexavalent Chromium	02/10/17 8:48 AM	Reported
68	N022999-002A	SAMP	100	Hexavalent Chromium	02/10/17 8:58 AM	Reported
69	N022999-002AMS	MS	100	Hexavalent Chromium	02/10/17 9:07 AM	Reported
70	N022999-003A	SAMP	100	Hexavalent Chromium	02/10/17 9:17 AM	Not Reported
71	N022999-003AMS	MS	100	Hexavalent Chromium	02/10/17 9:26 AM	Not Reported
72	N022985-004ADUP	DUP	5	Hexavalent Chromium	02/10/17 9:35 AM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/10/17 9:45 AM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/10/17 9:54 AM	Reported
75	N022908-009A	SAMP	1	Hexavalent Chromium	02/10/17 10:04 AM	Not Reported
76	N022908-009AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:13 AM	Not Reported
77	N022910-006A	SAMP	1	Hexavalent Chromium	02/10/17 10:23 AM	Not Reported
78	N022910-006AMS	SAMP	1	Hexavalent Chromium	02/10/17 10:32 AM	Not Reported
79	N022999-003A	SAMP	1	Hexavalent Chromium	02/10/17 10:42 AM	Reported
80	N022999-003AMS	MS	1	Hexavalent Chromium	02/10/17 10:51 AM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	02/10/17 11:01 AM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	02/10/17 11:10 AM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	02/10/17 11:20 AM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170209A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**10/Feb/17 11:50:23**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	2	1000	Unknown		02/09/2017 23:07	Finished	
11	CCV-1,CCV,1,	3	1000	Unknown		02/09/2017 23:18	Finished	CCV @5ppb, IWST-161114C
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/09/2017 23:28	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/09/2017 23:37	Finished	CCB R170123B
14	MB-H2O,MBLK,1	6	1000	Unknown		02/09/2017 23:47	Finished	MB R170123B
15	LCS-H2O,LCS,1	7	1000	Unknown		02/09/2017 23:56	Finished	LCS, IWST-161114D
16	N023040-006D,SAMP	9	1000	Unknown		02/10/2017 00:08	Finished	SAMP, 10mL
17	N023041-006B,SAMP	10	1000	Unknown		02/10/2017 00:19	Finished	SAMP, 10mL
18	N023040-004D,SAMP	11	1000	Unknown		02/10/2017 00:29	Finished	SAMP, 10mL
19	N023040-008C,SAMP	12	1000	Unknown		02/10/2017 00:38	Finished	SAMP, 10mL
20	N023040-009C,SAMP	13	1000	Unknown		02/10/2017 00:48	Finished	SAMP, 0.1>10mL
21	N023040-003D,SAMP	14	1000	Unknown		02/10/2017 00:57	Finished	SAMP, 10mL
22	N023041-003C,SAMP	16	1000	Unknown		02/10/2017 01:08	Finished	SAMP, 10mL
23	N023040-009C,SAMP	17	1000	Unknown		02/10/2017 01:19	Finished	SAMP, 2>10mL
24	CCV-2,CCV1,1,	18	1000	Unknown		02/10/2017 01:29	Finished	CCV @10ppb, IWST-161114C
25	CCB-2,CCB,1,	19	1000	Unknown		02/10/2017 01:38	Finished	CCB R170123B
26	N023040-010D,SAMP	20	1000	Unknown		02/10/2017 01:48	Finished	SAMP, 10mL
27	N023040-011D,SAMP	21	1000	Unknown		02/10/2017 01:57	Finished	SAMP, 10mL
28	N023041-005D,SAMP	22	1000	Unknown		02/10/2017 02:06	Finished	SAMP, 10mL
29	N023041-007C,SAMP	23	1000	Unknown		02/10/2017 02:16	Finished	SAMP, 1>10mL
30	N023041-003C,SAMP	24	1000	Unknown		02/10/2017 02:25	Finished	SAMP, 2>10mL
31	N023040-006DREP,D	25	1000	Unknown		02/10/2017 02:35	Finished	REP, 10mL
32	N023041-006BREP,D	26	1000	Unknown		02/10/2017 02:44	Finished	REP, 10mL
33	N023040-004DREP,D	27	1000	Unknown		02/10/2017 02:54	Finished	REP, 10mL
34	N023040-008CREP,D	28	1000	Unknown		02/10/2017 03:03	Finished	REP, 10mL
35	N023040-009CREP,D	29	1000	Unknown		02/10/2017 03:13	Finished	REP, 2>10mL
36	CCV-3,CCV,1,	30	1000	Unknown		02/10/2017 03:22	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	31	1000	Unknown		02/10/2017 03:32	Finished	CCB R170123B
38	N023040-003DREP,D	32	1000	Unknown		02/10/2017 03:41	Finished	REP, 10mL
39	N023041-003CREP,D	33	1000	Unknown		02/10/2017 03:51	Finished	REP, 2>10mL
40	N023040-010DREP,D	34	1000	Unknown		02/10/2017 04:00	Finished	REP, 10mL
41	N023040-011DREP,D	35	1000	Unknown		02/10/2017 04:09	Finished	REP, 10mL
42	N023041-005DREP,D	36	1000	Unknown		02/10/2017 04:19	Finished	REP, 10mL
43	N023041-007CREP,D	37	1000	Unknown		02/10/2017 04:28	Finished	REP, 1>10mL
44	N023040-010DMS,MS	38	1000	Unknown		02/10/2017 04:38	Finished	MS (5ppb), IWST-161114D,10
45	N023041-005DMS,MS	39	1000	Unknown		02/10/2017 04:47	Finished	MS (5ppb), IWST-161114D,10
46	N023040-010D,SAMP	40	1000	Unknown		02/10/2017 05:05	Finished	SAMP, 5>10mL
47	N023040-010DMS,MS	41	1000	Unknown		02/10/2017 05:16	Finished	MS (5ppb), IWST-161114D,5>1
48	CCV-4,CCV1,1,	42	1000	Unknown		02/10/2017 05:25	Finished	CCV @10ppb, IWST-161114C
49	CCB-4,CCB,1,	43	1000	Unknown		02/10/2017 05:35	Finished	CCB R170123B
50	N023040-010DREP,D	44	1000	Unknown		02/10/2017 05:44	Finished	REP,5>10mL
51	BLANK	45	1000	Unknown		02/10/2017 05:54	Finished	BLANK
52	N022985-001A,SAMP	46	1000	Unknown		02/10/2017 06:03	Finished	SAMP,2>10mL
53	N022985-001AMS,MS	47	1000	Unknown		02/10/2017 06:13	Finished	MS (5ppb), IWST-161114D,2>1
54	N022985-001AMSD,M	48	1000	Unknown		02/10/2017 06:22	Finished	MSD (5ppb), IWST-161114D,2
55	N022985-002A,SAMP	49	1000	Unknown		02/10/2017 06:31	Finished	SAMP, 10mL
56	N022985-002AMS,MS	50	1000	Unknown		02/10/2017 06:41	Finished	MS (1ppb), IWST-161114D,10
57	N022985-003A,SAMP	1	1000	Unknown		02/10/2017 06:54	Finished	SAMP,2>10mL
58	N022985-003AMS,MS	2	1000	Unknown		02/10/2017 07:05	Finished	MS (5ppb), IWST-161114D,2>1
59	N022985-004A,SAMP	3	1000	Unknown		02/10/2017 07:14	Finished	SAMP,2>10mL
60	CCV-5,CCV,1,	4	1000	Unknown		02/10/2017 07:24	Finished	CCV @5ppb, IWST-161114C

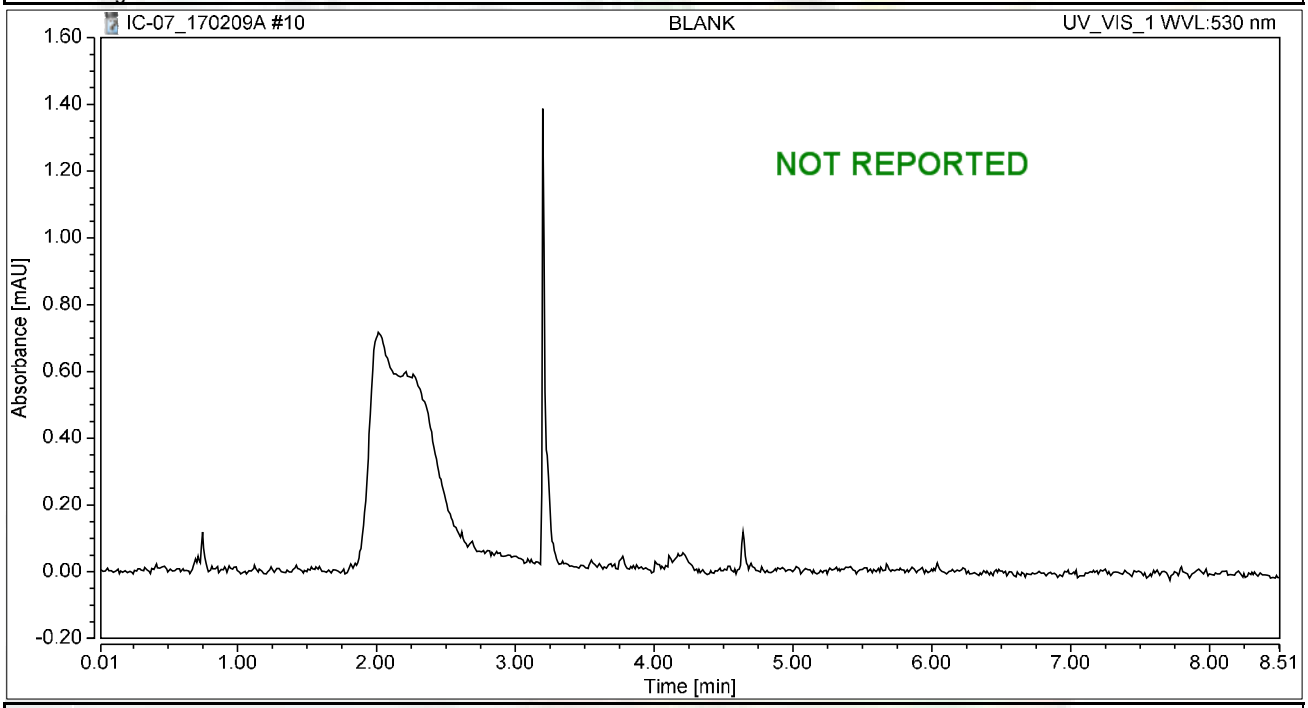
61	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:33	Finished	CCB R170123B	
62	CCB-5,CCB,1,	5	1000	Unknown		02/10/2017 07:59	Finished	CCB R170123B	
63	N022985-004AMS,MS	6	1000	Unknown		02/10/2017 08:10	Finished	MS (5ppb), IWST-161114D,2>1	
64	~~N022966-001A~~,SAMP	7	1000	Unknown		02/10/2017 08:20	Finished	SAMP, 10mL	N022966-013A
65	~~N022966-001AM~~S,MS	8	1000	Unknown		02/10/2017 08:29	Finished	MS (1ppb), IWST-161114D,10	N022966-013AMS
66	N022999-001A,SAMP	9	1000	Unknown		02/10/2017 08:39	Finished	SAMP, 10mL	
67	N022999-001AMS,MS	10	1000	Unknown		02/10/2017 08:48	Finished	MS (1ppb), IWST-161114D,10	
68	N022999-002A,SAMP	11	1000	Unknown		02/10/2017 08:58	Finished	SAMP, 0.1>10mL	
69	N022999-002AMS,MS	12	1000	Unknown		02/10/2017 09:07	Finished	MS (5ppb), IWST-161114D,0.1	
70	N022999-003A,SAMP	13	1000	Unknown		02/10/2017 09:17	Finished	SAMP, 0.1>10mL	
71	N022999-003AMS,MS	14	1000	Unknown		02/10/2017 09:26	Finished	MS (5ppb), IWST-161114D,0.1	
72	N022985-004ADUP,D	15	1000	Unknown		02/10/2017 09:35	Finished	DUP, 2>10mL	
73	CCV-6,CCV1,1,	16	1000	Unknown		02/10/2017 09:45	Finished	CCV @10ppb, IWST-161114C	
74	CCB-6,CCB,1,	17	1000	Unknown		02/10/2017 09:54	Finished	CCB R170123B	
75	N022908-009A,SAMP	18	1000	Unknown		02/10/2017 10:04	Finished	SAMP, 10mL	
76	N022908-009AMS,SA	19	1000	Unknown		02/10/2017 10:13	Finished	MS (1ppb), IWST-161114D,10	
77	N022910-006A,SAMP	20	1000	Unknown		02/10/2017 10:23	Finished	SAMP, 10mL	
78	N022910-006AMS,SA	21	1000	Unknown		02/10/2017 10:32	Finished	SAMP, 10mL	
79	N022999-003A,SAMP	22	1000	Unknown		02/10/2017 10:42	Finished	SAMP, 10mL	
80	N022999-003AMS,MS	23	1000	Unknown		02/10/2017 10:51	Finished	SAMP, 10mL	
81	CCV-7,CCV,1,	24	1000	Unknown		02/10/2017 11:01	Finished	CCV @5ppb, IWST-161114C	
82	CCB-7,CCB,1,	25	1000	Unknown		02/10/2017 11:10	Finished	CCB R170123B	
83	BLANK	26	1000	Unknown		02/10/2017 11:20	Finished	BLANK	
84	SHUTDOWN	27	1000	Unknown		02/10/2017 11:29	Finished		
85	Eluent: R170209B	28	1000	Unknown		n.a.	Finished	Eluent	
86	PCR: R170209C	29	1000	Unknown		n.a.	Finished	Post-Column Reagent	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

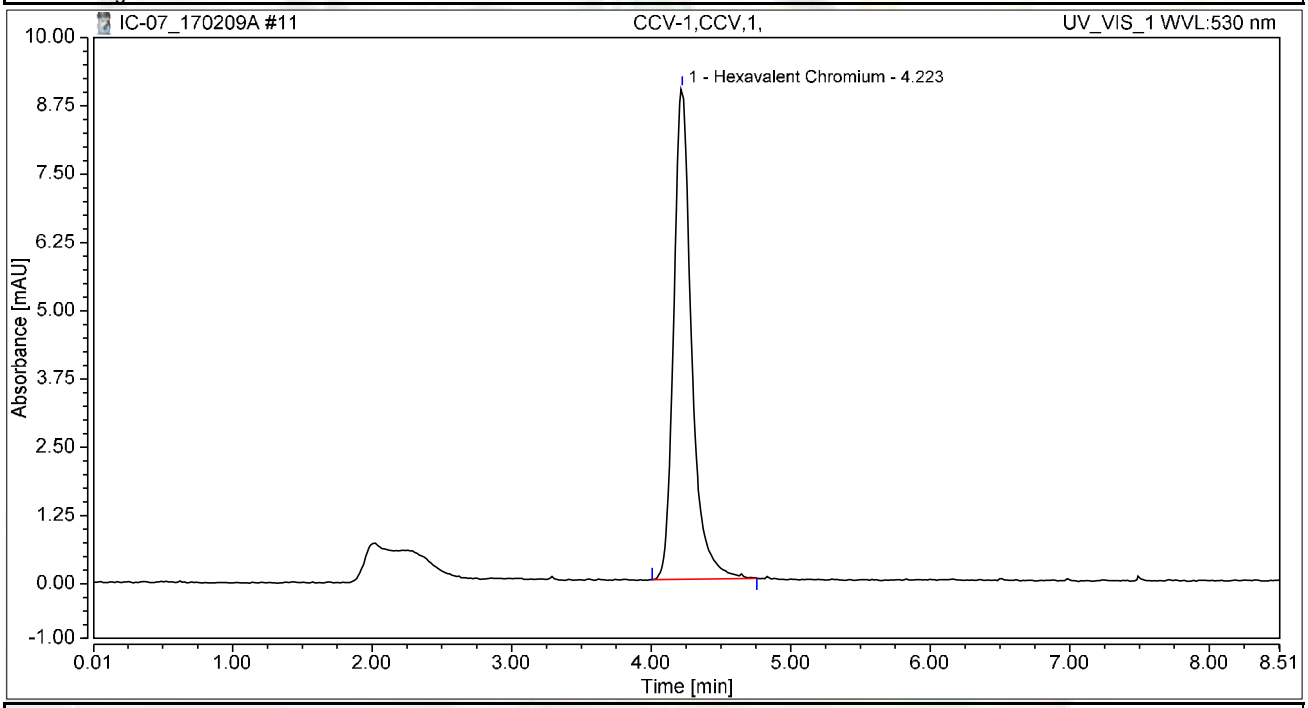
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

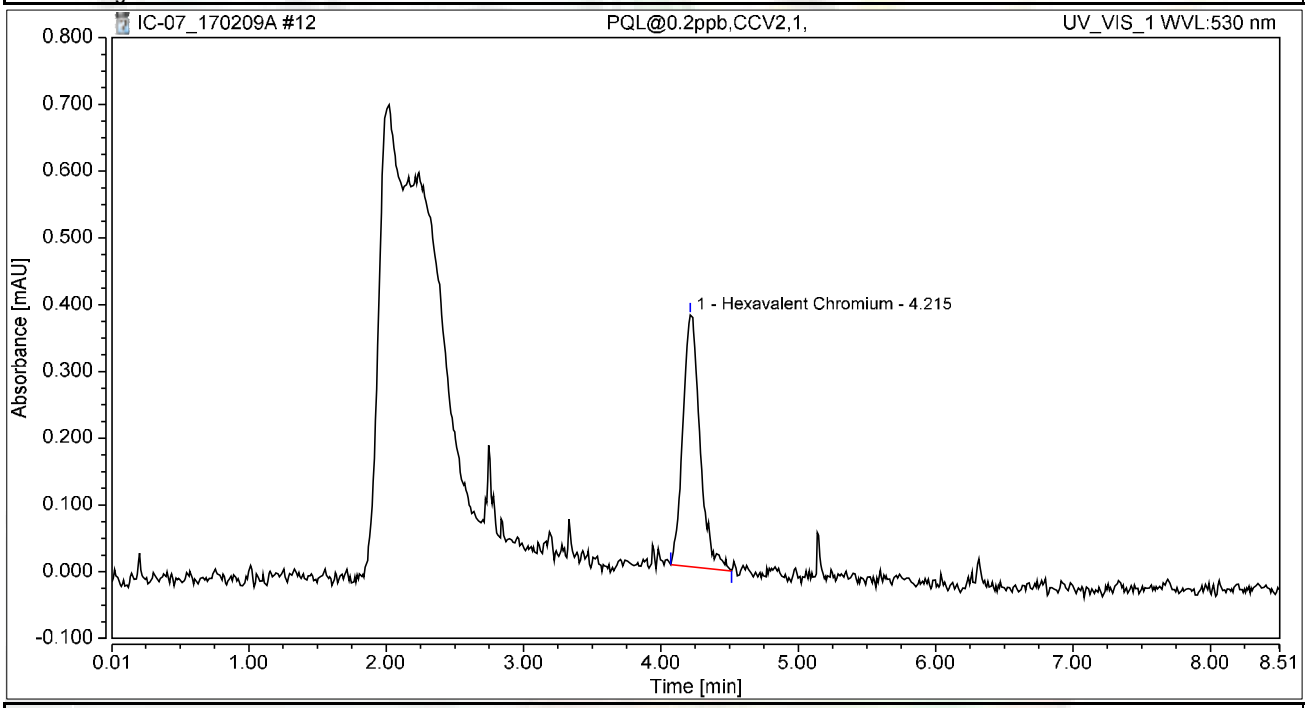
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.336	8.992	100.00	100.00	5.0386
Total:			**1.336**	**8.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

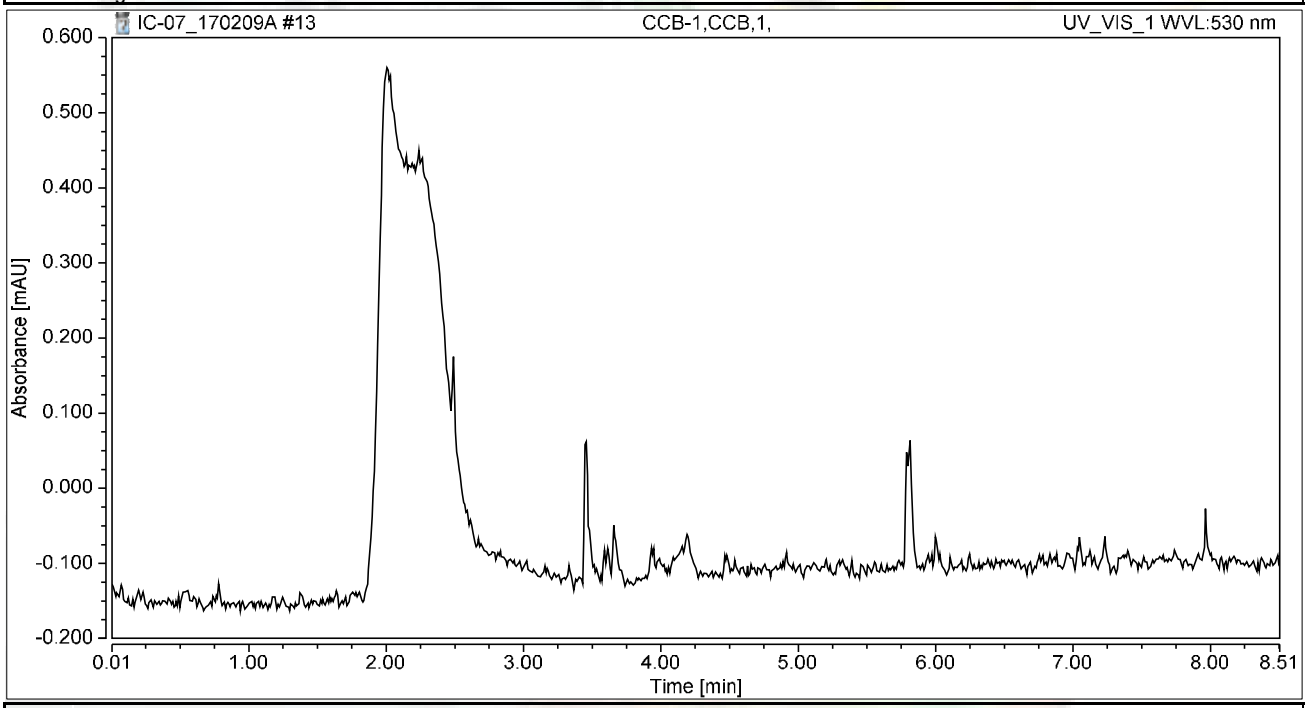
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.055	0.377	100.00	100.00	0.2061
Total:			**0.055**	**0.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

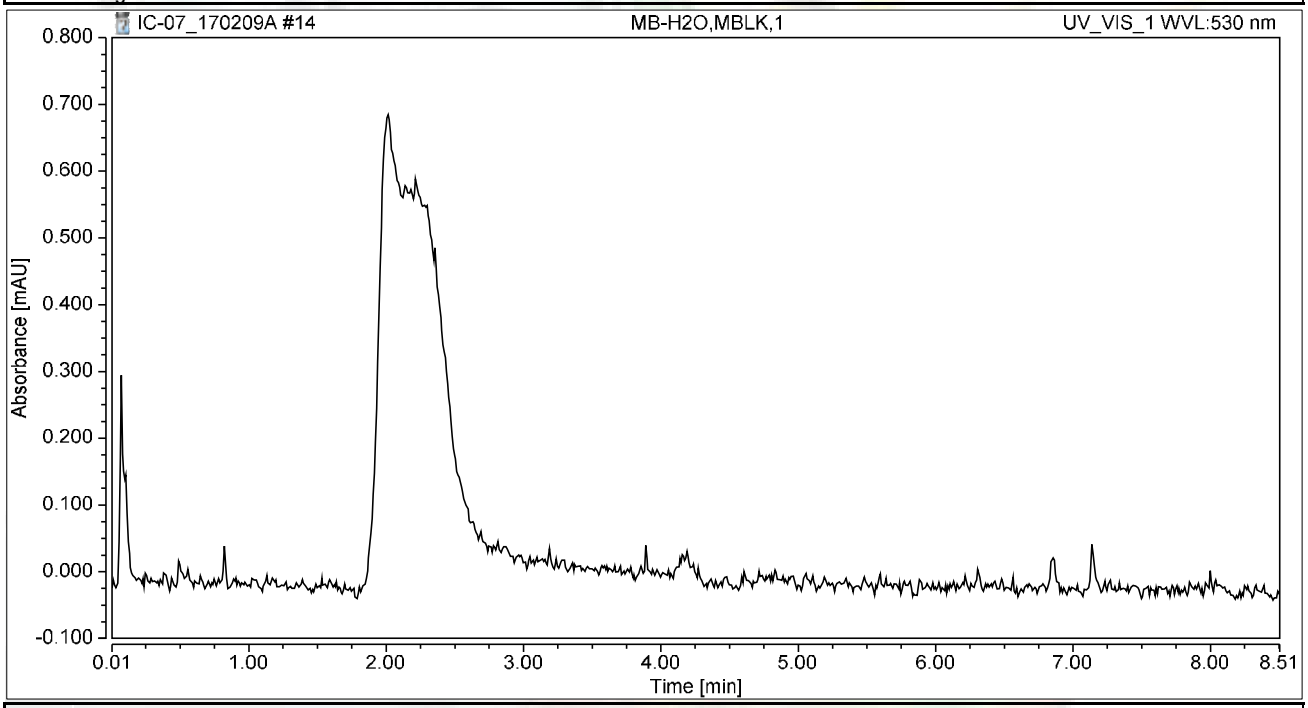
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

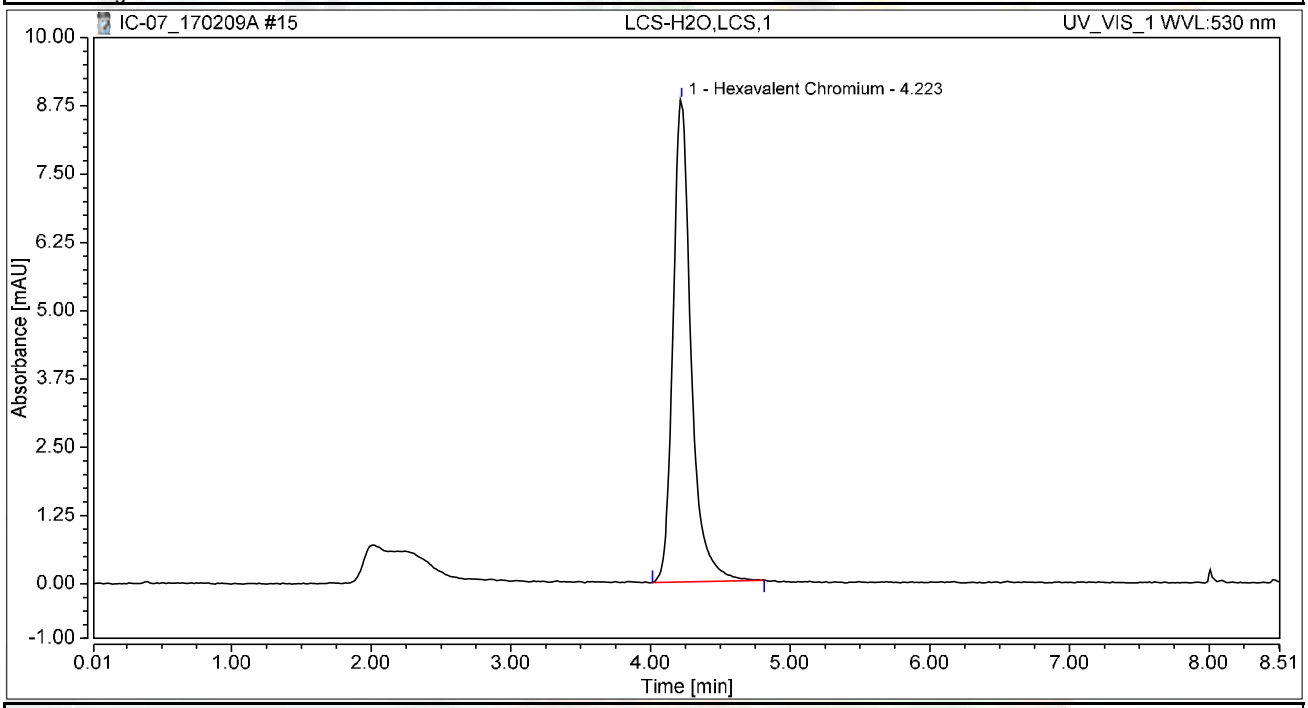
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Feb/17 23:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

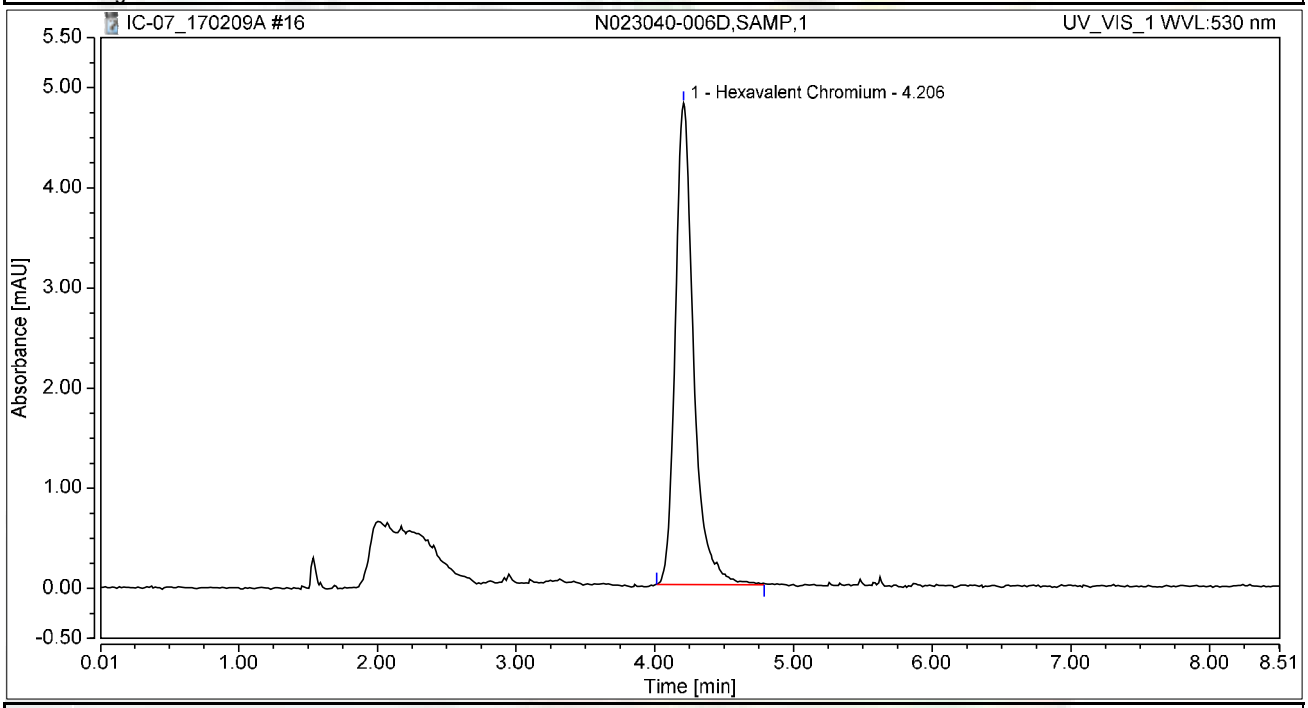
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.325	8.825	100.00	100.00	4.9947
Total:			**1.325**	**8.825**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-006D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

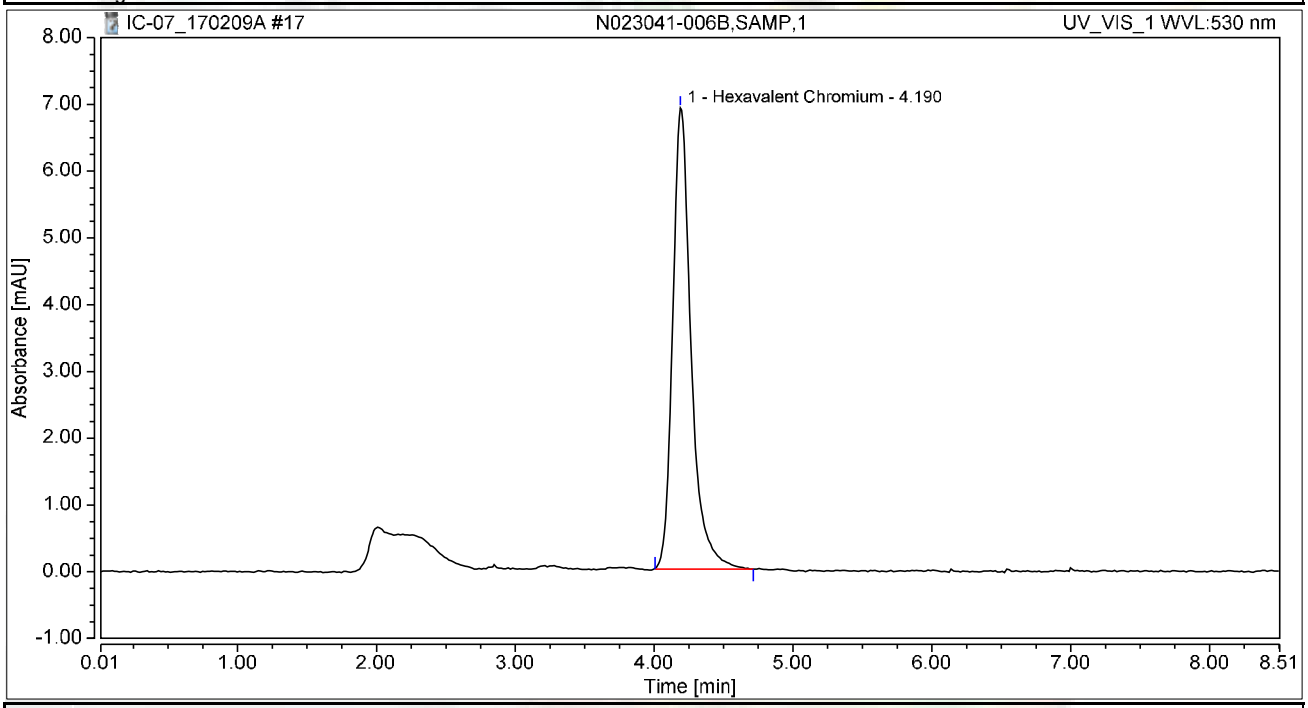
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.735	4.807	100.00	100.00	2.7703
Total:			**0.735**	**4.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-006B,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

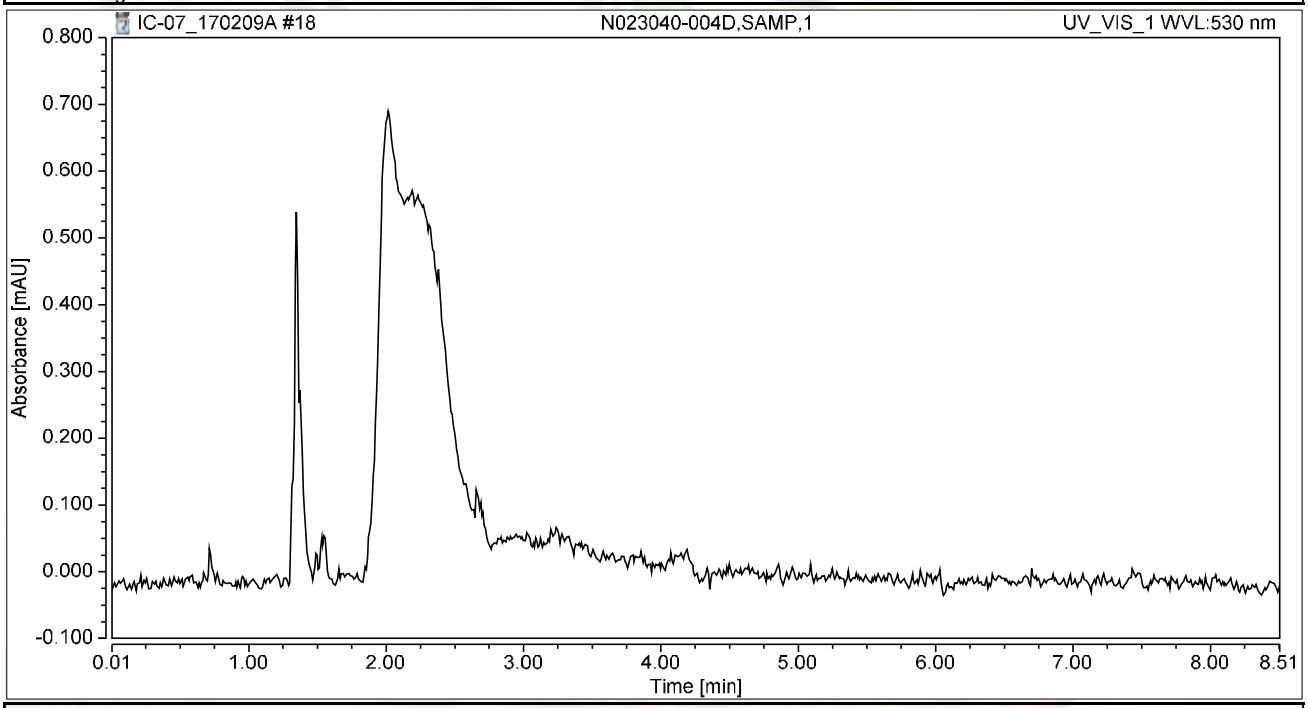
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.060	6.904	100.00	100.00	3.9961
Total:			**1.060**	**6.904**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-004D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

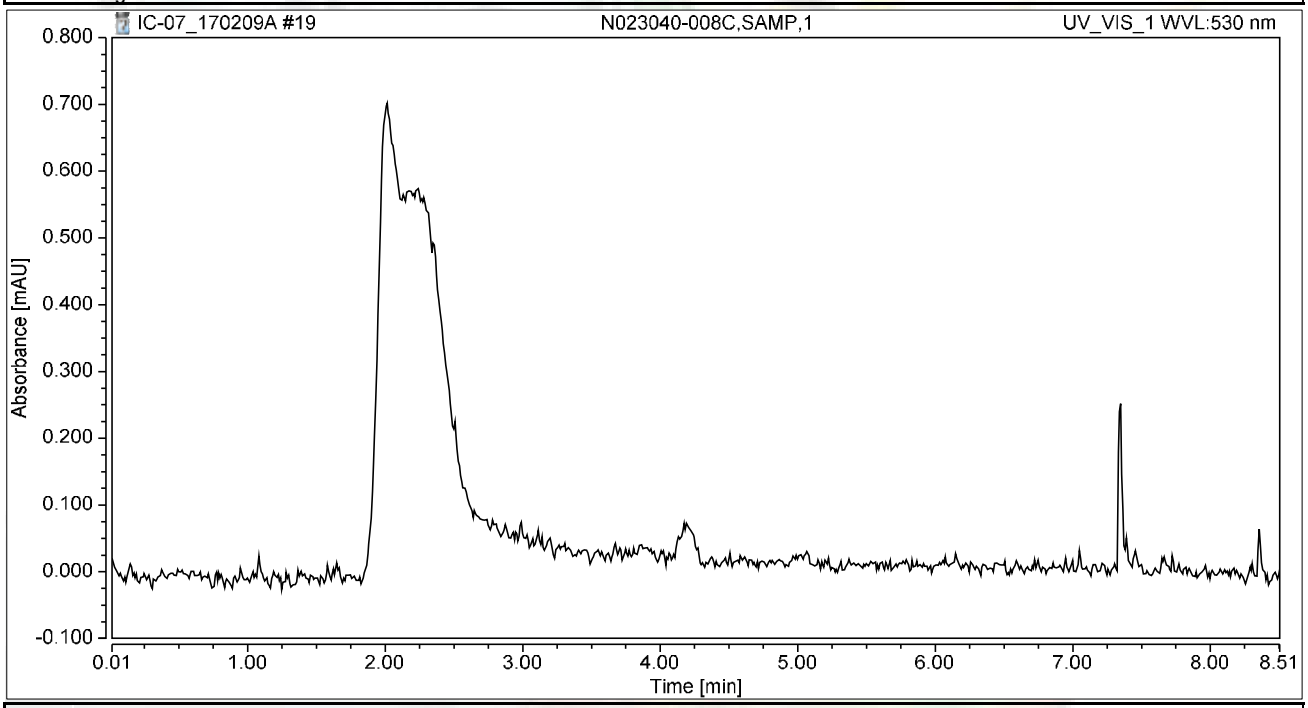
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-008C,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

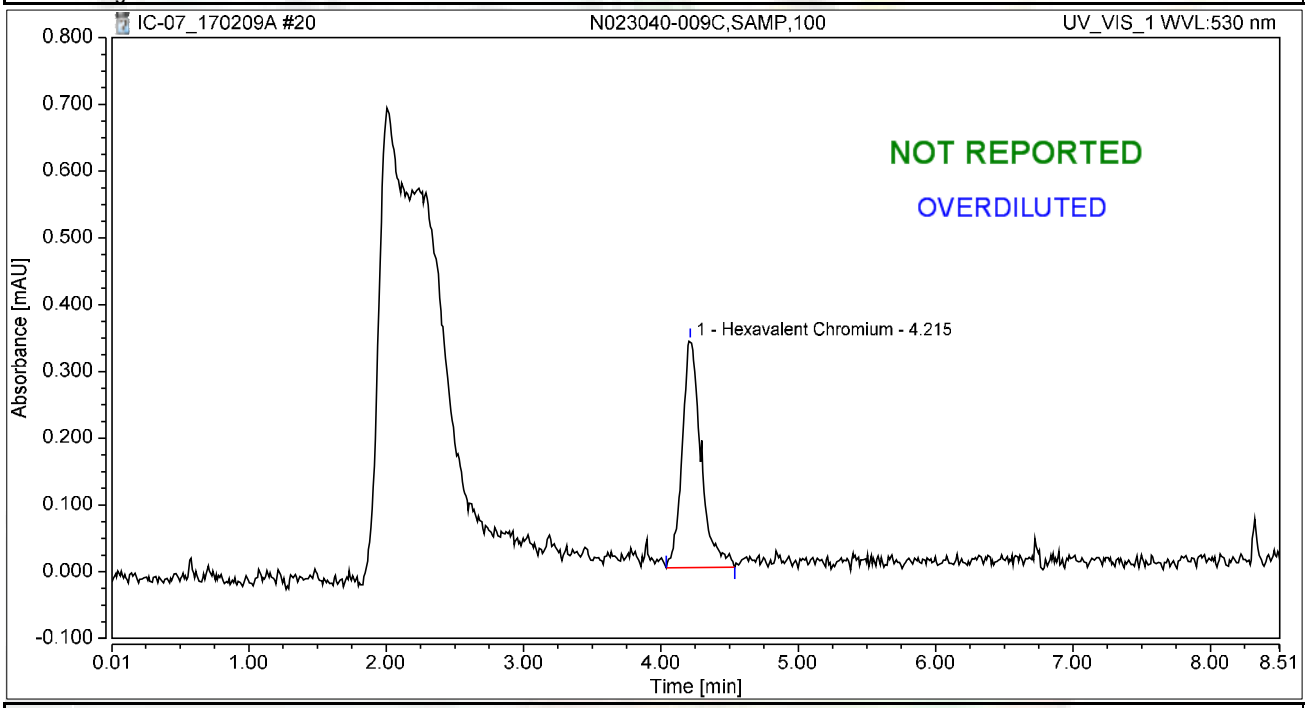
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009C,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

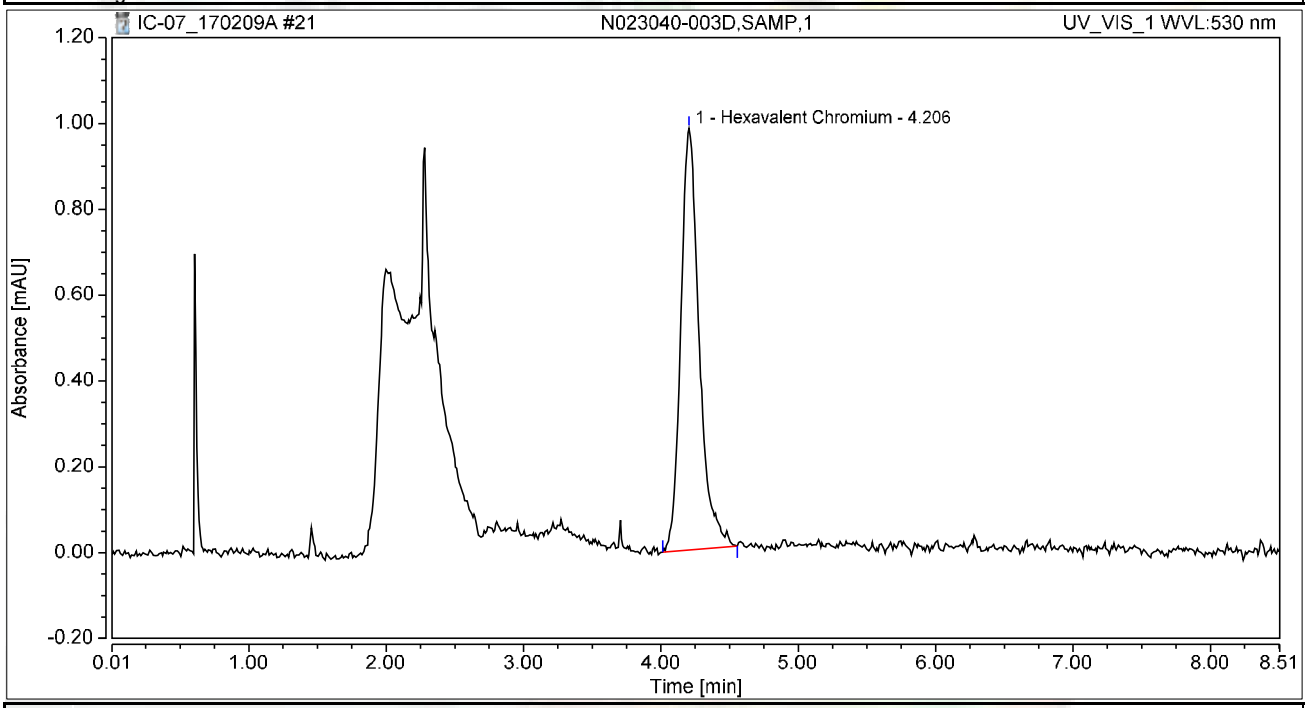
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.054	0.340	100.00	100.00	0.2052
Total:			**0.054**	**0.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-003D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 00:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

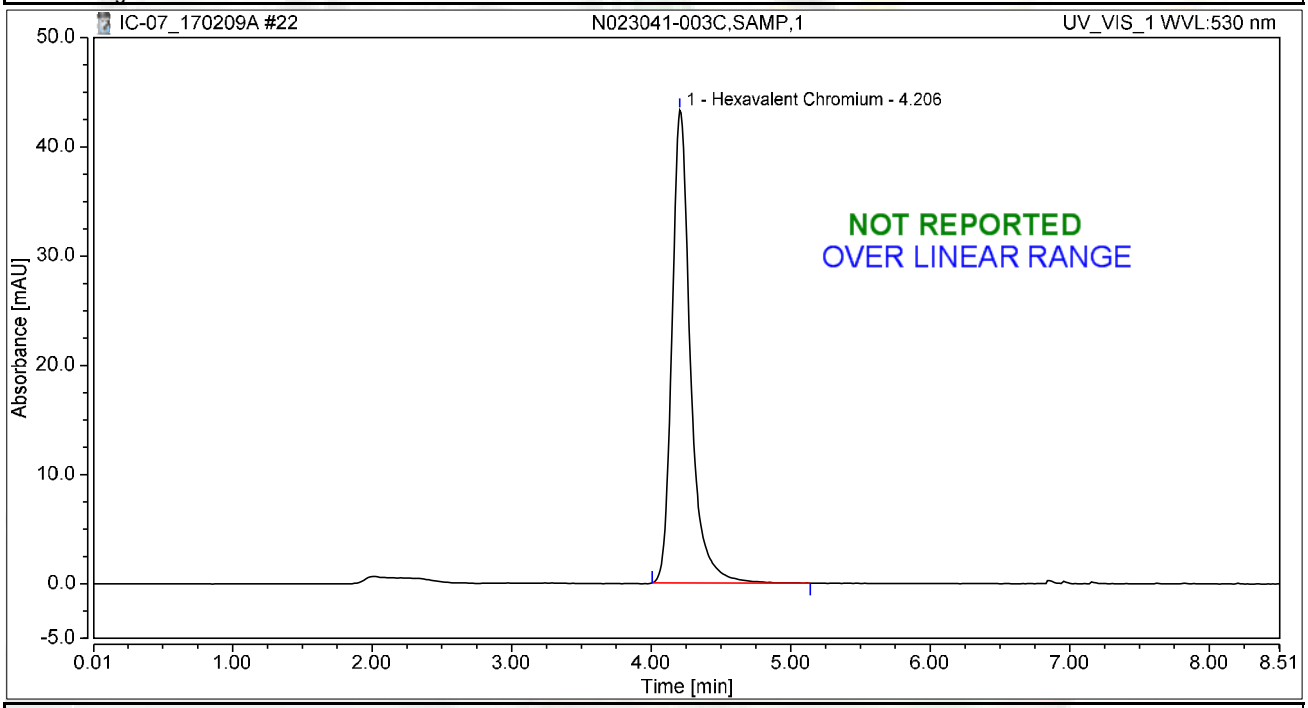
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.153	0.982	100.00	100.00	0.5762
Total:			**0.153**	**0.982**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003C,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

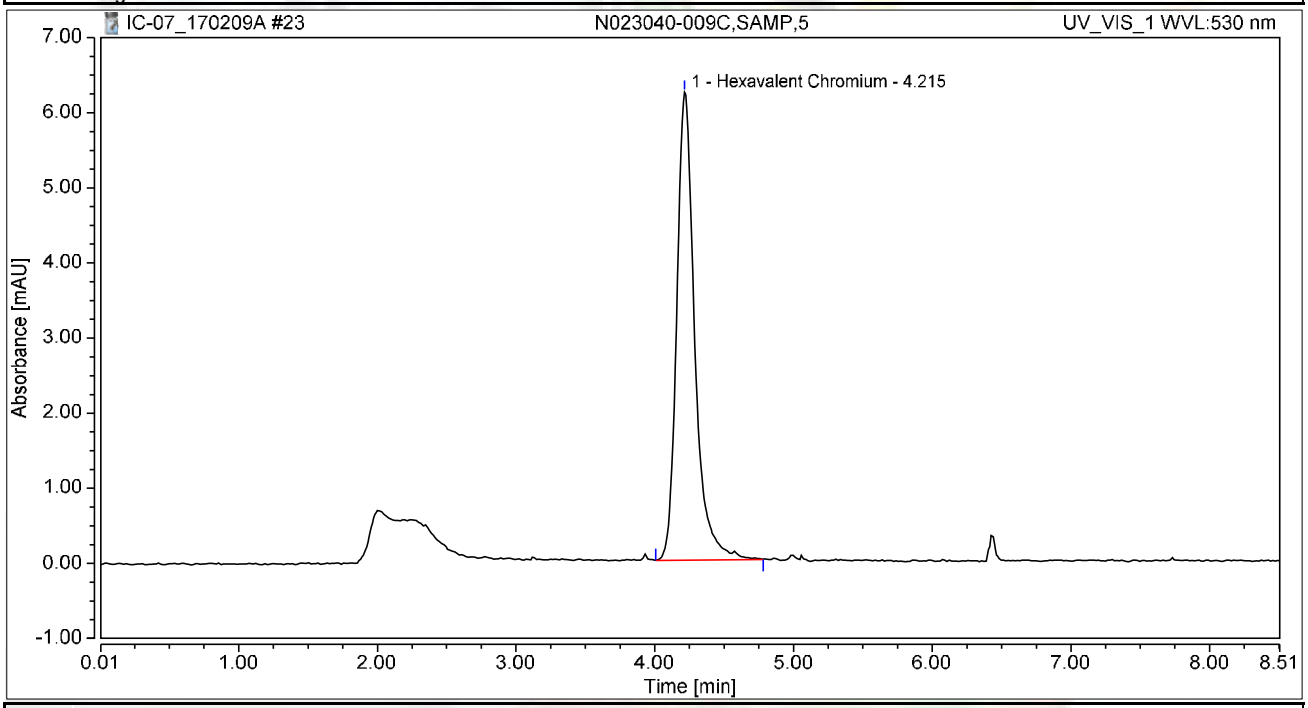
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	6.642	43.284	100.00	100.00	25.0427
Total:			**6.642**	**43.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009C,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

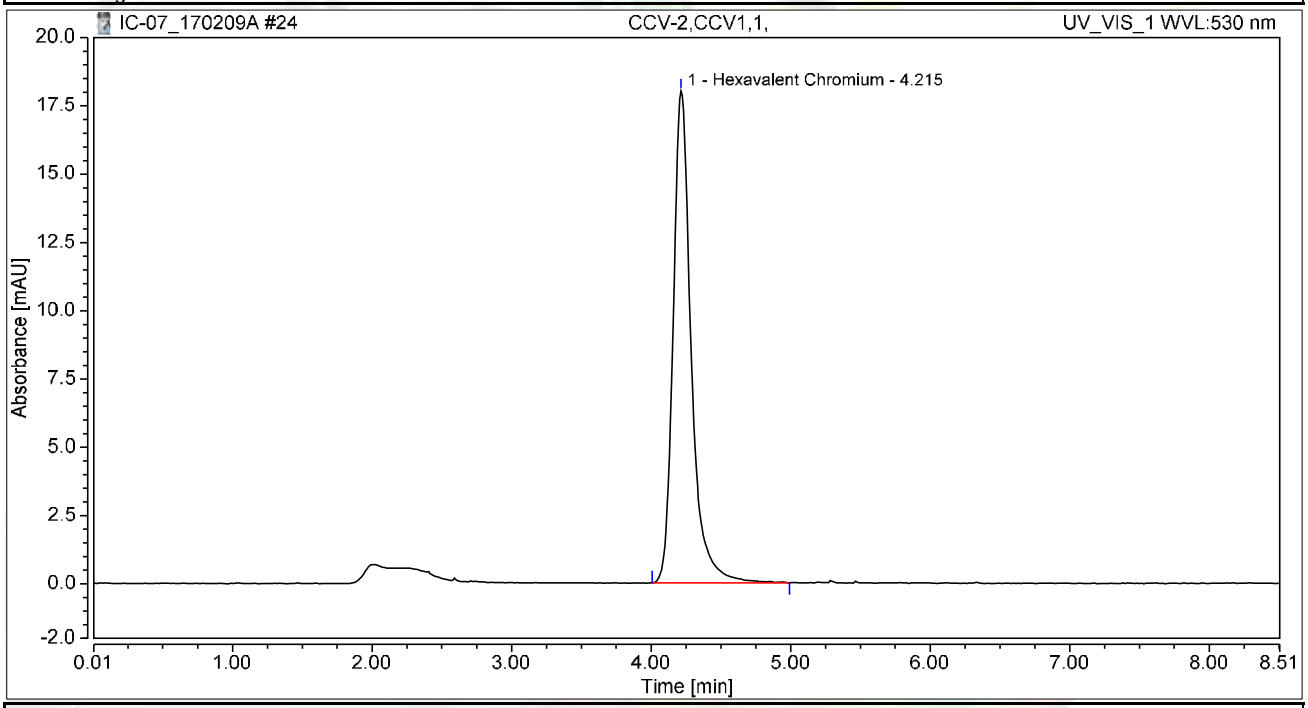
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.936	6.228	100.00	100.00	3.5275
Total:			**0.936**	**6.228**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

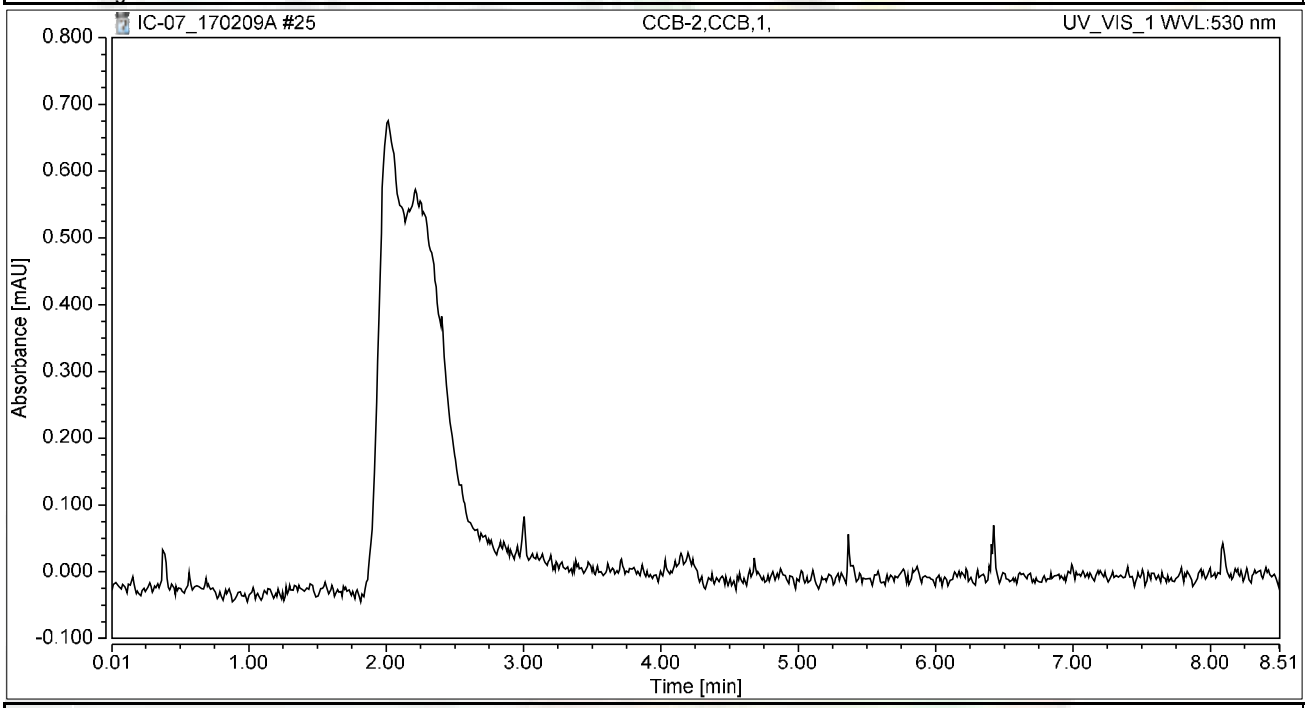
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.694	18.004	100.00	100.00	10.1579
Total:			**2.694**	**18.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

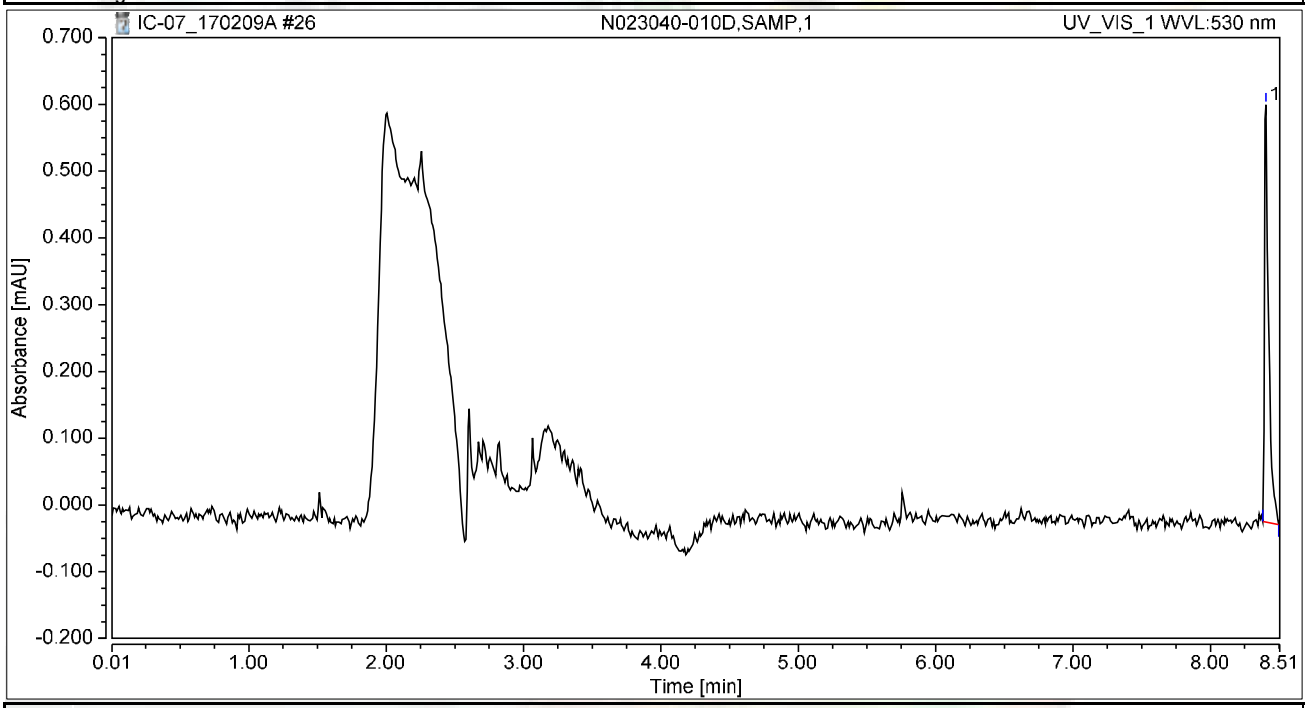
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

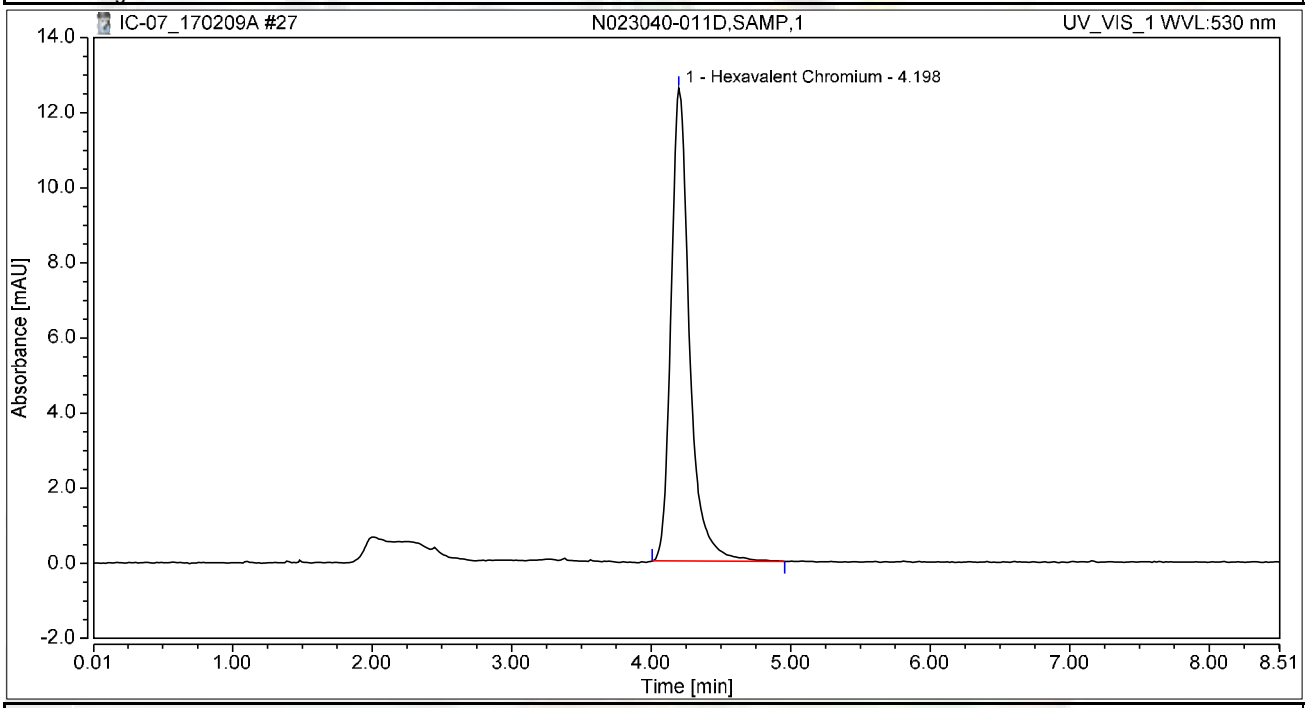
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.406	0.022	0.625	100.00	100.00	n.a.
Total:			**0.022**	**0.625**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-011D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 01:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

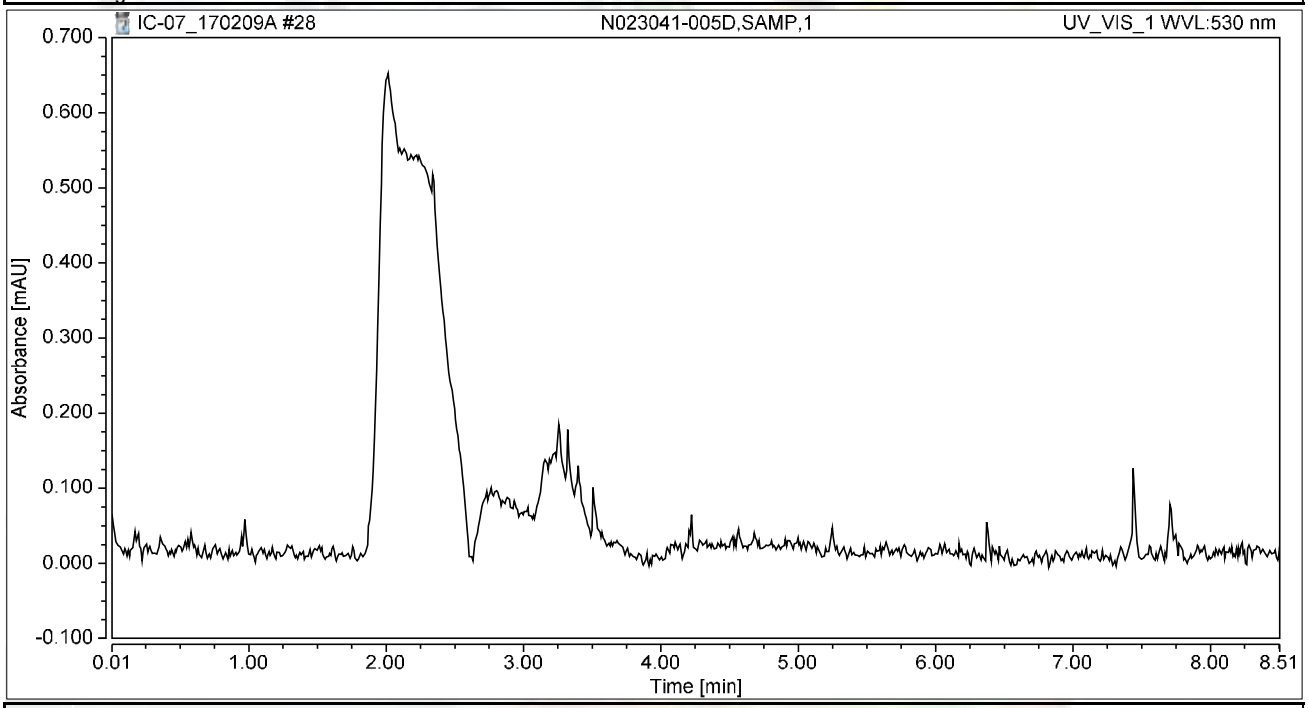
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.936	12.593	100.00	100.00	7.2995
Total:			**1.936**	**12.593**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

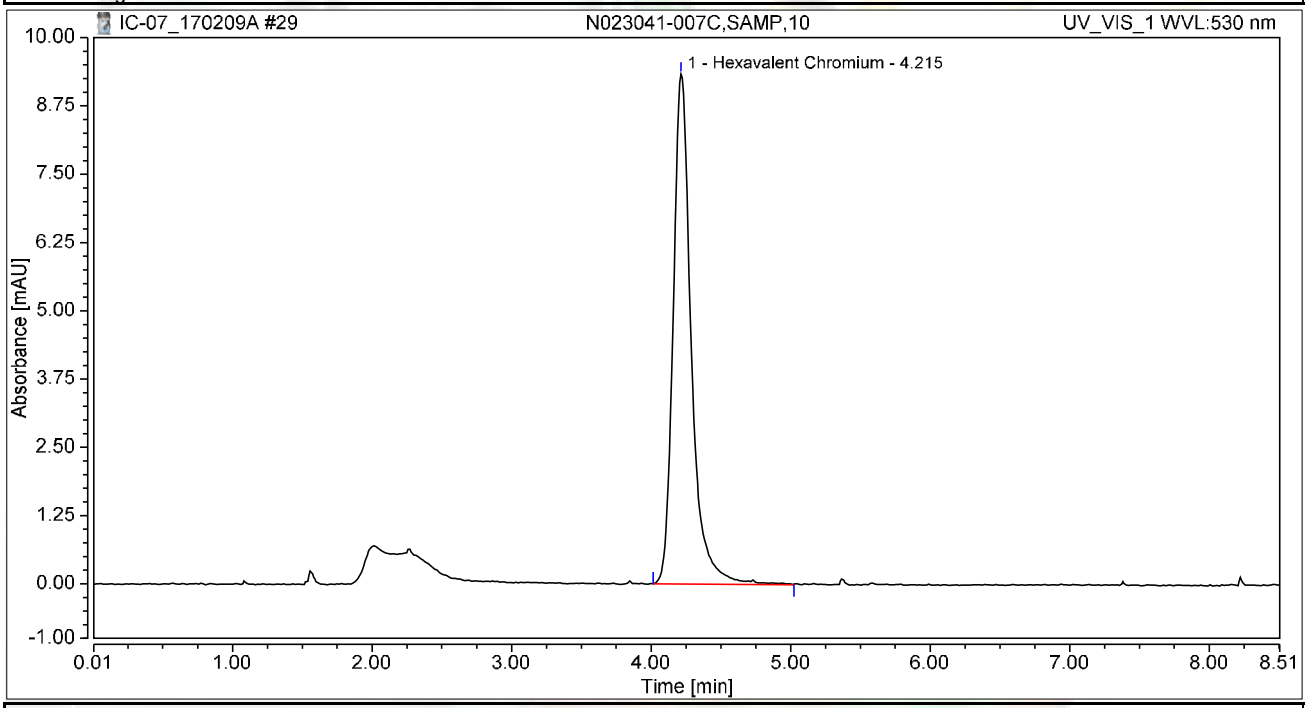
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-007C,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

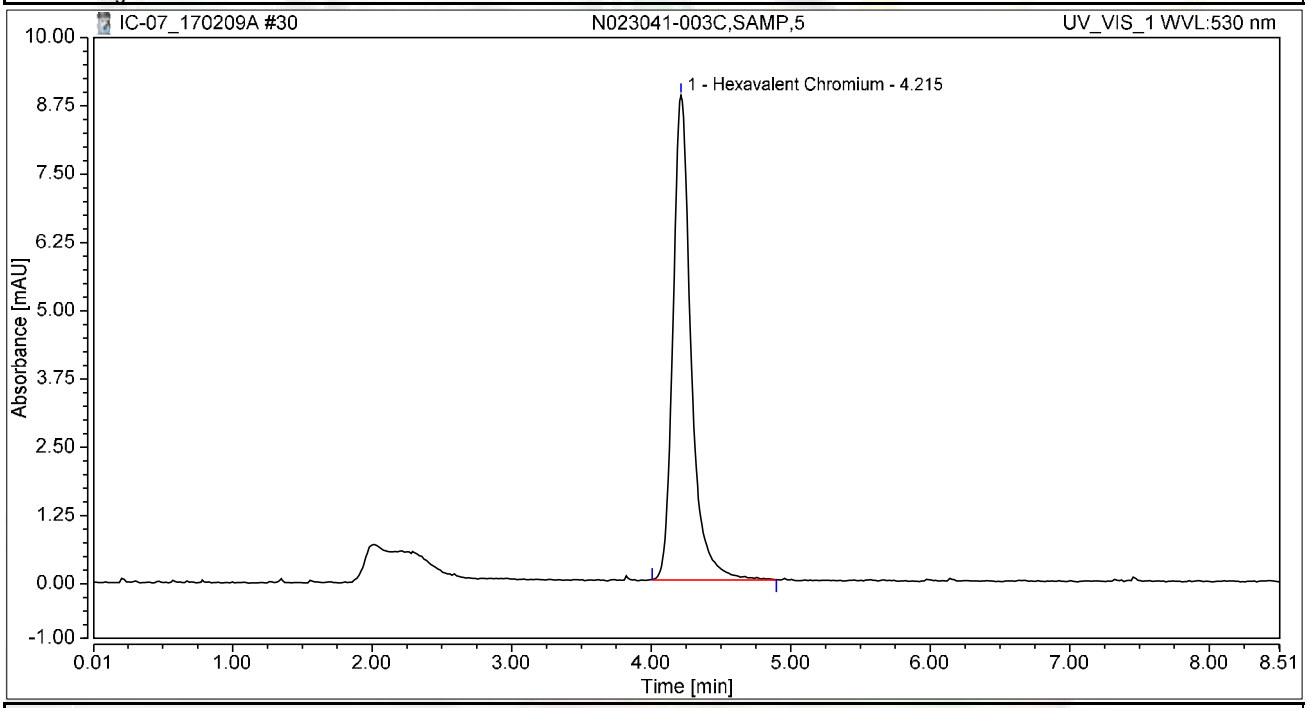
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.401	9.336	100.00	100.00	5.2828
Total:			**1.401**	**9.336**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003C,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

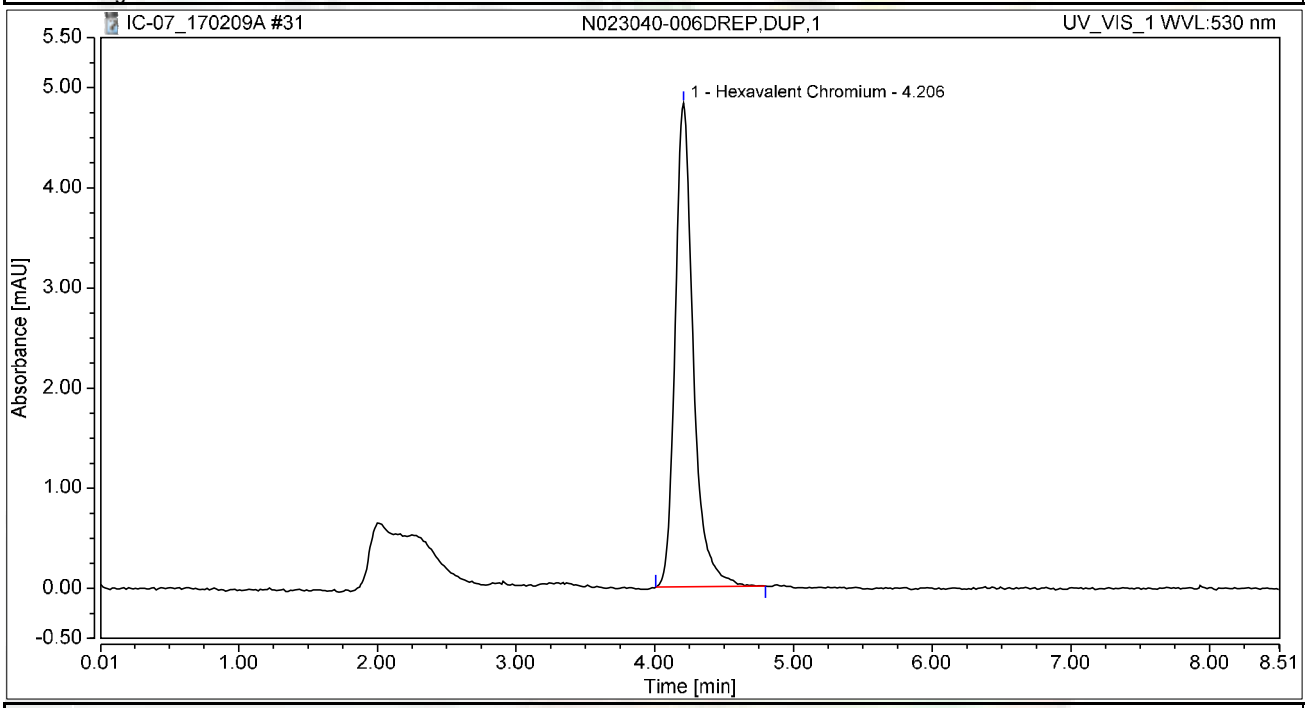
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.336	8.875	100.00	100.00	5.0365
Total:			**1.336**	**8.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-006DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

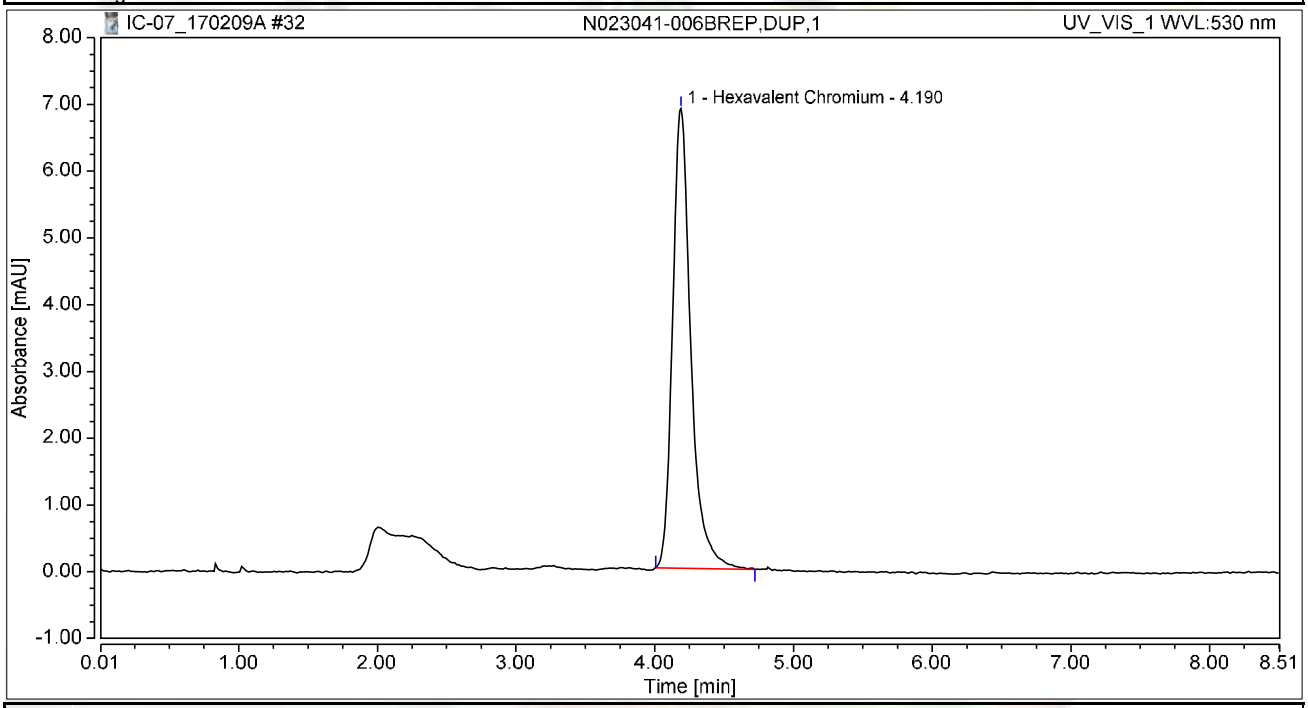
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.730	4.827	100.00	100.00	2.7525
Total:			**0.730**	**4.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-006BREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

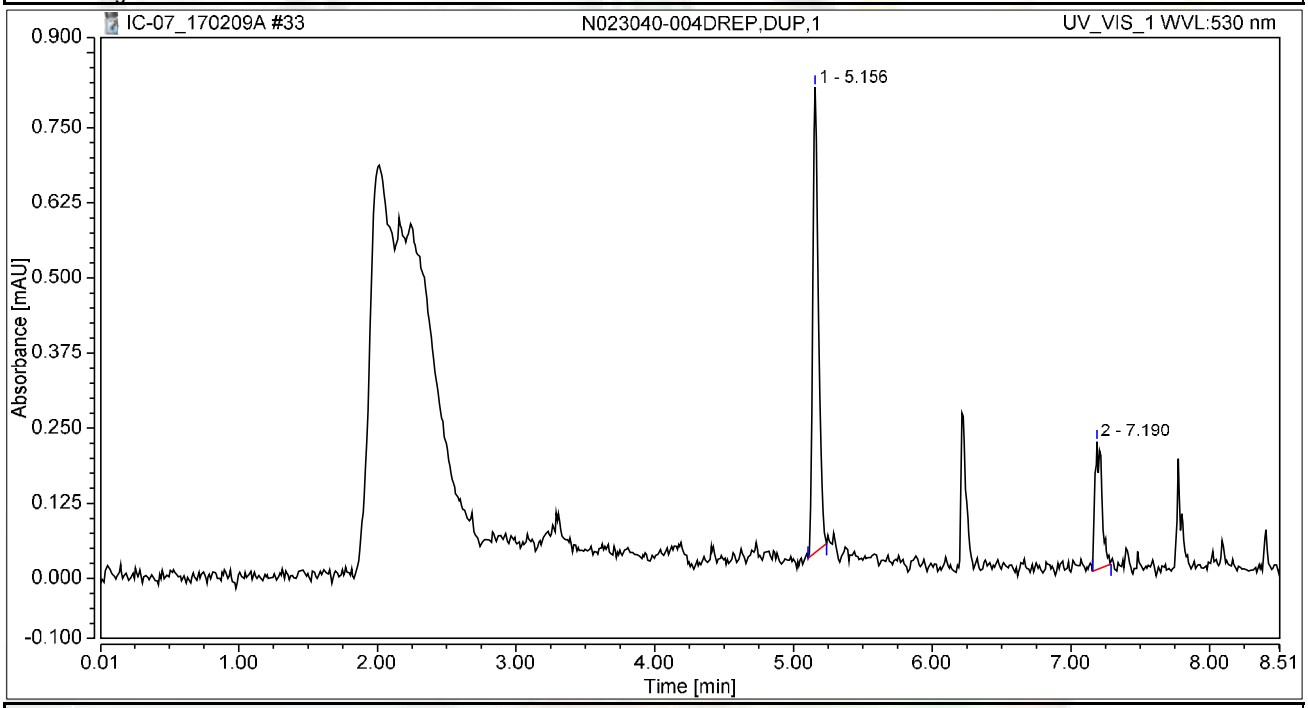
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.052	6.886	100.00	100.00	3.9655
Total:			**1.052**	**6.886**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-004DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 02:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

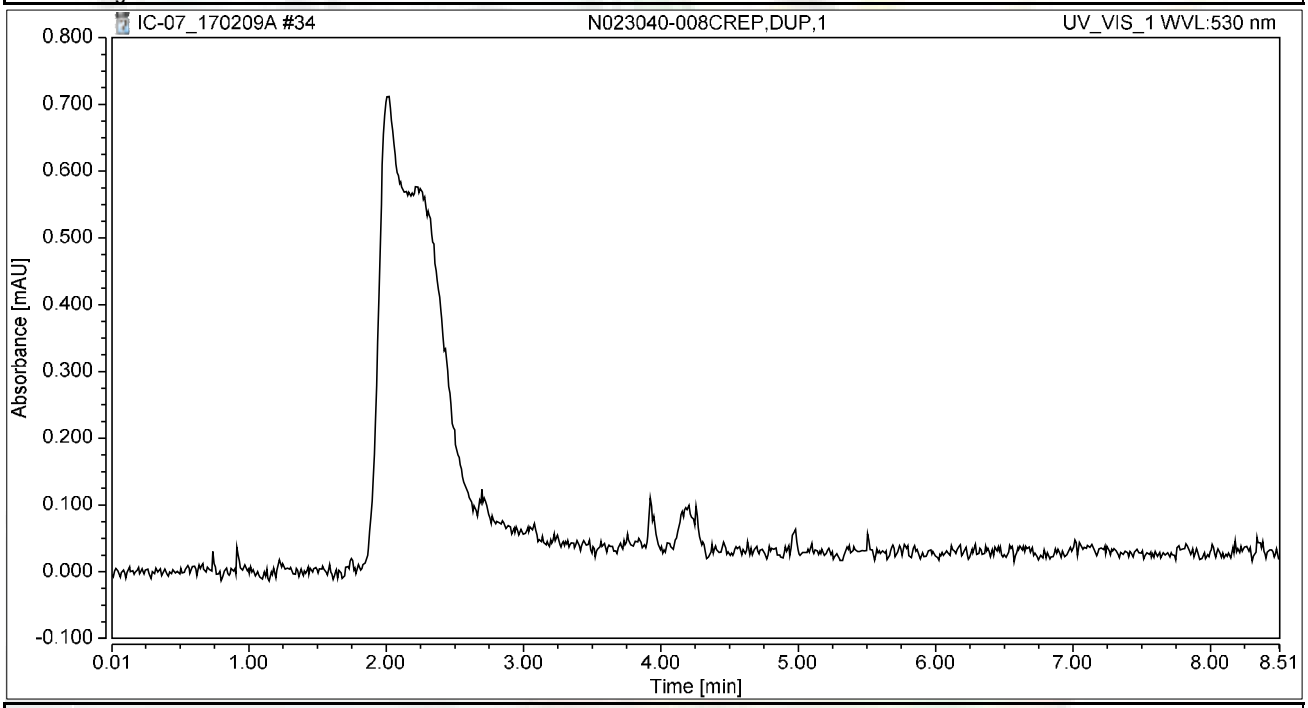
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.156	0.037	0.774	74.80	78.45	n.a.
2		7.190	0.013	0.213	25.20	21.55	n.a.
Total:			**0.050**	**0.987**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-008CREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

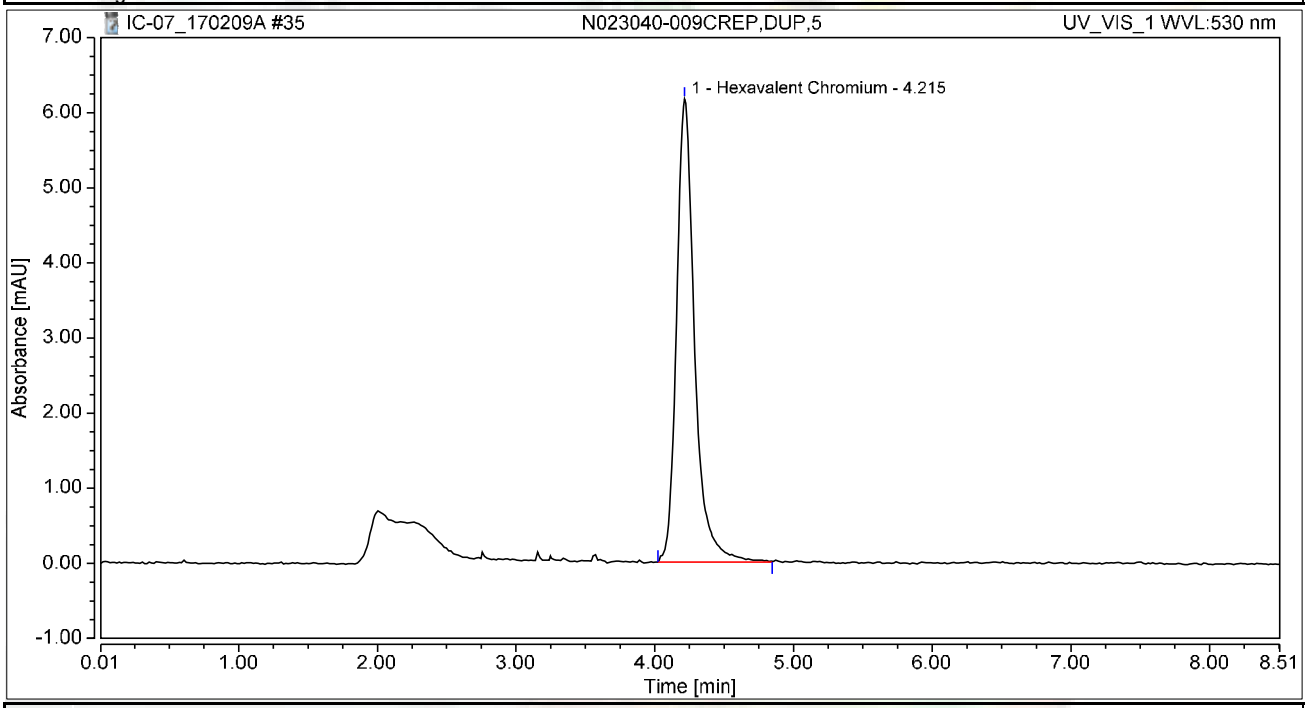
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-009CREP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

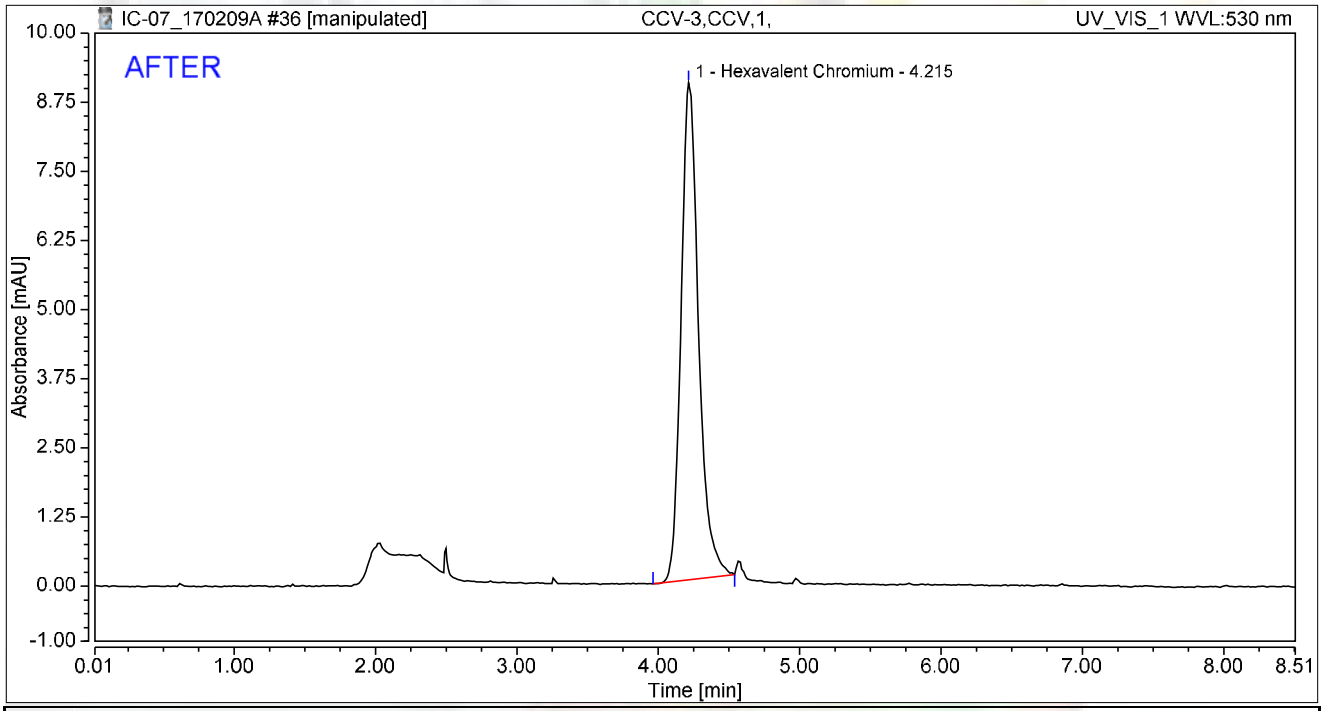
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.929	6.166	100.00	100.00	3.5035
Total:			**0.929**	**6.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.295	8.986	100.00	100.00	4.8808
Total:			**1.295**	**8.986**	**100.00**	**100.00**	

rba 2/14/2017

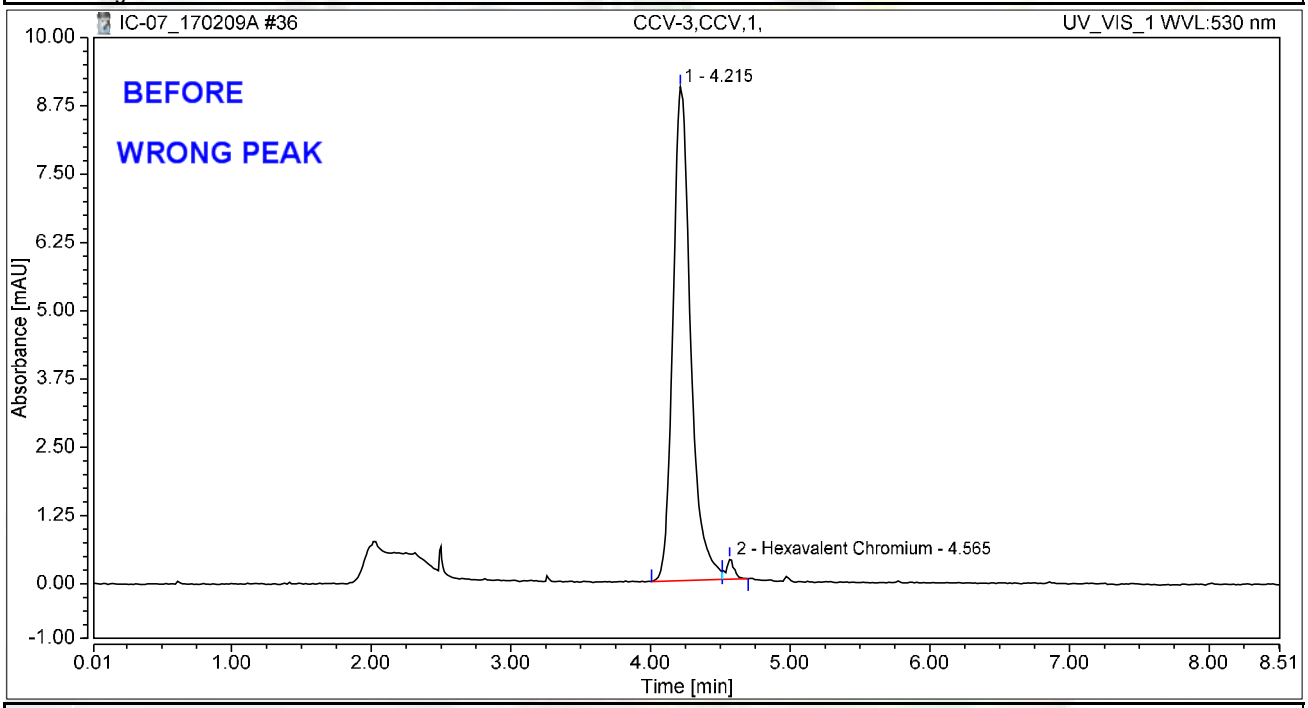
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.215	1.327	9.041	98.17	96.10	n.a.
2	Hexavalent Chromium	4.565	0.025	0.366	1.83	3.90	0.0931
Total:			**1.352**	**9.407**	**100.00**	**100.00**	

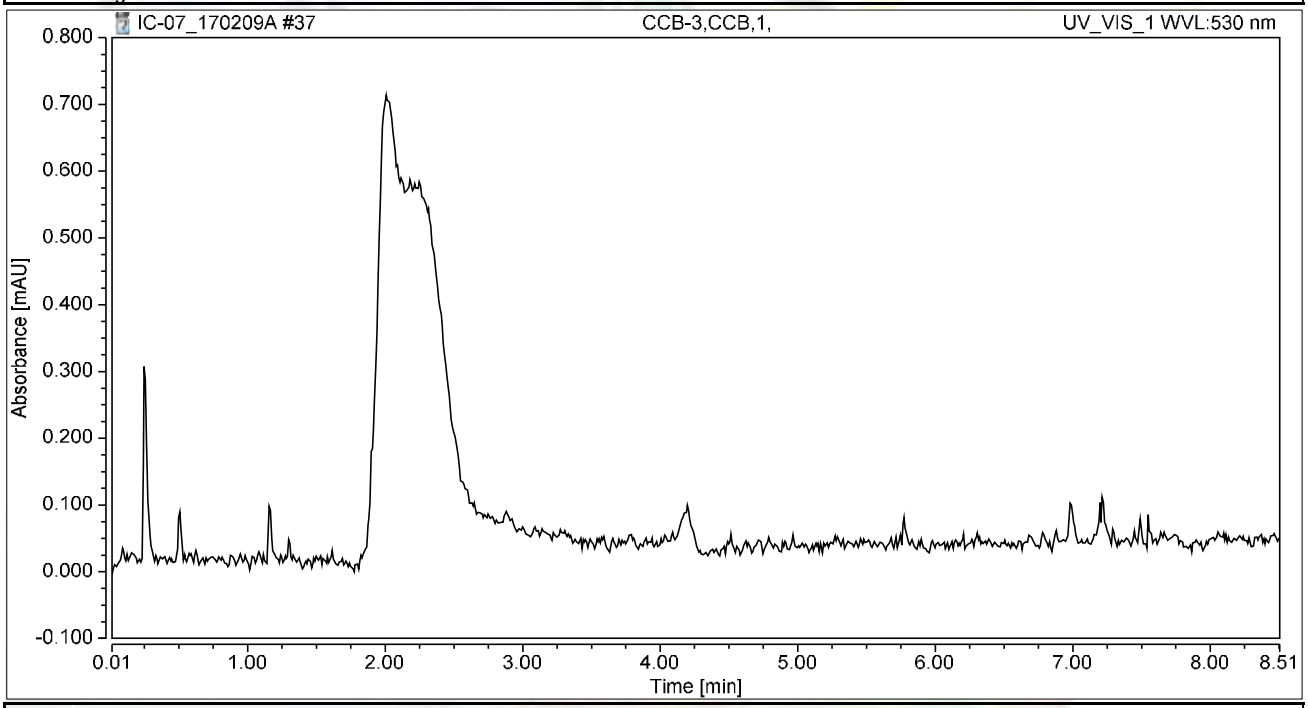
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

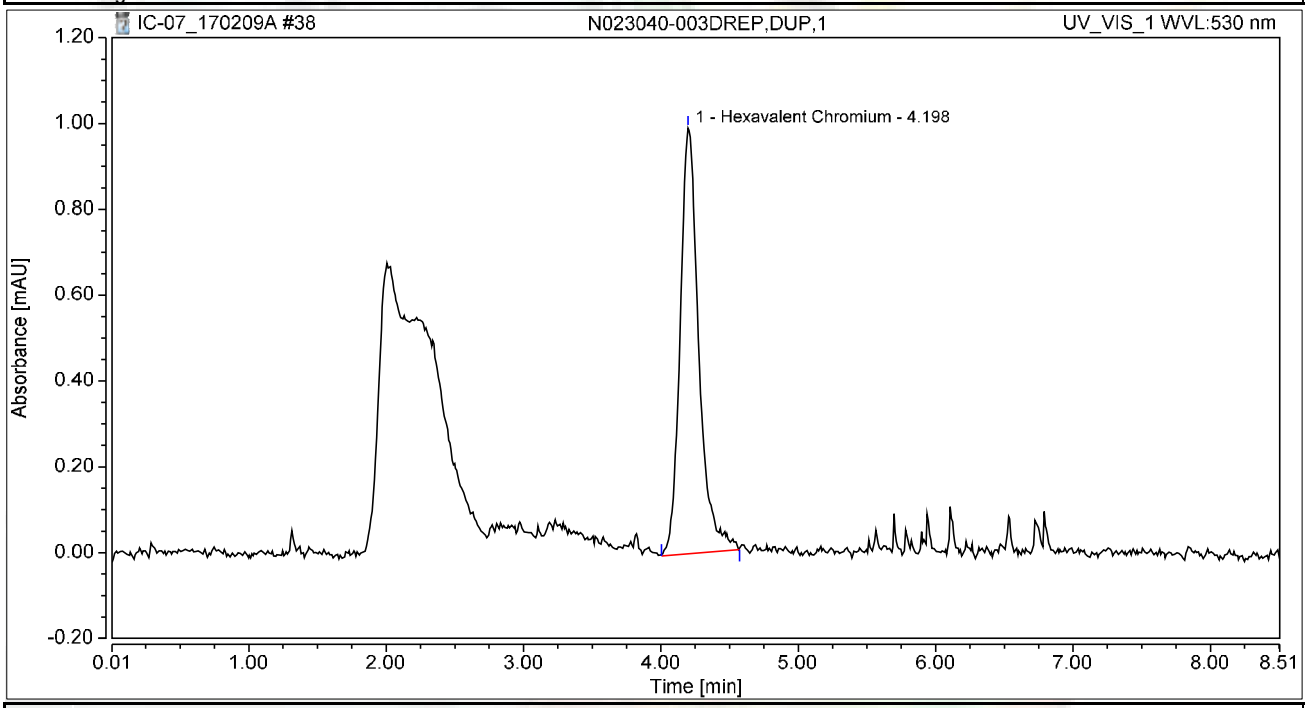
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-003DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

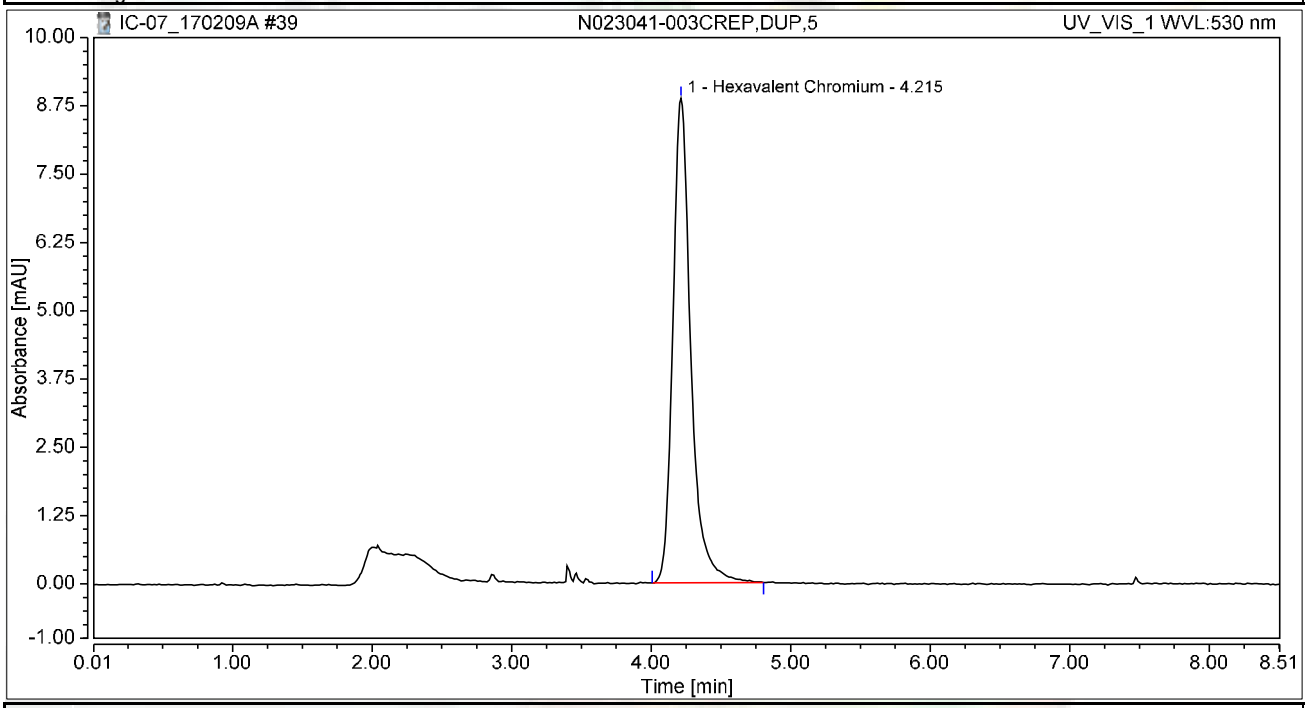
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.157	0.993	100.00	100.00	0.5906
Total:			**0.157**	**0.993**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-003CREP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 03:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

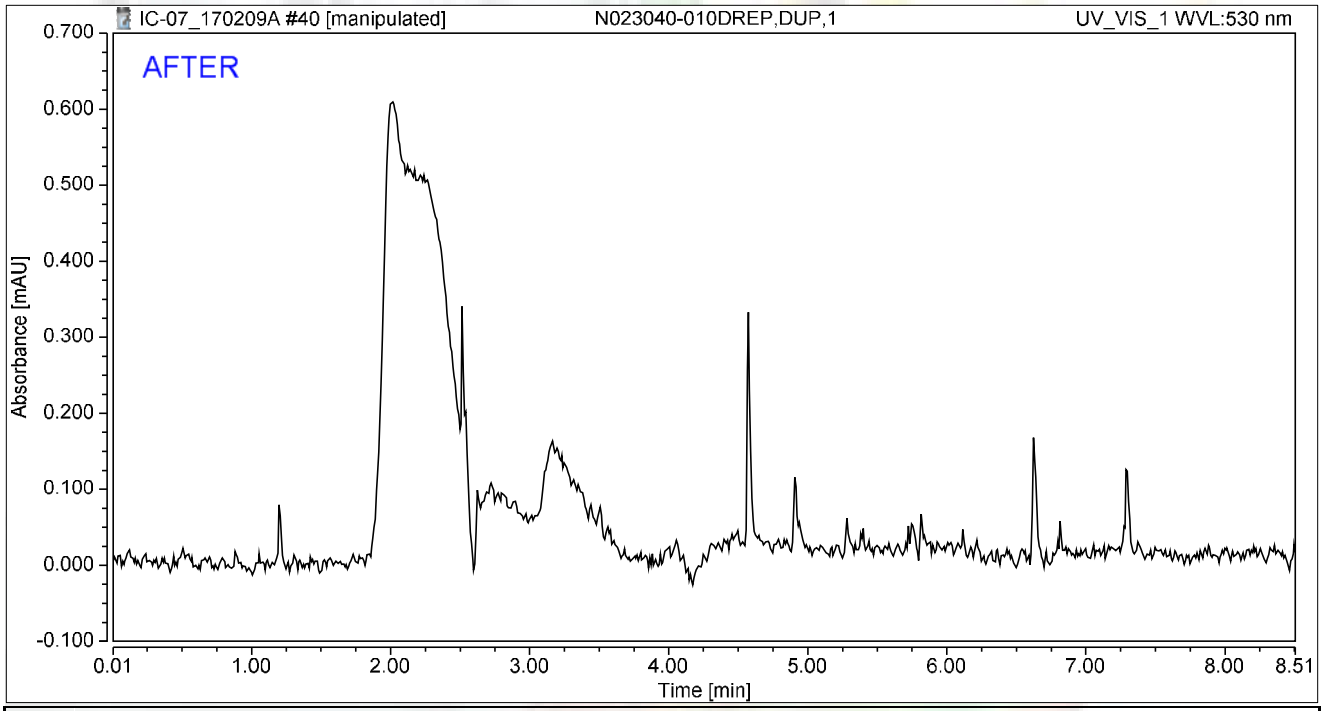
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.322	8.868	100.00	100.00	4.9847
Total:			**1.322**	**8.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

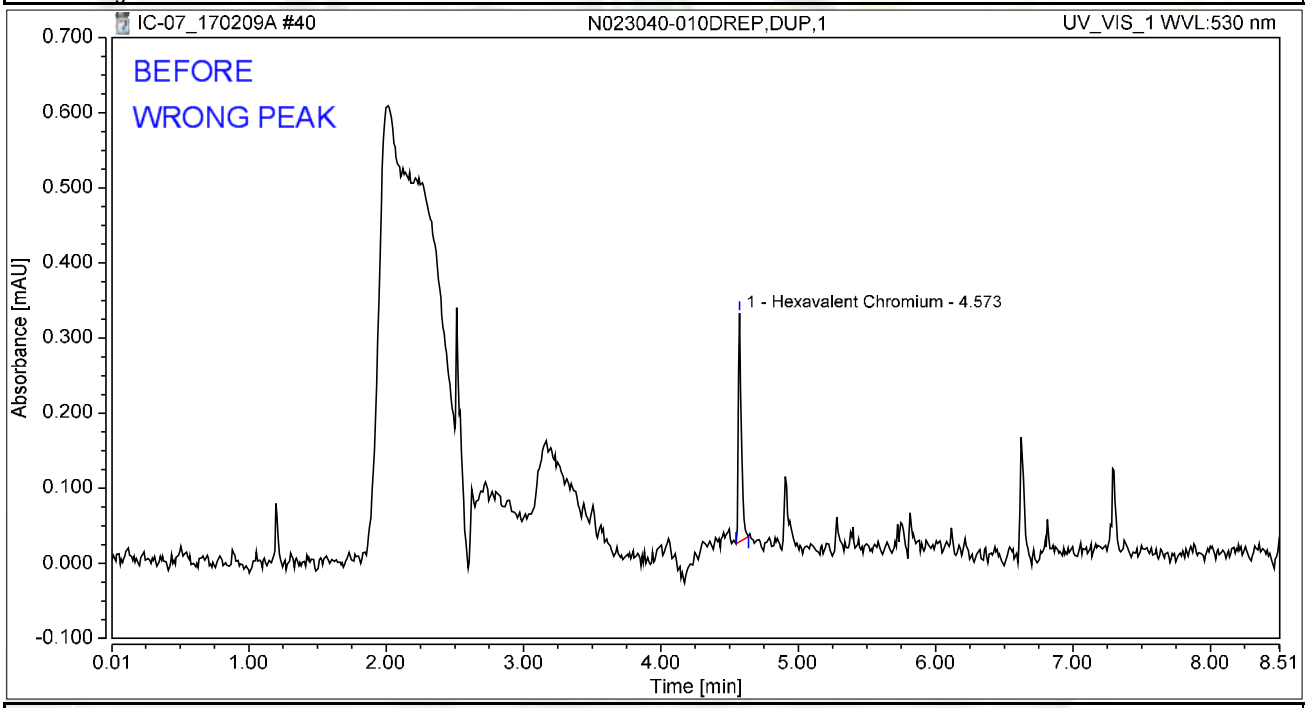
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.573	0.008	0.305	100.00	100.00	0.0308
Total:			**0.008**	**0.305**	**100.00**	**100.00**	

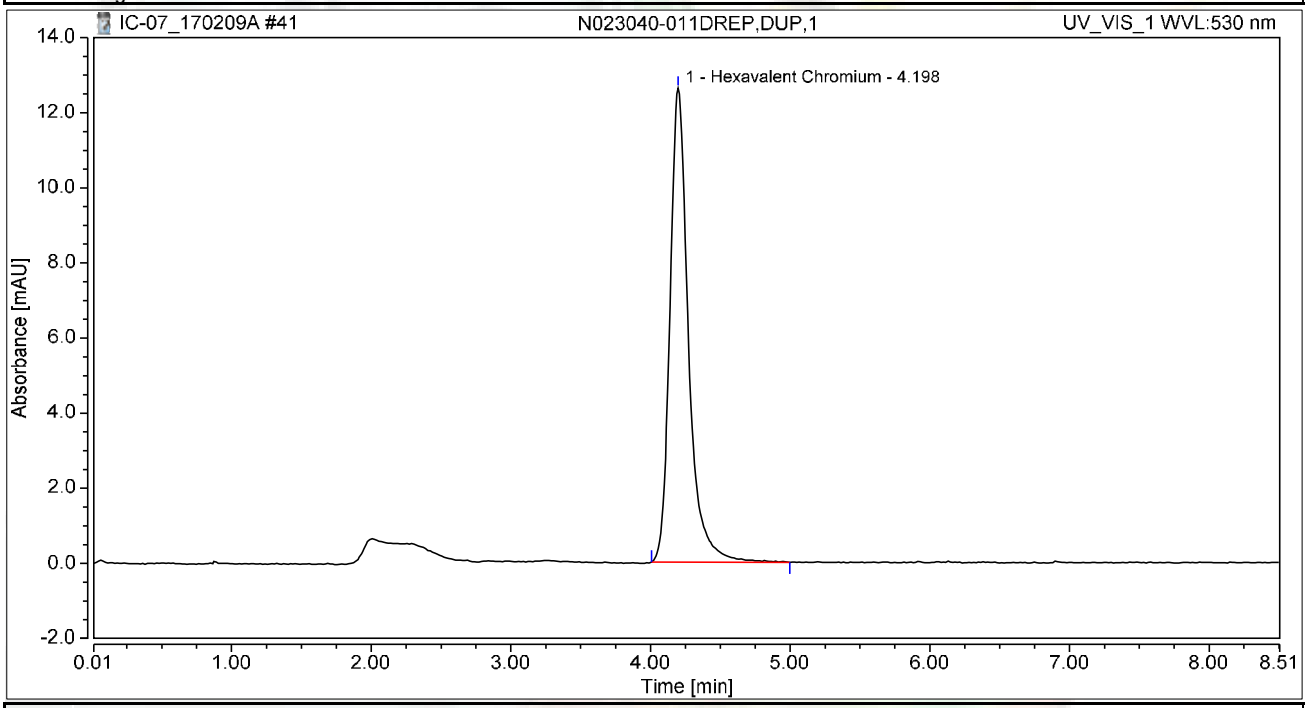
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-011DREP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

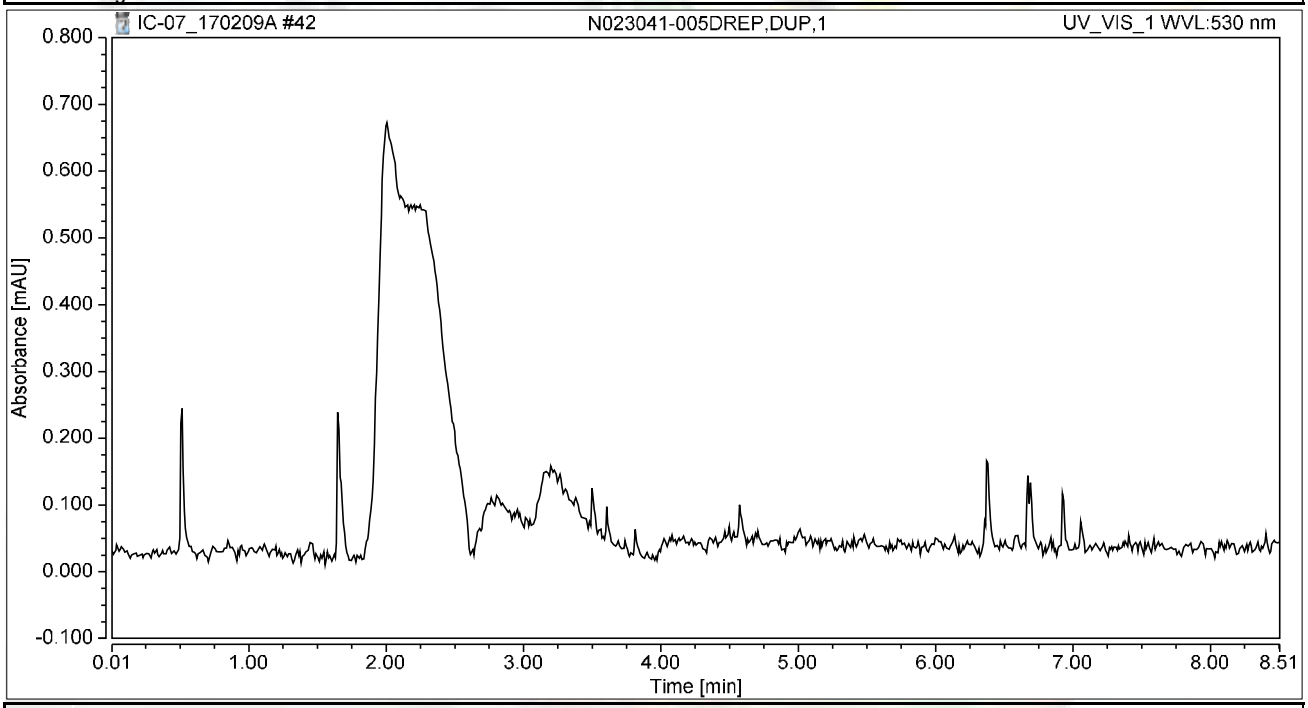
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.933	12.620	100.00	100.00	7.2863
Total:			**1.933**	**12.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

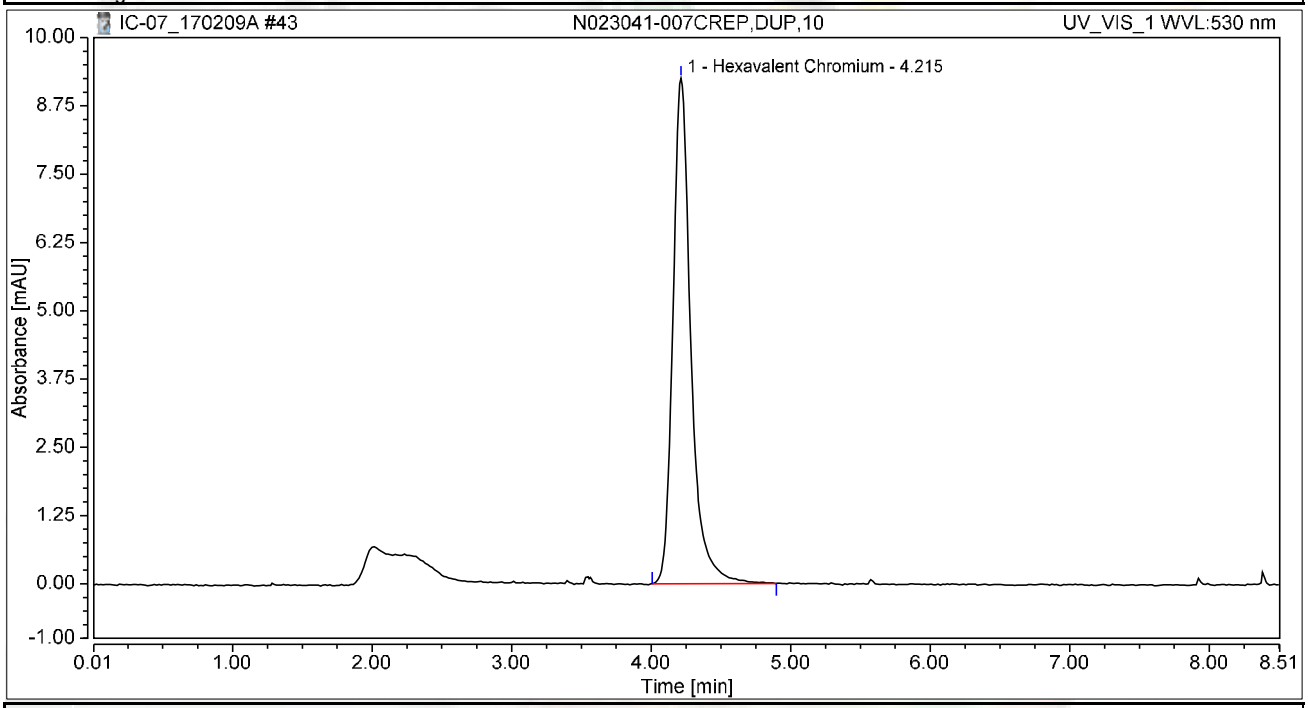
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023041-007CREP,DUP,10**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

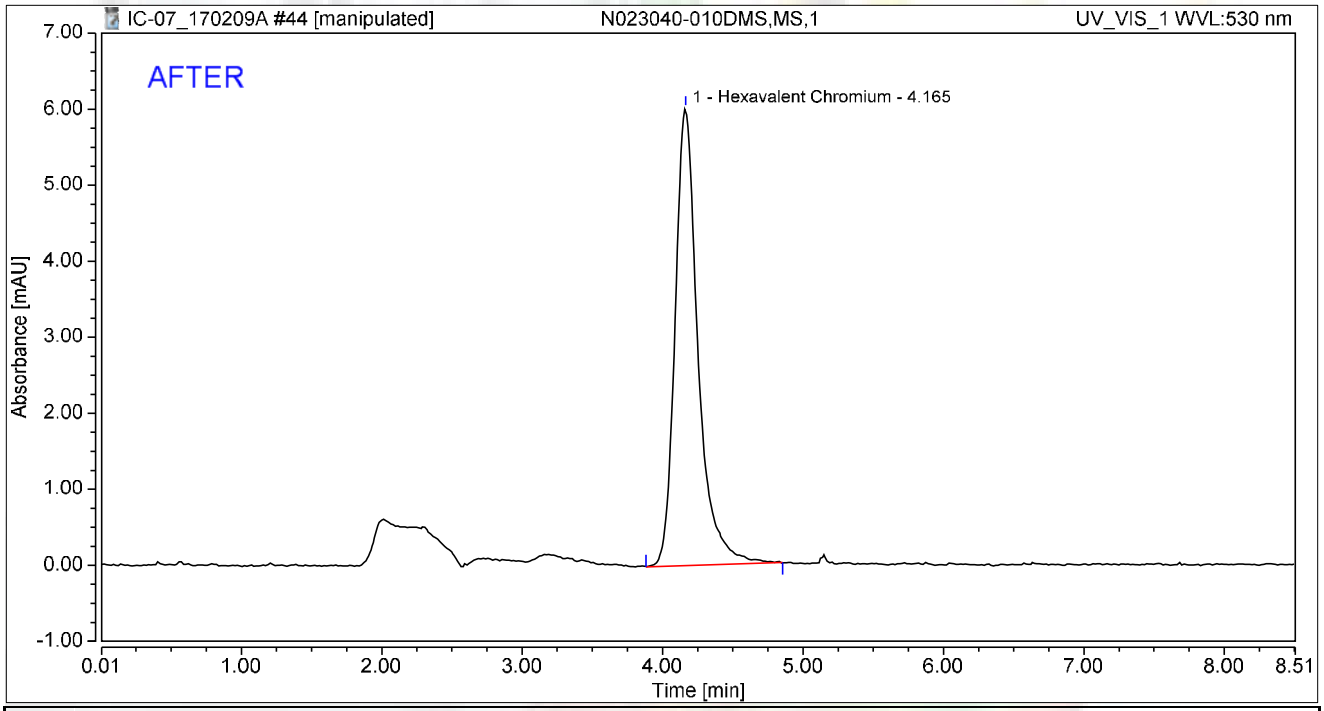
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.382	9.262	100.00	100.00	5.2119
Total:			**1.382**	**9.262**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.136	6.012	100.00	100.00	4.2820
Total:			**1.136**	**6.012**	**100.00**	**100.00**	

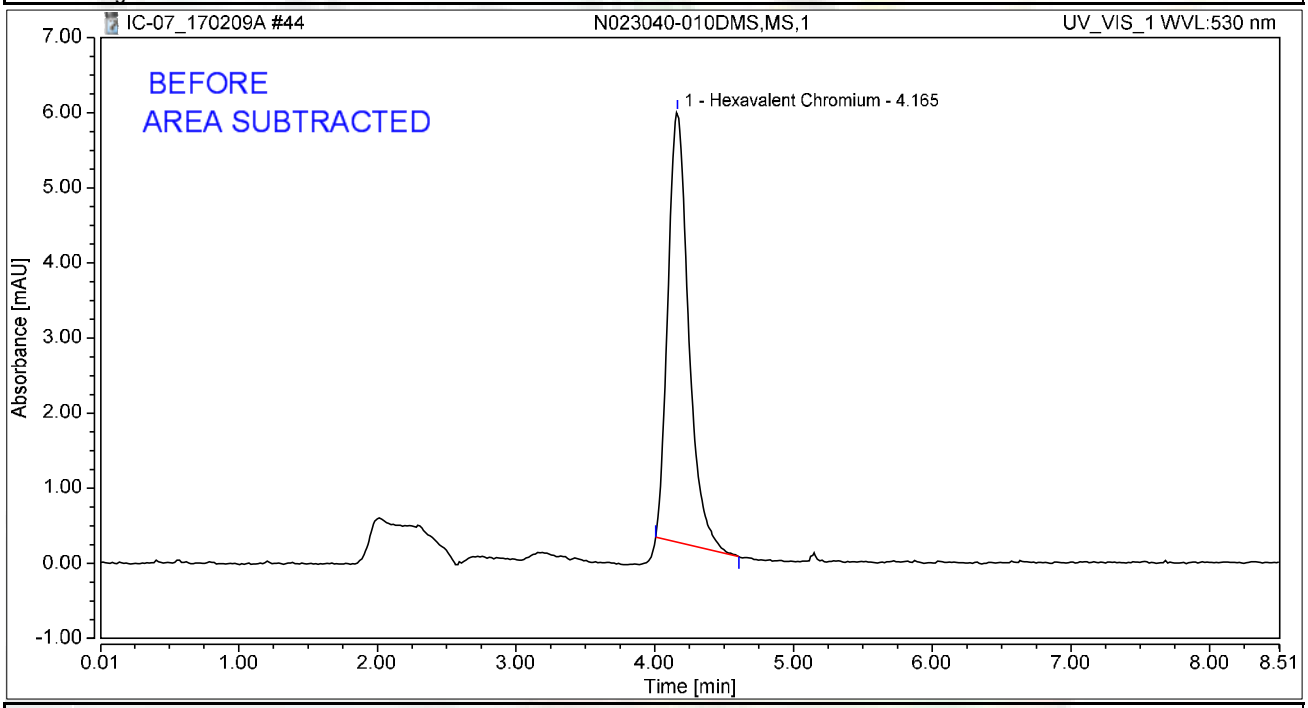
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.993	5.733	100.00	100.00	3.7453
Total:			**0.993**	**5.733**	**100.00**	**100.00**	

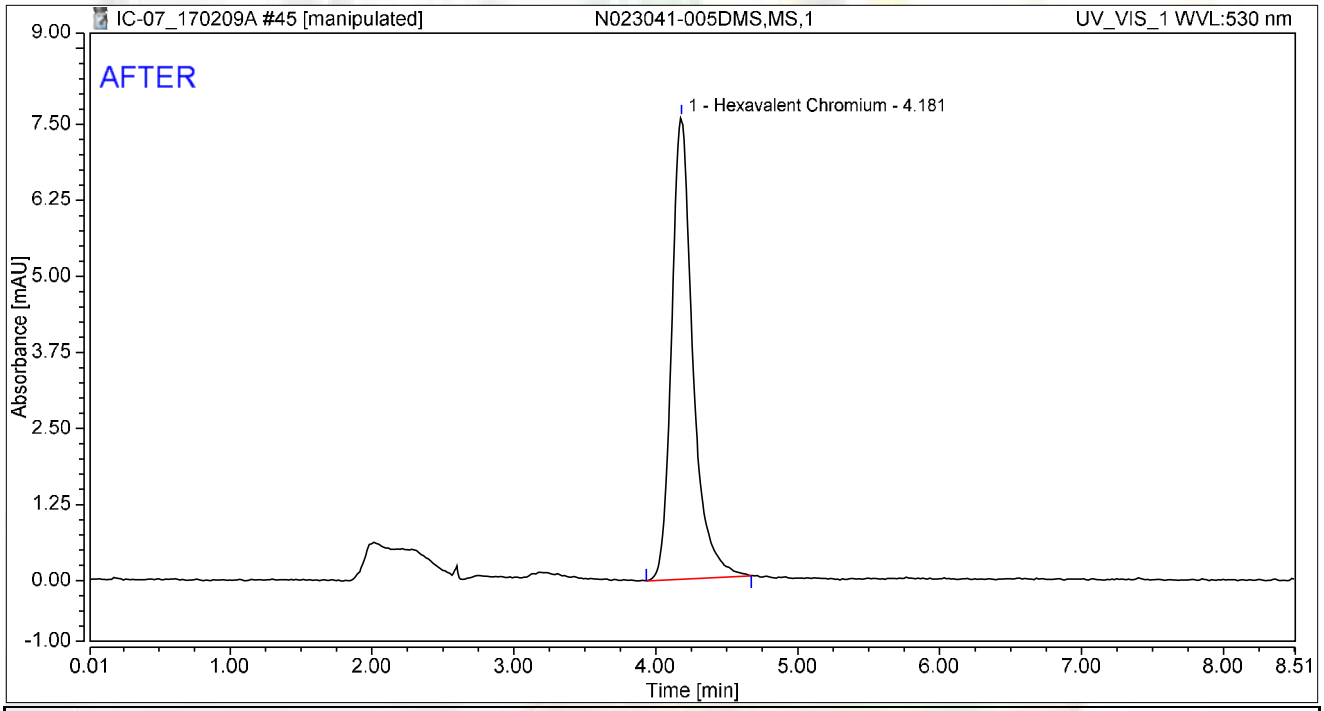
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.319	7.599	100.00	100.00	4.9729
Total:			**1.319**	**7.599**	**100.00**	**100.00**	

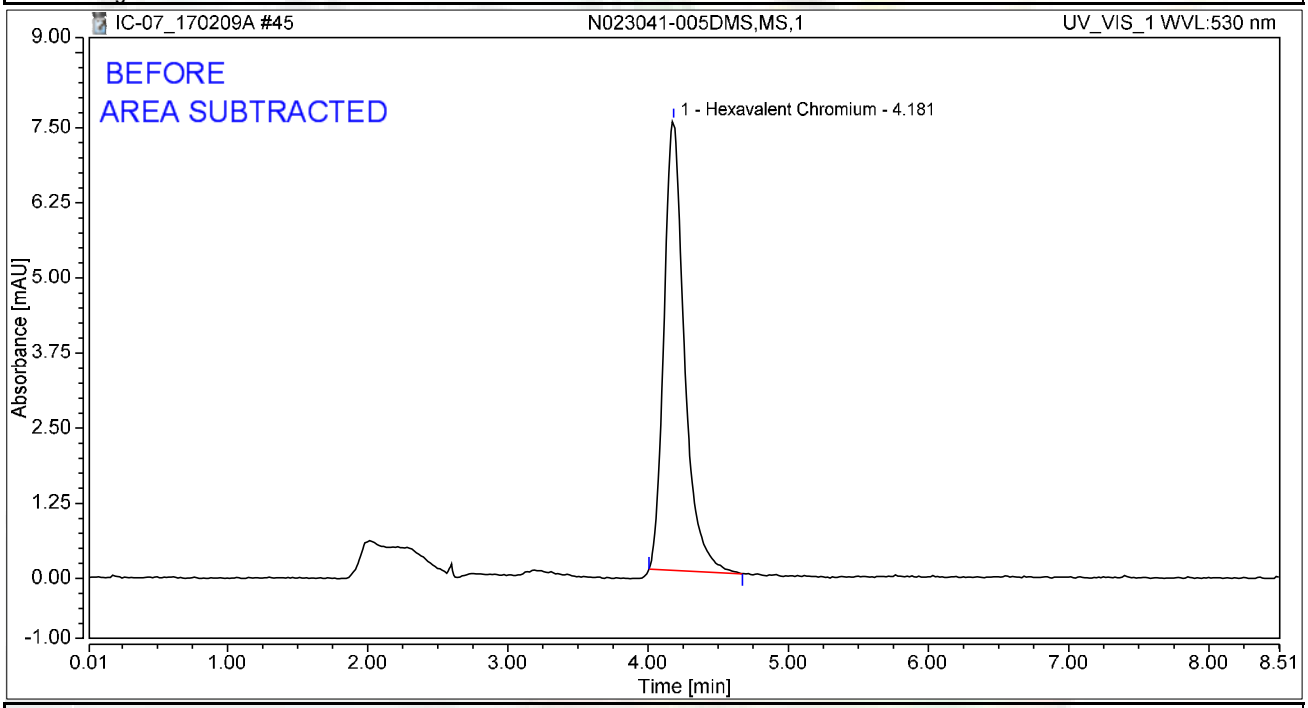
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023041-005DMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 04:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.264	7.485	100.00	100.00	4.7673
Total:			**1.264**	**7.485**	**100.00**	**100.00**	

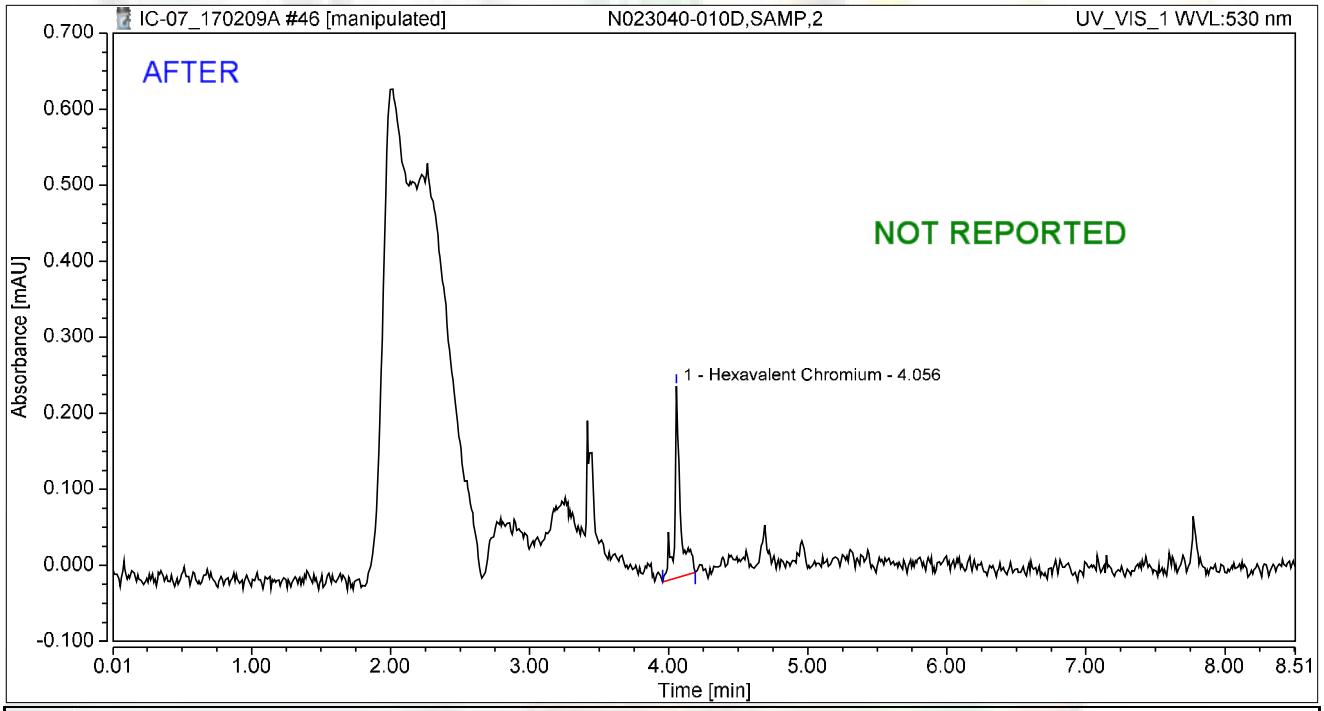
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.012	0.252	100.00	100.00	0.0438
Total:			**0.012**	**0.252**	**100.00**	**100.00**	

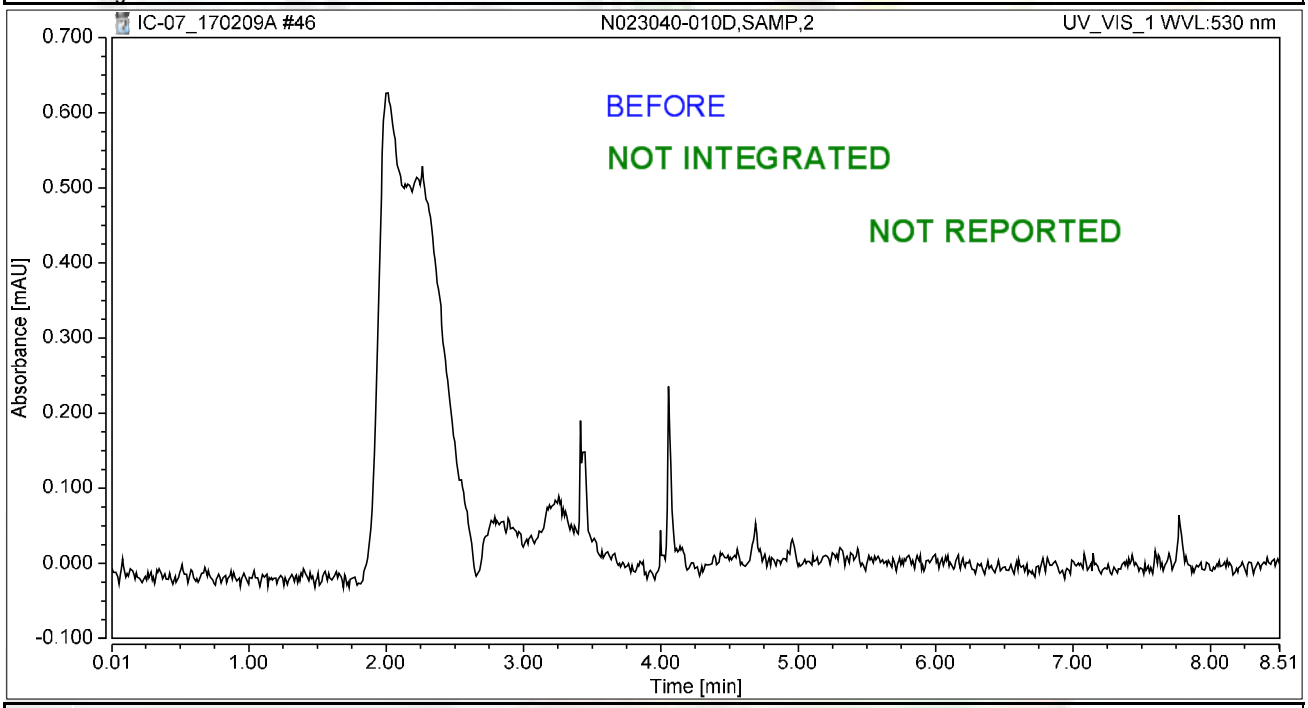
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010D,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

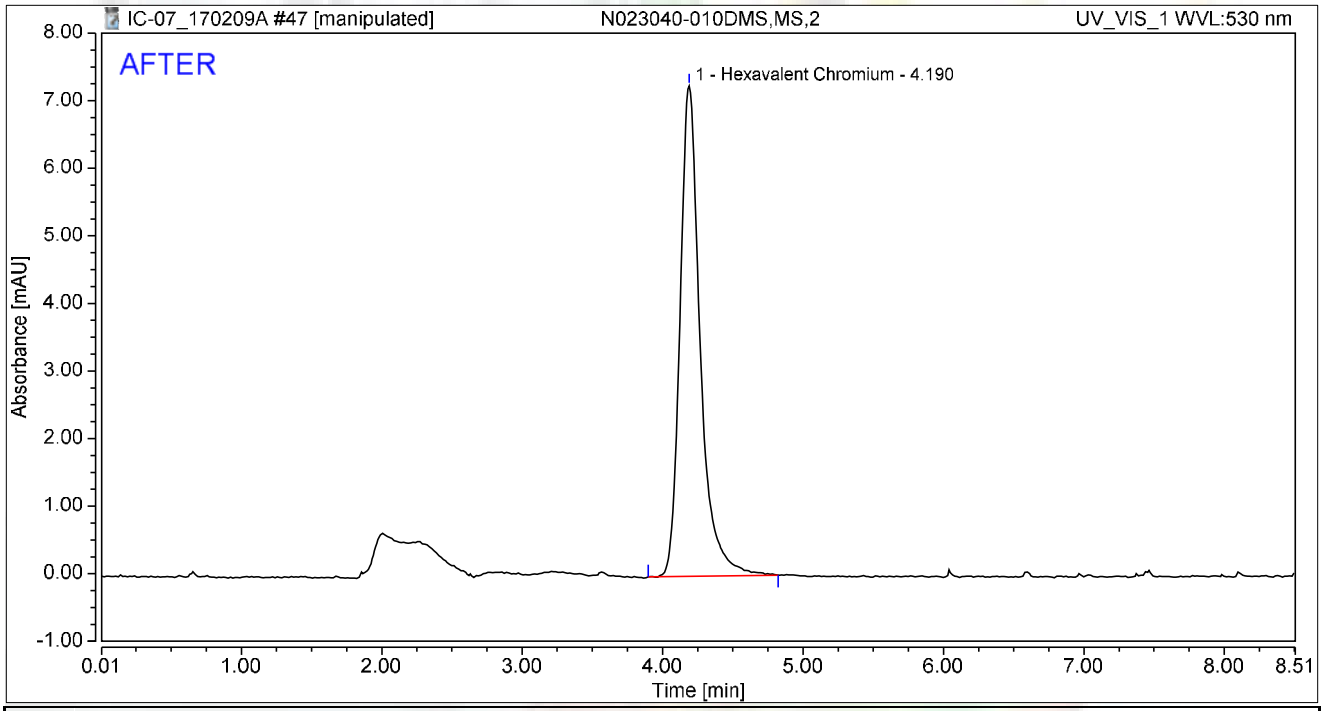
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.207	7.259	100.00	100.00	4.5516
Total:			**1.207**	**7.259**	**100.00**	**100.00**	

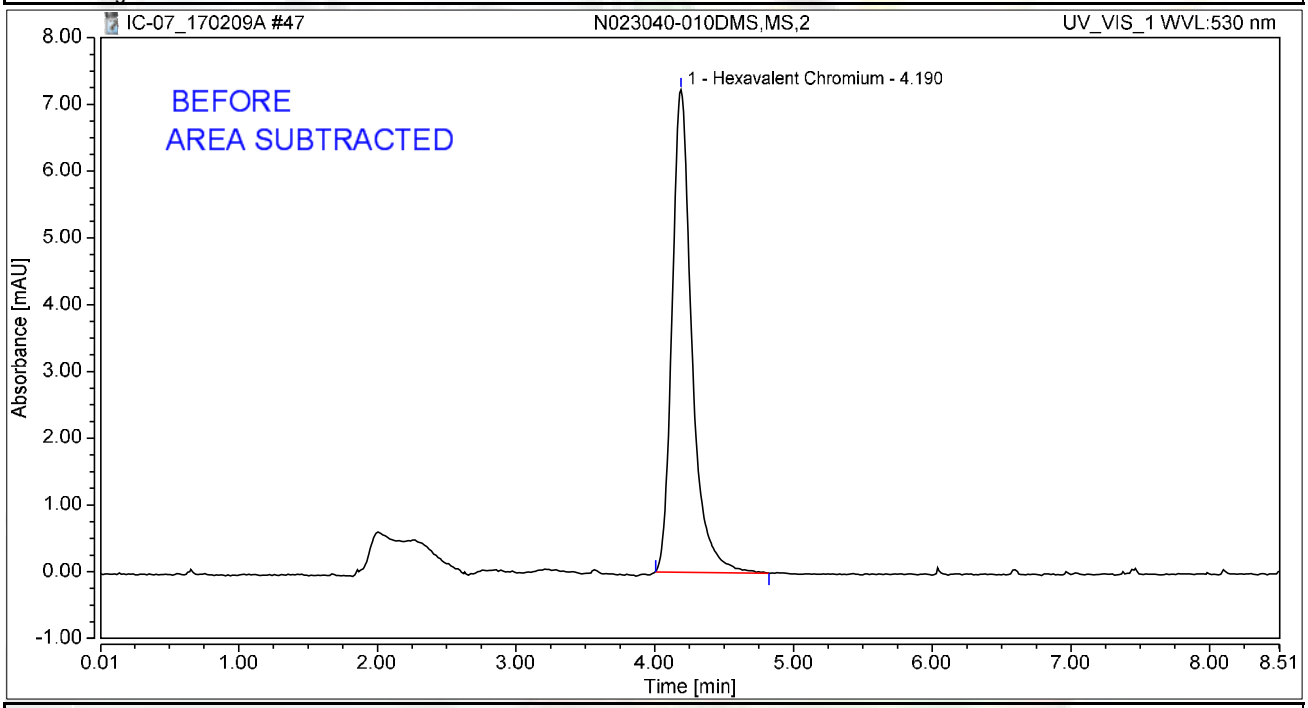
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.190	7.227	100.00	100.00	4.4852
Total:			**1.190**	**7.227**	**100.00**	**100.00**	

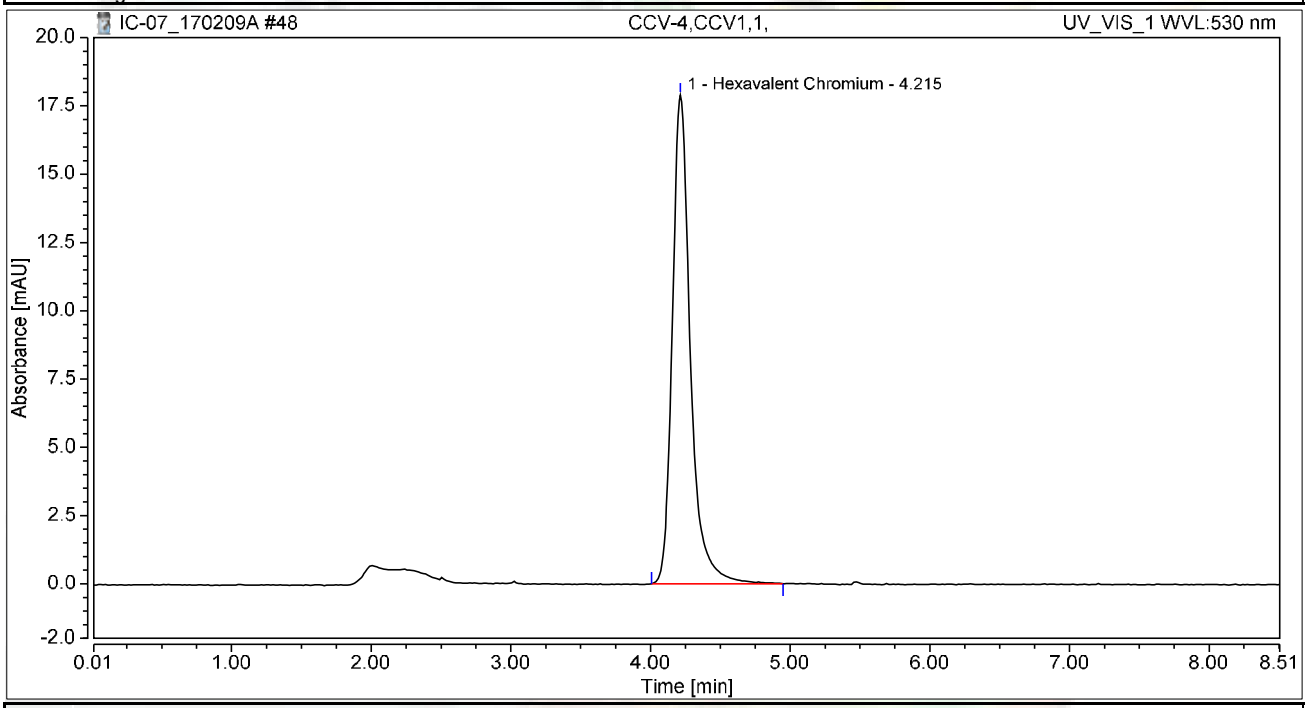
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

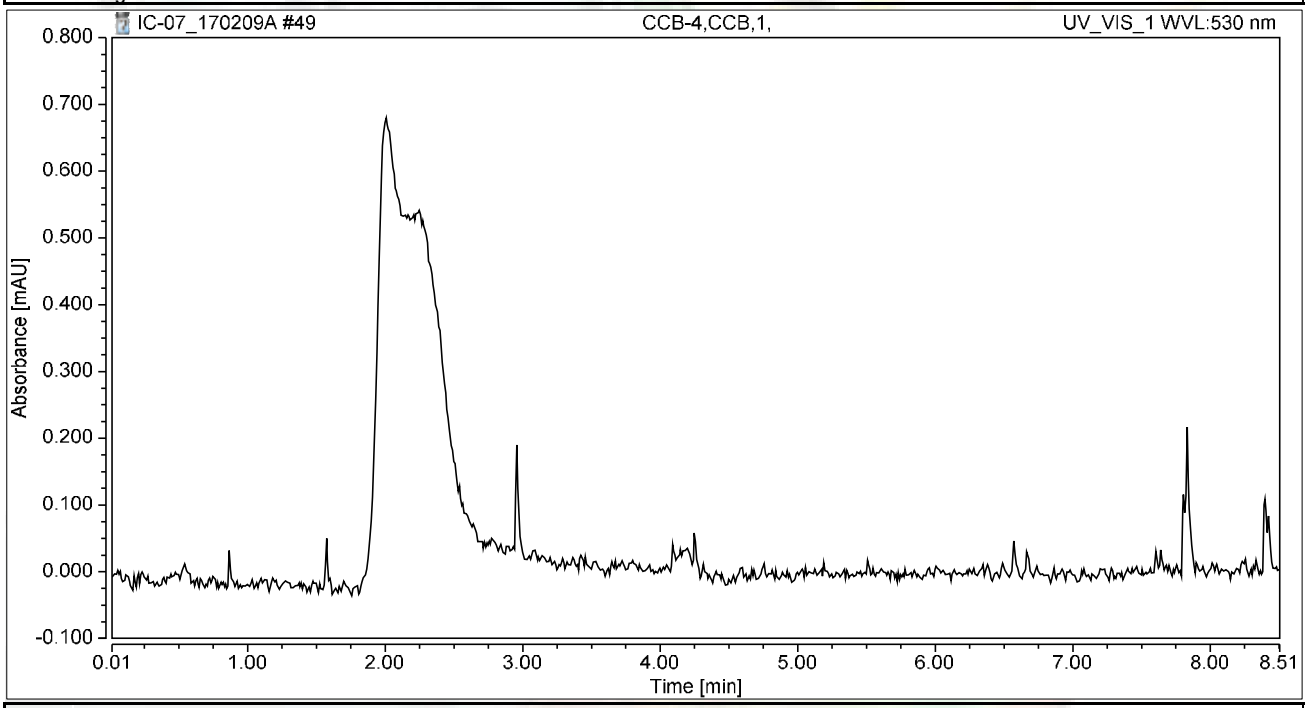
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.685	17.902	100.00	100.00	10.1235
Total:			**2.685**	**17.902**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

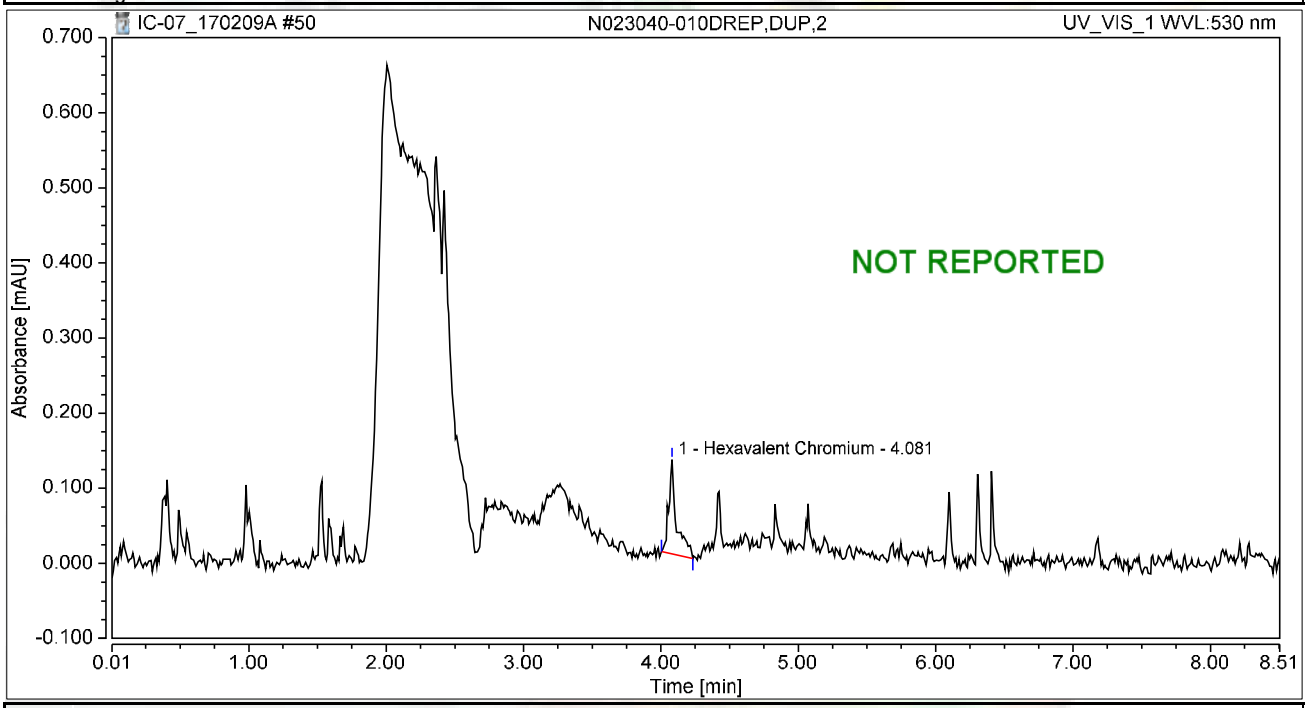
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023040-010DREP,DUP,2**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

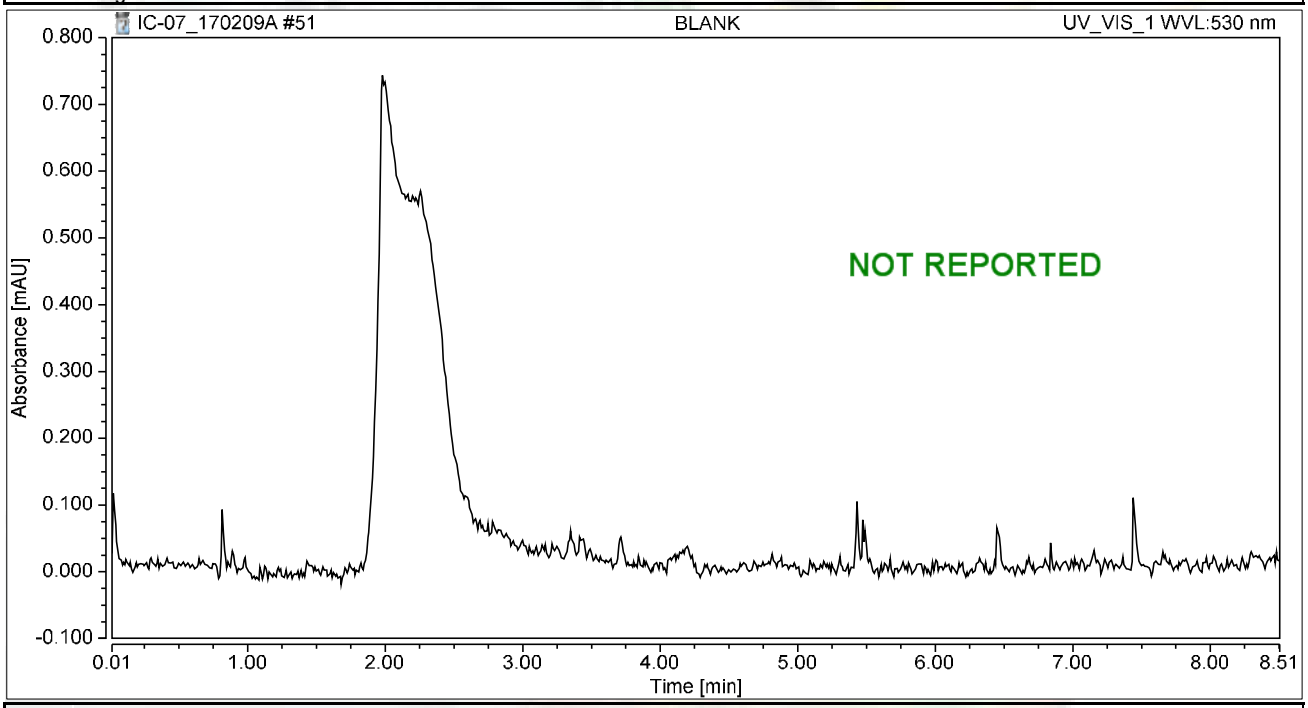
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.008	0.125	100.00	100.00	0.0310
Total:			**0.008**	**0.125**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 05:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

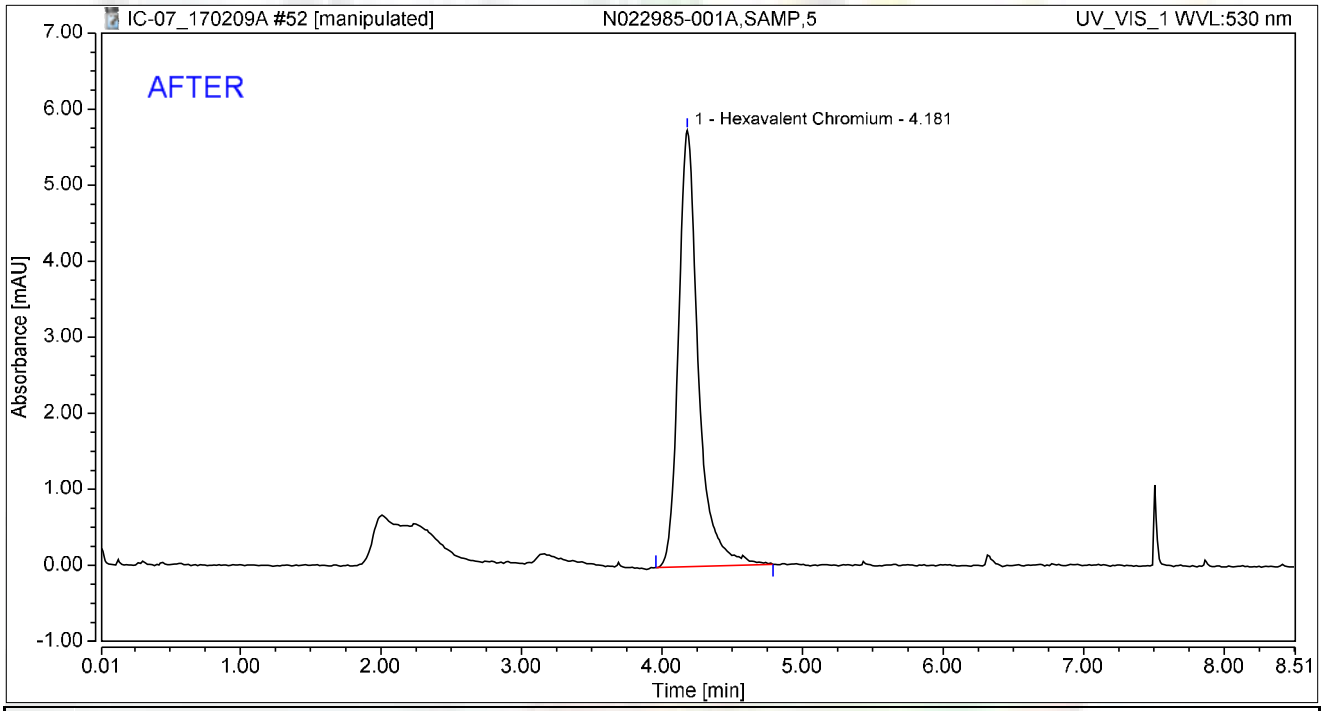
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.942	5.741	100.00	100.00	3.5531
Total:			**0.942**	**5.741**	**100.00**	**100.00**	

rba 2/14/2017

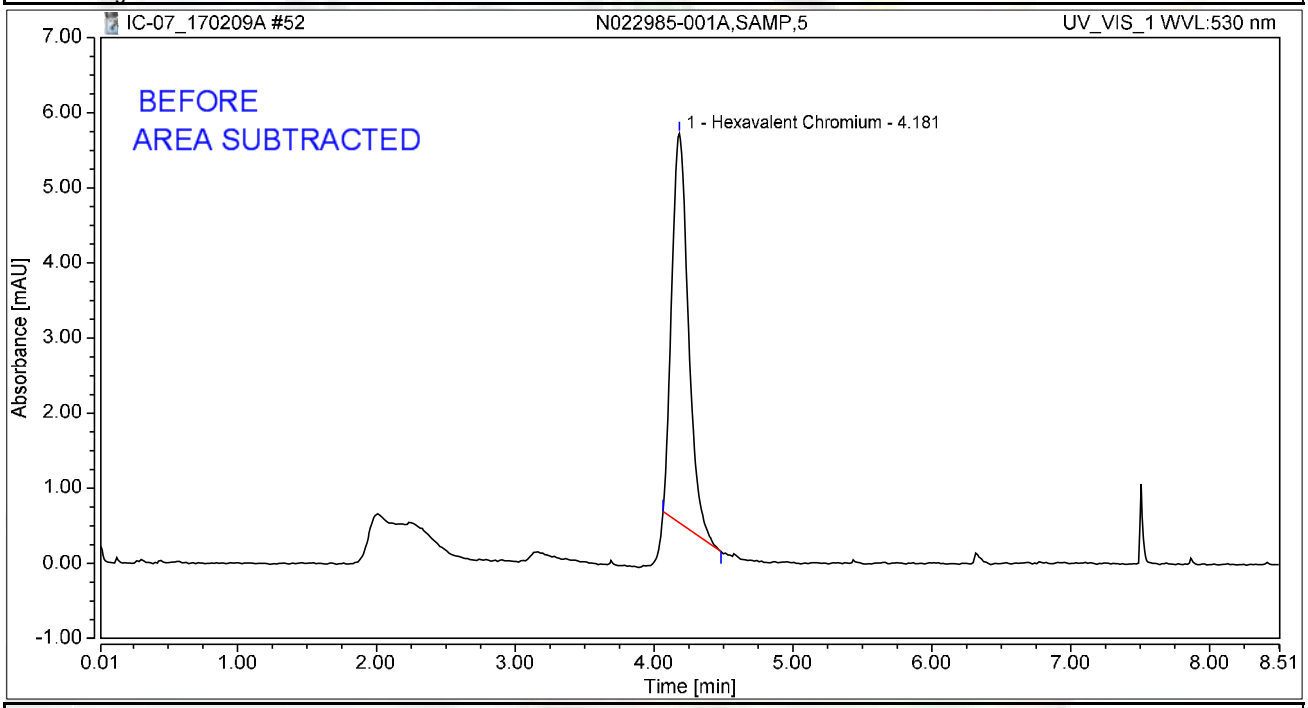
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.722	5.180	100.00	100.00	2.7213
Total:			**0.722**	**5.180**	**100.00**	**100.00**	

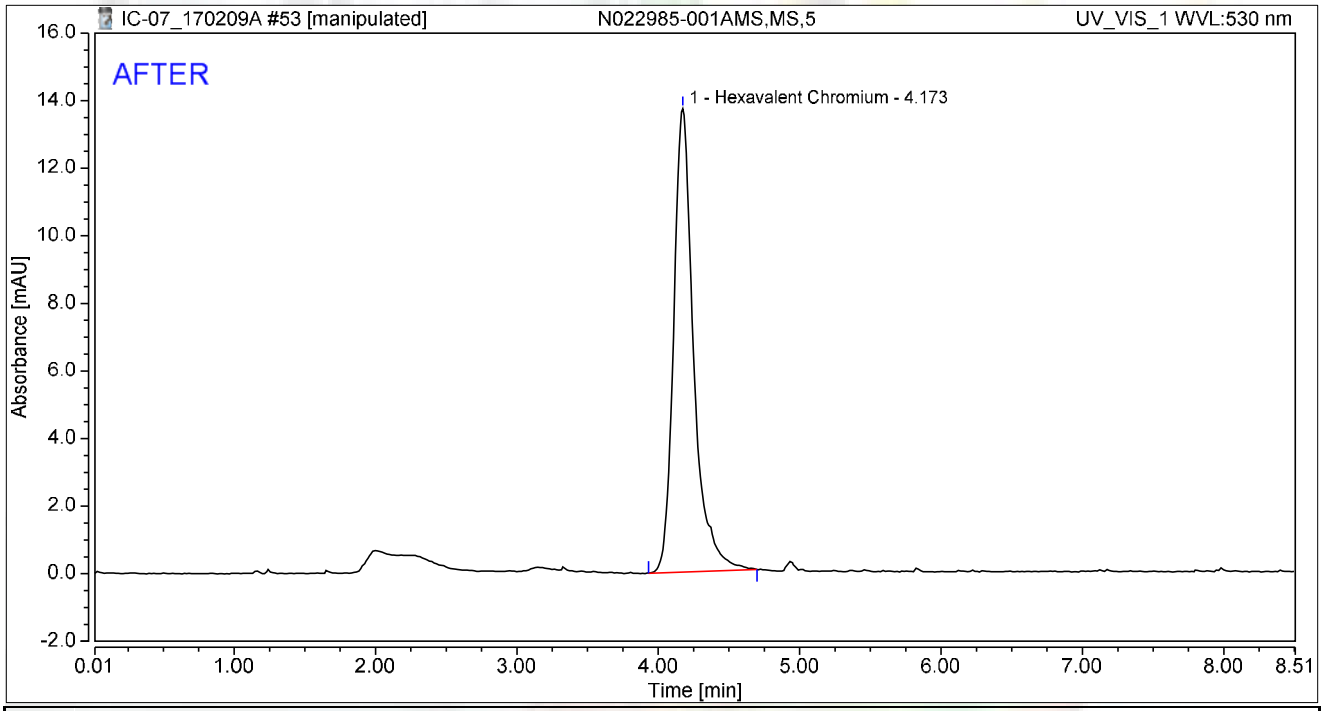
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.247	13.720	100.00	100.00	8.4719
Total:			**2.247**	**13.720**	**100.00**	**100.00**	

rba 2/14/2017

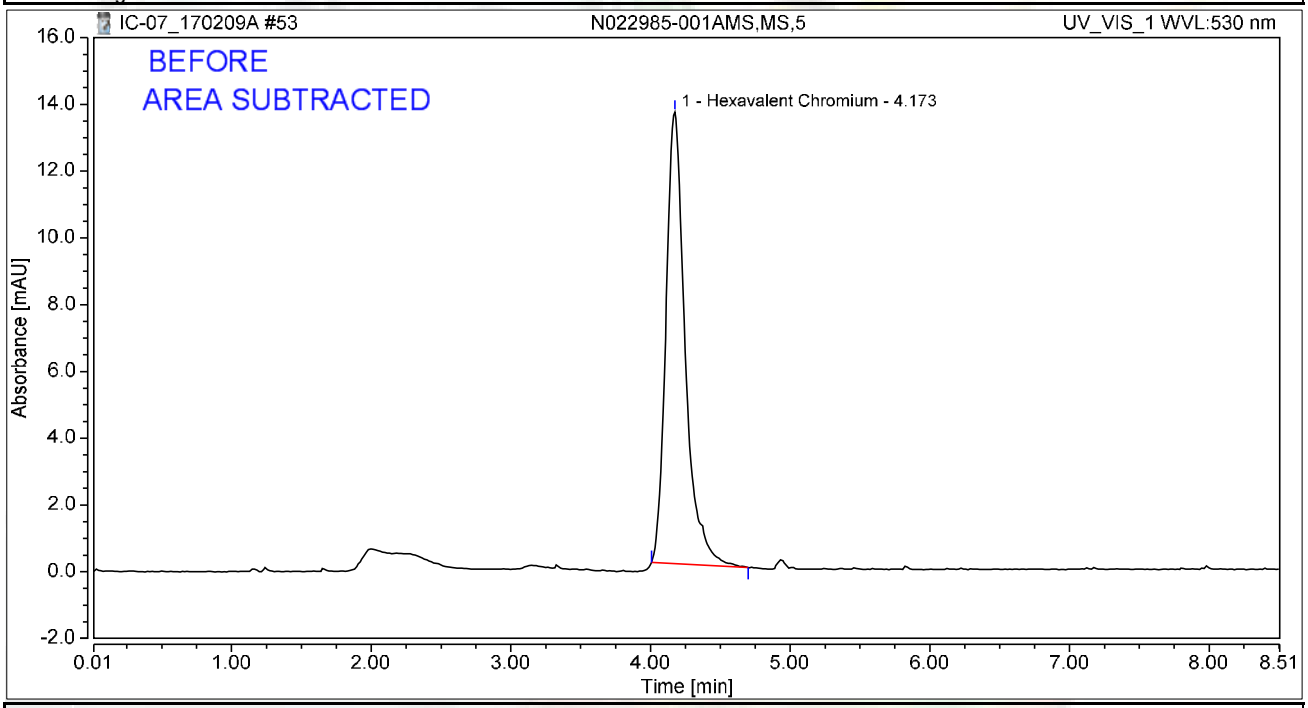
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.154	13.527	100.00	100.00	8.1219
Total:			**2.154**	**13.527**	**100.00**	**100.00**	

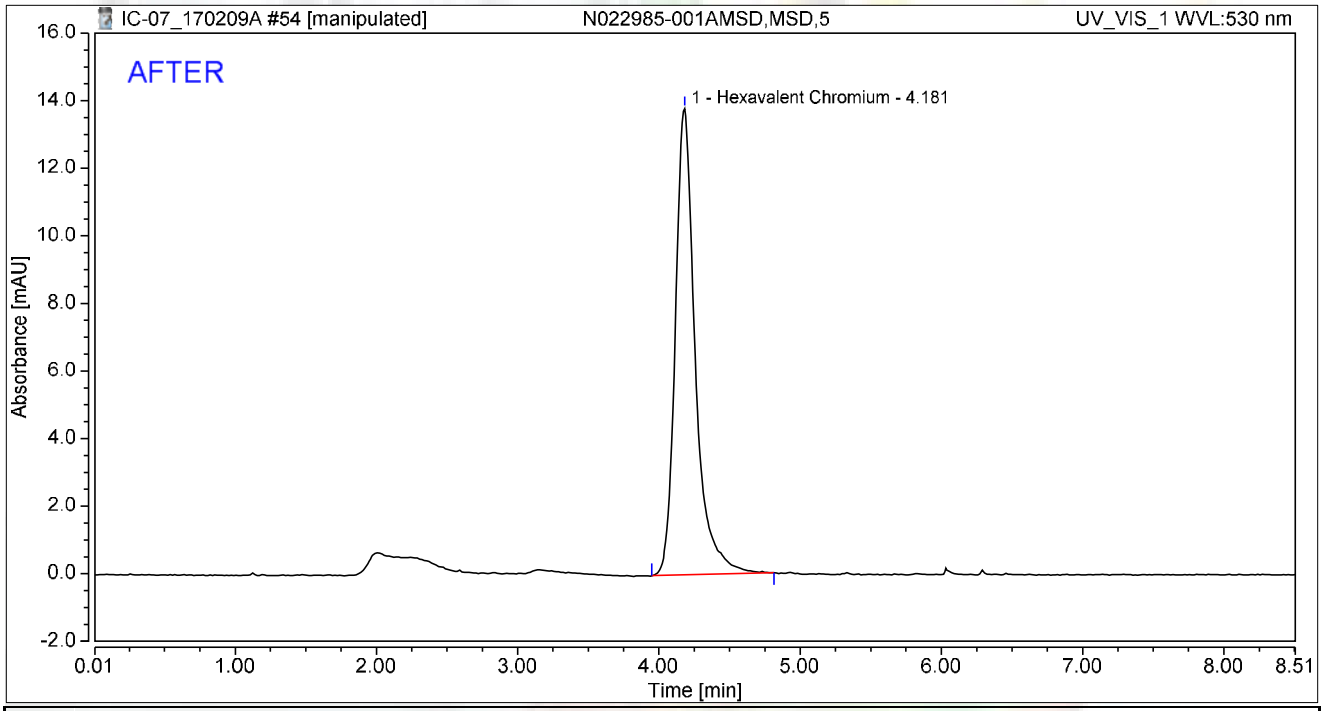
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.257	13.803	100.00	100.00	8.5097
Total:			**2.257**	**13.803**	**100.00**	**100.00**	

rba 2/14/2017

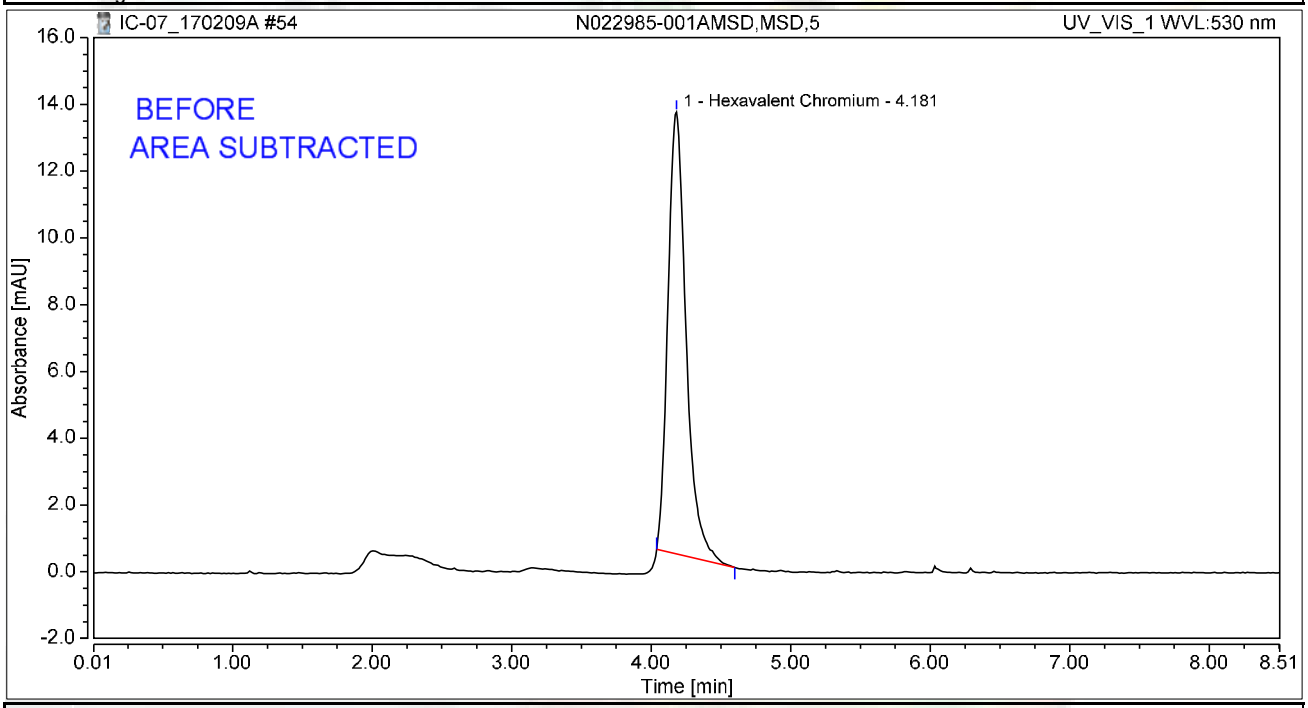
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.998	13.239	100.00	100.00	7.5344
Total:			**1.998**	**13.239**	**100.00**	**100.00**	

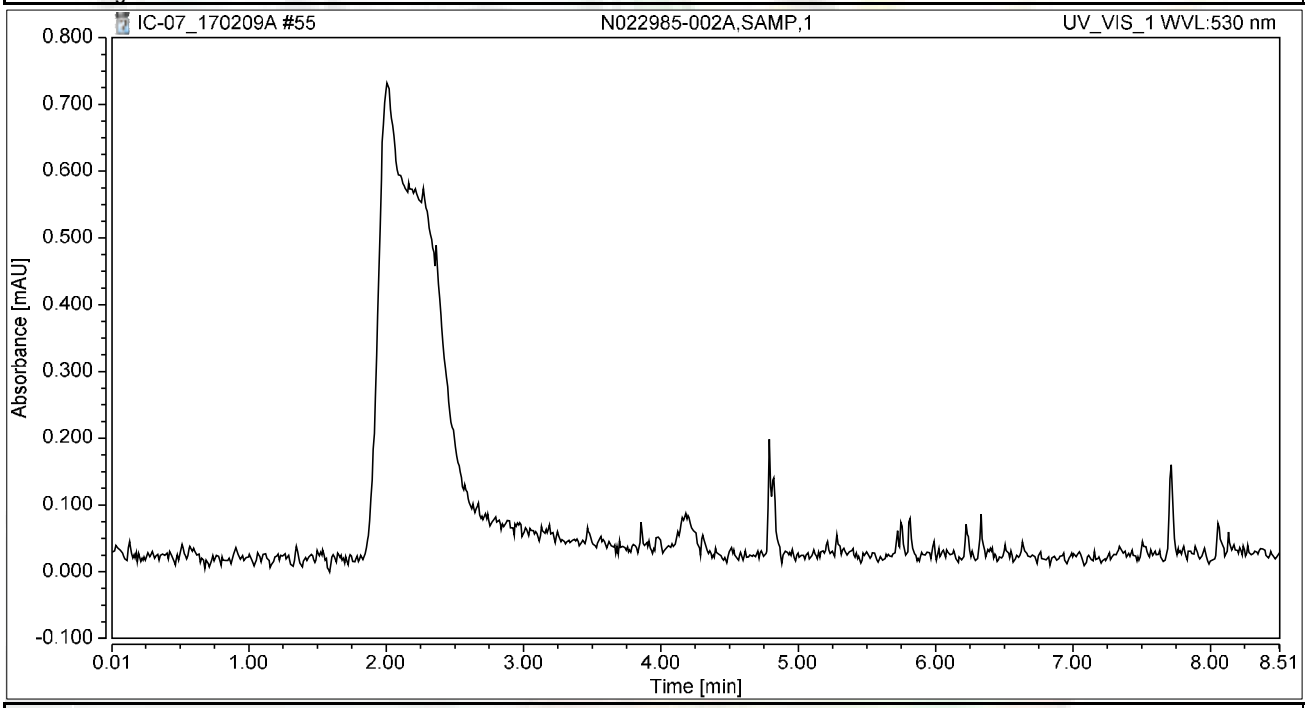
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

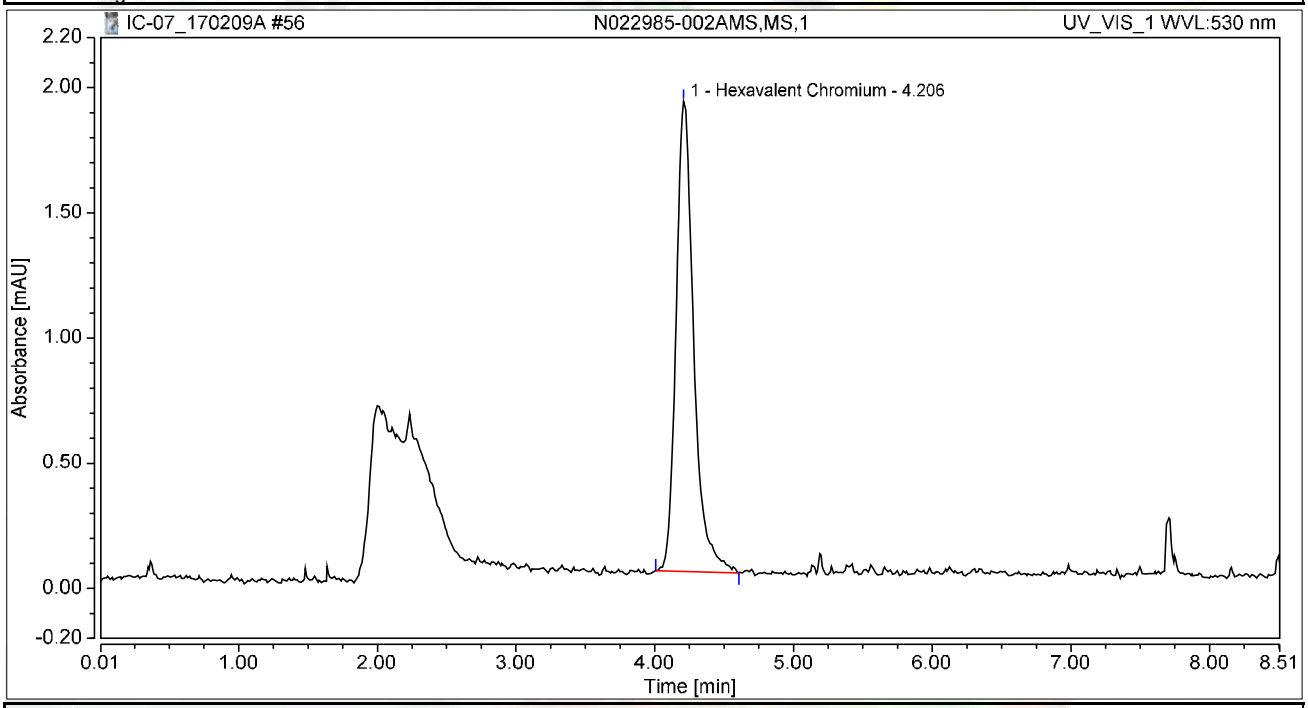
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

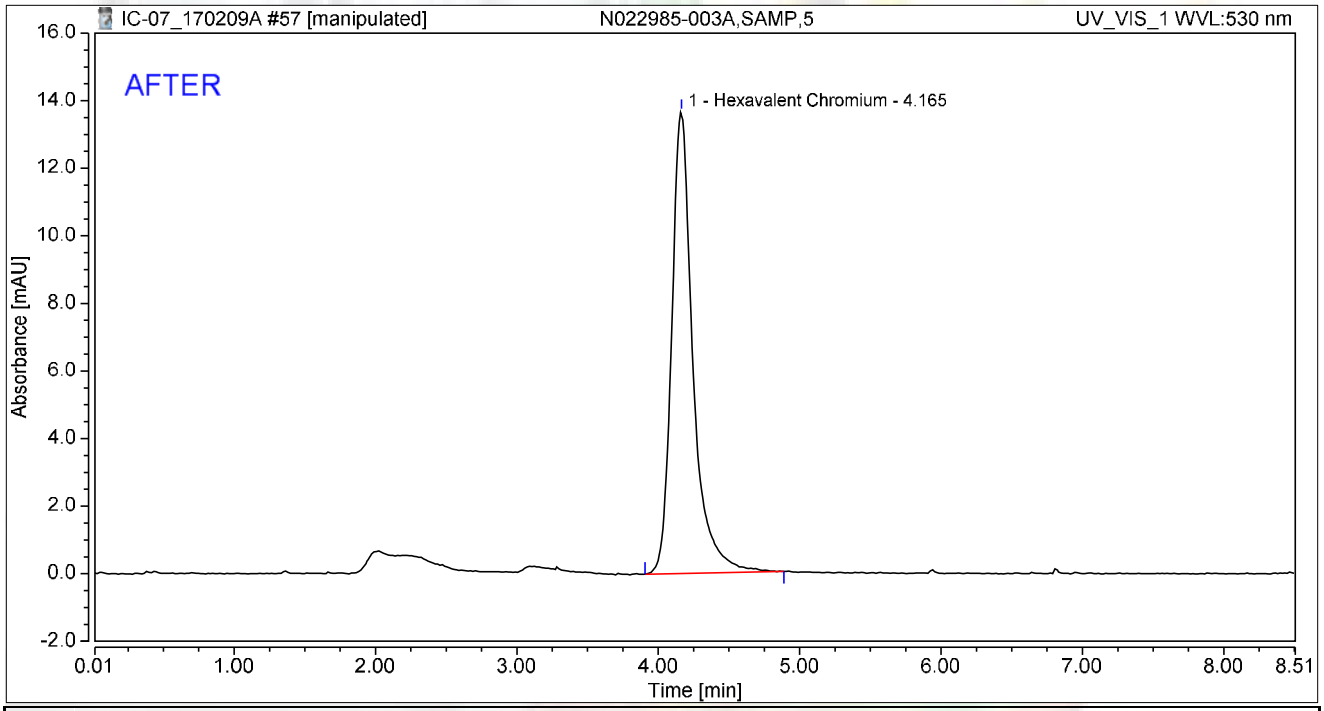
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.277	1.877	100.00	100.00	1.0425
Total:			**0.277**	**1.877**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.380	13.665	100.00	100.00	8.9722
Total:			**2.380**	**13.665**	**100.00**	**100.00**	

rba 2/14/2017

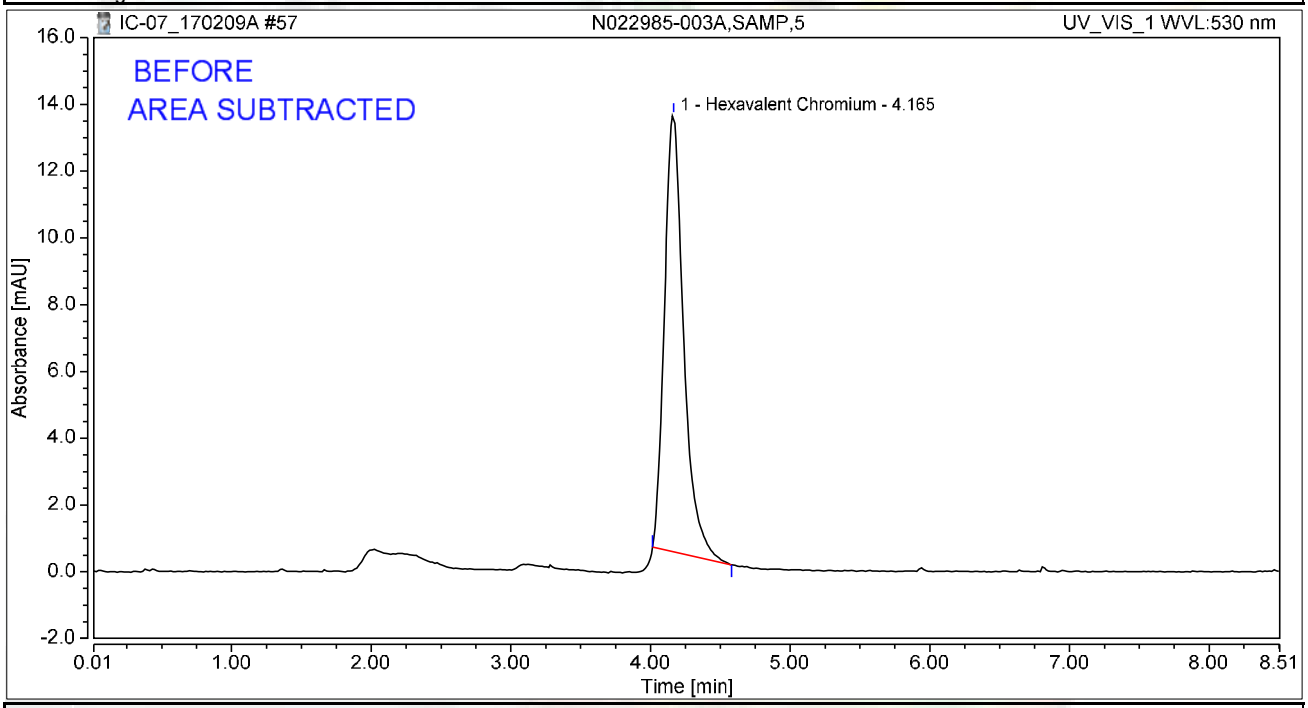
Reviewed
Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 06:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.089	13.081	100.00	100.00	7.8748
Total:			**2.089**	**13.081**	**100.00**	**100.00**	

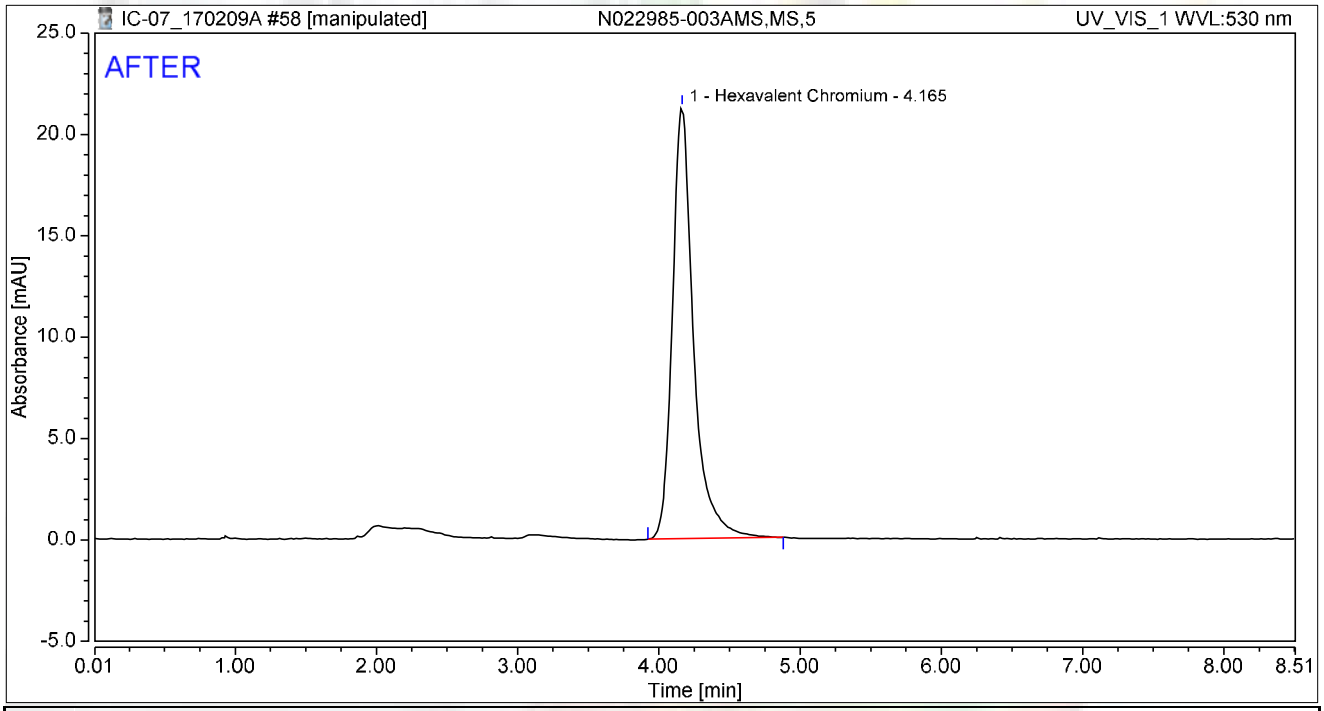
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.689	21.278	100.00	100.00	13.9061
Total:			**3.689**	**21.278**	**100.00**	**100.00**	

rba 2/14/2017

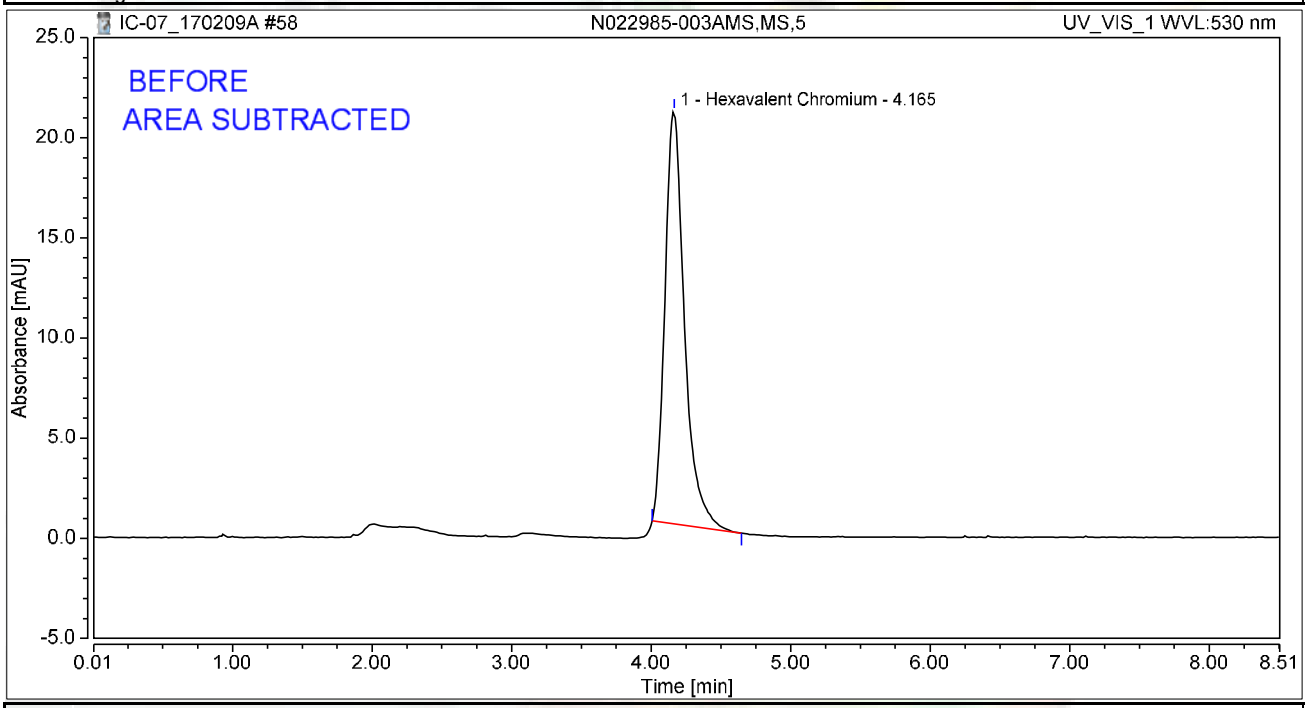
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.352	20.624	100.00	100.00	12.6375
Total:			**3.352**	**20.624**	**100.00**	**100.00**	

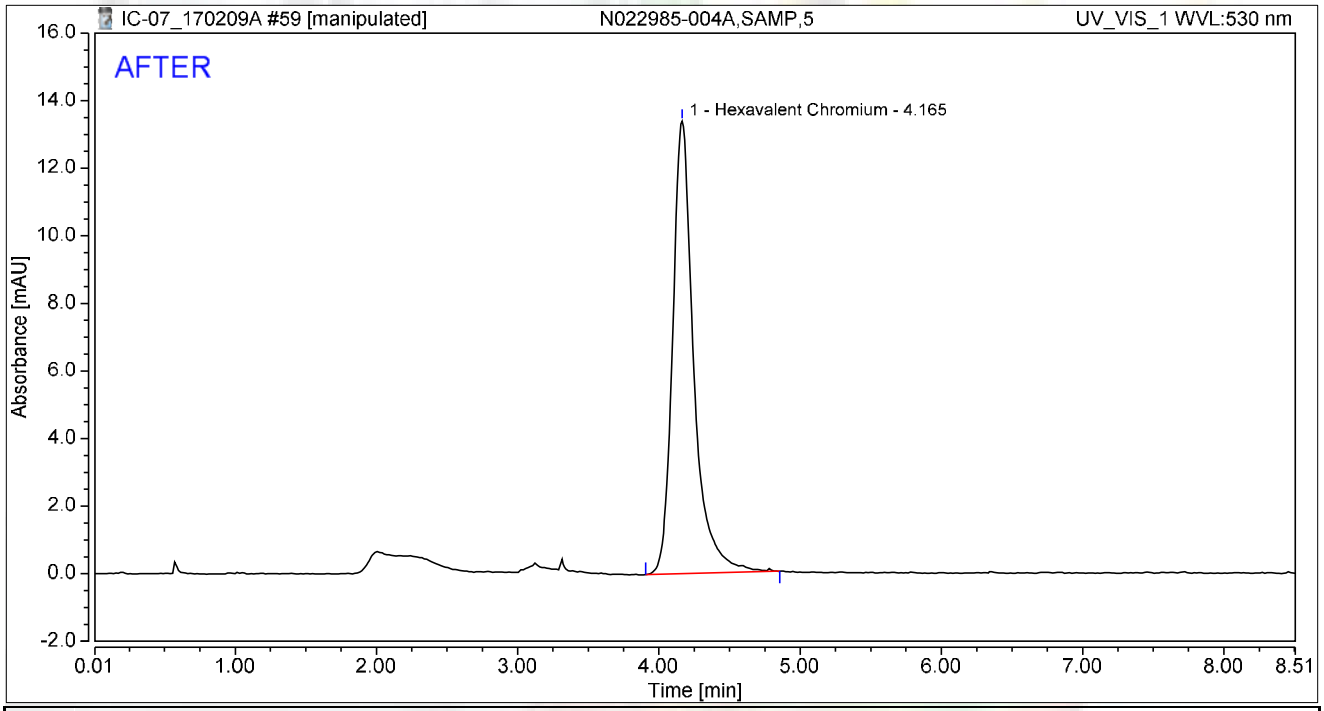
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.322	13.392	100.00	100.00	8.7544
Total:			**2.322**	**13.392**	**100.00**	**100.00**	

rba 2/14/2017

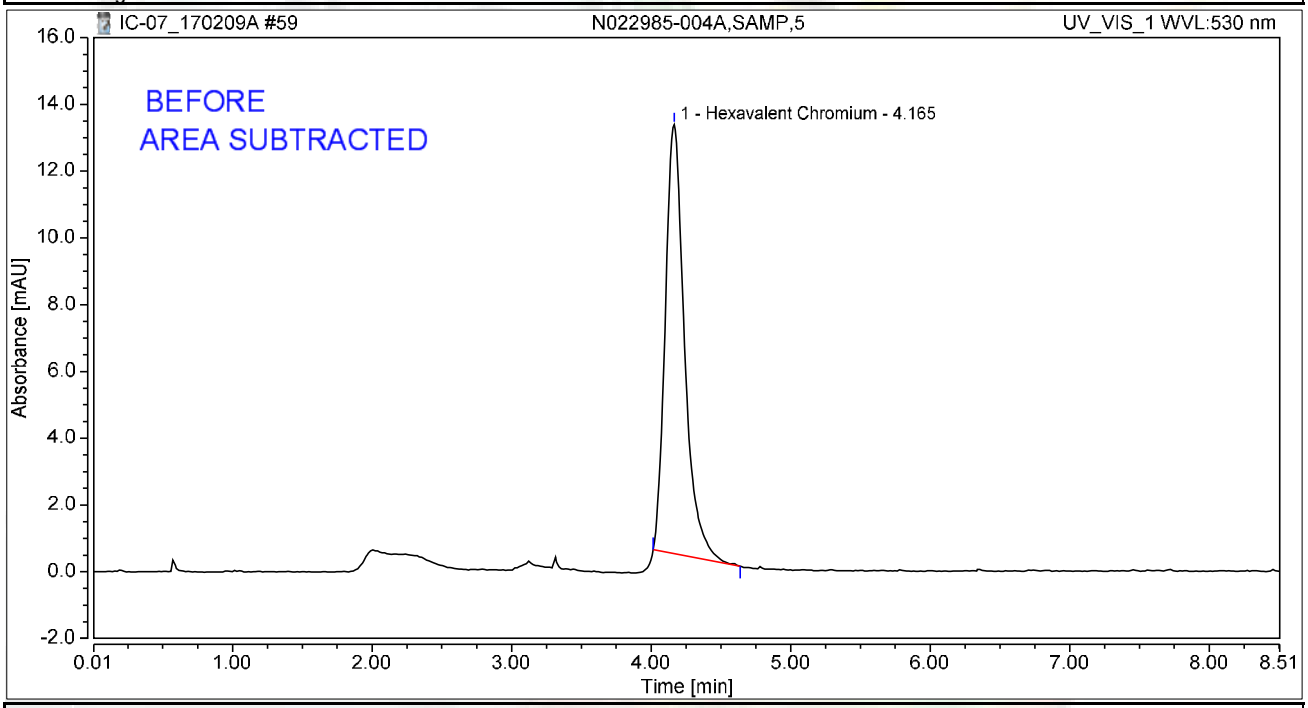
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.051	12.852	100.00	100.00	7.7325
Total:			**2.051**	**12.852**	**100.00**	**100.00**	

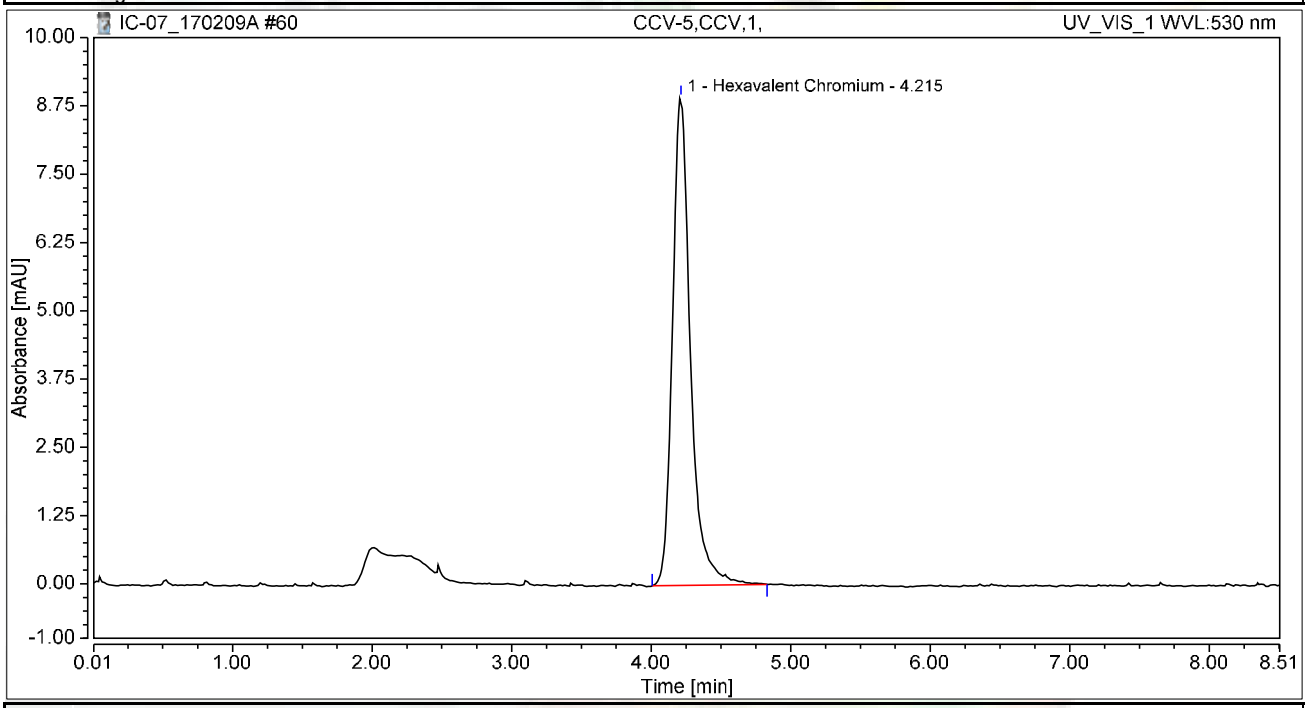
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

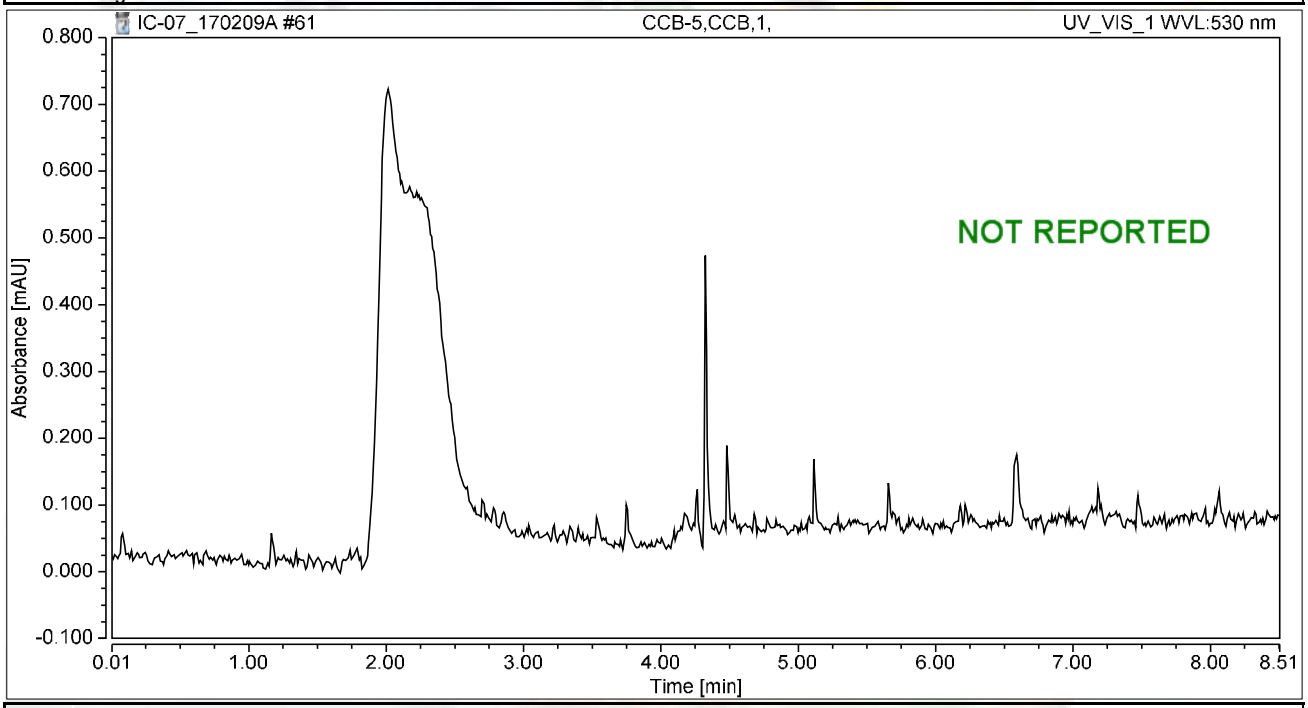
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.339	8.934	100.00	100.00	5.0477
Total:			**1.339**	**8.934**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

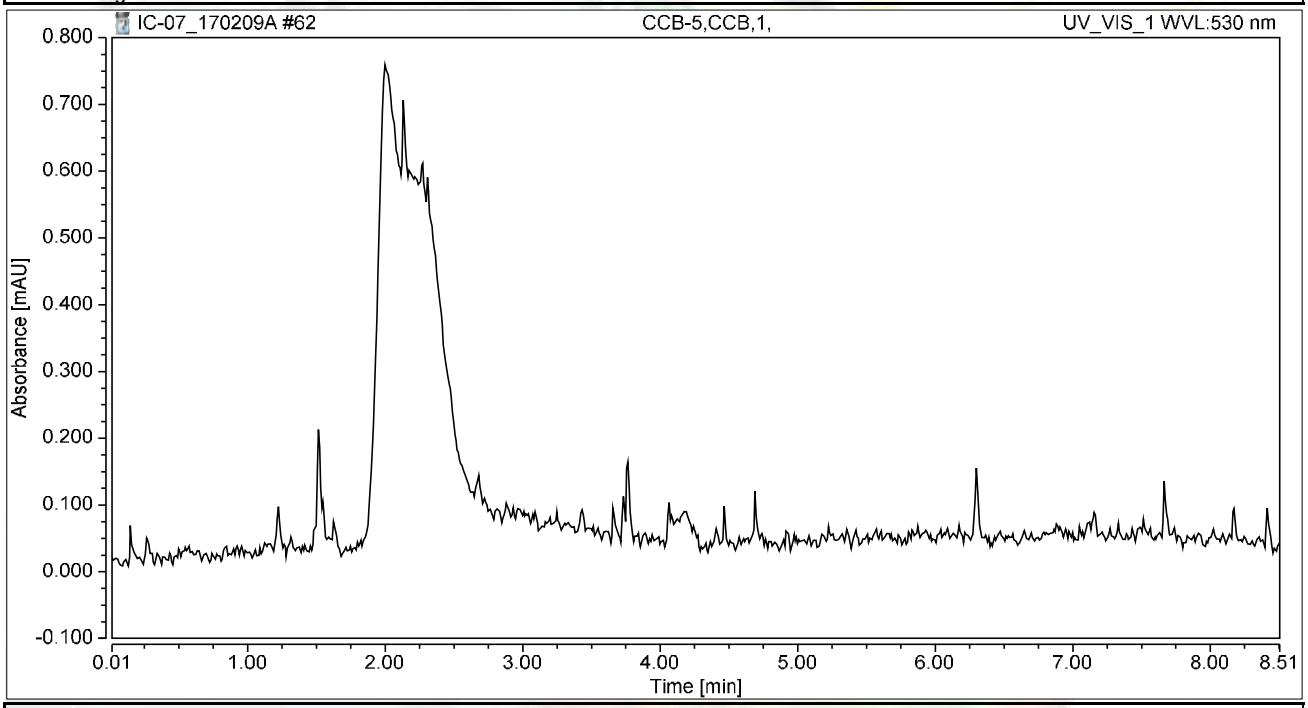
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 07:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

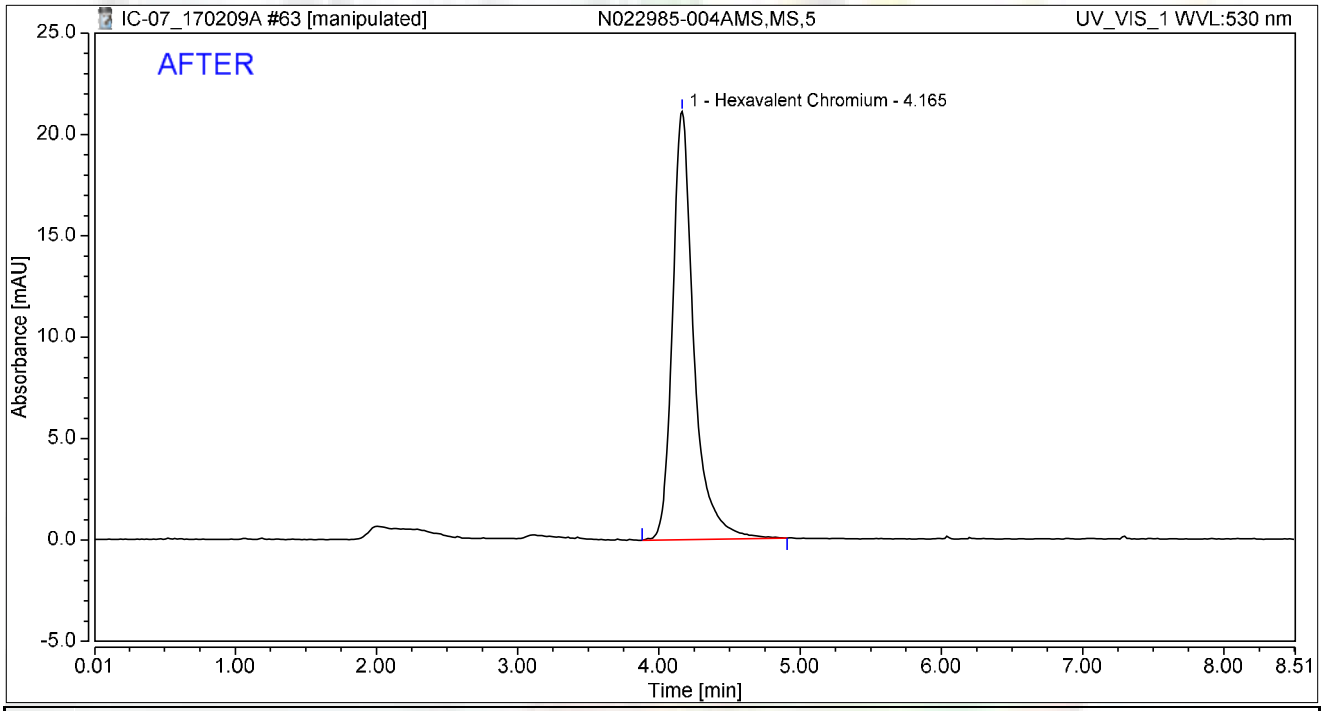
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.688	21.111	100.00	100.00	13.9030
Total:			**3.688**	**21.111**	**100.00**	**100.00**	

rba 2/14/2017

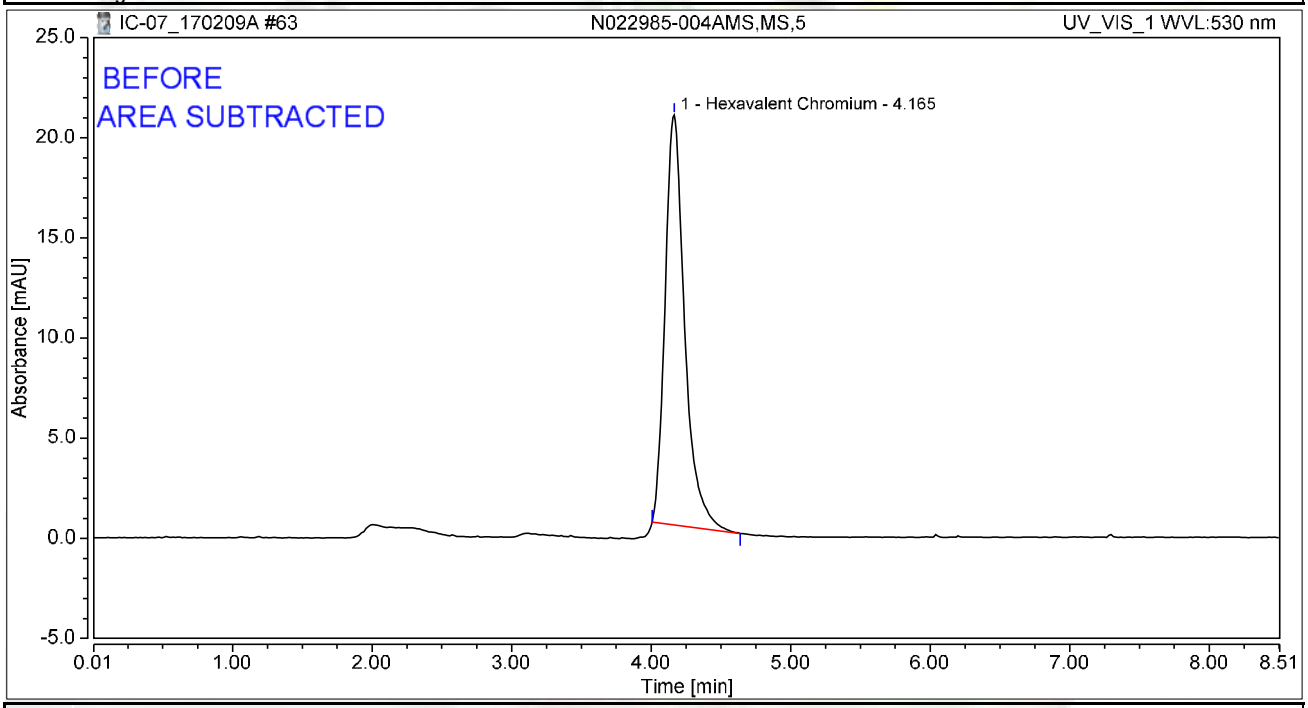
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.336	20.460	100.00	100.00	12.5758
Total:			**3.336**	**20.460**	**100.00**	**100.00**	

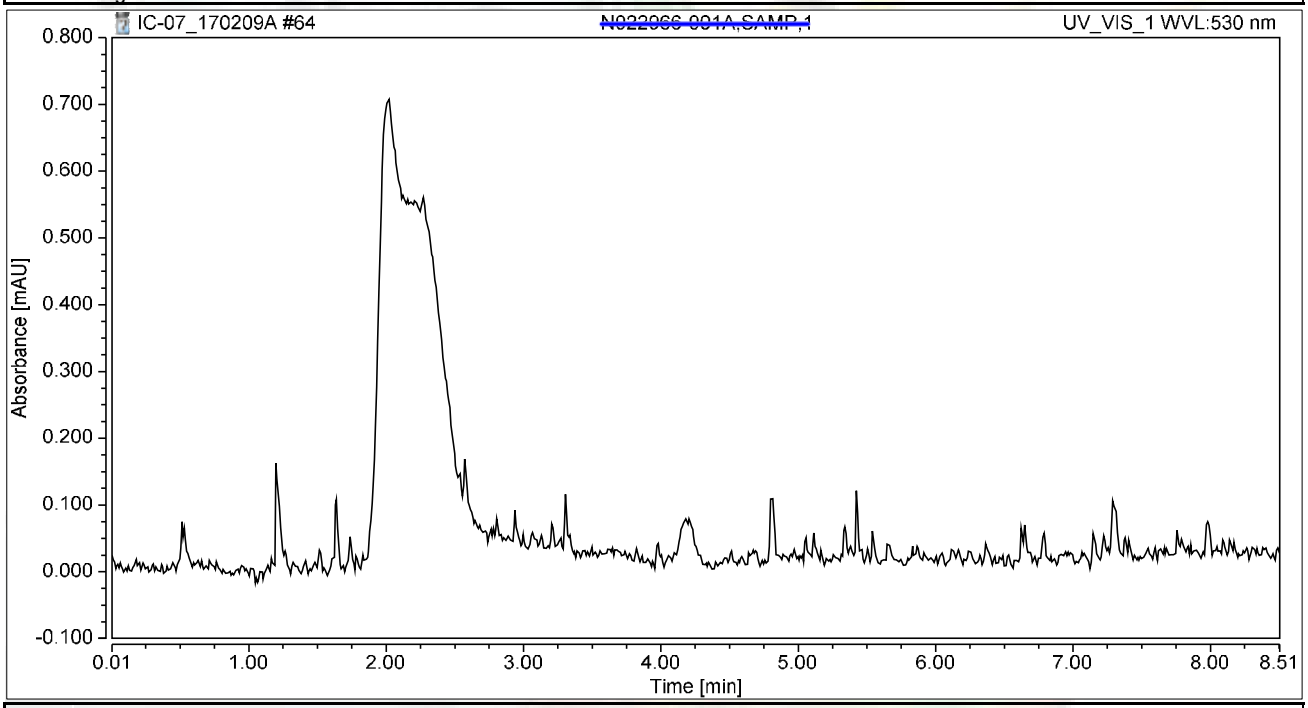
rba 2/14/2017

Chromatogram and Results

Injection Details N022966-013A,SAMP,1,

Injection Name:	~~N022966-001A,SAMP,~~1	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:20**	*Sample Weight:*	**1.0000**

Chromatogram N022966-013A,SAMP,1,



Integration Results

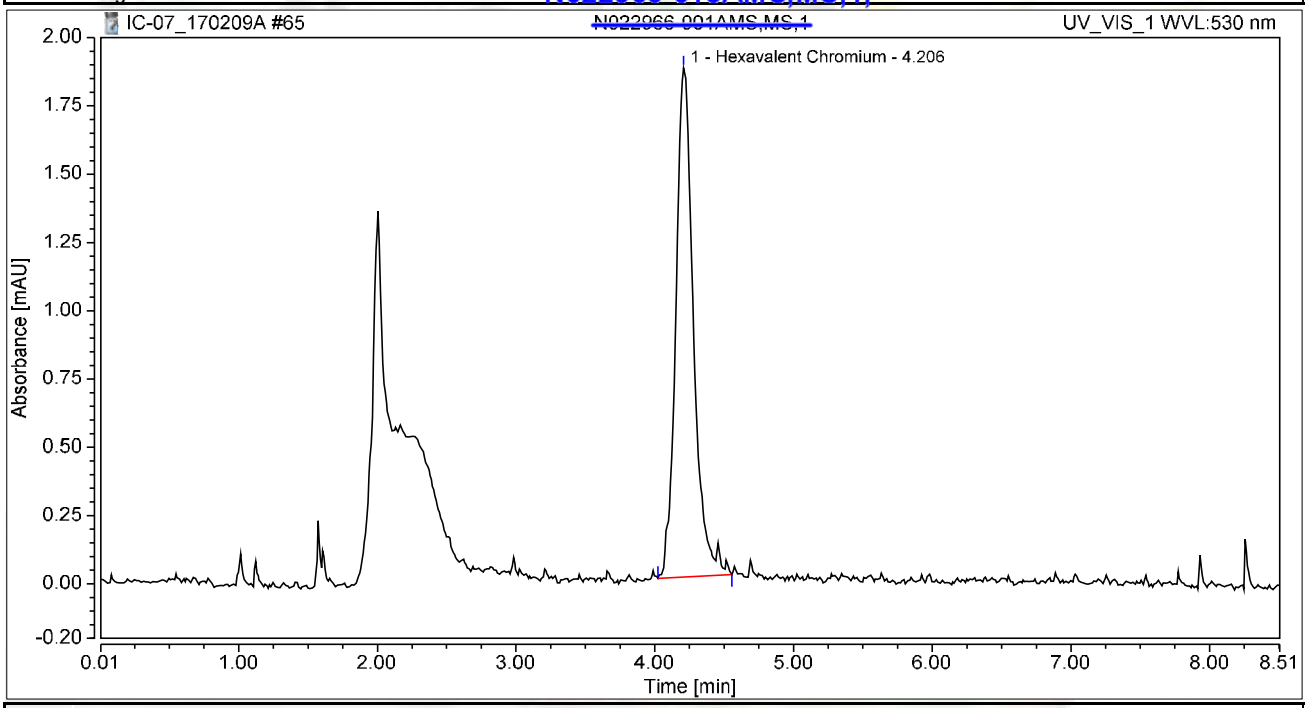
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details N022966-013AMS,MS,1

Injection Name:	~~N022966-001AMS,MS,1~~	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:29**	*Sample Weight:*	**1.0000**

Chromatogram N022966-013AMS,MS,1,



Integration Results

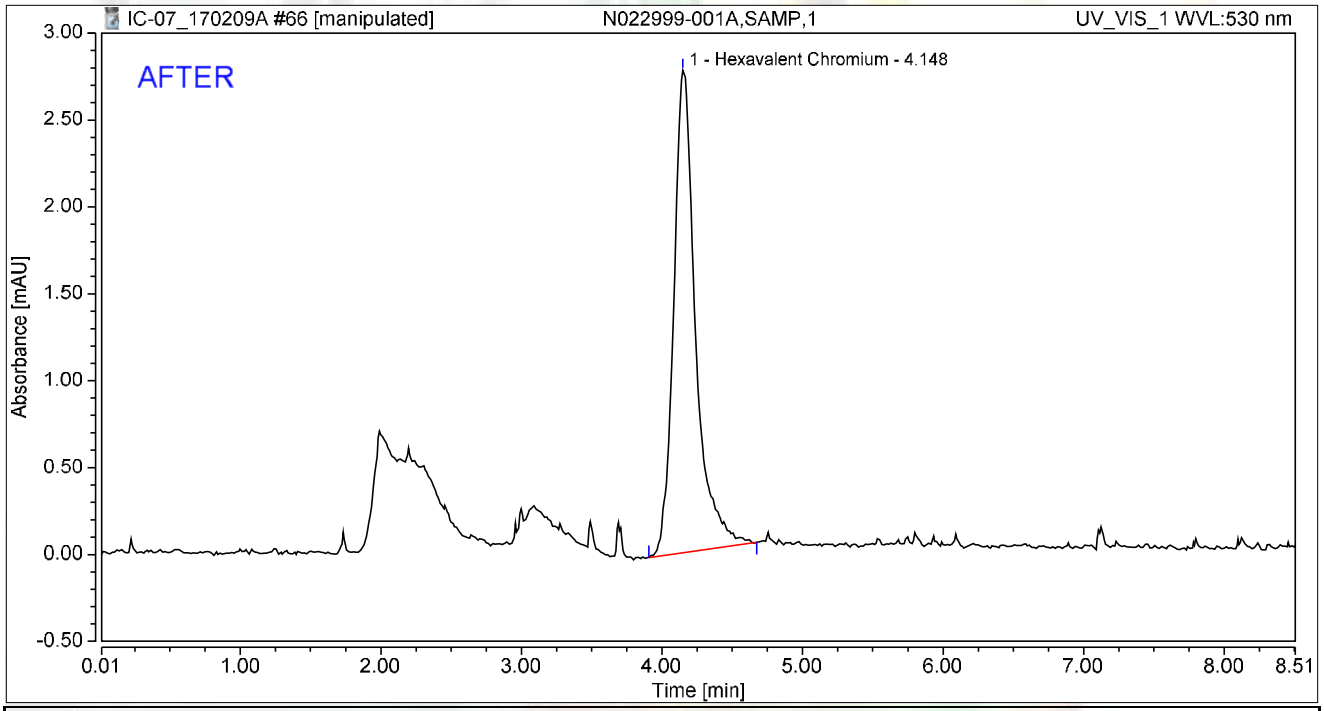
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.275	1.864	100.00	100.00	1.0351
Total:			**0.275**	**1.864**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.499	2.775	100.00	100.00	1.8827
Total:			**0.499**	**2.775**	**100.00**	**100.00**	

rba 2/14/2017

Reviewed

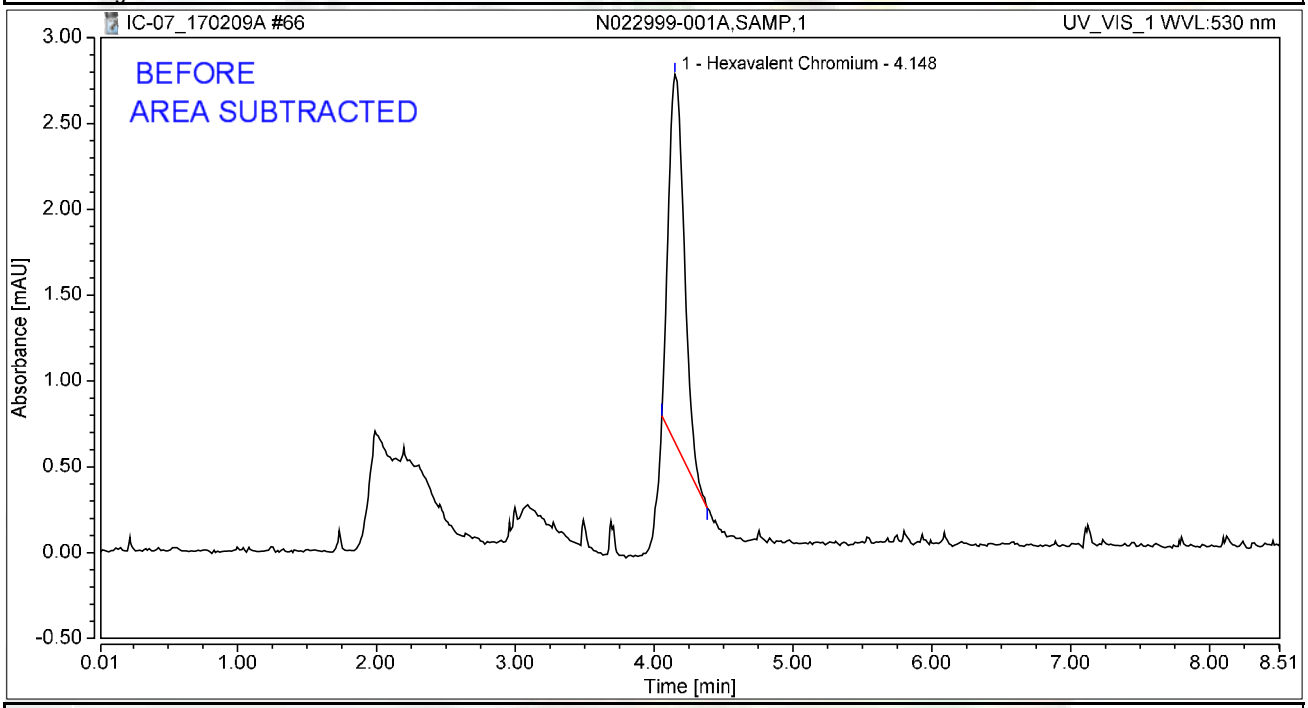
Dianey 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.284	2.137	100.00	100.00	1.0694
Total:			**0.284**	**2.137**	**100.00**	**100.00**	

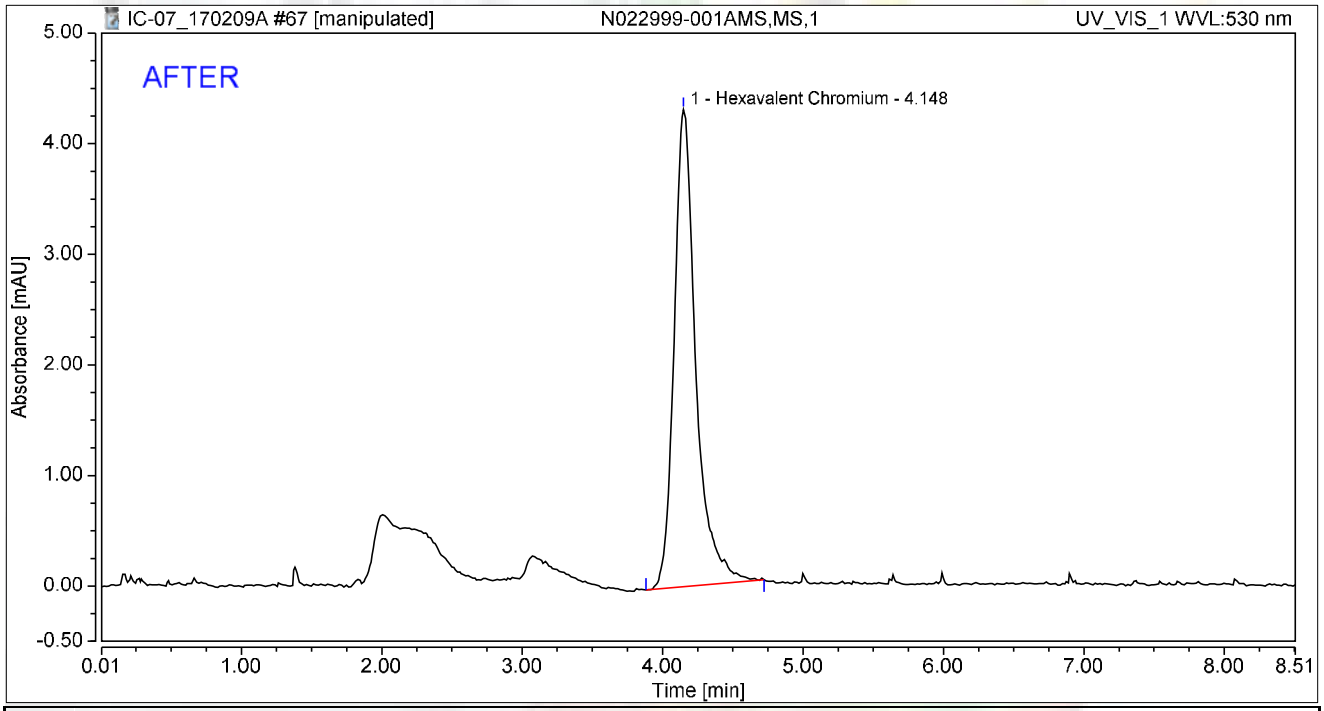
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.772	4.317	100.00	100.00	2.9093
Total:			**0.772**	**4.317**	**100.00**	**100.00**	

rba 2/14/2017

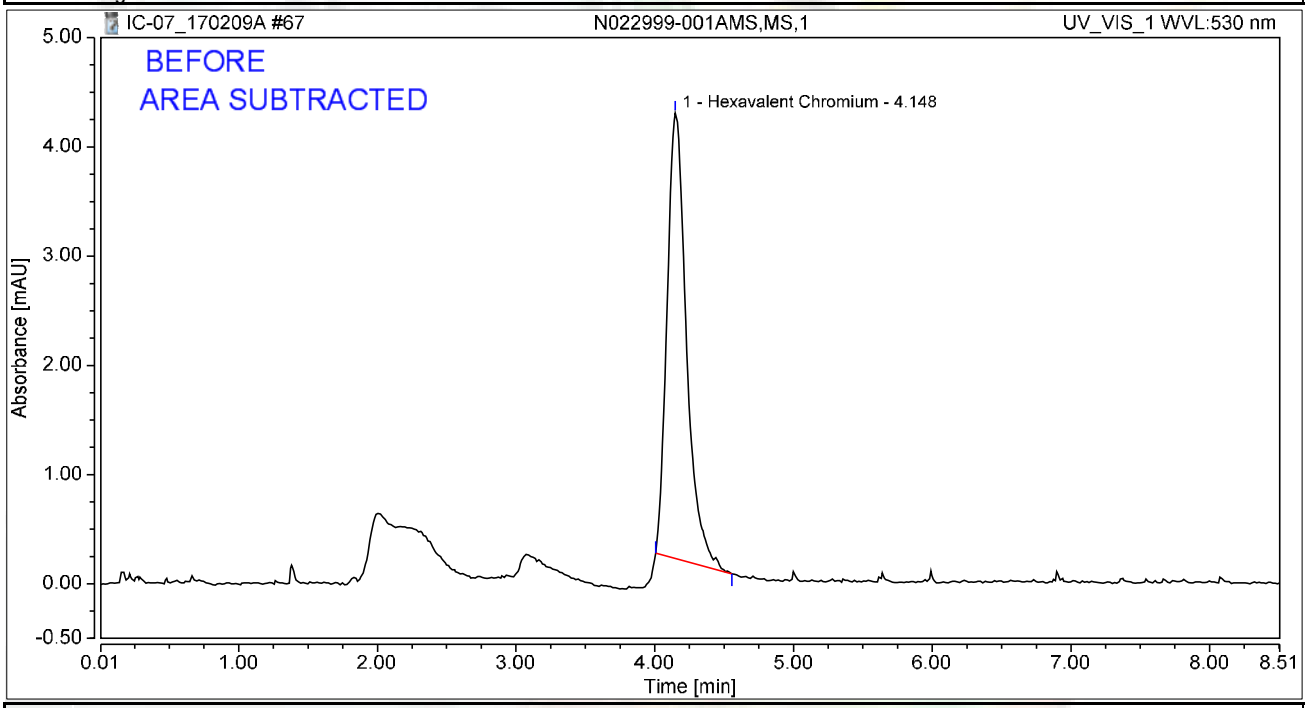
Reviewed by: Dionex 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.662	4.078	100.00	100.00	2.4971
Total:			**0.662**	**4.078**	**100.00**	**100.00**	

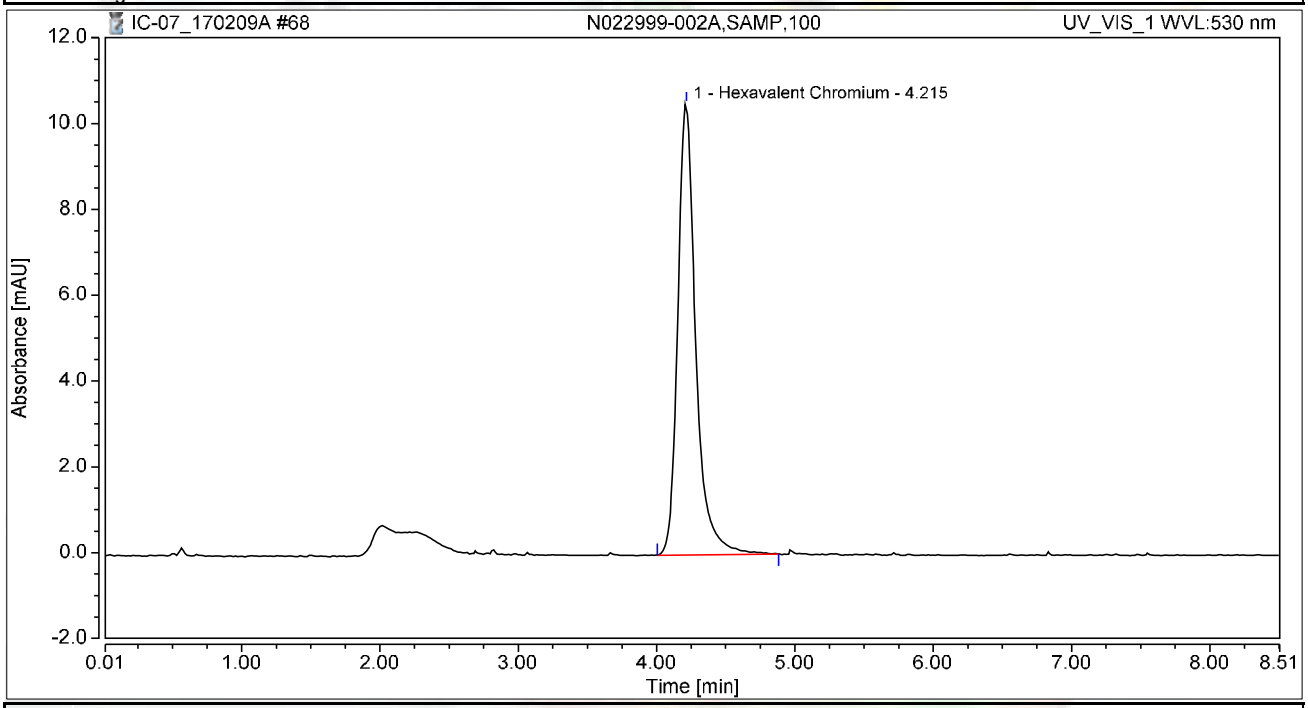
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-002A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 08:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

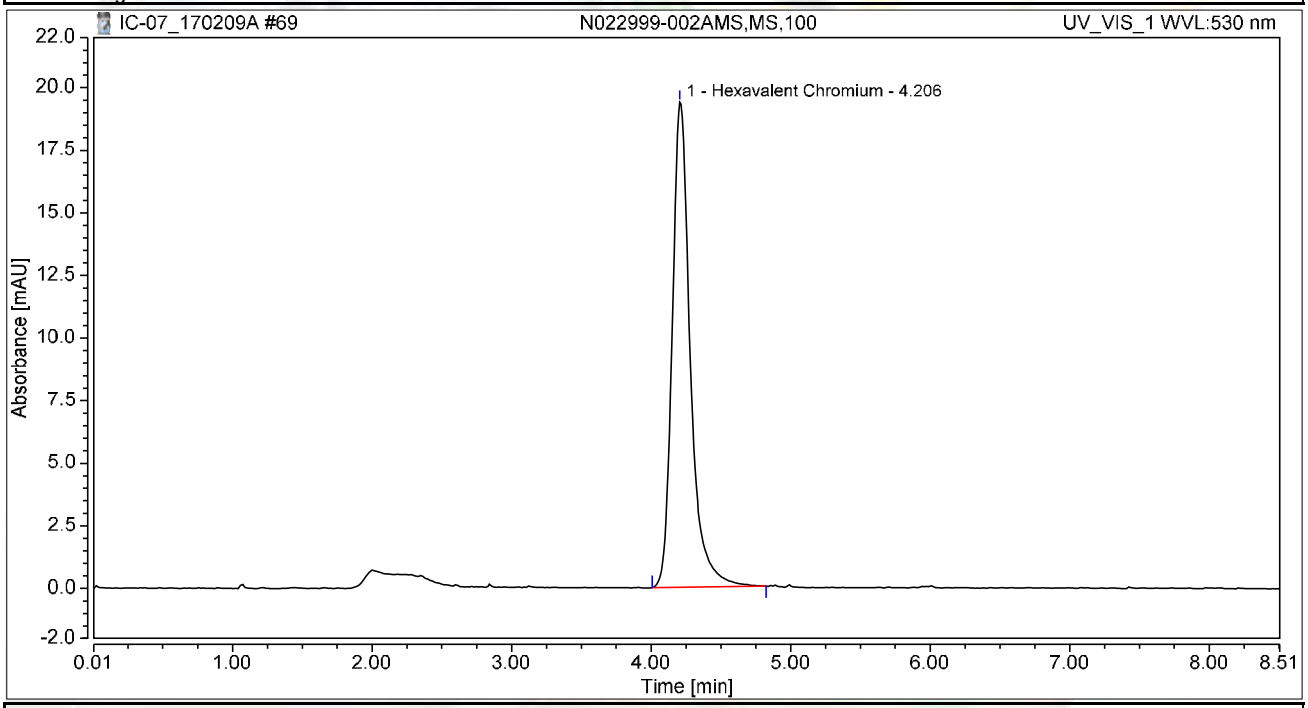
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.588	10.511	100.00	100.00	5.9869
Total:			**1.588**	**10.511**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

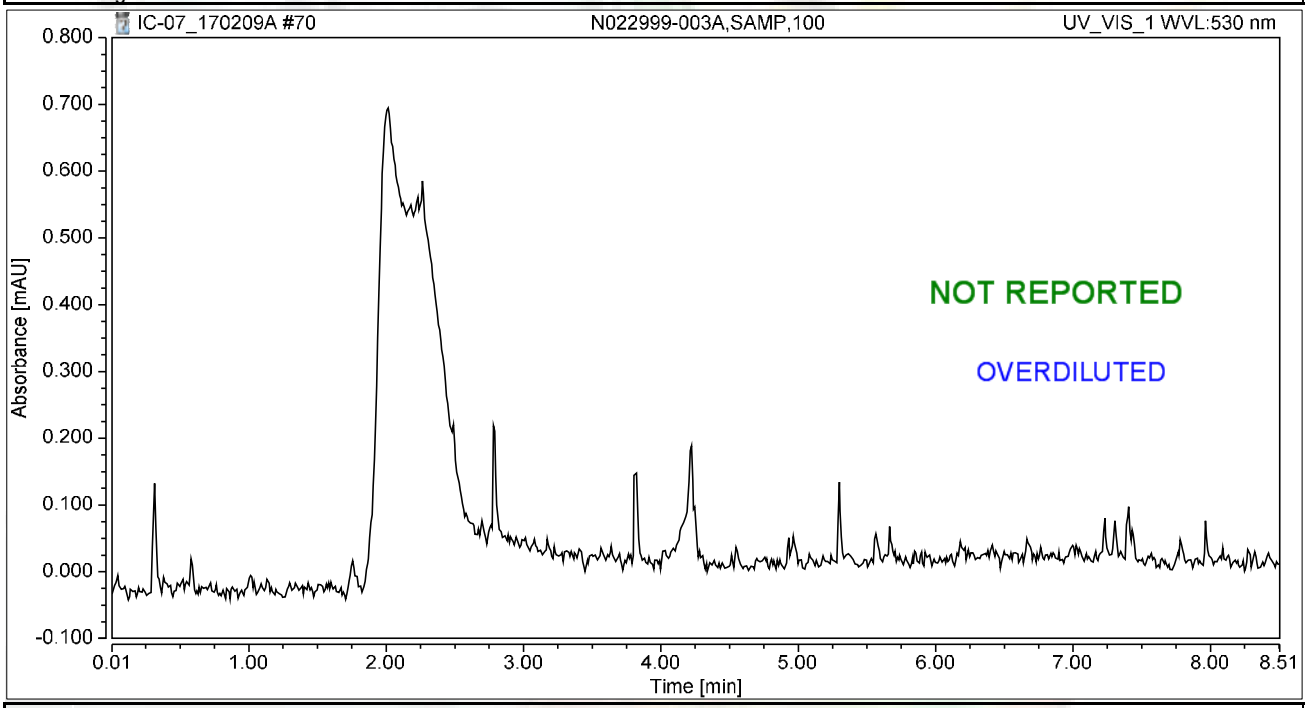
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.904	19.375	100.00	100.00	10.9471
Total:			**2.904**	**19.375**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

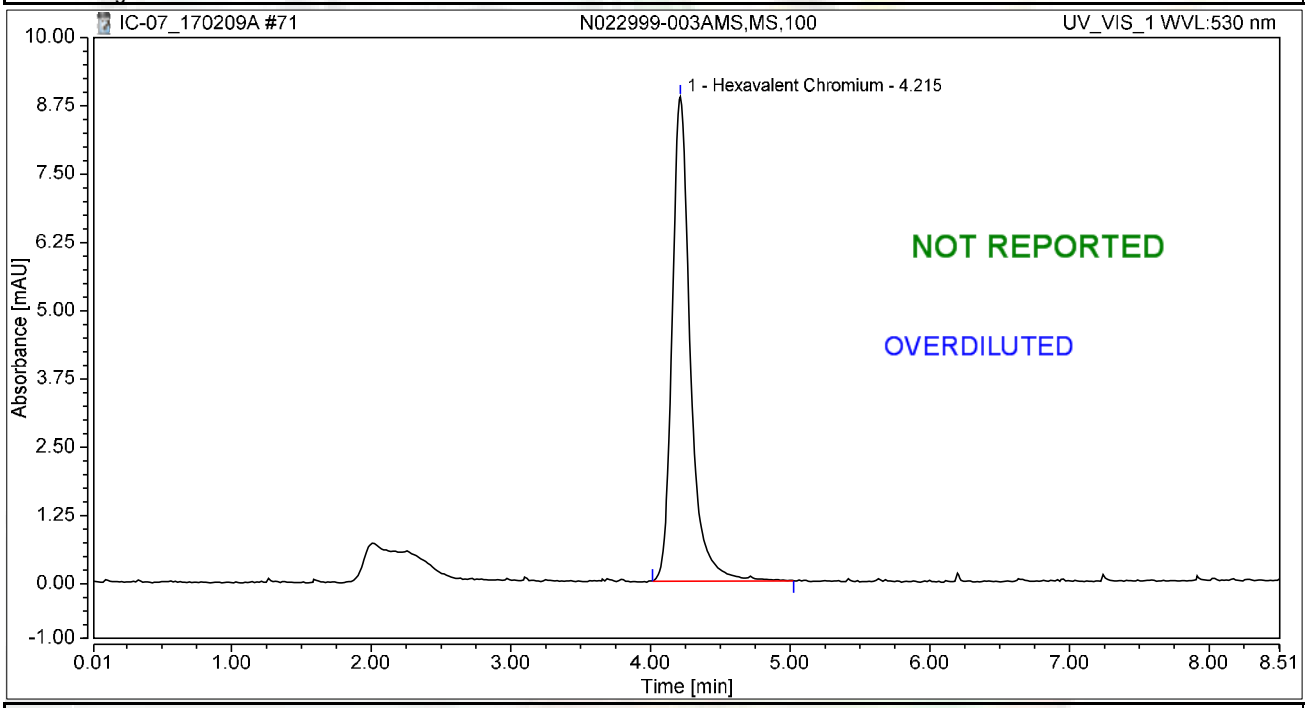
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

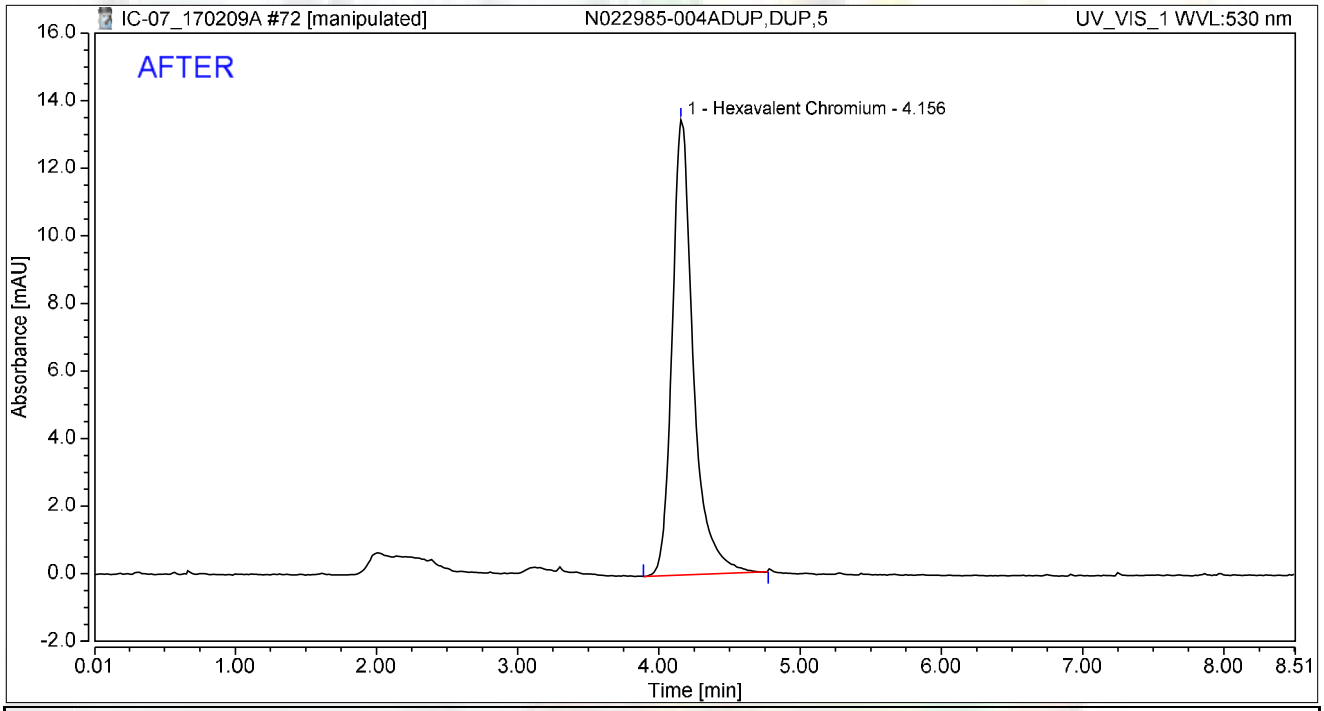
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.340	8.865	100.00	100.00	5.0526
Total:			**1.340**	**8.865**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004ADUP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.332	13.465	100.00	100.00	8.7919
Total:			**2.332**	**13.465**	**100.00**	**100.00**	

rba 2/14/2017

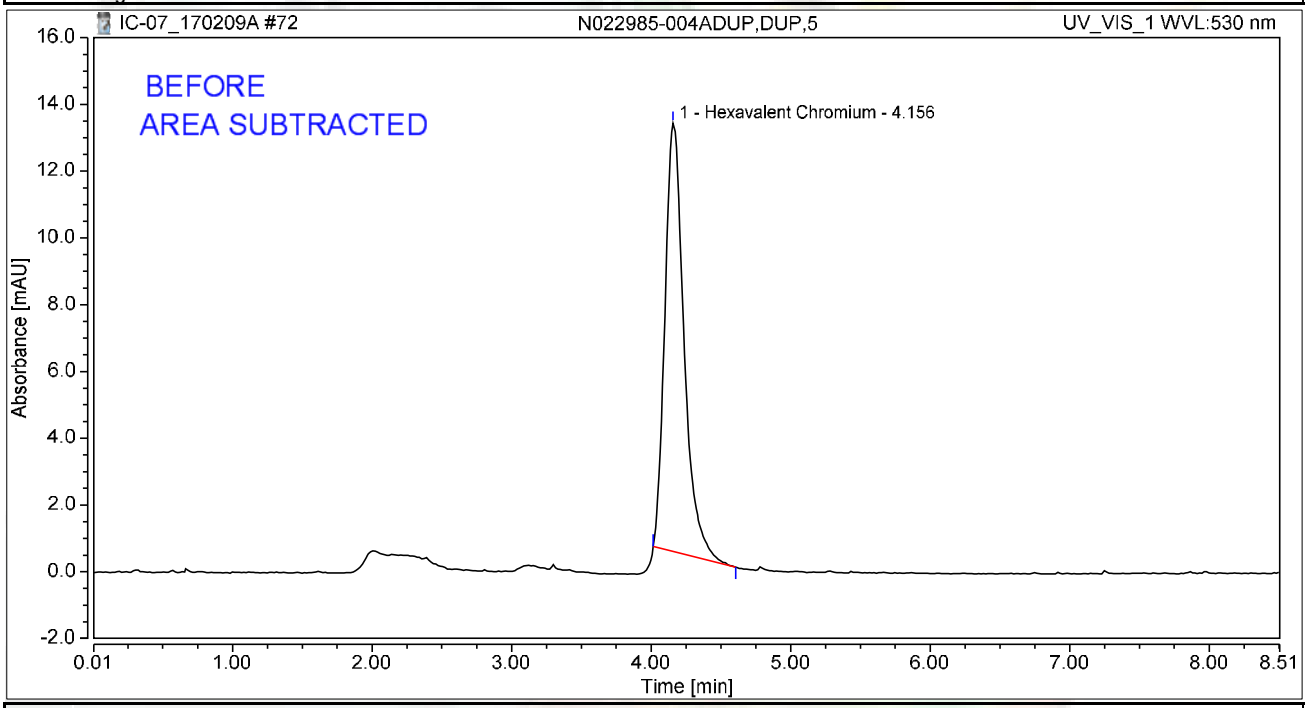
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022985-004ADUP,DUP,5**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.037	12.818	100.00	100.00	7.6785
Total:			**2.037**	**12.818**	**100.00**	**100.00**	

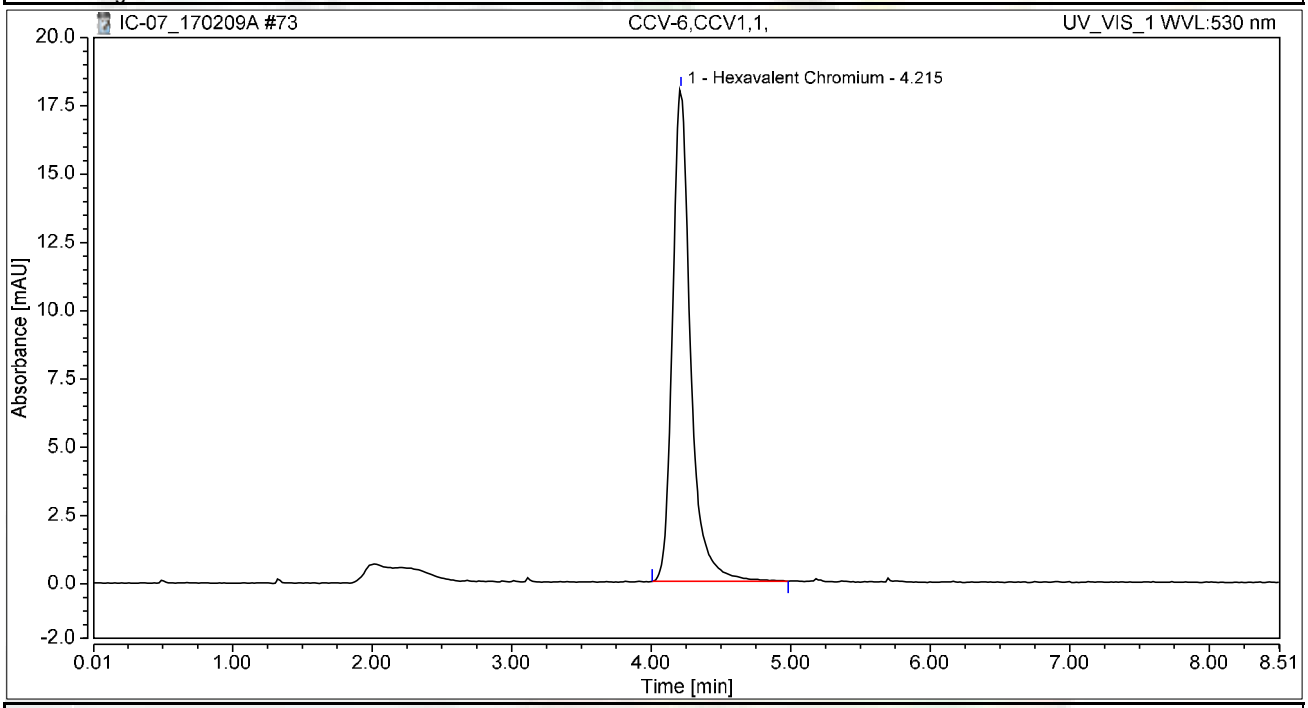
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

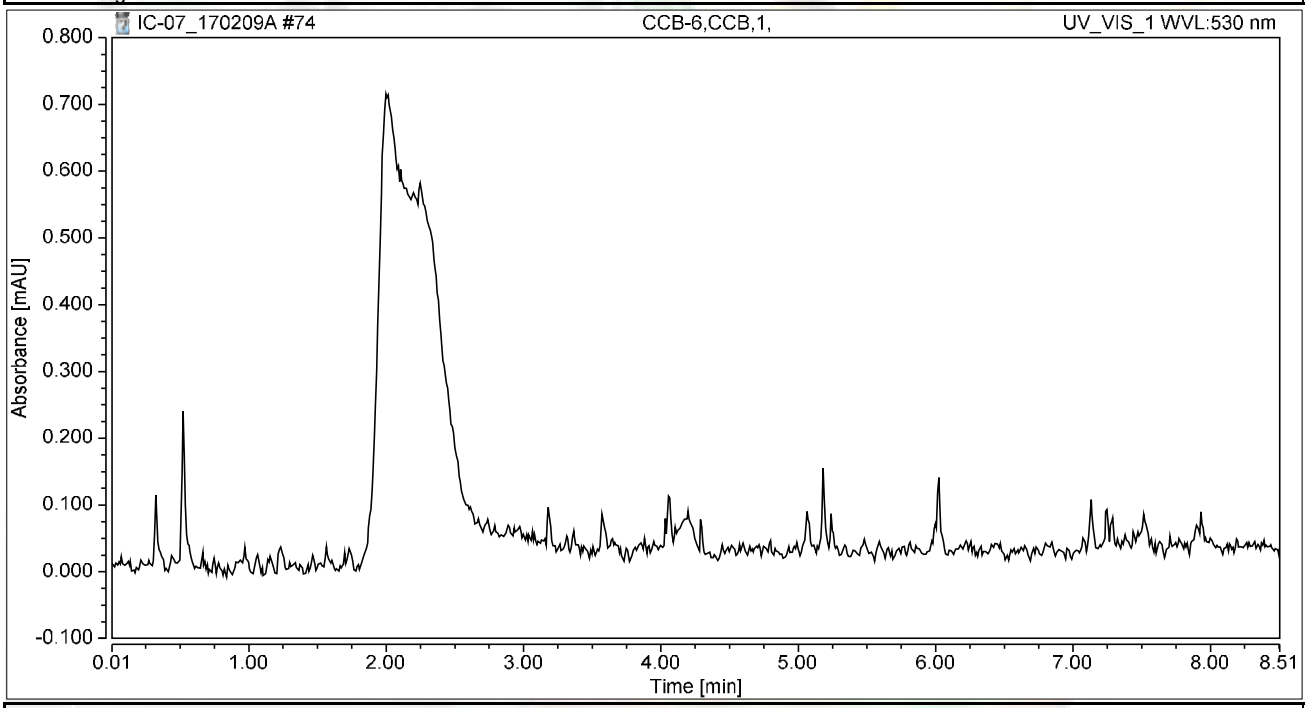
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.706	18.025	100.00	100.00	10.2008
Total:			**2.706**	**18.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

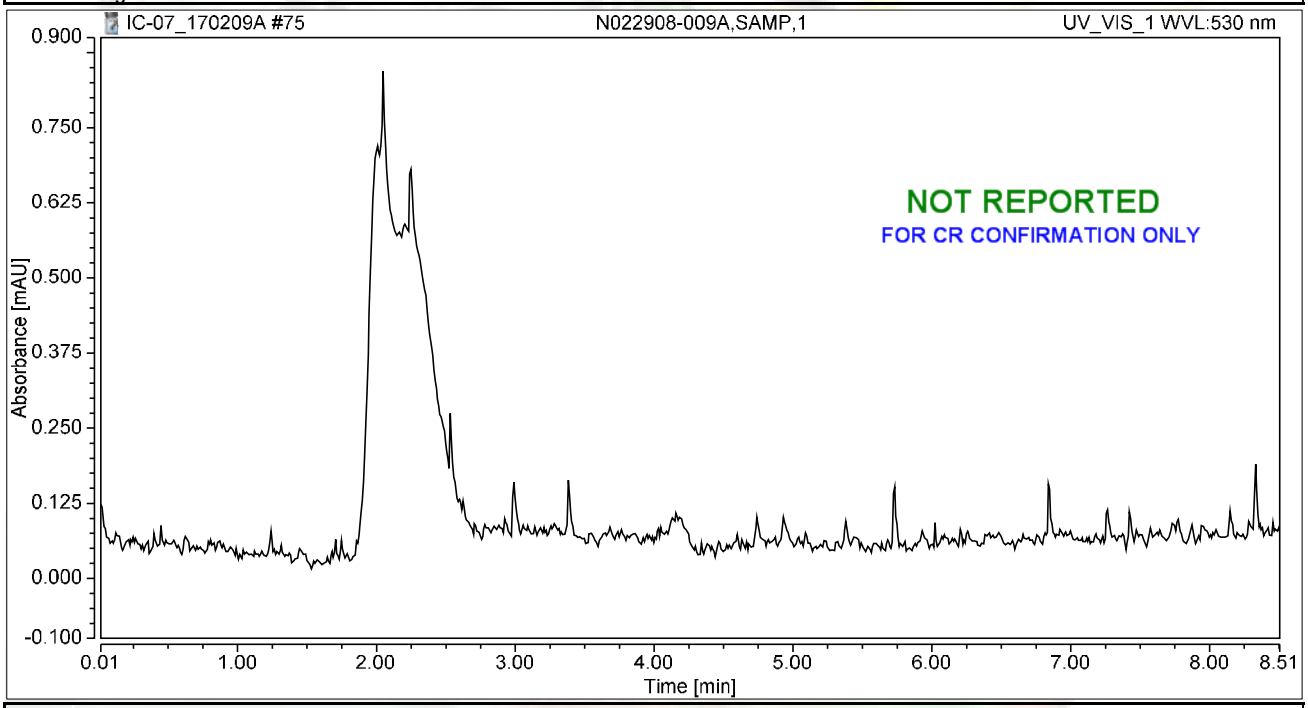
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022908-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

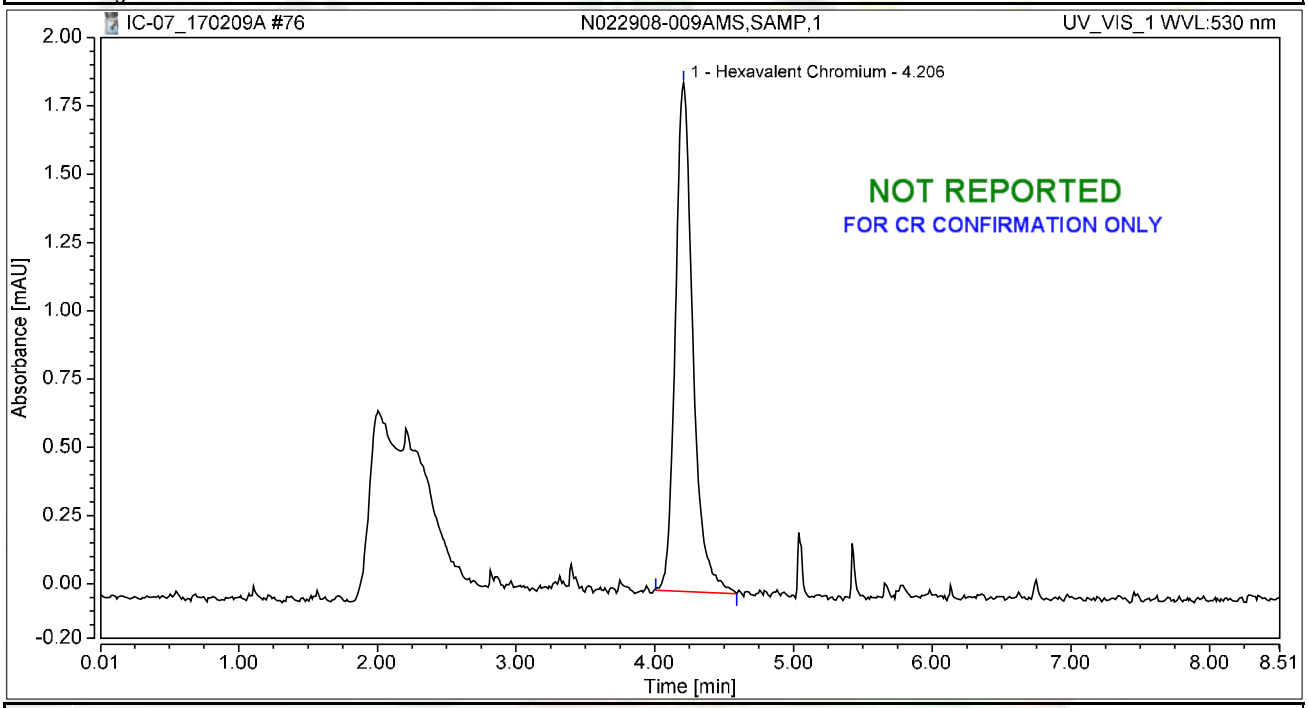
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022908-009AMS,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

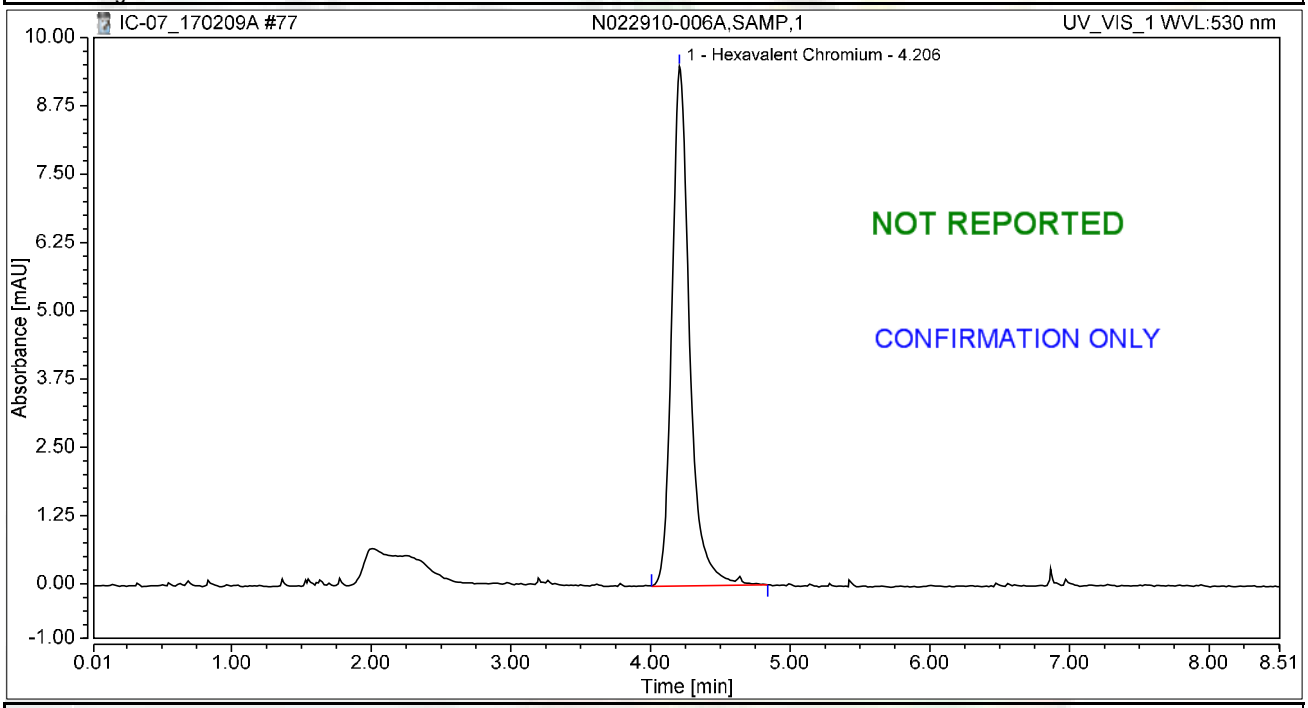
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.272	1.862	100.00	100.00	1.0272
Total:			**0.272**	**1.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022910-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

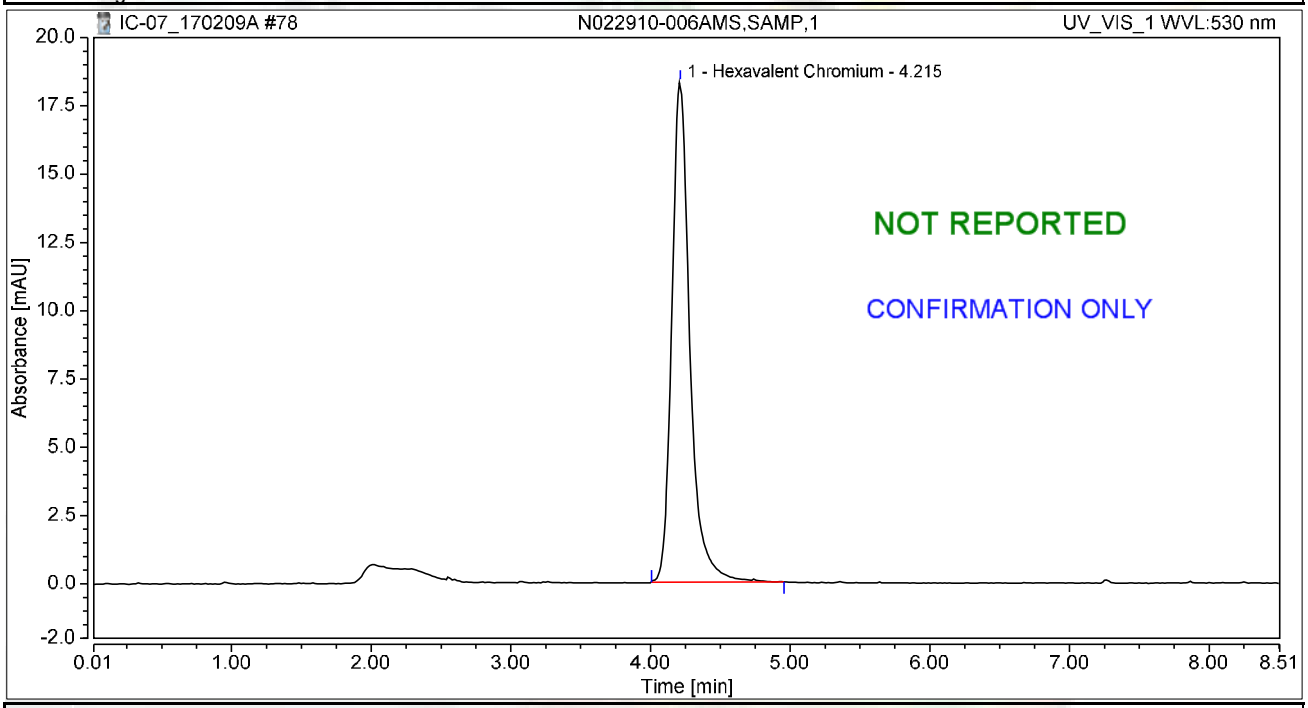
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.399	9.513	100.00	100.00	5.2750
Total:			**1.399**	**9.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022910-006AMS,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

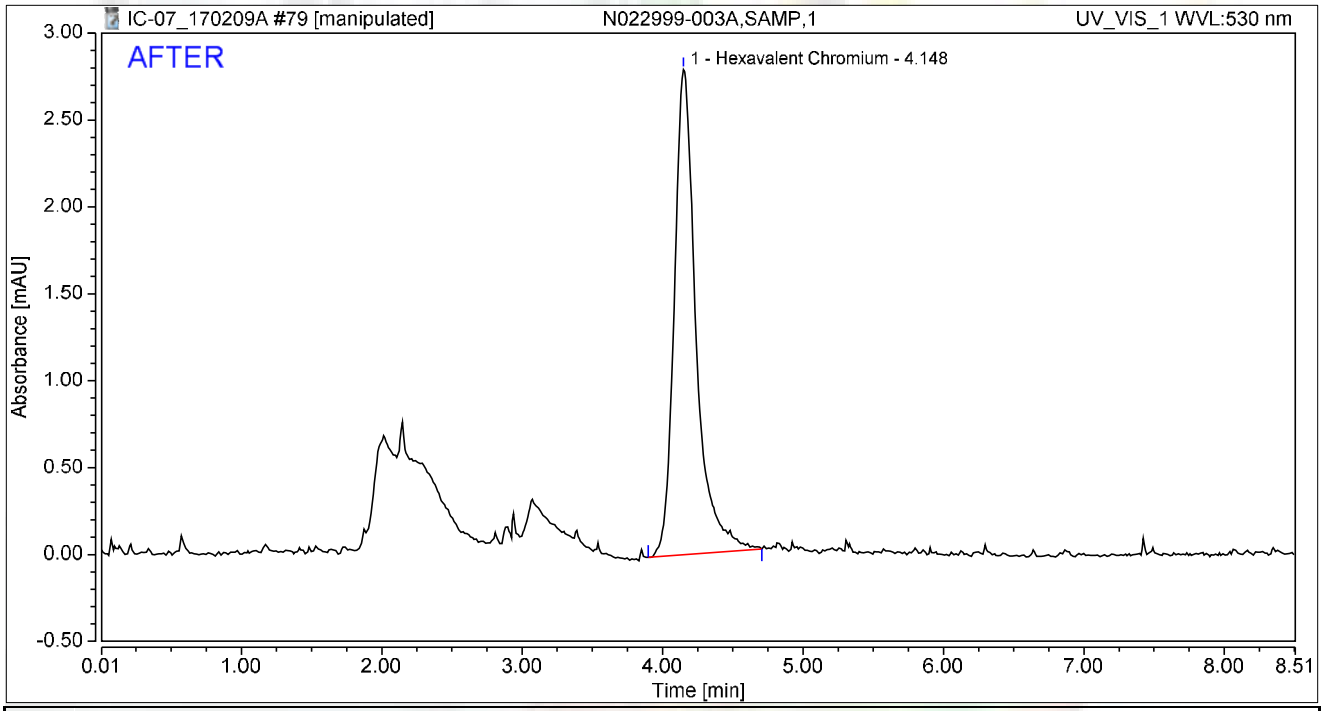
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.746	18.300	100.00	100.00	10.3515
Total:			**2.746**	**18.300**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.501	2.791	100.00	100.00	1.8886
Total:			**0.501**	**2.791**	**100.00**	**100.00**	

rba 2/14/2017

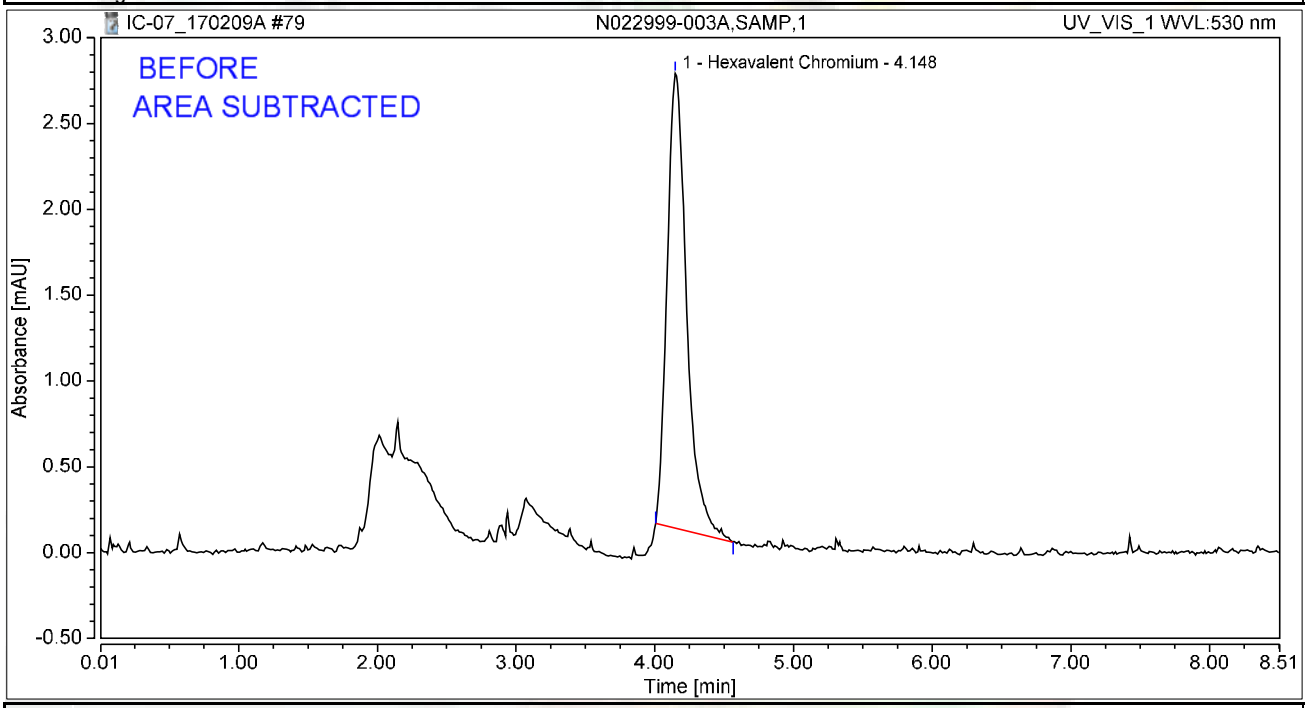
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.433	2.649	100.00	100.00	1.6339
Total:			**0.433**	**2.649**	**100.00**	**100.00**	

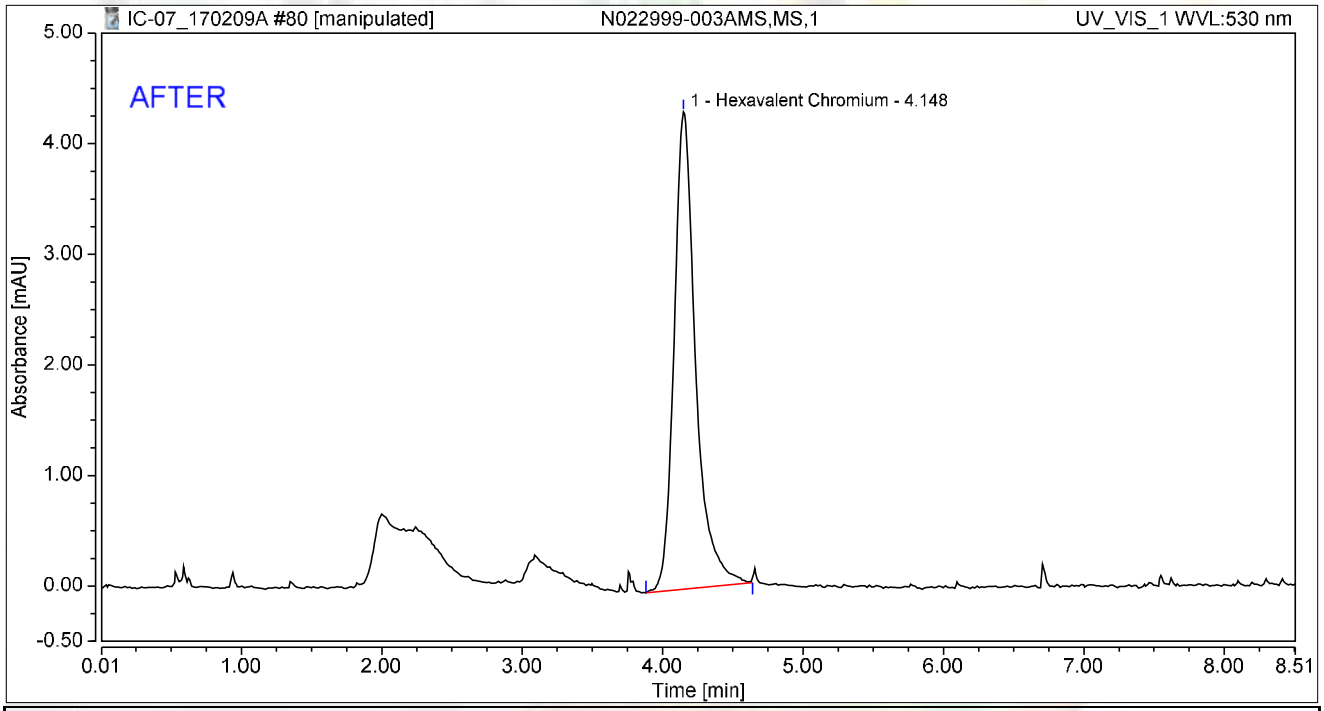
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.766	4.314	100.00	100.00	2.8879
Total:			**0.766**	**4.314**	**100.00**	**100.00**	

rba 2/14/2017

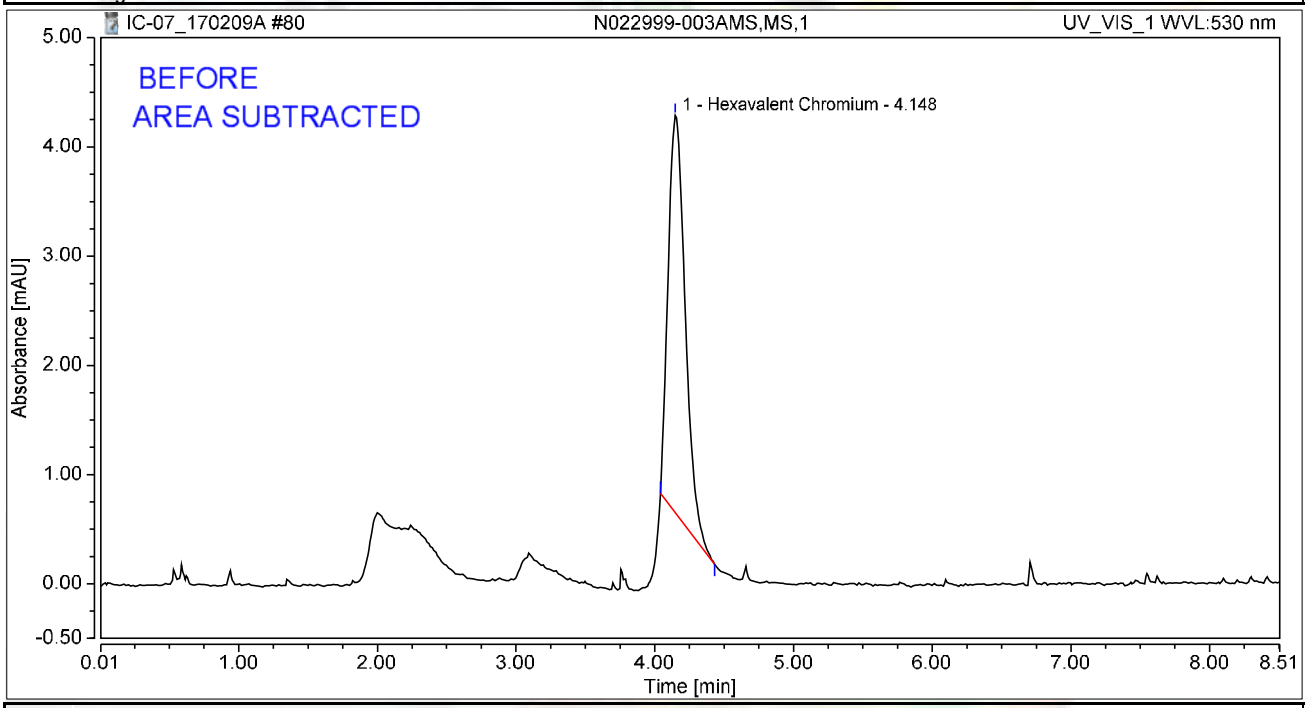
Reviewed by: Nancy 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022999-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.521	3.637	100.00	100.00	1.9649
Total:			**0.521**	**3.637**	**100.00**	**100.00**	

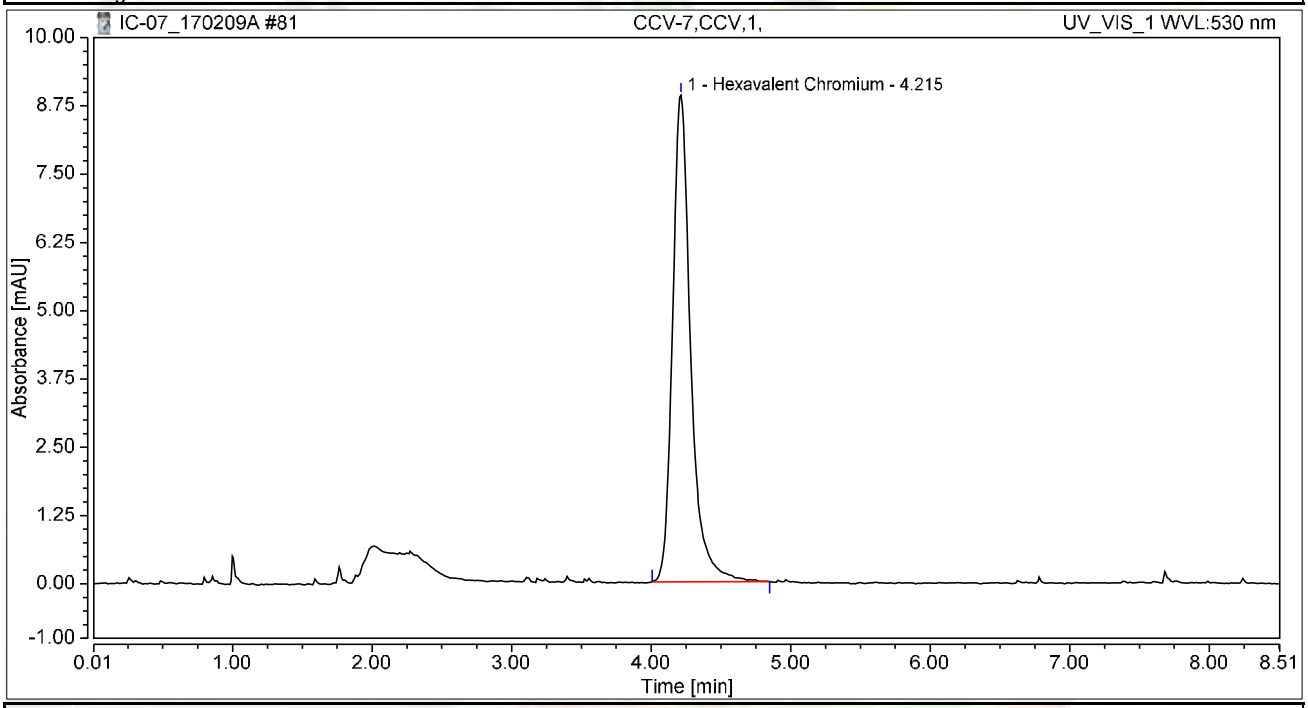
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

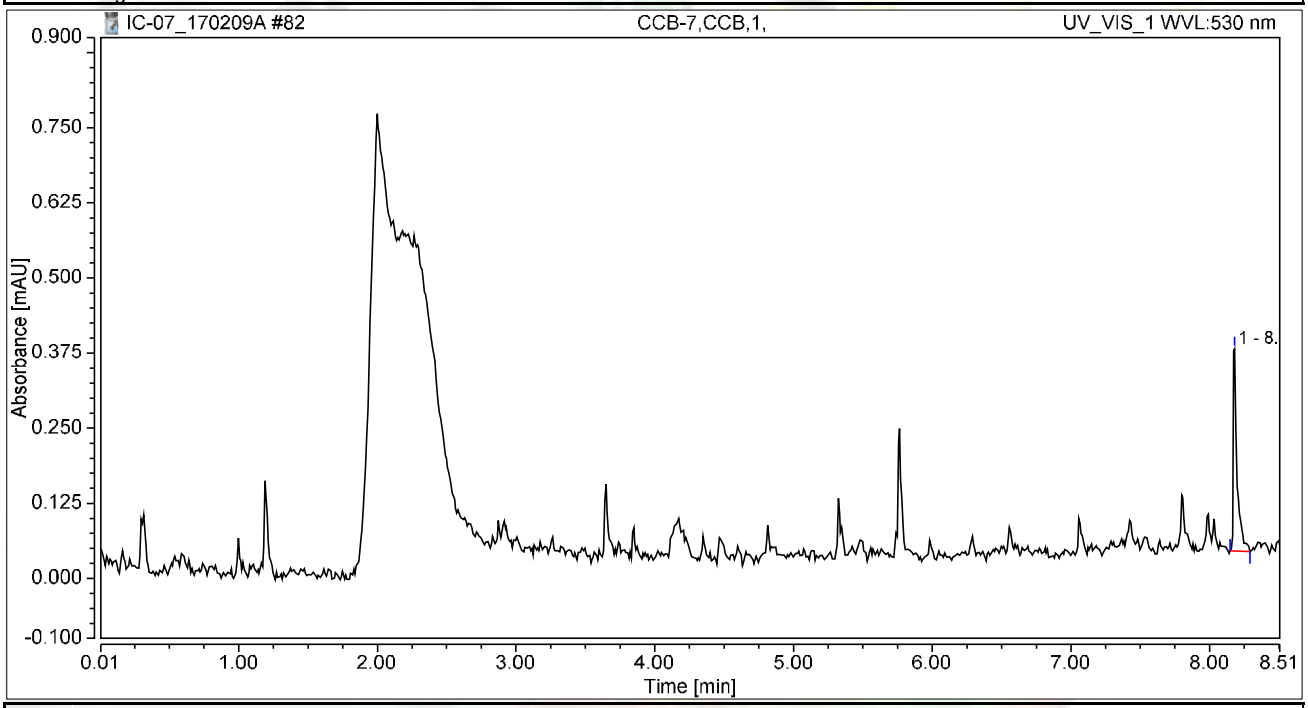
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.339	8.906	100.00	100.00	5.0477
Total:			**1.339**	**8.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

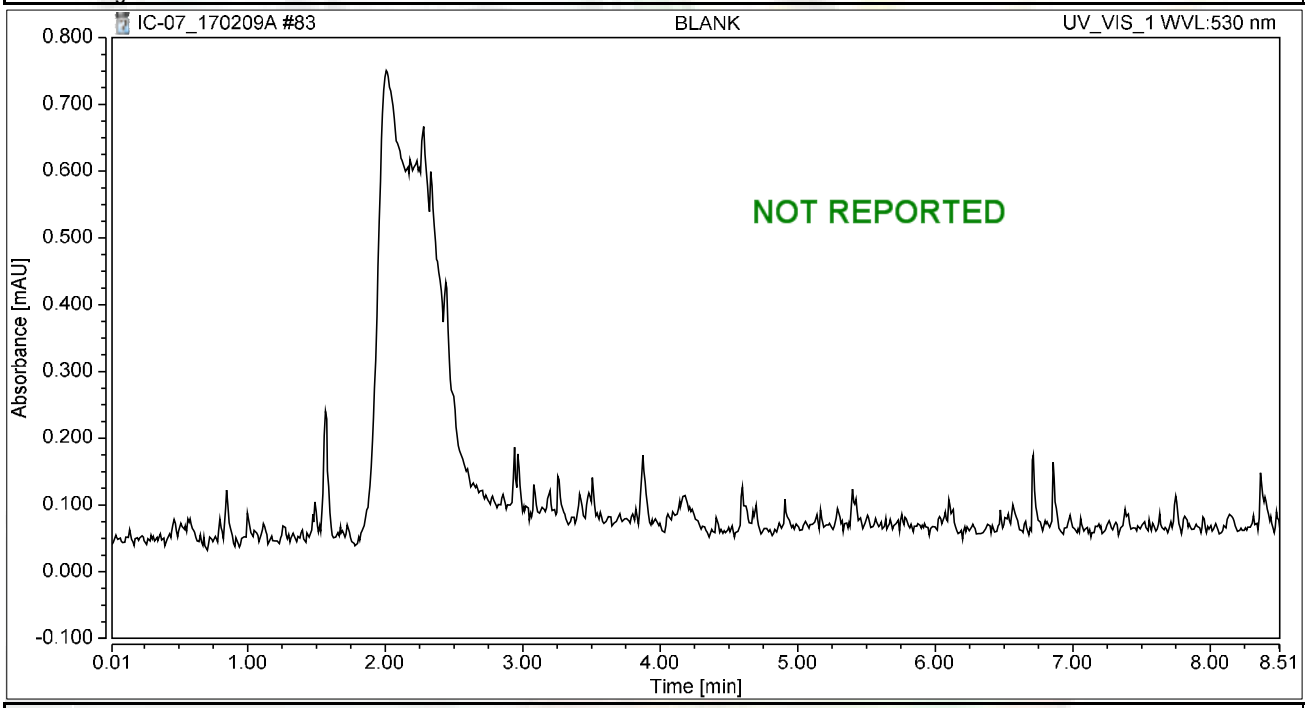
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.181	0.011	0.337	100.00	100.00	n.a.
Total:			**0.011**	**0.337**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Feb/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113399 **Analyst:** LSR

ASSET #: N022999 **Date Analyzed:** 2/8/2017

Method: EPA 2320

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/13/2017

2nd Level Reviewer Nancy 2/21/2017 Date: —

SAMPLE CALCULATION

Sample ID: **N022999-001C @ pH 7.61**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (10.95 mL)

= **0.02283 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.0) (0.02283 N) (1) * 1000

= 228.3000 mg/**L**

Reporting results in two significant figures,

= **230 mg/L** as CaCO3

Julia Ramit 2/13/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02283 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.0 mL) (0.02283) (1) * 1000

= 228.3000 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **228.3000 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **230 mg/L**

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.52	50	0.00	0.05	MBLK
LCS-1	8.27	50	0.00	4.50	LCS
N022999-001C	7.61	50	0.00	10.00	SAMP
N022999-002C	7.36	50	0.00	7.00	SAMP
N022999-003C	7.59	50	0.00	10.00	SAMP
N023003-010F	6.76	50	0.00	38.00	SAMP
N022999-001CDUP	7.80	50	0.00	10.10	DUP
N022999-002CMS	7.79	50	0.00	11.40	MS
N022999-002CMSD	7.70	50	0.00	11.30	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**10.95**	ml
N H2SO4	**0.02283**	Normal
Date Analyzed:	**2/8/17**	
Time:	**2:00 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170208A**	

Silia Ramit 2/13/2017

Date Analyzed:	2/8/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	2:00 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	10.95	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R170208A							**P > 1/2 T**
									N H2SO4	0.02283	**N**		**P = T**
Sample ID	**Sample Vol/Wt.**	**Sample pH**	**Std. Code**	**Spike Amount**	**Spike Conc.**	**Normality, Titrant**	**Vol. Used to pH 8.3, ml.**	**Vol. Used pH 8.3 to 4.5, ml.**	**Total Vol. Used, ml.**	**DF (50ml/Vsamp.)**	**P Alkalinity**	**T Alkalinity**	**Comments**
MB-1	50	5.52				0.02283	0.00	0.05	0.05	1	0.00	1.14	
LCS-1	50	8.27				0.02283	0.00	4.50	4.50	1	0.00	102.74	
N022999-001C	50	7.61				0.02283	0.00	10.00	10.00	1	0.00	228.31	
N022999-002C	50	7.36				0.02283	0.00	7.00	7.00	1	0.00	159.82	
N022999-003C	50	7.59				0.02283	0.00	10.00	10.00	1	0.00	228.31	
N023003-010F	50	6.76				0.02283	0.00	38.00	38.00	1	0.00	867.58	
N022999-001CDU	50	7.8				0.02283	0.00	10.10	10.10	1	0.00	230.59	
N022999-002CMS	50	7.79				0.02283	0.00	11.40	11.40	1	0.00	260.27	
N022999-002CMS	50	7.7				0.02283	0.00	11.30	11.30	1	0.00	257.99	

Julia Ramit 2/13/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	2/8/17
Time:	2:00 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.14	1.14	1.14		P = 0
LCS-1	0.00	0.00	102.74	102.74	102.74		P = 0
N022999-001C	0.00	0.00	228.31	228.31	228.31		P = 0
N022999-002C	0.00	0.00	159.82	159.82	159.82		P = 0
N022999-003C	0.00	0.00	228.31	228.31	228.31		P = 0
N023003-010F	0.00	0.00	867.58	867.58	867.58		P = 0
N022999-001CDUP	0.00	0.00	230.59	230.59	230.59		P = 0
N022999-002CMS	0.00	0.00	260.27	260.27	260.27		P = 0
N022999-002CMSD	0.00	0.00	257.99	257.99	257.99		P = 0

Silia Ramit 2/13/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 2/8/17
Time Extracted: 2/8/17
Extracted By: [illegible]

Date Analyzed: 2/8/17
Time Analyzed: 1400
Analyzed By: [illegible]

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV 161025B
Hydrochloric Acid: -
Sulfuric Acid: 170205A
Sodium Bicarbonate: CINV 150601A

pH meter calibration
slope: 97.8%
pH 4 - 4.00 @ 22.7°C - CINV 161025B
7 - 7.00 @ 22.7°C - 161025A
10 - 10.03 @ 22.2°C - 161214A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.44	IWST170205A	5 mL	0.05N	-	-	10.90	50/50	N H_2SO_4 = (2.65 g/L)(5 mL) / (53)(V titrant)	=0.0229357798
	#2	↓	10.54	↓	↓	↓	-	-	11.0	↓		=0.0227272727
1)	MBLK	50 mL	5.52	-	-	-	0.02283	0	0.05	50/50		Ave: 0.0228315263
2)	LCS	↓	8.27	IWST170205B	1 mL	0.05N	↓	0	4.50	↓		
3)	N022999-001C	↓	7.61	-	-	-	↓	0	10.0	↓		
4)	2C	↓	7.36	-	-	-	↓	0	7.0	↓		
5)	3C	↓	7.59	-	-	-	↓	0	10.0	↓		
6)	N023003-010F	↓	6.76	-	-	-	↓	0	38.0	↓		
7)	N022999-001C DUP	↓	7.80	-	-	-	↓	0	10.10	↓		
8)	2C MS	↓	7.79	IWST170205B	1 mL	0.05N	↓	0	11.40	↓		
9)	2C MSD	↓	7.70	↓	↓	↓	↓	0	11.30	↓		
10)												
11)												
12)												
13)												
14)												
15)												
16)					P = (V pH 8.3)(N H_2SO_4)(50,000) / Vsx							
17)												
18)												
19)												
20)					T = (V pH 4.5)(N H_2SO_4)(50,000) / Vsx							
	MS											
	MSD											
	LCS											

Julia Ramit 2/13/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113515
ASSET #: N022999 / N023028

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/13/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/15/2017

2nd Level Reviewer Nancy 2/20/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N022999-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 8.0459 * 50

= 402.295

Reporting result in two significant values,

Sulfate, mg/L = 400

rba **2/17/2017**

ANALYSIS RUN LOG

Sequence: IC-08_170118A
Operator: IC-05
Printed: 1/19/2017 12:43:32 AM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 21

Created: 1/18/2017 9:10:16 AM by IC-05
Last Update: 1/18/2017 2:25:54 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170118	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170118	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170118	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170118	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170118	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170118	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
11	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
13	N022701-001C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
14	N022702-003D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
15	N022702-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
16	N022702-011D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
17	N022702-003DMS,MS,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
18	N022702-003DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
19	N022702-010DDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
20	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
21	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished

rba 1/21/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 21
Created: 1/18/2017 9:10:16 AM by IC-05
Last Update: 1/18/2017 2:25:54 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	1/18/2017 9:10:59 AM	BLANK
2	BLANK,BLANK,1	1/18/2017 9:26:16 AM	BLANK
3	Std - 0	1/18/2017 9:41:34 AM	iBLANK
4	Std - 1	1/18/2017 10:05:28 AM	STD-LOW
5	Std - 2	1/18/2017 10:20:46 AM	STD
6	Std - 3	1/18/2017 10:36:04 AM	STD
7	Std - 4	1/18/2017 10:51:22 AM	STD
8	Std - 5	1/18/2017 11:06:40 AM	STD-HIGH
9	ICV,ICV,1	1/18/2017 11:27:22 AM	ICV
10	ICB,ICB,1	1/18/2017 11:42:40 AM	ICB
11	LCS-H2O,LCS,1	1/18/2017 11:57:57 AM	LCS
12	MB-H2O,MBLK,1	1/18/2017 12:13:15 PM	METHOD BLANK
13	N022701-001C,SAMP,2	1/18/2017 12:31:49 PM	SAMP,5>10mL
14	N022702-003D,SAMP,5	1/18/2017 12:47:07 PM	SAMP,2>10mL
15	N022702-010D,SAMP,5	1/18/2017 1:02:24 PM	SAMP,2>10mL
16	N022702-011D,SAMP,5	1/18/2017 1:17:42 PM	SAMP,2>10mL
17	N022702-003DMS,MS,5	1/18/2017 1:33:01 PM	MS,2>10mL
18	N022702-003DMSD,MSD,5	1/18/2017 1:48:19 PM	MSD,2>10mL
19	N022702-010DDUP,DUP,5	1/18/2017 2:03:36 PM	DUP,2>10mL
20	CCV-2,CCV,1	1/18/2017 2:26:00 PM	CCV
21	CCB-2,CCB,1	1/18/2017 2:41:17 PM	CCB

Sequence: IC-08_170213A
Operator: IC-05
Printed: 2/14/2017 6:14:38 PM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59

Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170118	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170118	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170118	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170118	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170118	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170118	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
14	N022999-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
15	N022999-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
16	N022999-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170118	Finished
17	N022999-002C,SAMP,100	Unknown	1000.0	Anions Default	Anions_170118	Finished
18	N022999-003C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
19	N022999-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
20	N023028-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
21	N023028-002C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
24	N023028-003C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
25	N022999-001CMS,MS,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
26	N022999-001CMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
27	N022999-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
28	N022999-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
29	N023028-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
30	N023028-001CDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
31	N023028-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
32	N023028-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
33	N023028-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
36	N023028-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
37	N023028-003C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
38	N023028-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
39	N023028-002CMS,MS,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
40	N023028-002CMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
41	N023028-003CDUP,DUP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished

rba 2/15/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	1/18/2017 9:10:59 AM	BLANK
2	BLANK,BLANK,1	1/18/2017 9:26:16 AM	BLANK
3	Std - 0	1/18/2017 9:41:34 AM	iBLANK
4	Std - 1	1/18/2017 10:05:28 AM	STD-LOW
5	Std - 2	1/18/2017 10:20:46 AM	STD
6	Std - 3	1/18/2017 10:36:04 AM	STD
7	Std - 4	1/18/2017 10:51:22 AM	STD
8	Std - 5	1/18/2017 11:06:40 AM	STD-HIGH
9	BLANK,BLANK,1	2/13/2017 8:23:20 AM	BLANK
10	CCV-1,CCV,1	2/13/2017 8:38:38 AM	CCV
11	CCB-1,CCB,1	2/13/2017 9:13:12 AM	CCB
12	MB-H2O,MBLK,1	2/13/2017 9:28:30 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/13/2017 9:43:48 AM	LCS
14	N022999-001C,SAMP,200	2/13/2017 10:08:10 AM	SAMP,0.05>10mL
15	N022999-001C,SAMP,50	2/13/2017 10:23:28 AM	SAMP,0.2>10mL
16	N022999-002C,SAMP,500	2/13/2017 10:38:46 AM	SAMP,0.02>10mL
17	N022999-002C,SAMP,100	2/13/2017 10:54:04 AM	SAMP,0.1>10mL
18	N022999-003C,SAMP,200	2/13/2017 11:09:22 AM	SAMP,0.05>10mL
19	N022999-003C,SAMP,50	2/13/2017 11:24:40 AM	SAMP,0.2>10mL
20	N023028-001C,SAMP,1	2/13/2017 11:39:58 AM	SAMP,10mL
21	N023028-002C,SAMP,2	2/13/2017 11:55:16 AM	SAMP,5>10mL
22	CCV-2,CCV,1	2/13/2017 12:10:34 PM	CCV
23	CCB-2,CCB,1	2/13/2017 12:25:52 PM	CCB
24	N023028-003C,SAMP,2	2/13/2017 12:41:10 PM	SAMP,5>10mL
25	N022999-001CMS,MS,200	2/13/2017 12:56:28 PM	MS,0.05>10mL
26	N022999-001CMSD,MSD,200	2/13/2017 1:11:46 PM	MSD,0.05>10mL
27	N022999-001CMS,MS,50	2/13/2017 1:27:04 PM	MS,0.2>10mL
28	N022999-001CMSD,MSD,50	2/13/2017 1:42:22 PM	MSD,0.2>10mL
29	N023028-001C,SAMP,200	2/13/2017 1:57:40 PM	SAMP,0.05>10mL
30	N023028-001CDUP,DUP,200	2/13/2017 2:12:58 PM	DUP,0.05>10mL
31	N023028-001C,SAMP,50	2/13/2017 2:28:15 PM	SAMP,0.2>10mL
32	N023028-001CDUP,DUP,50	2/13/2017 2:43:33 PM	DUP,0.2>10mL
33	N023028-002C,SAMP,200	2/13/2017 2:58:51 PM	SAMP,0.05>10mL
34	CCV-3,CCV,1	2/13/2017 3:14:09 PM	CCV
35	CCB-3,CCB,1	2/13/2017 3:29:27 PM	CCB
36	N023028-002C,SAMP,50	2/13/2017 3:44:44 PM	SAMP,0.2>10mL
37	N023028-003C,SAMP,200	2/13/2017 4:00:03 PM	SAMP,0.05>10mL
38	N023028-003C,SAMP,50	2/13/2017 4:15:21 PM	SAMP,0.2>10mL
39	N023028-002CMS,MS,2	2/13/2017 4:30:39 PM	MS,5>10mL
40	N023028-002CMSD,MSD,2	2/13/2017 4:45:57 PM	MSD,.5>10mL
41	N023028-003CDUP,DUP,2	2/13/2017 5:01:15 PM	DUP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N023087-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
43	N023088-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
44	N023079-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
45	N023080-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
48	N023080-001BDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
49	N023081-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
50	N023081-001BMS,MS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
51	N023081-001BMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
52	N023082-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
53	N023083-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
54	N023084-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
55	N023028-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
56	N023028-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
57	N023028-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N023087-001B,SAMP,1	2/13/2017 5:28:14 PM	SAMP,10mL
43	N023088-001B,SAMP,1	2/13/2017 5:43:32 PM	SAMP,10mL
44	N023079-001B,SAMP,1	2/13/2017 5:58:50 PM	SAMP,10mL
45	N023080-001B,SAMP,1	2/13/2017 6:14:08 PM	SAMP,10mL
46	CCV-4,CCV,1	2/13/2017 6:29:25 PM	CCV
47	CCB-4,CCB,1	2/13/2017 6:44:44 PM	CCB
48	N023080-001BDUP,DUP,1	2/13/2017 7:00:02 PM	DUP,10mL
49	N023081-001B,SAMP,1	2/13/2017 7:15:20 PM	SAMP,10mL
50	N023081-001BMS,MS,1	2/13/2017 7:30:37 PM	MS,10mL
51	N023081-001BMSD,MSD,1	2/13/2017 7:45:55 PM	MSD,10mL
52	N023082-001B,SAMP,1	2/13/2017 8:01:14 PM	SAMP,10mL
53	N023083-001B,SAMP,1	2/13/2017 8:16:32 PM	SAMP,10mL
54	N023084-001B,SAMP,1	2/13/2017 8:31:50 PM	SAMP,10mL
55	N023028-001C,SAMP,1	2/13/2017 8:47:07 PM	SAMP,10mL
56	N023028-001C,SAMP,200	2/13/2017 9:02:25 PM	SAMP,0.05>10mL
57	N023028-001C,SAMP,50	2/13/2017 9:17:43 PM	SAMP,0.2>10mL
58	CCV-5,CCV,1	2/13/2017 9:33:01 PM	CCV
59	CCB-5,CCB,1	2/13/2017 9:48:19 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 1/18/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0692	0.1386	0.2791	0.7337	1.5435	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 1/18/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0525	0.2137	0.4226	1.1035	2.2903	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.024	0.50	2.000	0	101	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.011	0.50	2.000	0	101	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.048	0.50	2.000	0	102	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.049	0.50	2.000	0	102	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.063	0.50	2.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.068	0.50	2.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICV	**ICV**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **ICV**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **1/18/2017**	SeqNo: **2566161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.998	0.50	4.000	0	99.9	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-1	**CCV**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCV**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.978	0.50	4.000	0	99.5	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-2	**CCV**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCV**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.011	0.50	4.000	0	100	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-3	**CCV**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCV**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.015	0.50	4.000	0	100	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-4	**CCV**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCV**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.044	0.50	4.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.007	0.50	4.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.168	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.157	0.50									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.155	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.156	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	ICB	SampType:	ICB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	113515
Client ID:	ICB	Batch ID:	R113515	TestNo:	EPA 300.0			Analysis Date:	1/18/2017	SeqNo:	2566162

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-1	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	113515
Client ID:	CCB	Batch ID:	R113515	TestNo:	EPA 300.0			Analysis Date:	2/13/2017	SeqNo:	2566164

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	CCB-2	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	113515
Client ID:	CCB	Batch ID:	R113515	TestNo:	EPA 300.0			Analysis Date:	2/13/2017	SeqNo:	2566171

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.242	0.50									

Sample ID	CCB-3	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	113515
Client ID:	CCB	Batch ID:	R113515	TestNo:	EPA 300.0			Analysis Date:	2/13/2017	SeqNo:	2566177

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.219	0.50									

Sample ID	CCB-4	SampType:	CCB	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	113515
Client ID:	CCB	Batch ID:	R113515	TestNo:	EPA 300.0			Analysis Date:	2/13/2017	SeqNo:	2566181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.223	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.047	
CCV-2	Chloride	4.044	
CCV-3	Chloride	4.044	
CCV-4	Chloride	4.044	
CCV-5	Chloride	4.047	
	Average	4.045	
	Applied RT Window	3.845 - 4.245	
MB-R113515_CL	Chloride	4.043	PASS
LCS-R113515_CL	Chloride	4.047	PASS
N022999-001C	Chloride	4.047	PASS
N022999-002C	Chloride	4.044	PASS
N022999-003C	Chloride	4.047	PASS
N022999-001CMS	Chloride	4.047	PASS
N022999-001CMSD	Chloride	4.047	PASS
N023028-001CDUP	Chloride	4.043	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.404	
CCV-2	Sulfate	9.397	
CCV-3	Sulfate	9.397	
CCV-4	Sulfate	9.390	
CCV-5	Sulfate	9.390	
	Average	9.396	
	Applied RT Window	9.196 - 9.596	
MB-R113515_SO4	Sulfate	N.A.	N.A.
LCS-R113515_SO4	Sulfate	9.404	PASS
N022999-001C	Sulfate	9.400	PASS
N022999-002C	Sulfate	9.400	PASS
N022999-003C	Sulfate	9.403	PASS
N022999-001CMS	Sulfate	9.400	PASS
N022999-001CMSD	Sulfate	9.397	PASS
N023028-001CDUP	Sulfate	9.393	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

MDL/LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 5/26/2016
Analyst: Quennie B. Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Compound	MDL	LOD Spike Conc., mg/L	LOD actual Conc., mg/L	PQL Spike Conc., mg/L	PQL actual Conc., mg/L	%Recovery
Fluoride	**0.0174**	0.035	0.072	0.100	0.122	**122**
Chloride	**0.0194**	0.050	0.146	0.500	0.538	**108**
Nitrite	**0.0205**	0.030	0.063	0.050	0.060	**120**
Bromide	**0.0359**	0.100	0.077	0.200	0.239	**120**
Nitrate	**0.0130**	0.030	0.061	0.050	0.066	**132**
Phosphate	**0.0325**	0.050	0.074	0.100	0.132	**132**
Sulfate	**0.0655**	0.150	0.269	0.500	0.662	**132**

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113466 **Analyst:** REB

ASSET #: N022999 **Date Analyzed:** 2/12/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/21/17 Date:

2nd Level Reviewer Nancy 2/21/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N022999-002D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6225*5

= 3.1125 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 3.1

RB 02/21/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

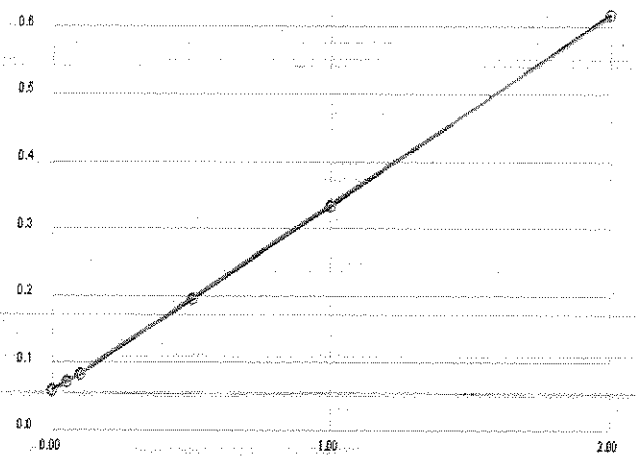
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2797x + 0.0564
Correlation	.999941



Calibrant	Energy	Set	Conc
1	0.0585	0.0000	0.0076
2	0.0716	0.0500	0.0544
3	0.0833	0.1000	0.0963
4	0.1958	0.5000	0.4984
5	0.3321	1.0000	0.9856
6	0.6180	2.0000	2.0077

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RJB 02/21/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.516	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N022999
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-12-2017 19:18
Time end: 02-12-2017 22:13

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	21:32:31	0.0101		0.0592
2	<BLANK>	21:33:31	0.0090		0.0589
3	<CAL1>	21:34:26	0.0076	[0]	0.0585
4	<CAL2>	21:35:21	0.0544	[0.05]	0.0716
5	<CAL3>	21:36:23	0.0963	[0.1]	0.0833
6	<CAL4>	21:37:17	0.4984	[0.5]	0.1958
7	<CAL5>	21:38:12	0.9856	[1]	0.3321
8	<CAL6>	21:39:14	2.0077	[2]	0.6180
9	,BLANK,BLANK,1,	21:40:08	0.0265		0.0638
10	,ICV,ICV,1,	21:41:09	0.5077		0.1984
11	,ICB,ICB,1,	21:42:05	0.0155		0.0607
12	,MB-H2O,MBLK,1,	21:43:00	0.0108		0.0594
13	,LCS-H2O,LCS,1,	21:44:00	0.5284		0.2042
14	,N022931-002D,SAMP,5,	21:44:56	0.6650		0.2424
15	,N022931-002DDUP,DUP,5,	21:45:51	0.6879		0.2488
16	,N022931-002DMS,MS,5,	21:46:53	1.1322		0.3731
17	,N022931-002DMSD,MSD,5,	21:47:47	1.1086		0.3665
18	,N022987-001D,SAMP,1,	21:48:43	0.7308		0.2608
19	,N022985-001C,SAMP,1,	21:49:44	0.1549		0.0997
20	~~,N022985-002C~~,SAMP,1, N022985-003C	21:50:38	0.1928		0.1103
21	,BLANK,BLANK,1	21:51:34	0.0133		0.0601
22	,CCV-1,CCV,1,	21:52:35	0.4963		0.1952
23	,CCB-1,CCB,1,	21:53:31	0.0201		0.0620
24	,N022985-004C,SAMP,5,	21:54:31	0.0455		0.0691
25	,N022998-001C,SAMP,1,	21:55:26	1.2391		0.4030
26	,N022998-002C,SAMP,1,	21:56:22	0.3472		0.1535

RB 02/21/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022998-003C,SAMP,1,	21:57:22	0.0451		0.0690
28	,N022998-004C,SAMP,1,	21:58:05	0.8895		0.3052
29	,N022999-001D,SAMP,1,	21:58:55	0.0298		0.0647
30	,N022999-002D,SAMP,5,	21:59:37	0.6225		0.2305
31	,N022999-003D,SAMP,1,	22:00:26	0.0155		0.0607
32	,N023014-001C,SAMP,20,	22:01:08	1.5129		0.4796
33	,BLANK,BLANK,1	22:01:52	0.0190		0.0617
34	,CCV-2,CCV,1,	22:02:40	0.5159		0.2007
35	,CCB-2,CCB,1,	22:03:23	0.0008		0.0566
36	,N023014-002C,SAMP,10,	22:04:06	2.7726		0.8320
37	,N023014-003C,SAMP,2,	22:04:54	4.7066	[HL][OR]	1.3730
38	,N023014-004C,SAMP,10,	22:05:38	1.3092		0.4226
39	,N023014-005C,SAMP,1,	22:06:26	0.1585		0.1007
40	,N023014-006C,SAMP,5,	22:07:09	0.7729		0.2726
41	,N023014-007C,SAMP,1,	22:07:51	0.1309		0.0930
42	,N023014-008C,SAMP,1,	22:08:41	0.0105		0.0593
43	,BLANK,BLANK,1	22:09:24	-0.0103		0.0535
44	,CCV-3,CCV,1,	22:10:06	0.4727		0.1886
45	,CCV-3,CCV,1, not used	22:10:55	0.5066		0.1981
46	,CCB-3,CCB,1,	22:11:37	0.0051		0.0578

RB 02/21/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/12/17
Time Analyzed: 07:18 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022931-001D		8.58						
2)	N022985-001C		7.91						
3)	N022985-003C		7.92						
4)	N022985-004C		7.49						
5)	N022987-001D		7.75						
6)	N022998-001C		7.38						
7)	N022998-002C		8.21						
8)	N022998-003C		6.17						
9)	N022998-004C		7.86						
10)	N022999-001D		7.86						
11)	N022999-002D		7.39						
12)	N022999-003D		7.99						
13)	N023014-001C		8.36						
14)	N023014-002C		6.95						
15)	N023014-003C		7.64						
16)	N023014-004C		6.22						
17)	N023014-005C		7.98						
18)	N023014-006C		7.76						
19)	N023014-007C		7.31						
20)	N023014-008C		7.62						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/21/17

February 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023014

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *22-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023014

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N023014-005 and N023014-007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike's recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N023014-003, N023014-005, N023014-006, N023014-007 and N023014-008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *22-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023014
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023014-001A	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-001B	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-001C	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-002A	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-002B	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-002C	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-003A	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-003B	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-003C	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-004A	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-004B	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-004C	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-005A	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-005B	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-005C	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-006A	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-006B	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-006C	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-007A	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-007B	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-007C	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-008A	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-008B	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-008C	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-009A	MW-703-Q117	Ground Water	2/8/2017 4:20:00 PM	2/8/2017	2/22/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate Analyst: **RAB**							
Hexavalent Chromium	35000	330	1000		µg/L	5000	2/11/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017** Analyst: **CEI**							
Chromium	37000	4.8	250		µg/L	250	2/19/2017 11:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate Analyst: **RAB**							
Hexavalent Chromium	36000	330	1000		µg/L	5000	2/11/2017 02:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017** Analyst: **CEI**							
Chromium	37000	4.8	250		µg/L	250	2/19/2017 11:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	530	6.6	20		µg/L	100	2/11/2017 04:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	550	0.096	5.0		µg/L	5	2/20/2017 12:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	170	1.3	4.0		µg/L	20	2/11/2017 03:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	170	0.019	1.0		µg/L	1	2/20/2017 12:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	2/13/2017 12:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/20/2017 12:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	31	0.33	1.0		µg/L	5	2/13/2017 10:43 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	2/20/2017 12:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	6.1	0.33	1.0		µg/L	5	2/13/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	6.7	0.019	1.0		µg/L	1	2/20/2017 12:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	0.45	0.066	0.20		µg/L	1	2/13/2017 11:51 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/20/2017 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170213A**	QC Batch: **R113519**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/13/2017 12:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113447** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **PBW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113447** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **LCSW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID **N022998-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.076	1.0	25.00	20.55	98.1	90	110				

Sample ID **N022998-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.094	1.0	25.00	20.55	98.2	90	110	45.08	0.0399	20	

Sample ID **N022998-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.404	0.20						4.345	1.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022998-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.366	0.20	5.000	4.345	100	90	110				

Sample ID **N022998-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.076	4.0	100.0	120.1	95.0	90	110				

Sample ID **N022998-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Sample ID **N022998-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023002-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023002-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID **N023014-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60469.000	1000	25000	35490	99.9	90	110				

Sample ID **N023014-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60829.500	1000	25000	35850	99.9	90	110				

Sample ID **N023014-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	274.040	4.0	100.0	173.9	100	90	110				

Sample ID **N023014-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.470	20	500.0	533.6	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113519** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **PBW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113519** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **LCSW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **N023014-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.605	1.0	25.00	30.58	100	90	110				

Sample ID **N023014-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.416	1.0	25.00	30.58	99.3	90	110	55.60	0.340	20	

Sample ID **N023014-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4478	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023014-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0	105	90	110				

Sample ID **N023014-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.798	1.0	5.000	0	96.0	90	110				

Sample ID **N023014-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.464	1.0	5.000	6.104	107	90	110				

Sample ID **N023029-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.306	0.20	1.000	1.227	108	90	110				

Sample ID **N023029-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1020.970	20	500.0	546.6	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023029-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.565	0.20						0.5703	0.969	20	

Sample ID **N023029-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.533	0.20	1.000	0.5703	96.3	90	110				

Sample ID **N023029-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.845	0.20	1.000	3.817	103	90	110				

Sample ID **N023029-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N023028-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.272	4.0	100.0	155.5	98.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023028-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.465	2.0	50.00	59.62	99.7	90	110				

Sample ID **N023028-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.302	4.0	100.0	156.8	103	90	110				

Sample ID **N023029-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	426.040	10	250.0	175.9	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A** QC Batch: **R113466**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	30	0.44	1.0		mg/L	20	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	32	1.1	2.5		mg/L	50	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	9.4	0.44	1.0		mg/L	20	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A** QC Batch: **R113466**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A**	QC Batch: **R113466**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.13	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R113631	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	113631
Client ID:	PBW	Batch ID:	R113631	TestNo:	SM4500-NO3			Analysis Date:	2/19/2017	SeqNo:	2573196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R113631	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	113631
Client ID:	LCSW	Batch ID:	R113631	TestNo:	SM4500-NO3			Analysis Date:	2/19/2017	SeqNo:	2573197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID	N022985-004CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	113631
Client ID:	ZZZZZZ	Batch ID:	R113631	TestNo:	SM4500-NO3			Analysis Date:	2/19/2017	SeqNo:	2573199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID	N022985-004CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	113631
Client ID:	ZZZZZZ	Batch ID:	R113631	TestNo:	SM4500-NO3			Analysis Date:	2/19/2017	SeqNo:	2573200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID	N022985-004CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	113631
Client ID:	ZZZZZZ	Batch ID:	R113631	TestNo:	SM4500-NO3			Analysis Date:	2/19/2017	SeqNo:	2573201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	2.6	0.025	0.10		µg/L	1	2/19/2017 11:24 PM
Manganese	ND	0.056	0.50		µg/L	1	2/19/2017 11:24 PM
Molybdenum	52	0.039	0.50		µg/L	1	2/19/2017 11:24 PM
Selenium	16	0.028	0.50		µg/L	1	2/19/2017 11:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	2.4	0.025	0.10		µg/L	1	2/19/2017 11:41 PM
Manganese	ND	0.056	0.50		µg/L	1	2/19/2017 11:41 PM
Molybdenum	51	0.039	0.50		µg/L	1	2/19/2017 11:41 PM
Selenium	15	0.028	0.50		µg/L	1	2/19/2017 11:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	2/19/2017 11:58 PM
Manganese	4.3	0.056	0.50		µg/L	1	2/19/2017 11:58 PM
Molybdenum	33	0.19	2.5		µg/L	5	2/20/2017 12:03 AM
Selenium	6.6	0.14	2.5		µg/L	5	2/20/2017 12:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	0.60	0.025	0.10		µg/L	1	2/20/2017 12:09 AM
Manganese	110	0.056	0.50		µg/L	1	2/20/2017 12:09 AM
Molybdenum	32	0.039	0.50		µg/L	1	2/20/2017 12:09 AM
Selenium	7.6	0.028	0.50		µg/L	1	2/20/2017 12:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	6.4	0.12	0.50		µg/L	5	2/20/2017 12:36 AM
Manganese	13	0.056	0.50		µg/L	1	2/20/2017 12:31 AM
Molybdenum	62	0.19	2.5		µg/L	5	2/20/2017 12:36 AM
Selenium	ND	0.14	2.5		µg/L	5	2/20/2017 12:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	2/20/2017 12:42 AM
Manganese	1.7	0.056	0.50		µg/L	1	2/20/2017 12:42 AM
Molybdenum	25	0.19	2.5		µg/L	5	2/20/2017 12:47 AM
Selenium	4.3	0.14	2.5		µg/L	5	2/20/2017 12:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	15	0.12	0.50		µg/L	5	2/20/2017 12:58 AM
Manganese	9.0	0.056	0.50		µg/L	1	2/20/2017 12:53 AM
Molybdenum	79	0.19	2.5		µg/L	5	2/20/2017 12:58 AM
Selenium	ND	0.14	2.5		µg/L	5	2/20/2017 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	7.2	0.025	0.10		µg/L	1	2/20/2017 01:04 AM
Manganese	97	0.056	0.50		µg/L	1	2/20/2017 01:04 AM
Molybdenum	48	0.19	2.5		µg/L	5	2/20/2017 01:09 AM
Selenium	ND	0.028	0.50		µg/L	1	2/20/2017 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us:
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: [illegible]	Address:	Sample Receipt Condition (Y / N): 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		Global ID: / Specify State: CA
Signature: [illegible] Date: 2/8/17	Sampled By: [illegible]		6. Method of Cooling: ICE
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Sample Temp: 2.2°C
Project Name: PG&E Topock - GMP	Signature: [illegible] Date: 2/8/17		Courier: LAB
Project Number: RC000753.801A			Tracking No:

Matrix: Ground (x); Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2 X 250 mL poly)	Metals Dissolved (6020AFF) As, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mo, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Se, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mn, HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Calcium, Dissolved (EPA 200.7), HNO3 (500 mL poly)	IRON, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Sodium, Dissolved (EPA 200.7) HNO3 (500 mL poly)	Boron, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Magnesium, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Chloride, E300 (1000 mL poly)	Alkalinity (SM2320B) Total as CaCO3 (1000 mL poly)	TDS, SM2540C (1000 mL poly)	Bromide, E300 (1000 mL poly)	Sulfate, E300 (1000 mL poly)	Specific conductance 120.1 (1000 mL poly)	pH (SM4500-HB) (1000 mL poly)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023014 - 01	MW-68-180-Q117	2/8/17	0859		X		X	X	X	X	X	X														E	3	P	BNS	
2	- 02	MW-904-Q117	2/8/17	0909		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-65-225-Q117	2/8/17	1010		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-65-160-Q117	2/8/17	1050		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-60BR-245-Q117	2/8/17	1130		X		X	X	X	X	X	X														E	3	P	BNS	
6	- 06	MW-73-080-Q117	2/8/17	1150		X		X	X	X	X	X	X														E	3	P	BNS	
7	- 07	MW-72BR-200-Q117	2/8/17	1556		X		X	X	X	X	X	X														E	3	P	BNS	
8	- 08	MW-62-110-Q117	2/8/17	1610		X		X	X	X	X	X	X														E	3	P	BNS	
9	- 09	MW-703-Q117	2/8/17	1620		X																					E	1	P	BNS	
10																																	
11																																	
12																																	
13																																	
14																																	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/8/17 1630	[illegible]	2/8/17 1630
[illegible]	2/8/17 2282	[illegible]	2/8/17 2282
[illegible]		[illegible]	

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms:
1. All samples will be disposed in 45 days and records will be retained in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
   Less than 24 Hrs =200%; Next Day=100%; 2 Workdays=40%; 3 Workdays=35 %; 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level II Data Packages, 15% for Level III Data Packages. Surcharge applies on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis: TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

Write=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/8/2017	Workorder:	N023014
Rep sample Temp (Deg C):	2.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/11/2017

Reviewed By: MBC 2/20/2017

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-001A	MW-68-180-Q117	2/8/2017 8:59:00 AM	2/22/2017	Ground Water	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-001B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-001C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-002A	MW-904-Q117	2/8/2017 9:09:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-002B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-002C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-003A	MW-65-225-Q117	2/8/2017 10:10:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-003B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-003C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-004A	MW-65-160-Q117	2/8/2017 10:50:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-004B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-004C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-005A	MW-60BR-245-Q117	2/8/2017 11:30:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-005B	MW-60BR-245-Q117	2/8/2017 11:30:00 AM	2/22/2017	Ground Water	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-005C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-006A	MW-73-080-Q117	2/8/2017 11:50:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-006B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-006C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-007A	MW-72BR-200-Q117	2/8/2017 3:56:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-007B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-007C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-008A	MW-62-110-Q117	2/8/2017 4:10:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-008B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-008C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-009A	MW-703-Q117	2/8/2017 4:20:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-010A	FOLDER	2/22/2017	2/22/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-010A	FOLDER	2/22/2017	2/22/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.801A

ASSET Laboratories Work Order:
N023014

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS
RAW DATA

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N023014

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-42
Sample Receiving Items	43-48
List of Analysts	49
Raw Data	
EPA 218.6	50-310
SM 4500-NO3F	311-341
EPA 6020_Dissolved	342-717

February 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023014

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *22-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023014

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N023014-005 and N023014-007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike's recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N023014-003, N023014-005, N023014-006, N023014-007 and N023014-008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *22-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023014
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023014-001A	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-001B	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-001C	MW-68-180-Q117	Ground Water	2/8/2017 8:59:00 AM	2/8/2017	2/22/2017
N023014-002A	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-002B	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-002C	MW-904-Q117	Ground Water	2/8/2017 9:09:00 AM	2/8/2017	2/22/2017
N023014-003A	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-003B	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-003C	MW-65-225-Q117	Ground Water	2/8/2017 10:10:00 AM	2/8/2017	2/22/2017
N023014-004A	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-004B	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-004C	MW-65-160-Q117	Ground Water	2/8/2017 10:50:00 AM	2/8/2017	2/22/2017
N023014-005A	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-005B	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-005C	MW-60BR-245-Q117	Ground Water	2/8/2017 11:30:00 AM	2/8/2017	2/22/2017
N023014-006A	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-006B	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-006C	MW-73-080-Q117	Ground Water	2/8/2017 11:50:00 AM	2/8/2017	2/22/2017
N023014-007A	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-007B	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-007C	MW-72BR-200-Q117	Ground Water	2/8/2017 3:56:00 PM	2/8/2017	2/22/2017
N023014-008A	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-008B	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-008C	MW-62-110-Q117	Ground Water	2/8/2017 4:10:00 PM	2/8/2017	2/22/2017
N023014-009A	MW-703-Q117	Ground Water	2/8/2017 4:20:00 PM	2/8/2017	2/22/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170211A**	QC Batch: **R113447**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	35000	330	1000		µg/L	5000	2/11/2017 02:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219B**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	37000	4.8	250		µg/L	250	2/19/2017 11:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170211A**	QC Batch: **R113447**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	36000	330	1000		µg/L	5000	2/11/2017 02:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219B**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	37000	4.8	250		µg/L	250	2/19/2017 11:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	530	6.6	20		µg/L	100	2/11/2017 04:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	550	0.096	5.0		µg/L	5	2/20/2017 12:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170211A** QC Batch: **R113447** PrepDate							Analyst: **RAB**
Hexavalent Chromium	170	1.3	4.0		µg/L	20	2/11/2017 03:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	170	0.019	1.0		µg/L	1	2/20/2017 12:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170213A** QC Batch: **R113519**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	2/13/2017 12:48 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/20/2017 12:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	31	0.33	1.0		µg/L	5	2/13/2017 10:43 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	29	0.019	1.0		µg/L	1	2/20/2017 12:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	6.1	0.33	1.0		µg/L	5	2/13/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	6.7	0.019	1.0		µg/L	1	2/20/2017 12:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	0.45	0.066	0.20		µg/L	1	2/13/2017 11:51 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/20/2017 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170213A**	QC Batch: **R113519**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/13/2017 12:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113447** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **PBW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113447** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **LCSW** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	90	110				

Sample ID **N022998-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.076	1.0	25.00	20.55	98.1	90	110				

Sample ID **N022998-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.094	1.0	25.00	20.55	98.2	90	110	45.08	0.0399	20	

Sample ID **N022998-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.404	0.20						4.345	1.34	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N022998-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.366	0.20	5.000	4.345	100	90	110				

Sample ID **N022998-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	215.076	4.0	100.0	120.1	95.0	90	110				

Sample ID **N022998-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	1.0	5.000	0	100	90	110				

Sample ID **N022998-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023002-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023002-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Sample ID **N023014-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60469.000	1000	25000	35490	99.9	90	110				

Sample ID **N023014-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	60829.500	1000	25000	35850	99.9	90	110				

Sample ID **N023014-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	274.040	4.0	100.0	173.9	100	90	110				

Sample ID **N023014-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.470	20	500.0	533.6	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113519** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **PBW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113519** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **LCSW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **N023014-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.605	1.0	25.00	30.58	100	90	110				

Sample ID **N023014-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.416	1.0	25.00	30.58	99.3	90	110	55.60	0.340	20	

Sample ID **N023014-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4478	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023014-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0	105	90	110				

Sample ID **N023014-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.798	1.0	5.000	0	96.0	90	110				

Sample ID **N023014-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.464	1.0	5.000	6.104	107	90	110				

Sample ID **N023029-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.306	0.20	1.000	1.227	108	90	110				

Sample ID **N023029-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1020.970	20	500.0	546.6	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023029-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.565	0.20						0.5703	0.969	20	

Sample ID **N023029-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.533	0.20	1.000	0.5703	96.3	90	110				

Sample ID **N023029-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.845	0.20	1.000	3.817	103	90	110				

Sample ID **N023029-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N023028-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.272	4.0	100.0	155.5	98.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023028-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.465	2.0	50.00	59.62	99.7	90	110				

Sample ID **N023028-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.302	4.0	100.0	156.8	103	90	110				

Sample ID **N023029-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	426.040	10	250.0	175.9	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A** QC Batch: **R113466**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	30	0.44	1.0		mg/L	20	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A** QC Batch: **R113631**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	32	1.1	2.5		mg/L	50	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	9.4	0.44	1.0		mg/L	20	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A** QC Batch: **R113631**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.16	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A** QC Batch: **R113466**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	3.9	0.11	0.25		mg/L	5	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170212A** QC Batch: **R113466** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.13	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170212A**	QC Batch: **R113466**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	2/12/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113466** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **PBW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113466** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **LCSW** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	85	115				

Sample ID **N022931-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.440	0.25						3.325	3.39	20	

Sample ID **N022931-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.661	0.25	2.500	3.325	93.4	75	125				

Sample ID **N022931-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ZZZZZZ** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.543	0.25	2.500	3.325	88.7	75	125	5.661	2.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 8:59:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	2.6	0.025	0.10		µg/L	1	2/19/2017 11:24 PM
Manganese	ND	0.056	0.50		µg/L	1	2/19/2017 11:24 PM
Molybdenum	52	0.039	0.50		µg/L	1	2/19/2017 11:24 PM
Selenium	16	0.028	0.50		µg/L	1	2/19/2017 11:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 9:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	2.4	0.025	0.10		µg/L	1	2/19/2017 11:41 PM
Manganese	ND	0.056	0.50		µg/L	1	2/19/2017 11:41 PM
Molybdenum	51	0.039	0.50		µg/L	1	2/19/2017 11:41 PM
Selenium	15	0.028	0.50		µg/L	1	2/19/2017 11:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	2/19/2017 11:58 PM
Manganese	4.3	0.056	0.50		µg/L	1	2/19/2017 11:58 PM
Molybdenum	33	0.19	2.5		µg/L	5	2/20/2017 12:03 AM
Selenium	6.6	0.14	2.5		µg/L	5	2/20/2017 12:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	0.60	0.025	0.10		µg/L	1	2/20/2017 12:09 AM
Manganese	110	0.056	0.50		µg/L	1	2/20/2017 12:09 AM
Molybdenum	32	0.039	0.50		µg/L	1	2/20/2017 12:09 AM
Selenium	7.6	0.028	0.50		µg/L	1	2/20/2017 12:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	6.4	0.12	0.50		µg/L	5	2/20/2017 12:36 AM
Manganese	13	0.056	0.50		µg/L	1	2/20/2017 12:31 AM
Molybdenum	62	0.19	2.5		µg/L	5	2/20/2017 12:36 AM
Selenium	ND	0.14	2.5		µg/L	5	2/20/2017 12:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.6	0.025	0.10		µg/L	1	2/20/2017 12:42 AM
Manganese	1.7	0.056	0.50		µg/L	1	2/20/2017 12:42 AM
Molybdenum	25	0.19	2.5		µg/L	5	2/20/2017 12:47 AM
Selenium	4.3	0.14	2.5		µg/L	5	2/20/2017 12:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 3:56:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	15	0.12	0.50		µg/L	5	2/20/2017 12:58 AM
Manganese	9.0	0.056	0.50		µg/L	1	2/20/2017 12:53 AM
Molybdenum	79	0.19	2.5		µg/L	5	2/20/2017 12:58 AM
Selenium	ND	0.14	2.5		µg/L	5	2/20/2017 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q117
Lab Order:	N023014	**Collection Date:**	2/8/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUND WATER
Lab ID:	N023014-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	7.2	0.025	0.10		µg/L	1	2/20/2017 01:04 AM
Manganese	97	0.056	0.50		µg/L	1	2/20/2017 01:04 AM
Molybdenum	48	0.19	2.5		µg/L	5	2/20/2017 01:09 AM
Selenium	ND	0.028	0.50		µg/L	1	2/20/2017 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

Contact us:
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: [illegible]	Address:	Sample Receipt Condition (Y / N): 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		Global ID: / Specify State: CA
Signature: [illegible] Date: 2/8/17	Sampled By: [illegible]		6. Method of Cooling: ICE
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Sample Temp: 2.2°C
Project Name: PG&E Topock - GMP	Signature: [illegible] Date: 2/8/17		Courier: LAB
Project Number: RC000753.801A			Tracking No:

Matrix: Ground (x); Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2 X 250 mL poly)	Metals Dissolved (6020AFF) As, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mo, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Se, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Mn, HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Calcium, Dissolved (EPA 200.7), HNO3 (500 mL poly)	IRON, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Sodium, Dissolved (EPA 200.7) HNO3 (500 mL poly)	Boron, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Magnesium, Dissolved (EPA 200.7), HNO3 (500 mL poly)	Chloride, E300 (1000 mL poly)	Alkalinity (SM2320B) Total as CaCO3 (1000 mL poly)	TDS, SM2540C (1000 mL poly)	Bromide, E300 (1000 mL poly)	Sulfate, E300 (1000 mL poly)	Specific conductance 120.1 (1000 mL poly)	pH (SM4500-HB) (1000 mL poly)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023014 - 01	MW-68-180-Q117	2/8/17	0859		X		X	X	X	X	X	X														E	3	P	BNS	
2	- 02	MW-904-Q117	2/8/17	0909		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-65-225-Q117	2/8/17	1010		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-65-160-Q117	2/8/17	1050		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-60BR-245-Q117	2/8/17	1130		X		X	X	X	X	X	X														E	3	P	BNS	
6	- 06	MW-73-080-Q117	2/8/17	1150		X		X	X	X	X	X	X														E	3	P	BNS	
7	- 07	MW-72BR-200-Q117	2/8/17	1556		X		X	X	X	X	X	X														E	3	P	BNS	
8	- 08	MW-62-110-Q117	2/8/17	1610		X		X	X	X	X	X	X														E	3	P	BNS	
9	- 09	MW-703-Q117	2/8/17	1620		X																					E	1	P	BNS	
10																																	
11																																	
12																																	
13																																	
14																																	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/8/17 1630	[illegible]	2/8/17 1630
[illegible]	2/8/17 2282	[illegible]	2/8/17 2282
[illegible]		[illegible]	

Turn Around Time (TAT):
- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for** Title 22 metals Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs =200%, Next Day=100%, 2 Workdays=50%, 3 Workdays=35 %, 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level II Data Packages, 15% for Level III Data Packages. Surcharge applies on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/8/2017	Workorder:	N023014
Rep sample Temp (Deg C):	2.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/11/2017

Reviewed By: MBC 2/20/2017

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-001A	MW-68-180-Q117	2/8/2017 8:59:00 AM	2/22/2017	Ground Water	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-001B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-001C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-002A	MW-904-Q117	2/8/2017 9:09:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-002B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-002C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-003A	MW-65-225-Q117	2/8/2017 10:10:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-003B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-003C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-004A	MW-65-160-Q117	2/8/2017 10:50:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-004B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-004C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-005A	MW-60BR-245-Q117	2/8/2017 11:30:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-005B	MW-60BR-245-Q117	2/8/2017 11:30:00 AM	2/22/2017	Ground Water	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-005C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-006A	MW-73-080-Q117	2/8/2017 11:50:00 AM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-006B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-006C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-007A	MW-72BR-200-Q117	2/8/2017 3:56:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-007B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-007C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-008A	MW-62-110-Q117	2/8/2017 4:10:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-008B			2/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023014-008C			2/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023014-009A	MW-703-Q117	2/8/2017 4:20:00 PM	2/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023014-010A	FOLDER	2/22/2017	2/22/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

08-Feb-17

WorkOrder: N023014

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023014-010A	FOLDER	2/22/2017	2/22/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N023014**

NAME	TEST METHOD
Claire Ignacio	EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113447
ASSET #: N023014

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/19/2017

2nd Level Reviewer 2/22/2017 Date: —

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113519
ASSET #: N023014

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/13/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/19/2017

2nd Level Reviewer Nancy 2/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N023014-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.0983 * 5000$$

$$Cr^{+6}, \mu g/L = 35491.50$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 35000}$$

rba **2/19/2017**

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:32 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:43 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/11/17 8:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/11/17 9:02 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/11/17 9:11 AM	Reported
15	MB-R113447	MBLK	1	Hexavalent Chromium	02/11/17 9:21 AM	Reported
16	LCS-R113447	LCS	1	Hexavalent Chromium	02/11/17 9:30 AM	Reported
17	N022998-001A	SAMP	5	Hexavalent Chromium	02/11/17 9:52 AM	Reported
18	N022998-001AMS	MS	5	Hexavalent Chromium	02/11/17 10:03 AM	Reported
19	N022998-001AMSD	MSD	5	Hexavalent Chromium	02/11/17 10:12 AM	Reported
20	N022998-002A	SAMP	1	Hexavalent Chromium	02/11/17 10:22 AM	Reported
21	N022998-002ADUP	DUP	1	Hexavalent Chromium	02/11/17 10:31 AM	Reported
22	N022998-002AMS	MS	1	Hexavalent Chromium	02/11/17 10:40 AM	Reported
23	N022998-005A	SAMP	1	Hexavalent Chromium	02/11/17 10:50 AM	Reported
24	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 10:59 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/11/17 11:09 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:18 AM	Not Reported
27	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:42 AM	Reported
28	N022998-004A	SAMP	20	Hexavalent Chromium	02/11/17 11:53 AM	Reported
29	N022998-004AMS	MS	20	Hexavalent Chromium	02/11/17 12:02 PM	Reported
30	N022998-003A	SAMP	1	Hexavalent Chromium	02/11/17 12:11 PM	Not Reported
31	N022998-003AMS	MS	1	Hexavalent Chromium	02/11/17 12:21 PM	Not Reported
32	N022998-003A	SAMP	5	Hexavalent Chromium	02/11/17 12:30 PM	Reported
33	N022998-003AMS	MS	5	Hexavalent Chromium	02/11/17 12:40 PM	Reported
34	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:08 PM	Reported
35	N023002-005A	SAMP	1	Hexavalent Chromium	02/11/17 1:24 PM	Reported
36	N023002-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:35 PM	Reported
37	N023002-006A	SAMP	1	Hexavalent Chromium	02/11/17 1:44 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/11/17 1:54 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/11/17 2:04 PM	Reported
40	N023002-006AMS	MS	1	Hexavalent Chromium	02/11/17 2:13 PM	Reported
41	N023014-001A	SAMP	5000	Hexavalent Chromium	02/11/17 2:22 PM	Reported
42	N023014-001AMS	MS	5000	Hexavalent Chromium	02/11/17 2:32 PM	Reported
43	N023014-002A	SAMP	5000	Hexavalent Chromium	02/11/17 2:41 PM	Reported
44	N023014-002AMS	MS	5000	Hexavalent Chromium	02/11/17 2:51 PM	Reported
45	N023014-003A	SAMP	20	Hexavalent Chromium	02/11/17 3:00 PM	Not Reported
46	N023014-003AMS	MS	20	Hexavalent Chromium	02/11/17 3:10 PM	Not Reported
47	N023014-004A	SAMP	20	Hexavalent Chromium	02/11/17 3:19 PM	Reported
48	N023014-004AMS	MS	20	Hexavalent Chromium	02/11/17 3:29 PM	Reported
49	N023030-001A	SAMP	10	Hexavalent Chromium	02/11/17 3:45 PM	Not Reported

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCV-4	CCV1	1	Hexavalent Chromium	02/11/17 3:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/11/17 4:06 PM	Reported
52	N023014-003A	SAMP	100	Hexavalent Chromium	02/11/17 4:15 PM	Reported
53	N023014-003AMS	MS	100	Hexavalent Chromium	02/11/17 4:25 PM	Reported
54	N023030-001A	SAMP	1	Hexavalent Chromium	02/11/17 4:34 PM	Reported
55	N023062-002A	SAMP	10	Hexavalent Chromium	02/11/17 4:48 PM	Not Reported
56	N023030-001A	SAMP	5	Hexavalent Chromium	02/11/17 5:06 PM	Not Reported
57	N023062-002A	SAMP	1	Hexavalent Chromium	02/11/17 5:24 PM	Reported
58	N023063-001A	SAMP	1	Hexavalent Chromium	02/11/17 5:36 PM	Not Reported
59	N023030-001AMS	MS	5	Hexavalent Chromium	02/11/17 5:45 PM	Not Reported
60	N023030-001AMS	MS	1	Hexavalent Chromium	02/11/17 5:58 PM	Reported
61	N023063-001A	SAMP	50	Hexavalent Chromium	02/11/17 6:09 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/11/17 6:18 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:28 PM	Not Reported
64	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Feb/17 19:22:17**
No. of Injections:	**67**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/11/2017 08:32	Finished	
11	BLANK	2	1000	Unknown		02/11/2017 08:43	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/11/2017 08:53	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/11/2017 09:02	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/11/2017 09:11	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/11/2017 09:21	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/11/2017 09:30	Finished	LCS, IWST-161114D
17	N022998-001A,SAMF	9	1000	Unknown		02/11/2017 09:52	Finished	SAMP, 2>10mL
18	N022998-001AMS,MS	10	1000	Unknown		02/11/2017 10:03	Finished	MS (5ppb), IWST-161114D,2>
19	N022998-001AMSD,M	11	1000	Unknown		02/11/2017 10:12	Finished	MSD (5ppb), IWST-161114D,2
20	N022998-002A,SAMF	12	1000	Unknown		02/11/2017 10:22	Finished	SAMP, 10mL
21	N022998-002ADUP,D	13	1000	Unknown		02/11/2017 10:31	Finished	DUP, 10mL
22	N022998-002AMS,MS	14	1000	Unknown		02/11/2017 10:40	Finished	MS (5ppb), IWST-161114D,10
23	N022998-005A,SAMF	15	1000	Unknown		02/11/2017 10:50	Finished	SAMP, 10mL
24	N022998-005AMS,MS	16	1000	Unknown		02/11/2017 10:59	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/11/2017 11:09	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:18	Finished	CCB R170123B
27	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:42	Finished	CCB R170123B
28	N022998-004A,SAMF	19	1000	Unknown		02/11/2017 11:53	Finished	SAMP, 0.5>10mL
29	N022998-004AMS,MS	20	1000	Unknown		02/11/2017 12:02	Finished	MS (5ppb), IWST-161114D,0.5
30	N022998-003A,SAMF	21	1000	Unknown		02/11/2017 12:11	Finished	SAMP, 10mL
31	N022998-003AMS,MS	22	1000	Unknown		02/11/2017 12:21	Finished	MS (1ppb), IWST-161114D,10
32	N022998-003A,SAMF	23	1000	Unknown		02/11/2017 12:30	Finished	SAMP, 2>10mL
33	N022998-003AMS,MS	24	1000	Unknown		02/11/2017 12:40	Finished	MS (1ppb), IWST-161114D,2>
34	N022998-005AMS,MS	26	1000	Unknown		02/11/2017 13:08	Finished	MS (1ppb), IWST-161114D,10
35	N023002-005A,SAMF	28	1000	Unknown		02/11/2017 13:24	Finished	SAMP, 10mL
36	N023002-005AMS,MS	29	1000	Unknown		02/11/2017 13:35	Finished	MS (1ppb), IWST-161114D,10
37	N023002-006A,SAMF	30	1000	Unknown		02/11/2017 13:44	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/11/2017 13:54	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/11/2017 14:04	Finished	CCB R170112D
40	N023002-006AMS,MS	33	1000	Unknown		02/11/2017 14:13	Finished	MS (1ppb), IWST-161114D,10
41	N023014-001A,SAMF	34	1000	Unknown		02/11/2017 14:22	Finished	SAMP, 0.002>10mL
42	N023014-001AMS,MS	35	1000	Unknown		02/11/2017 14:32	Finished	MS (5ppb), IWST-161114D,0.0
43	N023014-002A,SAMF	36	1000	Unknown		02/11/2017 14:41	Finished	SAMP, 0.002>10mL
44	N023014-002AMS,MS	37	1000	Unknown		02/11/2017 14:51	Finished	MS (5ppb), IWST-161114D,0.0
45	N023014-003A,SAMF	38	1000	Unknown		02/11/2017 15:00	Finished	SAMP, 0.5>10mL
46	N023014-003AMS,MS	39	1000	Unknown		02/11/2017 15:10	Finished	MS (5ppb), IWST-161114D,0.5
47	N023014-004A,SAMF	40	1000	Unknown		02/11/2017 15:19	Finished	SAMP, 0.5>10mL
48	N023014-004AMS,MS	41	1000	Unknown		02/11/2017 15:29	Finished	MS (5ppb), IWST-161114D,0.5
49	N023030-001A,SAMF	43	1000	Unknown		02/11/2017 15:45	Finished	SAMP, 1>10mL
50	CCV-4,CCV1,1,	44	1000	Unknown		02/11/2017 15:56	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	45	1000	Unknown		02/11/2017 16:06	Finished	CCB R170112D
52	N023014-003A,SAMF	46	1000	Unknown		02/11/2017 16:15	Finished	SAMP,0.1>10mL
53	N023014-003AMS,MS	47	1000	Unknown		02/11/2017 16:25	Finished	MS (5ppb), IWST-161114D,0.1
54	N023030-001A,SAMF	48	1000	Unknown		02/11/2017 16:34	Finished	SAMP, 10mL
55	N023062-002A,SAMF	50	1000	Unknown		02/11/2017 16:48	Interrupted	SAMP, 1>10mL
56	N023030-001A,SAMF	1	1000	Unknown		02/11/2017 17:06	Finished	SAMP, 2>10mL
57	N023062-002A,SAMF	4	1000	Unknown		02/11/2017 17:24	Finished	SAMP, 10mL
58	N023063-001A,SAMF	5	1000	Unknown		02/11/2017 17:36	Finished	SAMP, 10mL
59	N023030-001AMS,MS	6	1000	Unknown		02/11/2017 17:45	Finished	MS (5ppb), IWST-161114D,2>
60	N023030-001AMS,MS	7	1000	Unknown		02/11/2017 17:58	Finished	MS (5ppb), IWST-161114D,10

61	N023063-001A,SAMP	8	1000	Unknown		02/11/2017 18:09	Finished	SAMP,0.2>10mL
62	CCV-5,CCV,1,	9	1000	Unknown		02/11/2017 18:18	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	10	1000	Unknown		02/11/2017 18:28	Finished	CCB R170123B
64	CCB-5,CCB,1,	12	1000	Unknown		02/11/2017 18:42	Finished	CCB R170123B
65	SHUTDOWN	24	1000	Unknown		02/11/2017 18:59	Finished	
66	Eluent: R170209B	25	1000	Unknown		n.a.	Finished	Eluent
67	PCR: R170209C	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/13/17 9:43 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/13/17 9:53 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/13/17 10:02 AM	Reported
15	MB-R113519	MBLK	1	Hexavalent Chromium	02/13/17 10:12 AM	Reported
16	LCS-R113519	LCS	1	Hexavalent Chromium	02/13/17 10:24 AM	Reported
17	N023014-006A	SAMP	5	Hexavalent Chromium	02/13/17 10:43 AM	Reported
18	N023014-006AMS	MS	5	Hexavalent Chromium	02/13/17 10:54 AM	Reported
19	N023014-006AMSD	MSD	5	Hexavalent Chromium	02/13/17 11:03 AM	Reported
20	N023014-005A	SAMP	1	Hexavalent Chromium	02/13/17 11:13 AM	Not Reported
21	N023014-005AMS	MS	1	Hexavalent Chromium	02/13/17 11:22 AM	Not Reported
22	N023014-007A	SAMP	1	Hexavalent Chromium	02/13/17 11:32 AM	Not Reported
23	N023014-007AMS	MS	1	Hexavalent Chromium	02/13/17 11:41 AM	Not Reported
24	N023014-008A	SAMP	1	Hexavalent Chromium	02/13/17 11:51 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/13/17 12:00 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/13/17 12:10 PM	Reported
27	N023014-008AMS	MS	1	Hexavalent Chromium	02/13/17 12:19 PM	Reported
28	N023014-009A	SAMP	1	Hexavalent Chromium	02/13/17 12:29 PM	Reported
29	N023014-009AMS	MS	1	Hexavalent Chromium	02/13/17 12:38 PM	Reported
30	N023014-005A	SAMP	5	Hexavalent Chromium	02/13/17 12:48 PM	Reported
31	N023014-005AMS	MS	5	Hexavalent Chromium	02/13/17 12:57 PM	Reported
32	N023014-007A	SAMP	5	Hexavalent Chromium	02/13/17 1:07 PM	Reported
33	N023014-007AMS	MS	5	Hexavalent Chromium	02/13/17 1:16 PM	Reported
34	N023014-008A	SAMP	5	Hexavalent Chromium	02/13/17 1:25 PM	Not Reported
35	N023014-008AMS	MS	5	Hexavalent Chromium	02/13/17 1:35 PM	Not Reported
36	N023028-001A	SAMP	1	Hexavalent Chromium	02/13/17 1:51 PM	Not Reported
37	N023028-002A	SAMP	1	Hexavalent Chromium	02/13/17 2:02 PM	Not Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/13/17 2:12 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/13/17 2:21 PM	Reported
40	N023028-003A	SAMP	1	Hexavalent Chromium	02/13/17 2:30 PM	Not Reported
41	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 2:40 PM	Not Reported
42	N023029-001AMS	MS	1	Hexavalent Chromium	02/13/17 2:49 PM	Reported

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023029-002A	SAMP	100	Hexavalent Chromium	02/13/17 2:59 PM	Reported
44	N023029-002AMS	MS	100	Hexavalent Chromium	02/13/17 3:08 PM	Reported
45	N023029-003A	SAMP	100	Hexavalent Chromium	02/13/17 3:18 PM	Not Reported
46	N023029-003AMS	MS	100	Hexavalent Chromium	02/13/17 3:27 PM	Not Reported
47	N023029-004A	SAMP	1	Hexavalent Chromium	02/13/17 3:37 PM	Reported
48	N023029-004ADUP	DUP	1	Hexavalent Chromium	02/13/17 3:46 PM	Reported
49	N023029-004AMS	MS	1	Hexavalent Chromium	02/13/17 3:56 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	02/13/17 4:05 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/13/17 4:15 PM	Reported
52	N023029-005A	SAMP	1	Hexavalent Chromium	02/13/17 4:24 PM	Reported
53	N023029-005AMS	MS	1	Hexavalent Chromium	02/13/17 4:33 PM	Reported
54	N023029-006A	SAMP	1	Hexavalent Chromium	02/13/17 4:43 PM	Reported
55	N023029-006AMS	MS	1	Hexavalent Chromium	02/13/17 4:52 PM	Reported
56	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 5:02 PM	Reported
57	N023028-001A	SAMP	20	Hexavalent Chromium	02/13/17 5:11 PM	Reported
58	N023028-001AMS	MS	20	Hexavalent Chromium	02/13/17 5:25 PM	Reported
59	N023028-002A	SAMP	10	Hexavalent Chromium	02/13/17 5:36 PM	Reported
60	N023028-002AMS	MS	10	Hexavalent Chromium	02/13/17 5:45 PM	Reported
61	N023028-003A	SAMP	20	Hexavalent Chromium	02/13/17 5:54 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/13/17 6:04 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/13/17 6:13 PM	Reported
64	N023028-003AMS	MS	20	Hexavalent Chromium	02/13/17 6:23 PM	Reported
65	N023029-003A	SAMP	50	Hexavalent Chromium	02/13/17 6:32 PM	Reported
66	N023029-003AMS	MS	50	Hexavalent Chromium	02/13/17 6:42 PM	Reported
67	N023043-001A	SAMP	1	Hexavalent Chromium	02/13/17 6:51 PM	Not Reported
68	N023043-002A	SAMP	1	Hexavalent Chromium	02/13/17 7:01 PM	Not Reported
69	N023043-003A	SAMP	1	Hexavalent Chromium	02/13/17 7:10 PM	Not Reported
70	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 7:20 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	02/13/17 7:29 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	02/13/17 7:39 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Feb/17 09:47:02**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/13/2017 09:23	Finished	
11	BLANK	2	1000	Unknown		02/13/2017 09:34	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/13/2017 09:43	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/13/2017 09:53	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/13/2017 10:02	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/13/2017 10:12	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/13/2017 10:24	Finished	LCS, IWST-161114D
17	N023014-006A,SAMP	9	1000	Unknown		02/13/2017 10:43	Finished	SAMP, 2>10mL
18	N023014-006AMS,MS	10	1000	Unknown		02/13/2017 10:54	Finished	MS (5ppb), IWST-161114D,2>1
19	N023014-006AMSD,M	11	1000	Unknown		02/13/2017 11:03	Finished	MSD (5ppb), IWST-161114D,2
20	N023014-005A,SAMP	12	1000	Unknown		02/13/2017 11:13	Finished	SAMP, 10mL
21	N023014-005AMS,MS	13	1000	Unknown		02/13/2017 11:22	Finished	MS (1ppb), IWST-161114D,10
22	N023014-007A,SAMP	14	1000	Unknown		02/13/2017 11:32	Finished	SAMP, 10mL
23	N023014-007AMS,MS	15	1000	Unknown		02/13/2017 11:41	Finished	MS (1ppb), IWST-161114D,10
24	N023014-008A,SAMP	16	1000	Unknown		02/13/2017 11:51	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		02/13/2017 12:00	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/13/2017 12:10	Finished	CCB R170123B
27	N023014-008AMS,MS	19	1000	Unknown		02/13/2017 12:19	Finished	MS (1ppb), IWST-161114D,10
28	N023014-009A,SAMP	20	1000	Unknown		02/13/2017 12:29	Finished	SAMP, 10mL
29	N023014-009AMS,MS	21	1000	Unknown		02/13/2017 12:38	Finished	MS (1ppb), IWST-161114D,10
30	N023014-005A,SAMP	22	1000	Unknown		02/13/2017 12:48	Finished	SAMP, 2>10mL
31	N023014-005AMS,MS	23	1000	Unknown		02/13/2017 12:57	Finished	MS (1ppb), IWST-161114D,2>1
32	N023014-007A,SAMP	24	1000	Unknown		02/13/2017 13:07	Finished	SAMP, 2>10mL
33	N023014-007AMS,MS	25	1000	Unknown		02/13/2017 13:16	Finished	MS (1ppb), IWST-161114D,2>1
34	N023014-008A,SAMP	26	1000	Unknown		02/13/2017 13:25	Finished	SAMP, 2>10mL
35	N023014-008AMS,MS	27	1000	Unknown		02/13/2017 13:35	Finished	MS (1ppb), IWST-161114D,2>1
36	N023028-001A,SAMP	29	1000	Unknown		02/13/2017 13:51	Finished	SAMP, 10mL
37	N023028-002A,SAMP	30	1000	Unknown		02/13/2017 14:02	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/13/2017 14:12	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/13/2017 14:21	Finished	CCB R170112D
40	N023028-003A,SAMP	33	1000	Unknown		02/13/2017 14:30	Finished	SAMP, 10mL
41	N023029-001A,SAMP	34	1000	Unknown		02/13/2017 14:40	Finished	SAMP, 10mL
42	N023029-001AMS,MS	35	1000	Unknown		02/13/2017 14:49	Finished	MS (1ppb), IWST-161114D,10
43	N023029-002A,SAMP	36	1000	Unknown		02/13/2017 14:59	Finished	SAMP, 0.1>10mL
44	N023029-002AMS,MS	37	1000	Unknown		02/13/2017 15:08	Finished	MS (5ppb), IWST-161114D,0.1
45	N023029-003A,SAMP	38	1000	Unknown		02/13/2017 15:18	Finished	SAMP, 0.1>10mL
46	N023029-003AMS,MS	39	1000	Unknown		02/13/2017 15:27	Finished	MS (5ppb), IWST-161114D,0.1
47	N023029-004A,SAMP	40	1000	Unknown		02/13/2017 15:37	Finished	SAMP, 10mL
48	N023029-004ADUP,D	41	1000	Unknown		02/13/2017 15:46	Finished	DUP, 10mL
49	N023029-004AMS,MS	42	1000	Unknown		02/13/2017 15:56	Finished	MS (1ppb), IWST-161114D,10
50	CCV-4,CCV1,1,	43	1000	Unknown		02/13/2017 16:05	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	44	1000	Unknown		02/13/2017 16:15	Finished	CCB R170112D
52	N023029-005A,SAMP	45	1000	Unknown		02/13/2017 16:24	Finished	SAMP, 10mL
53	N023029-005AMS,MS	46	1000	Unknown		02/13/2017 16:33	Finished	MS (1ppb), IWST-161114D,10
54	N023029-006A,SAMP	47	1000	Unknown		02/13/2017 16:43	Finished	SAMP, 10mL
55	N023029-006AMS,MS	48	1000	Unknown		02/13/2017 16:52	Finished	MS (1ppb), IWST-161114D,10
56	N023029-001A,SAMP	49	1000	Unknown		02/13/2017 17:02	Finished	SAMP, 10mL
57	N023028-001A,SAMP	50	1000	Unknown		02/13/2017 17:11	Finished	SAMP, 0.5>10mL
58	N023028-001AMS,MS	1	1000	Unknown		02/13/2017 17:25	Finished	MS (5ppb), IWST-161114D,0.5
59	N023028-002A,SAMP	2	1000	Unknown		02/13/2017 17:36	Finished	SAMP, 1>10mL
60	N023028-002AMS,MS	3	1000	Unknown		02/13/2017 17:45	Finished	MS (5ppb), IWST-161114D,1>1

61	N023028-003A,SAMP	4	1000	Unknown		02/13/2017 17:54	Finished	SAMP,0.5>10mL
62	CCV-5,CCV,1,	5	1000	Unknown		02/13/2017 18:04	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	6	1000	Unknown		02/13/2017 18:13	Finished	CCB R170123B
64	N023028-003AMS,MS	7	1000	Unknown		02/13/2017 18:23	Finished	MS (5ppb), IWST-161114D,0.5
65	N023029-003A,SAMP	8	1000	Unknown		02/13/2017 18:32	Finished	SAMP,0.2>10mL
66	N023029-003AMS,MS	9	1000	Unknown		02/13/2017 18:42	Finished	MS (5ppb), IWST-161114D,0.2
67	N023043-001A,SAMP	10	1000	Unknown		02/13/2017 18:51	Finished	SAMP, 10mL
68	N023043-002A,SAMP	11	1000	Unknown		02/13/2017 19:01	Finished	SAMP, 10mL
69	N023043-003A,SAMP	12	1000	Unknown		02/13/2017 19:10	Finished	SAMP, 10mL
70	BLANK	13	1000	Unknown		02/13/2017 19:20	Finished	
71	CCV-6,CCV1,1,	14	1000	Unknown		02/13/2017 19:29	Finished	CCV @10ppb, IWST-161114C
72	CCB-6,CCB,1,	15	1000	Unknown		02/13/2017 19:39	Finished	CCB R170123B
73	SHUTDOWN	16	1000	Unknown		02/13/2017 19:48	Finished	
74	Eluent: R170209B	17	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R170213A	18	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/9/17
Time Prepared: 1100
Prepared By: MG

slope - 97.7%
pH 4 - 4.01 @ 22.2°C
pH 7 - 7.05 @ 22.3°C
pH 10 - 10.04 @ 22.3°C
LCS - 7.05 @ 20.8°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CIW-161012A
NH4OH + NH4SO4 eluent: R170209B
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023014 - 1A	9.69	–	~250mL	~250mL		R170123B
2)	2A	9.67	–				
3)	3A	9.65	–				
4)	4A	9.60	–				
5)	5A	9.69	–				
6)	6A	9.65	–				
7)	7A	9.67	–				
8)	8A	9.62	–				
9)	9A	9.69	–				
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/9/17
Time Prepared: 1132 PM
Prepared By: MSA

slope: 98.0%
pH 4: 4.02 @ 21.8°C
7: 7.00 @ 21.8°C
10: 10.04 @ 21.9°C
LCS: 7.01 @ 21.9°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CIW-161012A
NH4OH + NH4SO4 eluent: R170209A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023040-103D	7.36	9.18	~125 mL~	~125 mL	0.2mL R170123B / 10 mL per sample	
2)	4D	7.12	9.12				
3)	6D	7.40	9.21				
4)	8C	7.54	9.20				
5)	9C	7.04	9.05				
6)	10D	7.06	9.09				
7)	11D	7.05	9.11				R170123B
8)	N023041-103C	6.89	9.03				
9)	5D	7.28	9.16				
10)	6B	7.27	9.20				
11)	7C	7.01	9.08				
12)							
13)							
14)							
15)							

Logbook No. 12

rba 2/19/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ICV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.058	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.088	0.20	5.000	0	102	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ZZZZZZ** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.241	0.20	10.00	0	102	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCV** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ICV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.990	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.212	0.20	0.2000	0	106	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.023	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.015	0.20	5.000	0	100	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.043	0.20	10.00	0	100	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.965	0.20	5.000	0	99.3	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.026	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **ICB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2563480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113447**
Client ID: **CCB** Batch ID: **R113447** TestNo: **EPA 218.6** Analysis Date: **2/11/2017** SeqNo: **2563521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ICB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113519
Client ID:	CCB	Batch ID:	R113519	TestNo:	EPA 218.6			Analysis Date:	2/13/2017	SeqNo:	2566487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113519
Client ID:	CCB	Batch ID:	R113519	TestNo:	EPA 218.6			Analysis Date:	2/13/2017	SeqNo:	2566492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.215	
CCV-3	4.206	
CCV-4	4.206	
CCV-5	4.206	
Average	4.208	
Actual RT Window	4.128 - 4.288	
Applied RT Window	4.008 - 4.408	
MB-R113447	N.A.	N.A.
LCS-R113447	4.206	PASS
N022998-001A	4.148	PASS
N022998-001AMS	4.156	PASS
N022998-001AMSD	4.148	PASS
N022998-002A	4.065	PASS
N022998-002ADUP	4.065	PASS
N022998-002AMS	4.065	PASS
N022998-005A	N.A.	N.A.
N022998-005AMS	4.215	PASS
N022998-004A	4.198	PASS
N022998-004AMS	4.198	PASS
N022998-003A	N.A.	N.A.
N022998-003AMS	3.915	FAIL
N022998-003A	N.A.	N.A.
N022998-003AMS	4.165	PASS
N022998-005AMS	4.206	PASS
N023002-005A	N.A.	N.A.
N023002-005AMS	4.215	PASS
N023002-006A	N.A.	N.A.
N023002-006AMS	4.206	PASS
N023014-001A	4.206	PASS
N023014-001AMS	4.206	PASS
N023014-002A	4.206	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.215	
CCV-3	4.206	
CCV-4	4.206	
CCV-5	4.206	
Average	4.208	
Actual RT Window	4.128 - 4.288	
Applied RT Window	4.008 - 4.408	
N023014-002AMS	4.206	PASS
N023014-003A	4.206	PASS
N023014-003AMS	4.206	PASS
N023014-004A	4.206	PASS
N023014-004AMS	4.206	PASS
N023030-001A	4.323	PASS
N023014-003A	4.206	PASS
N023014-003AMS	4.206	PASS
N023030-001A	4.190	PASS
N023062-002A	4.123	PASS
N023030-001A	4.681	FAIL
N023062-002A	4.198	PASS
N023063-001A	4.190	PASS
N023030-001AMS	4.206	PASS
N023030-001AMS	4.198	PASS
N023063-001A	4.198	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
MB-R113519	N.A.	N.A.
LCS-R113519	4.206	PASS
N023014-006A	4.173	PASS
N023014-006AMS	4.173	PASS
N023014-006AMSD	4.173	PASS
N023014-005A	N.A.	N.A.
N023014-005AMS	N.A.	N.A.
N023014-007A	N.A.	N.A.
N023014-007AMS	N.A.	N.A.
N023014-008A	4.098	PASS
N023014-008AMS	4.048	PASS
N023014-009A	N.A.	N.A.
N023014-009AMS	4.206	PASS
N023014-005A	N.A.	N.A.
N023014-005AMS	4.148	PASS
N023014-007A	4.156	PASS
N023014-007AMS	4.156	PASS
N023014-008A	4.181	PASS
N023014-008AMS	4.181	PASS
N023028-001A	4.165	PASS
N023028-002A	4.173	PASS
N023028-003A	4.173	PASS
N023029-001A	4.106	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
N023029-001AMS	4.106	PASS
N023029-002A	4.206	PASS
N023029-002AMS	4.206	PASS
N023029-003A	4.206	PASS
N023029-003AMS	4.206	PASS
N023029-004A	4.190	PASS
N023029-004ADUP	4.190	PASS
N023029-004AMS	4.190	PASS
N023029-005A	4.190	PASS
N023029-005AMS	4.190	PASS
N023029-006A	N.A.	N.A.
N023029-006AMS	4.206	PASS
N023029-001A	4.106	PASS
N023028-001A	4.206	PASS
N023028-001AMS	4.206	PASS
N023028-002A	4.206	PASS
N023028-002AMS	4.198	PASS
N023028-003A	4.206	PASS
N023028-003AMS	4.206	PASS
N023029-003A	4.206	PASS
N023029-003AMS	4.206	PASS
N023043-001A	N.A.	N.A.
N023043-002A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
N023043-003A	N.A.	N.A.

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

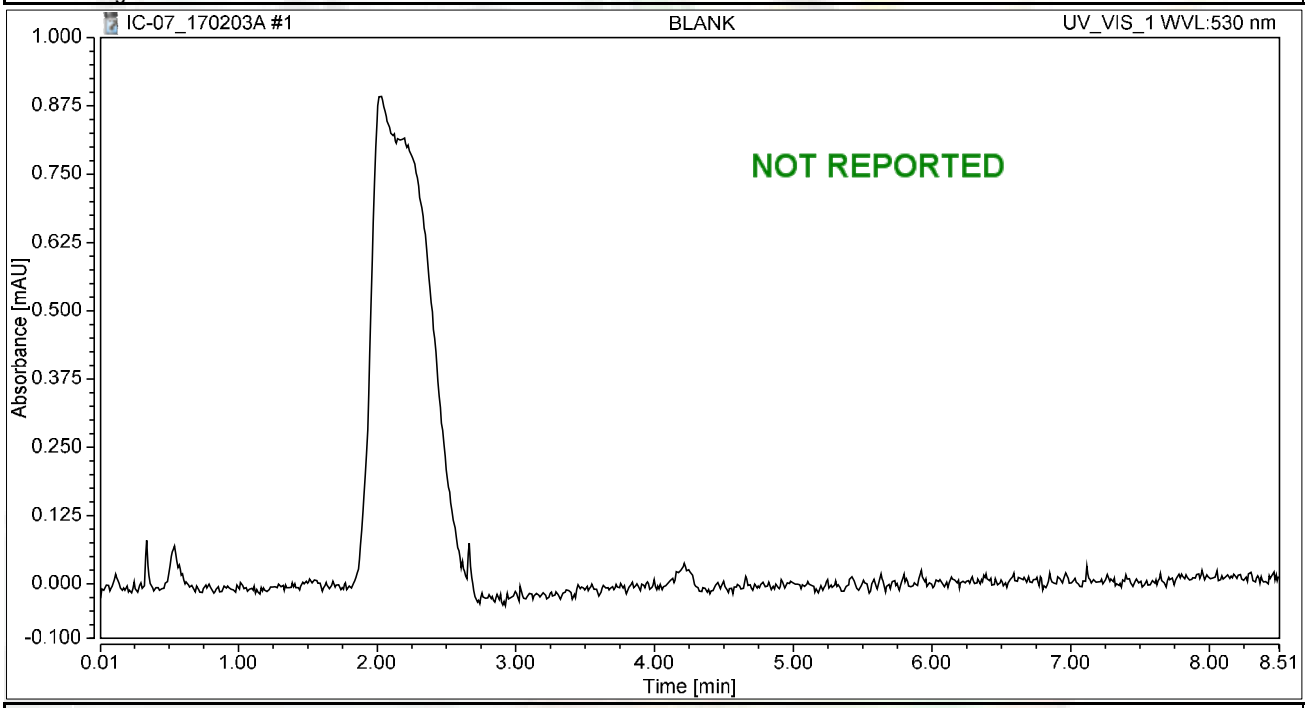
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

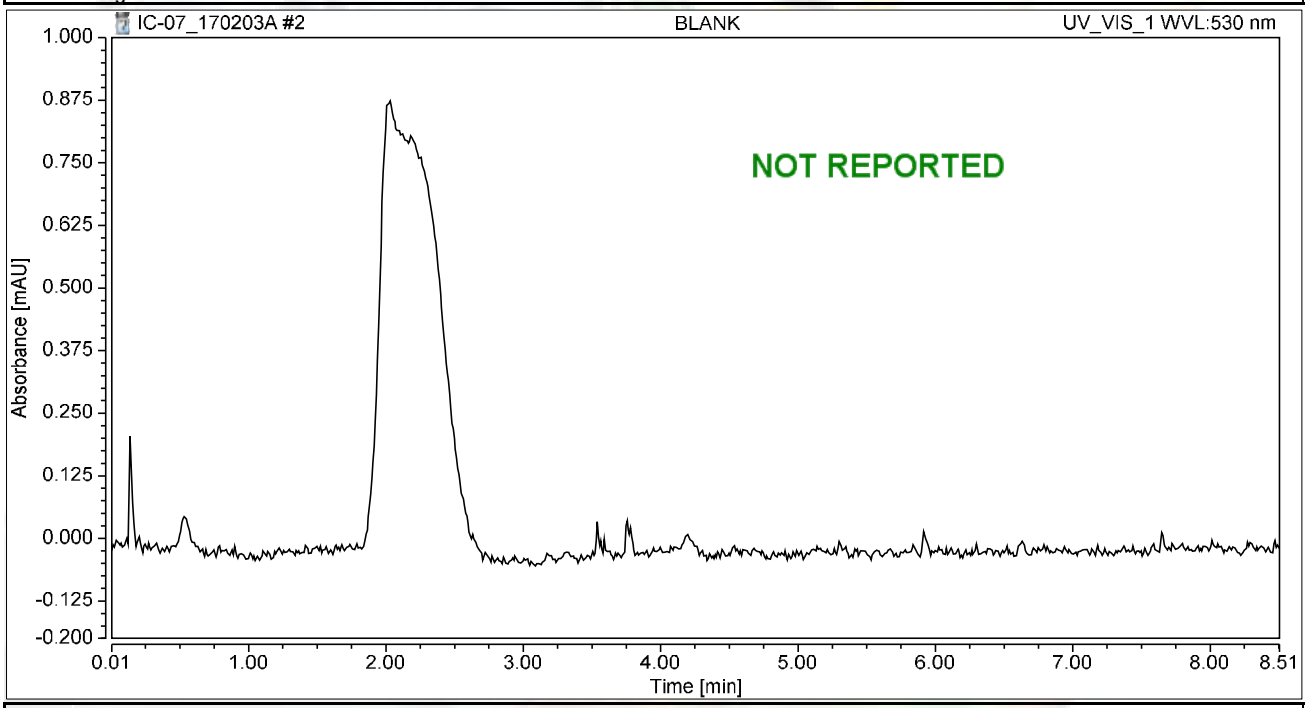
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

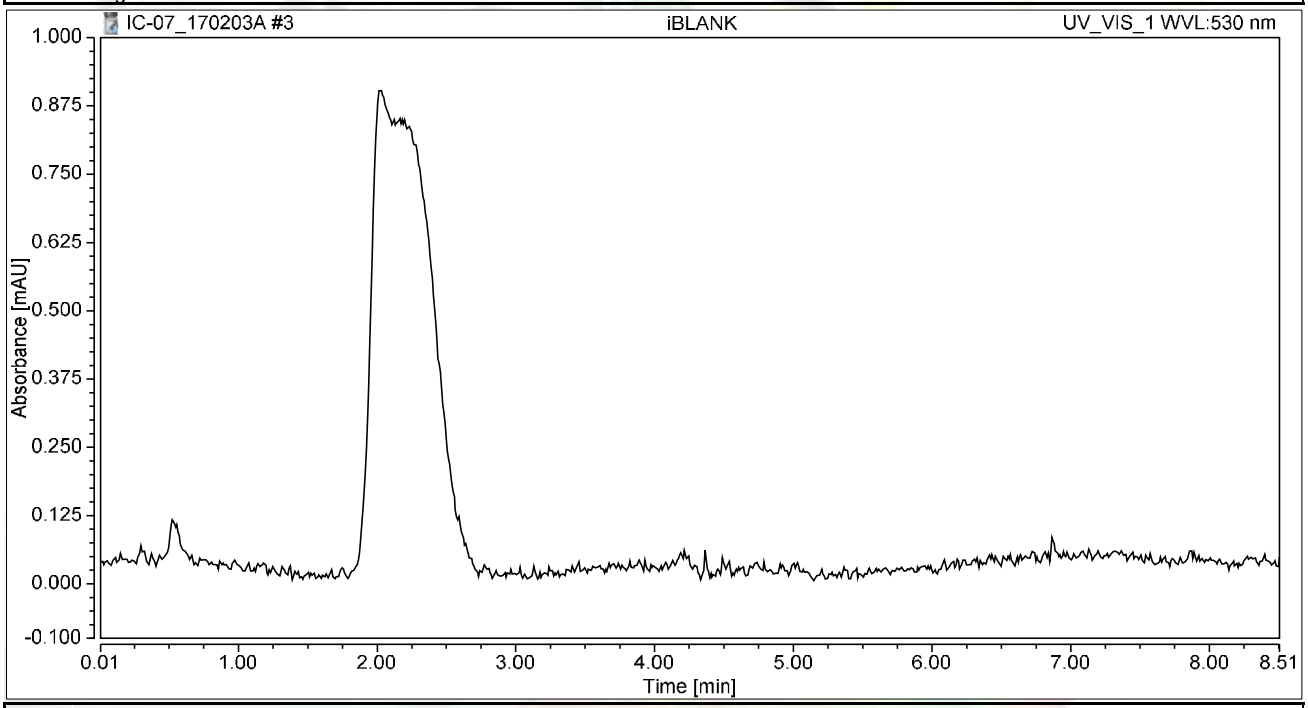
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

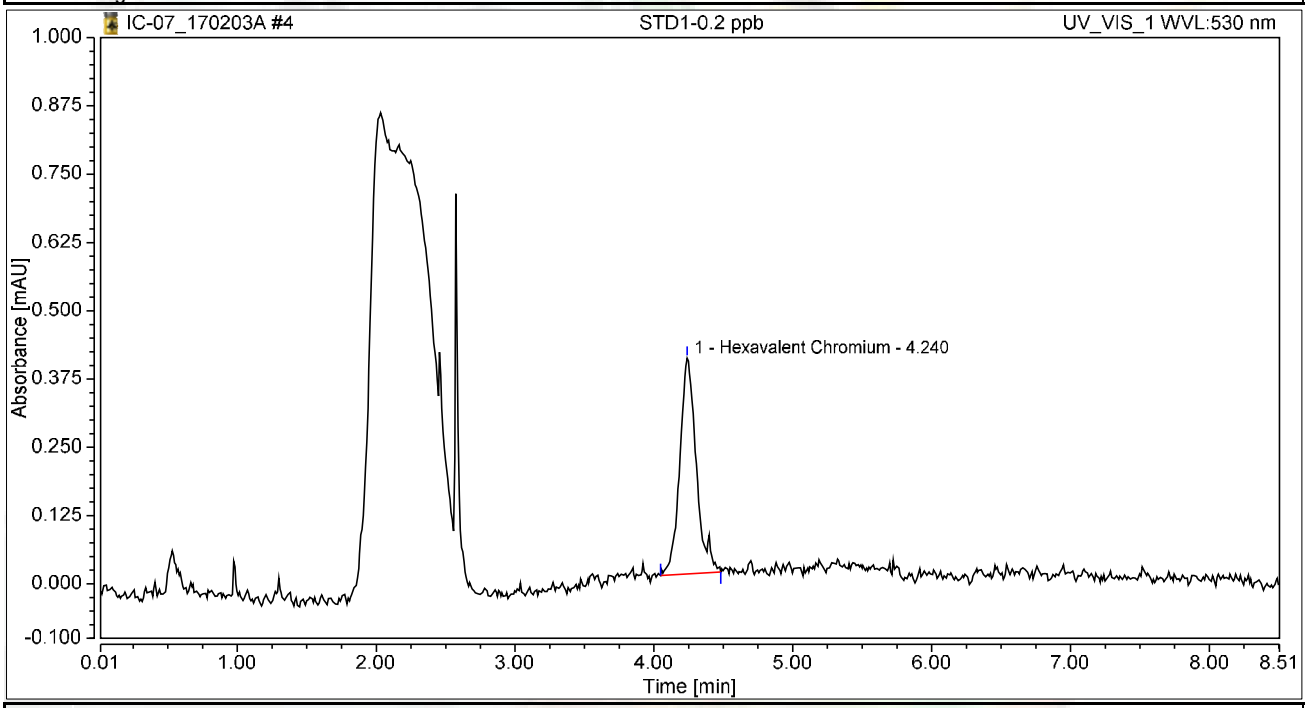
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

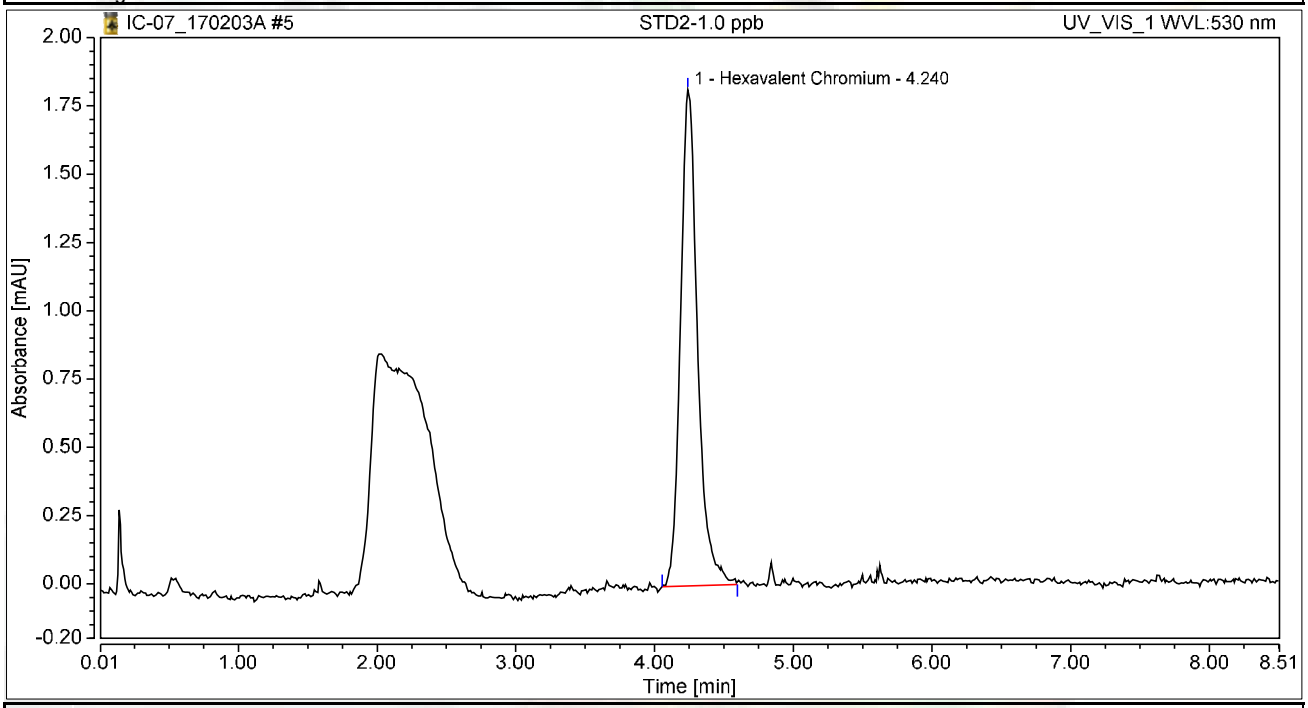
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

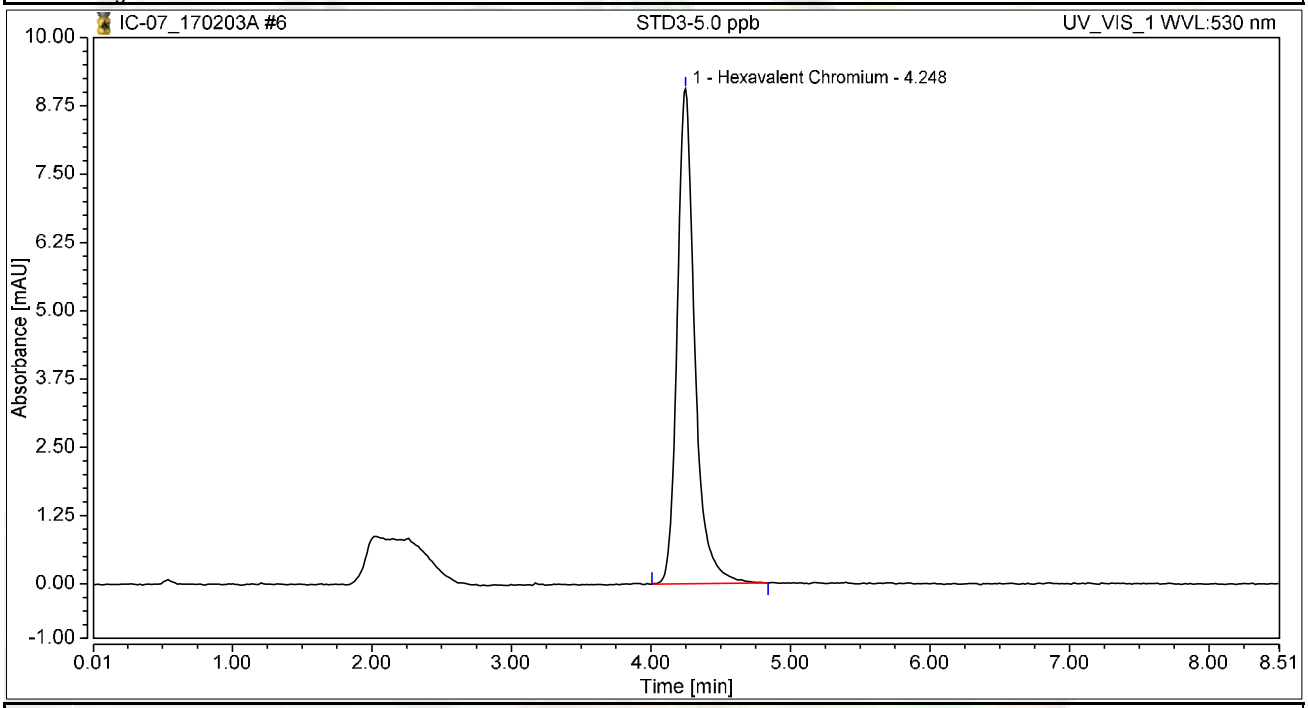
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

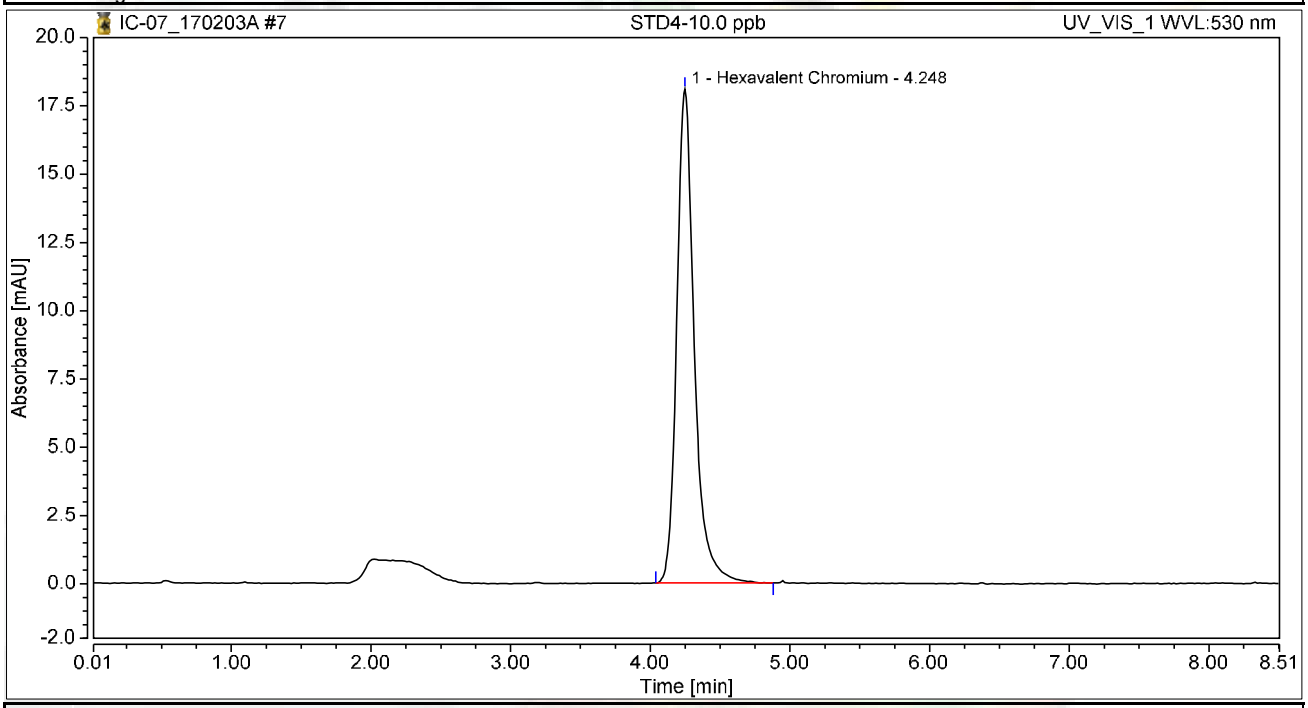
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

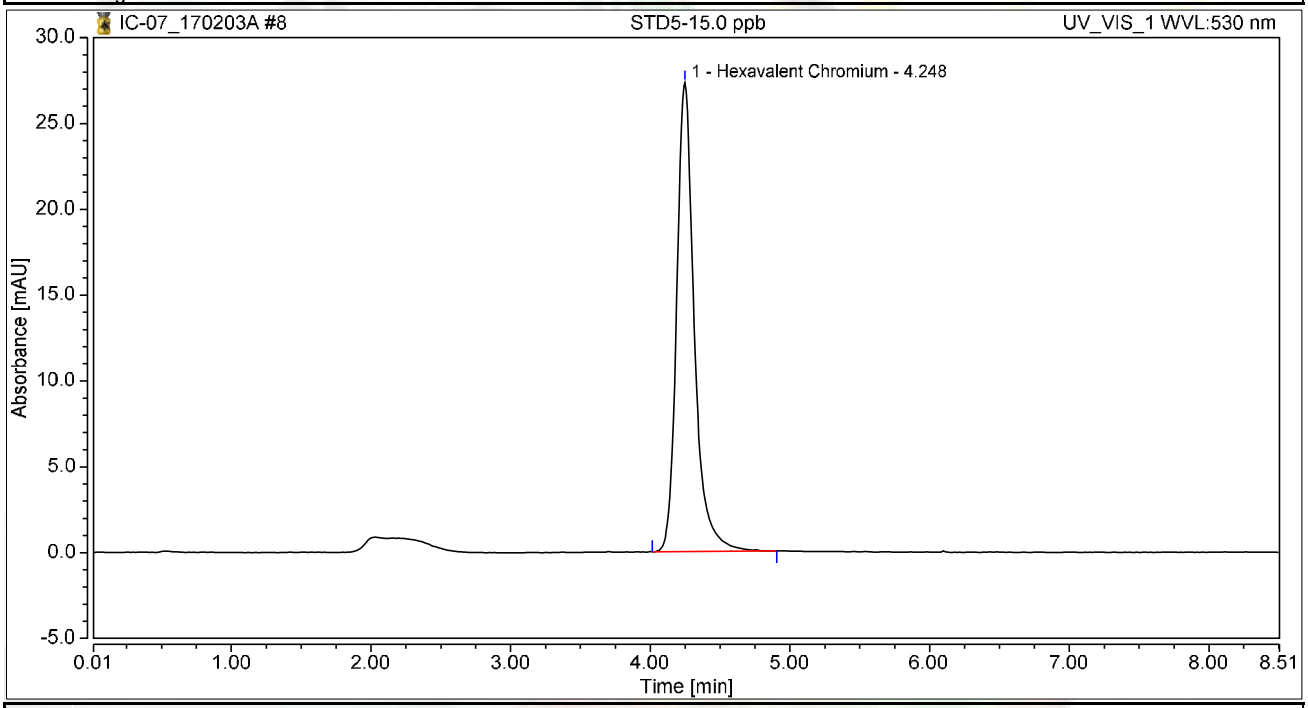
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

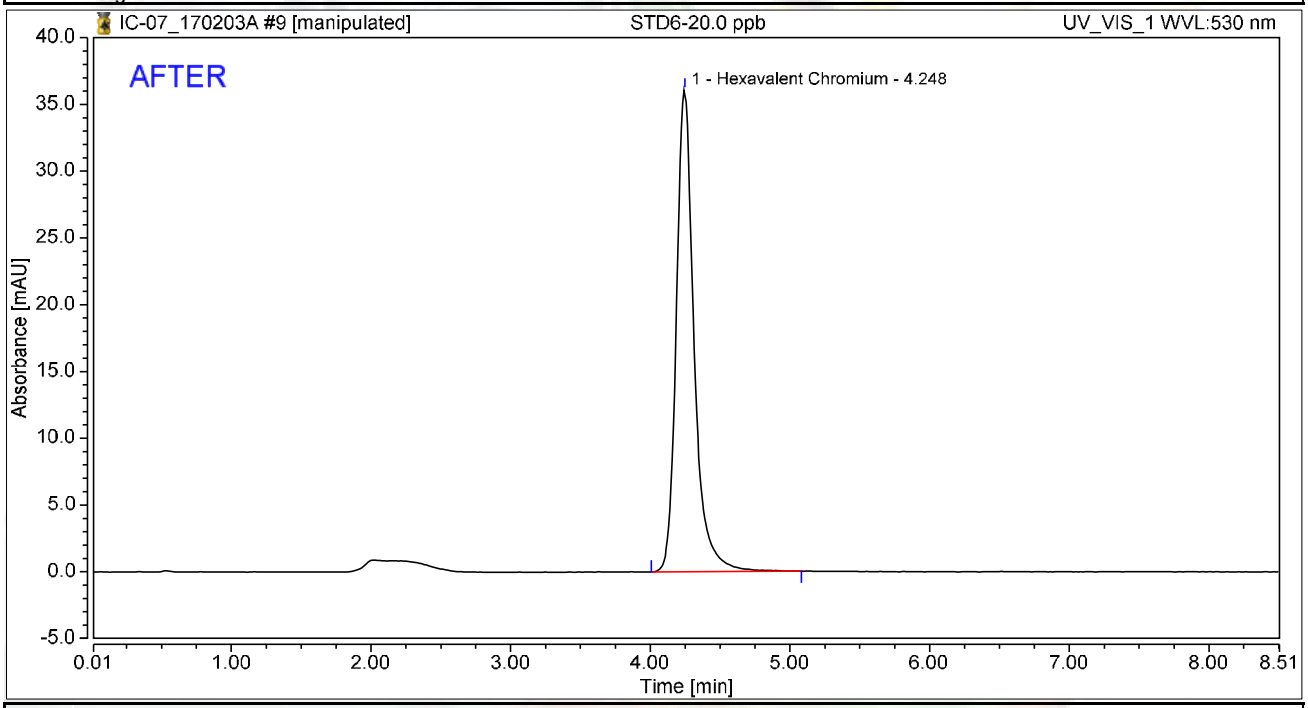
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

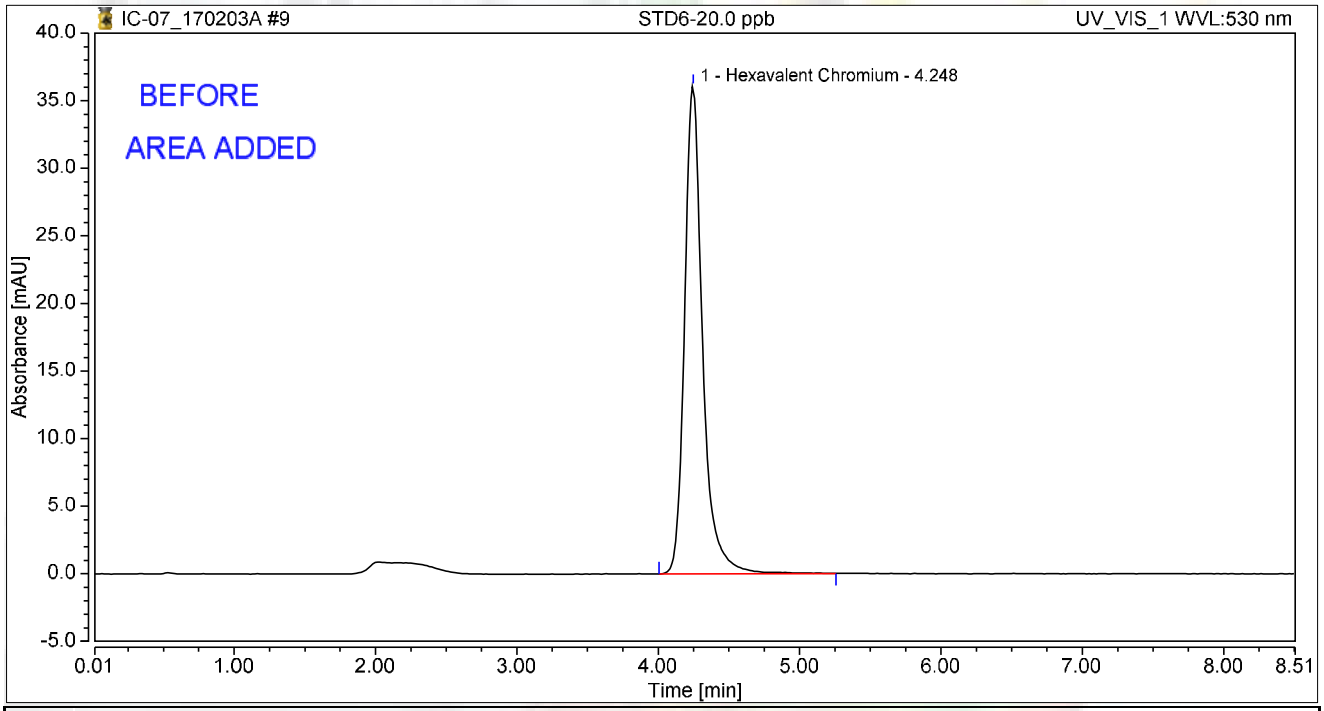
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

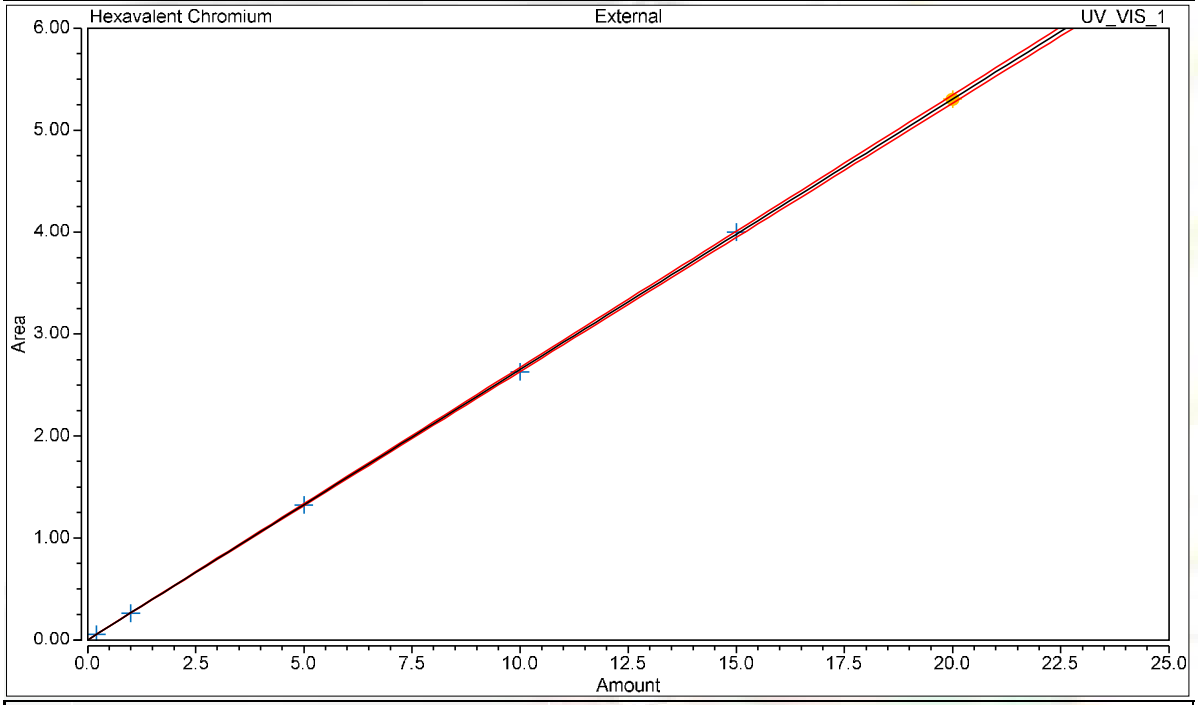
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

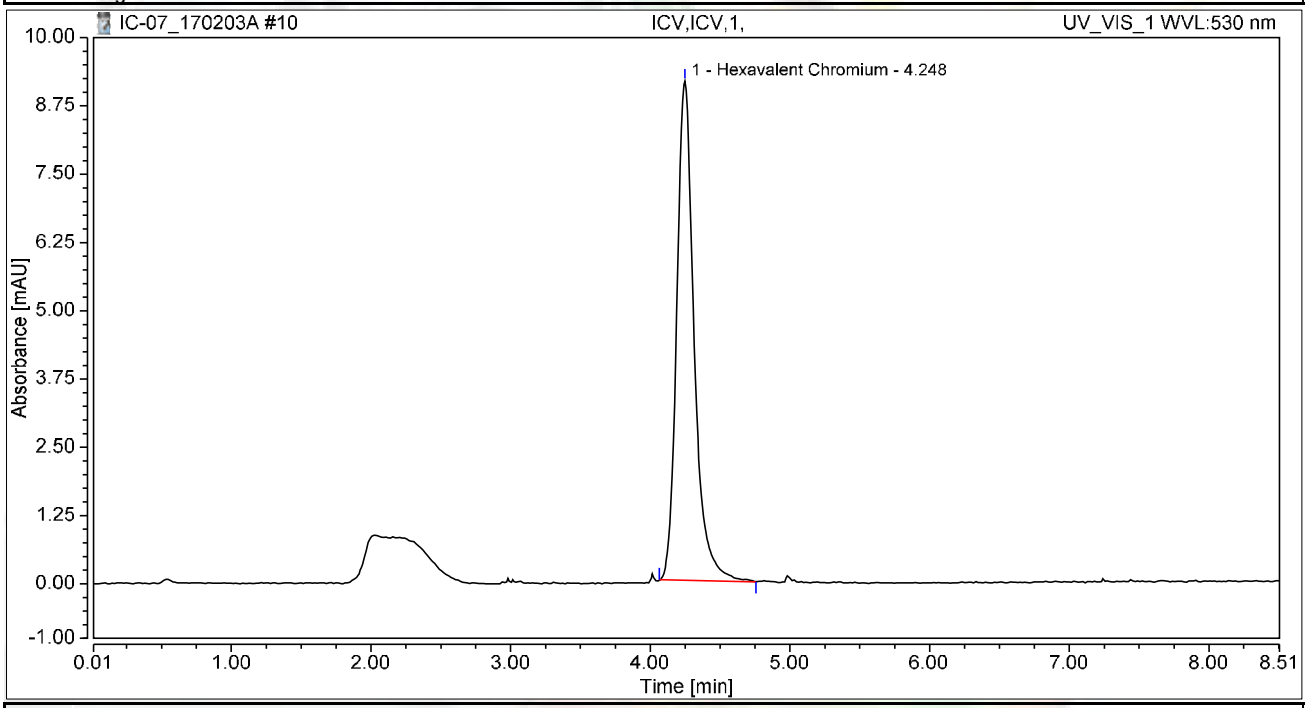
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

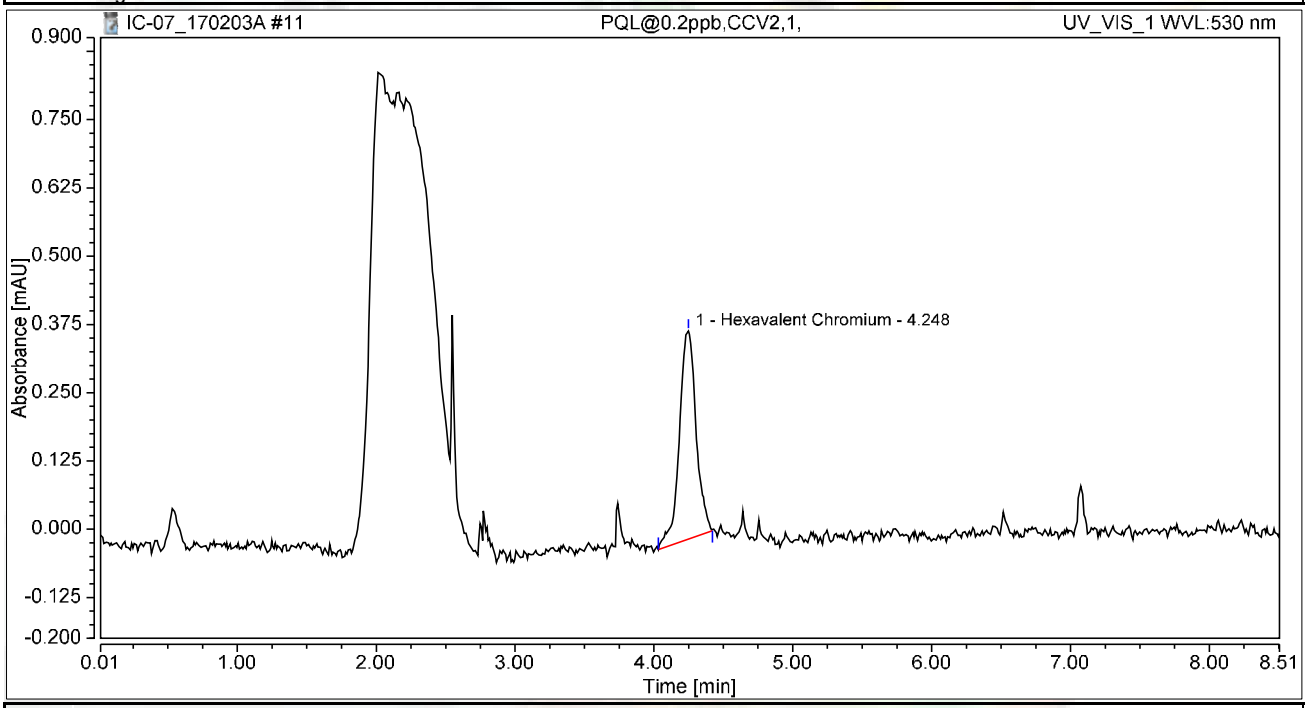
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

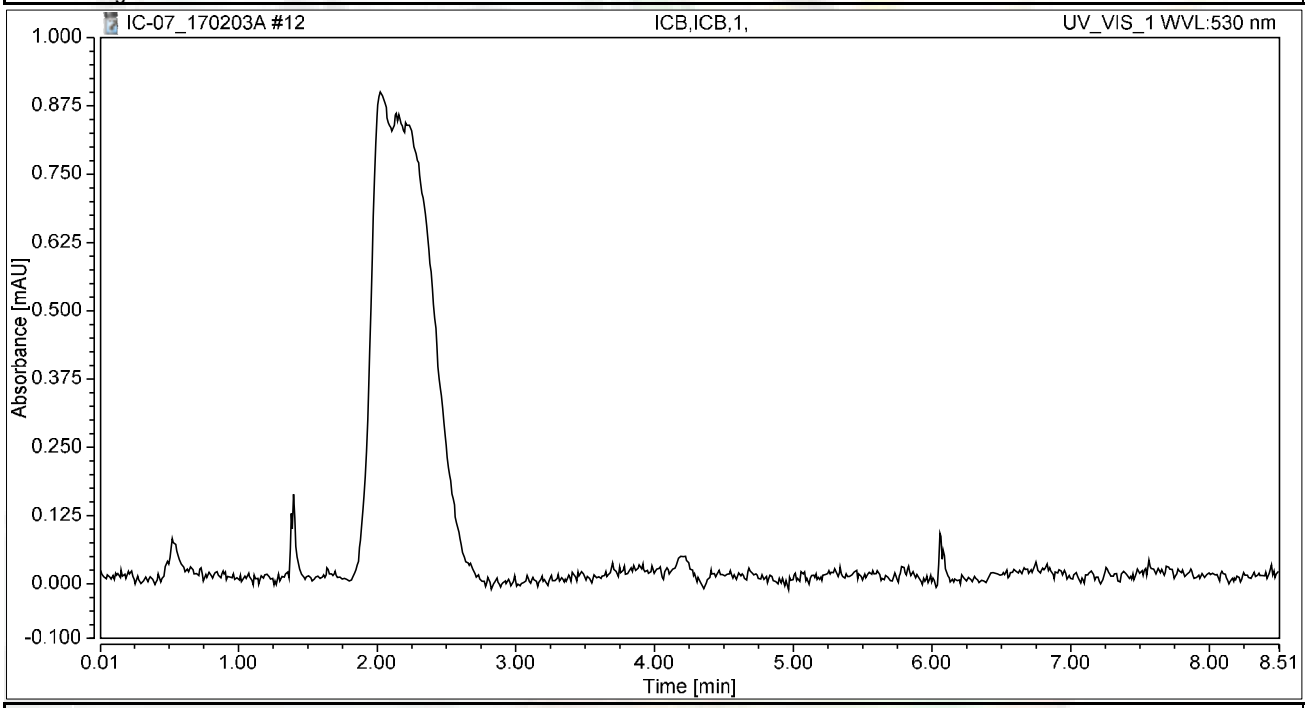
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:32 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/11/17 8:43 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/11/17 8:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/11/17 9:02 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/11/17 9:11 AM	Reported
15	MB-R113447	MBLK	1	Hexavalent Chromium	02/11/17 9:21 AM	Reported
16	LCS-R113447	LCS	1	Hexavalent Chromium	02/11/17 9:30 AM	Reported
17	N022998-001A	SAMP	5	Hexavalent Chromium	02/11/17 9:52 AM	Reported
18	N022998-001AMS	MS	5	Hexavalent Chromium	02/11/17 10:03 AM	Reported
19	N022998-001AMSD	MSD	5	Hexavalent Chromium	02/11/17 10:12 AM	Reported
20	N022998-002A	SAMP	1	Hexavalent Chromium	02/11/17 10:22 AM	Reported
21	N022998-002ADUP	DUP	1	Hexavalent Chromium	02/11/17 10:31 AM	Reported
22	N022998-002AMS	MS	1	Hexavalent Chromium	02/11/17 10:40 AM	Reported
23	N022998-005A	SAMP	1	Hexavalent Chromium	02/11/17 10:50 AM	Reported
24	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 10:59 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/11/17 11:09 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:18 AM	Not Reported
27	CCB-2	CCB	1	Hexavalent Chromium	02/11/17 11:42 AM	Reported
28	N022998-004A	SAMP	20	Hexavalent Chromium	02/11/17 11:53 AM	Reported
29	N022998-004AMS	MS	20	Hexavalent Chromium	02/11/17 12:02 PM	Reported
30	N022998-003A	SAMP	1	Hexavalent Chromium	02/11/17 12:11 PM	Not Reported
31	N022998-003AMS	MS	1	Hexavalent Chromium	02/11/17 12:21 PM	Not Reported
32	N022998-003A	SAMP	5	Hexavalent Chromium	02/11/17 12:30 PM	Reported
33	N022998-003AMS	MS	5	Hexavalent Chromium	02/11/17 12:40 PM	Reported
34	N022998-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:08 PM	Reported
35	N023002-005A	SAMP	1	Hexavalent Chromium	02/11/17 1:24 PM	Reported
36	N023002-005AMS	MS	1	Hexavalent Chromium	02/11/17 1:35 PM	Reported
37	N023002-006A	SAMP	1	Hexavalent Chromium	02/11/17 1:44 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/11/17 1:54 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/11/17 2:04 PM	Reported
40	N023002-006AMS	MS	1	Hexavalent Chromium	02/11/17 2:13 PM	Reported
41	N023014-001A	SAMP	5000	Hexavalent Chromium	02/11/17 2:22 PM	Reported
42	N023014-001AMS	MS	5000	Hexavalent Chromium	02/11/17 2:32 PM	Reported
43	N023014-002A	SAMP	5000	Hexavalent Chromium	02/11/17 2:41 PM	Reported
44	N023014-002AMS	MS	5000	Hexavalent Chromium	02/11/17 2:51 PM	Reported
45	N023014-003A	SAMP	20	Hexavalent Chromium	02/11/17 3:00 PM	Not Reported
46	N023014-003AMS	MS	20	Hexavalent Chromium	02/11/17 3:10 PM	Not Reported
47	N023014-004A	SAMP	20	Hexavalent Chromium	02/11/17 3:19 PM	Reported
48	N023014-004AMS	MS	20	Hexavalent Chromium	02/11/17 3:29 PM	Reported
49	N023030-001A	SAMP	10	Hexavalent Chromium	02/11/17 3:45 PM	Not Reported

rba 2/14/2017

Nancy 2/20/2017

INJECTION LOG: 170211A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCV-4	CCV1	1	Hexavalent Chromium	02/11/17 3:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/11/17 4:06 PM	Reported
52	N023014-003A	SAMP	100	Hexavalent Chromium	02/11/17 4:15 PM	Reported
53	N023014-003AMS	MS	100	Hexavalent Chromium	02/11/17 4:25 PM	Reported
54	N023030-001A	SAMP	1	Hexavalent Chromium	02/11/17 4:34 PM	Reported
55	N023062-002A	SAMP	10	Hexavalent Chromium	02/11/17 4:48 PM	Not Reported
56	N023030-001A	SAMP	5	Hexavalent Chromium	02/11/17 5:06 PM	Not Reported
57	N023062-002A	SAMP	1	Hexavalent Chromium	02/11/17 5:24 PM	Reported
58	N023063-001A	SAMP	1	Hexavalent Chromium	02/11/17 5:36 PM	Not Reported
59	N023030-001AMS	MS	5	Hexavalent Chromium	02/11/17 5:45 PM	Not Reported
60	N023030-001AMS	MS	1	Hexavalent Chromium	02/11/17 5:58 PM	Reported
61	N023063-001A	SAMP	50	Hexavalent Chromium	02/11/17 6:09 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/11/17 6:18 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:28 PM	Not Reported
64	CCB-5	CCB	1	Hexavalent Chromium	02/11/17 6:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170211A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/Feb/17 19:22:17**
No. of Injections:	**67**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/11/2017 08:32	Finished	
11	BLANK	2	1000	Unknown		02/11/2017 08:43	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/11/2017 08:53	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/11/2017 09:02	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/11/2017 09:11	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/11/2017 09:21	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/11/2017 09:30	Finished	LCS, IWST-161114D
17	N022998-001A,SAMF	9	1000	Unknown		02/11/2017 09:52	Finished	SAMP, 2>10mL
18	N022998-001AMS,MS	10	1000	Unknown		02/11/2017 10:03	Finished	MS (5ppb), IWST-161114D,2>1
19	N022998-001AMSD,M	11	1000	Unknown		02/11/2017 10:12	Finished	MSD (5ppb), IWST-161114D,2
20	N022998-002A,SAMF	12	1000	Unknown		02/11/2017 10:22	Finished	SAMP, 10mL
21	N022998-002ADUP,D	13	1000	Unknown		02/11/2017 10:31	Finished	DUP, 10mL
22	N022998-002AMS,MS	14	1000	Unknown		02/11/2017 10:40	Finished	MS (5ppb), IWST-161114D,10
23	N022998-005A,SAMF	15	1000	Unknown		02/11/2017 10:50	Finished	SAMP, 10mL
24	N022998-005AMS,MS	16	1000	Unknown		02/11/2017 10:59	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/11/2017 11:09	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:18	Finished	CCB R170123B
27	CCB-2,CCB,1,	18	1000	Unknown		02/11/2017 11:42	Finished	CCB R170123B
28	N022998-004A,SAMF	19	1000	Unknown		02/11/2017 11:53	Finished	SAMP, 0.5>10mL
29	N022998-004AMS,MS	20	1000	Unknown		02/11/2017 12:02	Finished	MS (5ppb), IWST-161114D,0.5
30	N022998-003A,SAMF	21	1000	Unknown		02/11/2017 12:11	Finished	SAMP, 10mL
31	N022998-003AMS,MS	22	1000	Unknown		02/11/2017 12:21	Finished	MS (1ppb), IWST-161114D,10
32	N022998-003A,SAMF	23	1000	Unknown		02/11/2017 12:30	Finished	SAMP, 2>10mL
33	N022998-003AMS,MS	24	1000	Unknown		02/11/2017 12:40	Finished	MS (1ppb), IWST-161114D,2>1
34	N022998-005AMS,MS	26	1000	Unknown		02/11/2017 13:08	Finished	MS (1ppb), IWST-161114D,10
35	N023002-005A,SAMF	28	1000	Unknown		02/11/2017 13:24	Finished	SAMP, 10mL
36	N023002-005AMS,MS	29	1000	Unknown		02/11/2017 13:35	Finished	MS (1ppb), IWST-161114D,10
37	N023002-006A,SAMF	30	1000	Unknown		02/11/2017 13:44	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/11/2017 13:54	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/11/2017 14:04	Finished	CCB R170112D
40	N023002-006AMS,MS	33	1000	Unknown		02/11/2017 14:13	Finished	MS (1ppb), IWST-161114D,10
41	N023014-001A,SAMF	34	1000	Unknown		02/11/2017 14:22	Finished	SAMP, 0.002>10mL
42	N023014-001AMS,MS	35	1000	Unknown		02/11/2017 14:32	Finished	MS (5ppb), IWST-161114D,0.0
43	N023014-002A,SAMF	36	1000	Unknown		02/11/2017 14:41	Finished	SAMP, 0.002>10mL
44	N023014-002AMS,MS	37	1000	Unknown		02/11/2017 14:51	Finished	MS (5ppb), IWST-161114D,0.0
45	N023014-003A,SAMF	38	1000	Unknown		02/11/2017 15:00	Finished	SAMP, 0.5>10mL
46	N023014-003AMS,MS	39	1000	Unknown		02/11/2017 15:10	Finished	MS (5ppb), IWST-161114D,0.5
47	N023014-004A,SAMF	40	1000	Unknown		02/11/2017 15:19	Finished	SAMP, 0.5>10mL
48	N023014-004AMS,MS	41	1000	Unknown		02/11/2017 15:29	Finished	MS (5ppb), IWST-161114D,0.5
49	N023030-001A,SAMF	43	1000	Unknown		02/11/2017 15:45	Finished	SAMP, 1>10mL
50	CCV-4,CCV1,1,	44	1000	Unknown		02/11/2017 15:56	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	45	1000	Unknown		02/11/2017 16:06	Finished	CCB R170112D
52	N023014-003A,SAMF	46	1000	Unknown		02/11/2017 16:15	Finished	SAMP,0.1>10mL
53	N023014-003AMS,MS	47	1000	Unknown		02/11/2017 16:25	Finished	MS (5ppb), IWST-161114D,0.1
54	N023030-001A,SAMF	48	1000	Unknown		02/11/2017 16:34	Finished	SAMP, 10mL
55	N023062-002A,SAMF	50	1000	Unknown		02/11/2017 16:48	Interrupted	SAMP, 1>10mL
56	N023030-001A,SAMF	1	1000	Unknown		02/11/2017 17:06	Finished	SAMP, 2>10mL
57	N023062-002A,SAMF	4	1000	Unknown		02/11/2017 17:24	Finished	SAMP, 10mL
58	N023063-001A,SAMF	5	1000	Unknown		02/11/2017 17:36	Finished	SAMP, 10mL
59	N023030-001AMS,MS	6	1000	Unknown		02/11/2017 17:45	Finished	MS (5ppb), IWST-161114D,2>1
60	N023030-001AMS,MS	7	1000	Unknown		02/11/2017 17:58	Finished	MS (5ppb), IWST-161114D,10

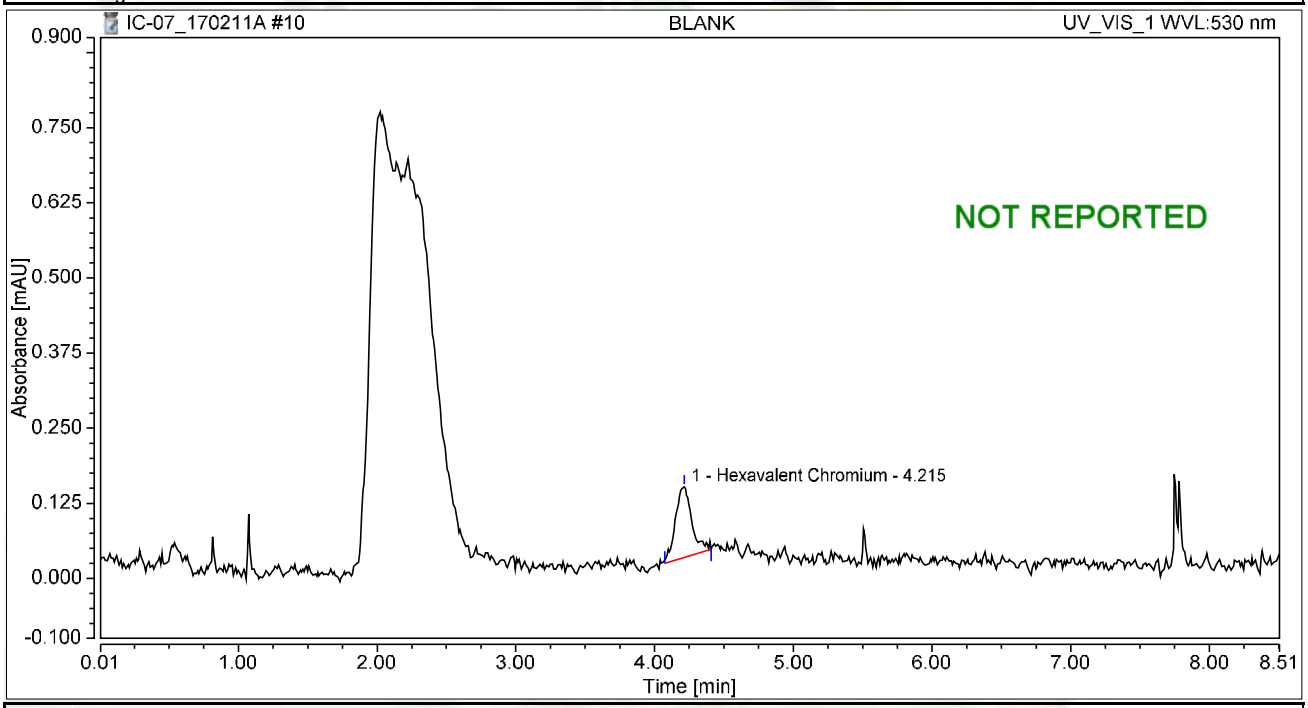
61	N023063-001A,SAMP	8	1000	Unknown		02/11/2017 18:09	Finished	SAMP,0.2>10mL
62	CCV-5,CCV,1,	9	1000	Unknown		02/11/2017 18:18	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	10	1000	Unknown		02/11/2017 18:28	Finished	CCB R170123B
64	CCB-5,CCB,1,	12	1000	Unknown		02/11/2017 18:42	Finished	CCB R170123B
65	SHUTDOWN	24	1000	Unknown		02/11/2017 18:59	Finished	
66	Eluent: R170209B	25	1000	Unknown		n.a.	Finished	Eluent
67	PCR: R170209C	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

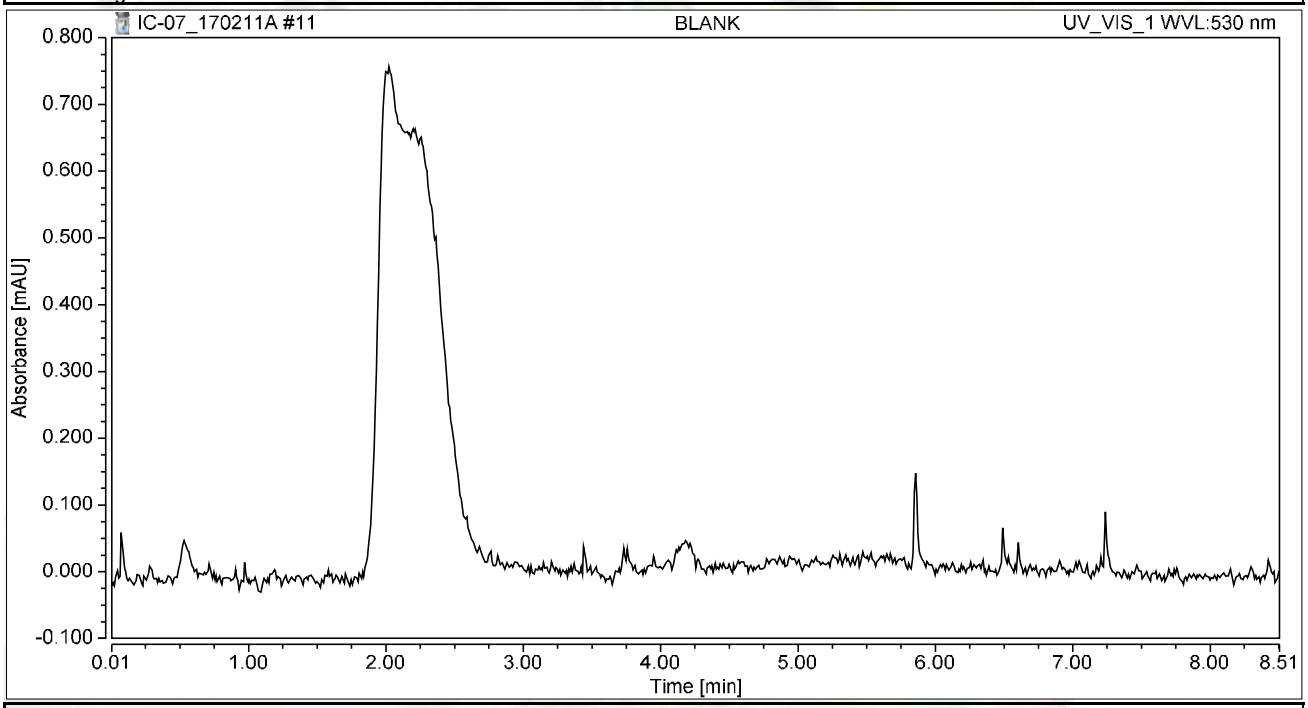
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.016	0.117	100.00	100.00	0.0603
Total:			**0.016**	**0.117**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

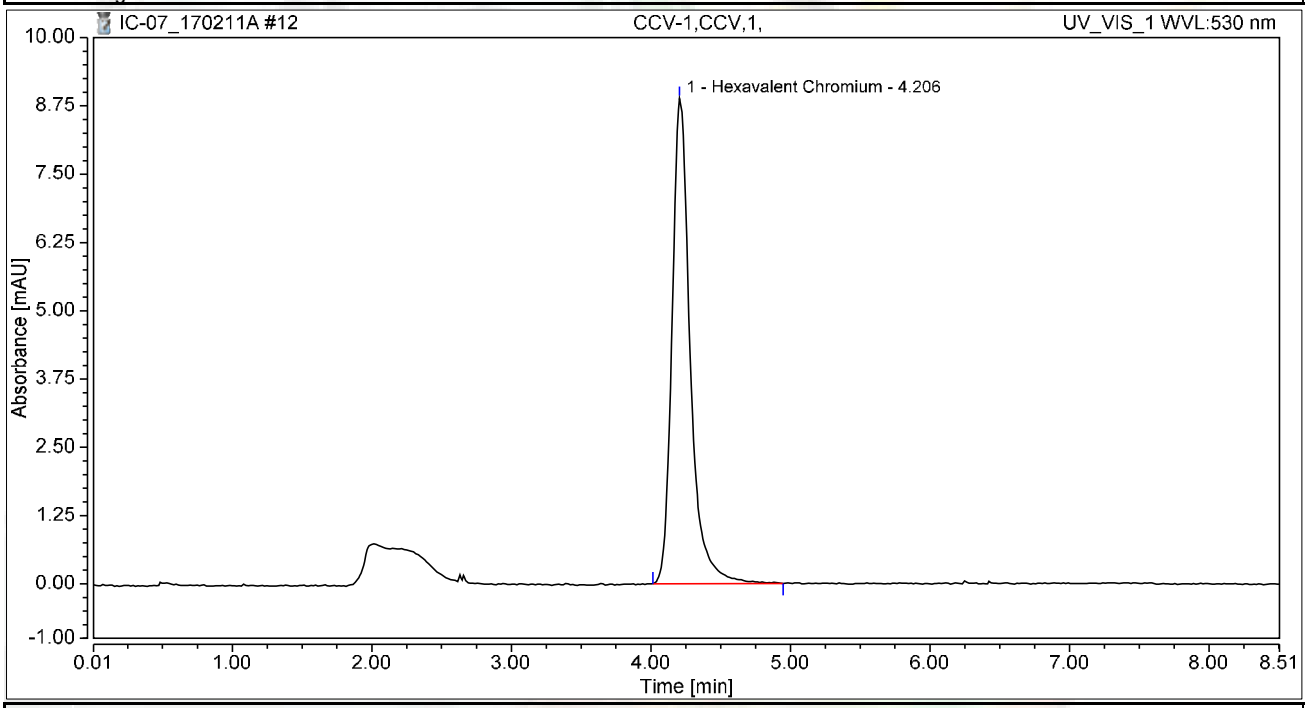
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

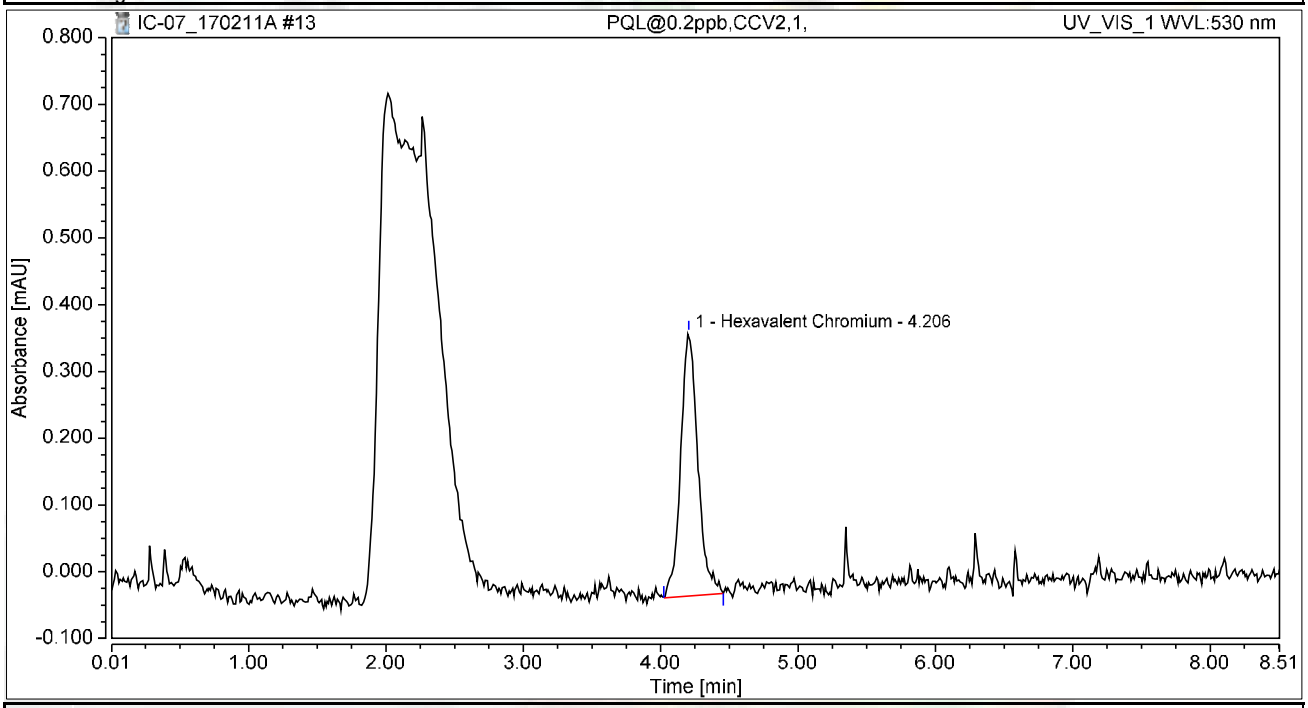
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.347	8.888	100.00	100.00	5.0775
Total:			**1.347**	**8.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

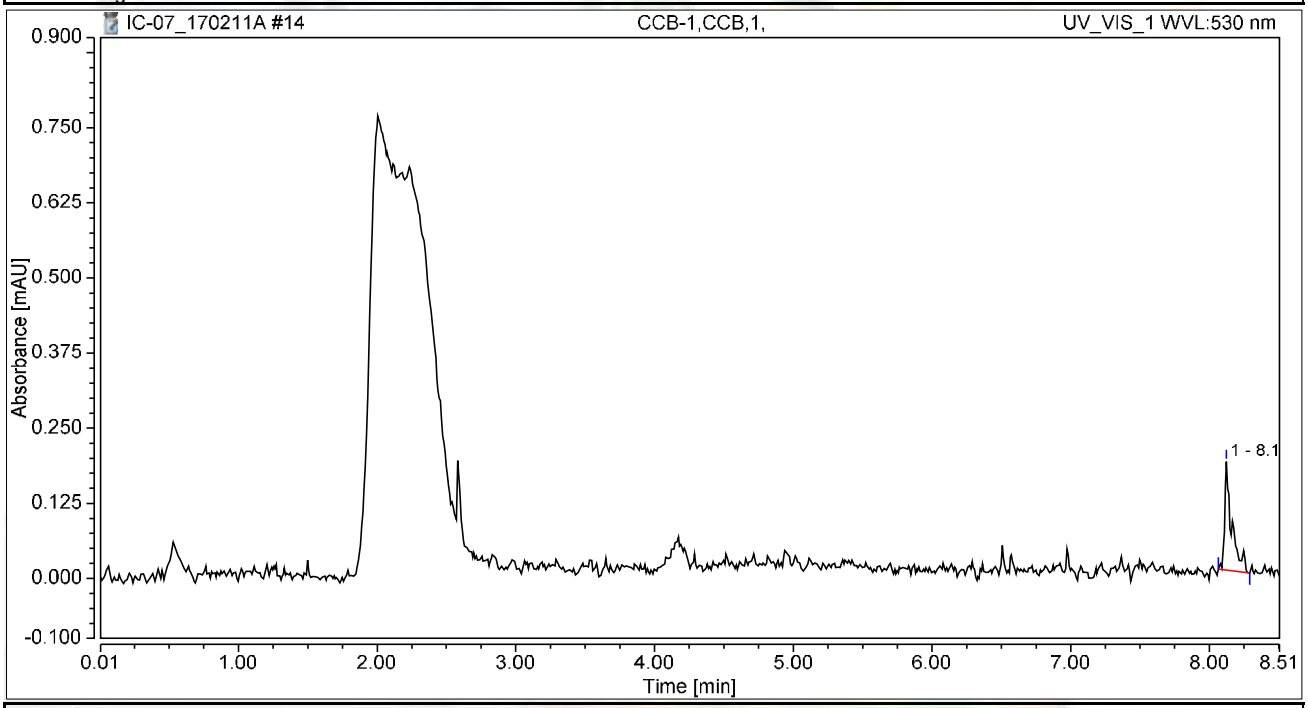
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.057	0.395	100.00	100.00	0.2151
Total:			**0.057**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

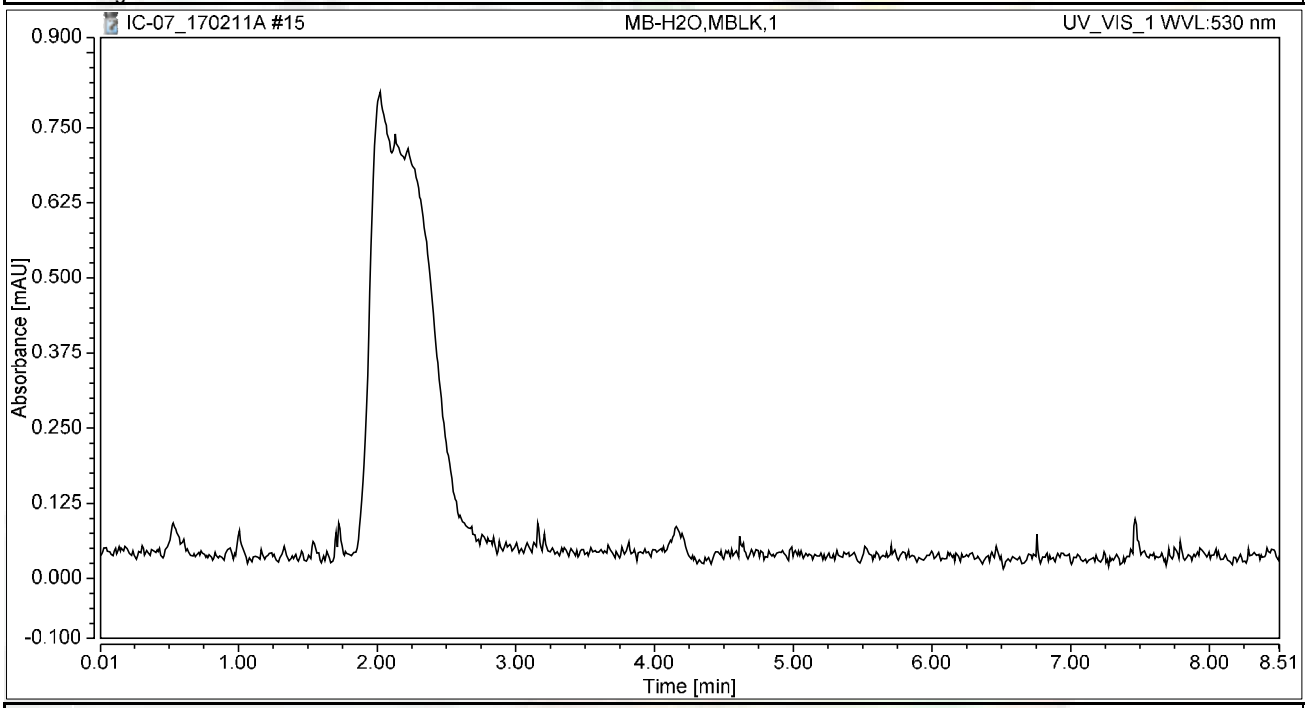
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.123	0.011	0.181	100.00	100.00	n.a.
Total:			**0.011**	**0.181**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

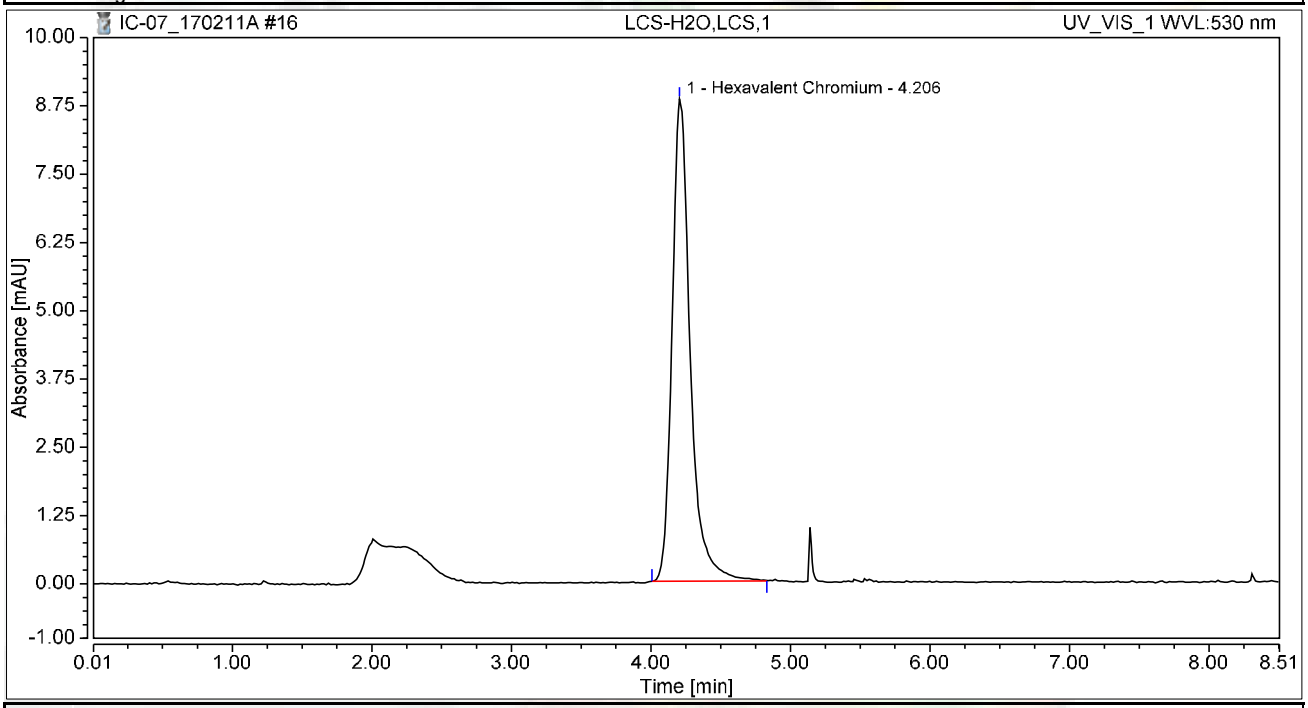
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

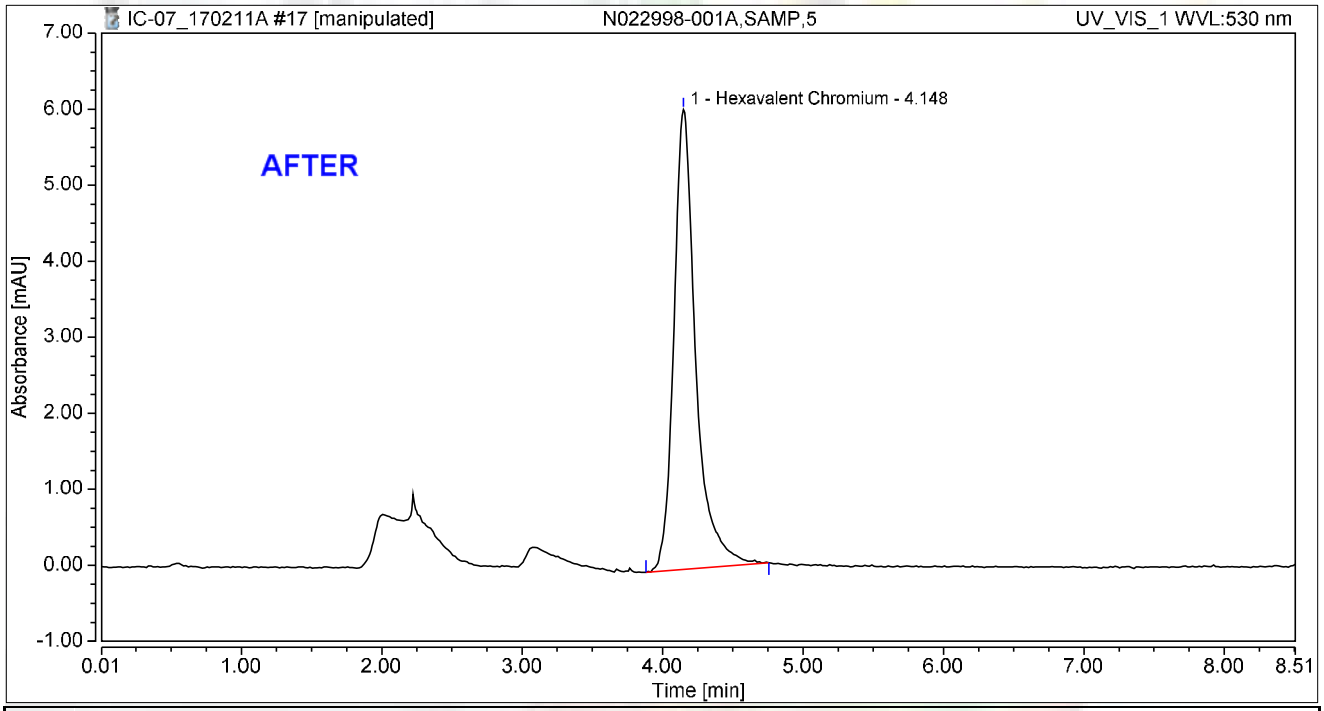
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.329	8.827	100.00	100.00	5.0122
Total:			**1.329**	**8.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.090	6.045	100.00	100.00	4.1108
Total:			**1.090**	**6.045**	**100.00**	**100.00**	

rba 2/14/2017

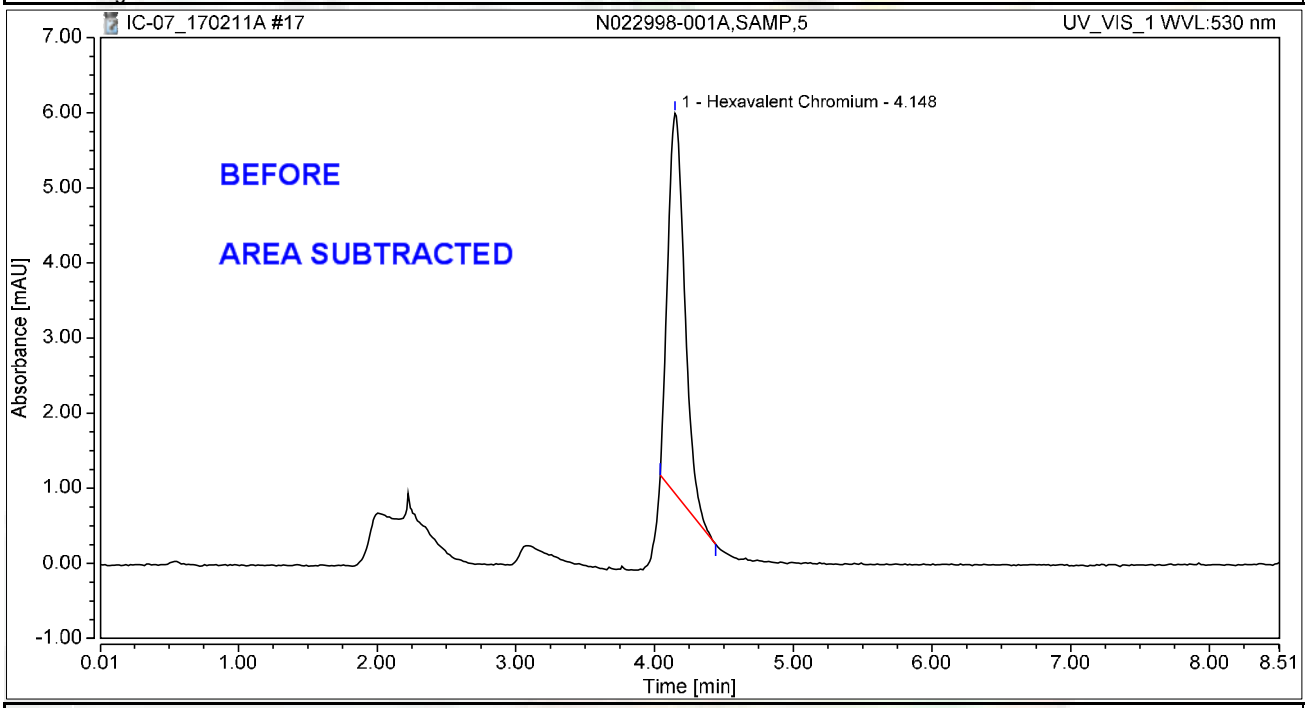
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.721	5.065	100.00	100.00	2.7172
Total:			**0.721**	**5.065**	**100.00**	**100.00**	

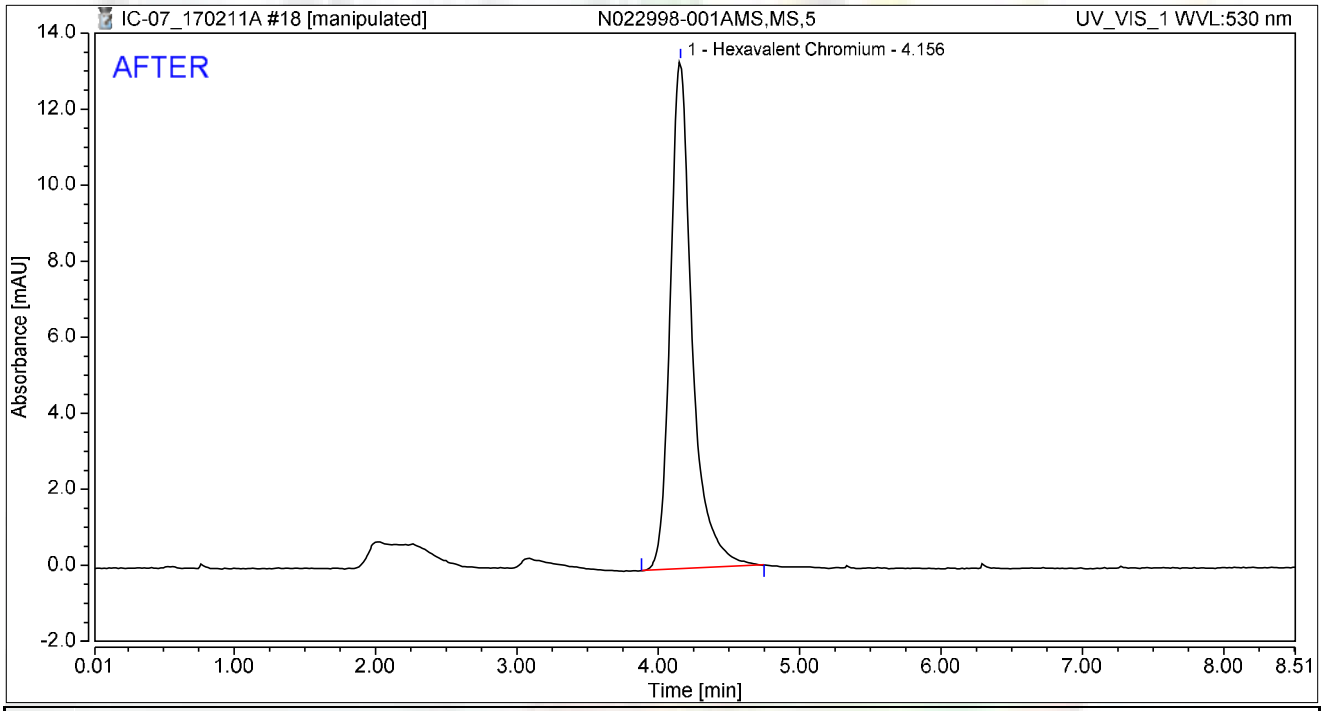
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.391	13.355	100.00	100.00	9.0151
Total:			**2.391**	**13.355**	**100.00**	**100.00**	

rba 2/14/2017

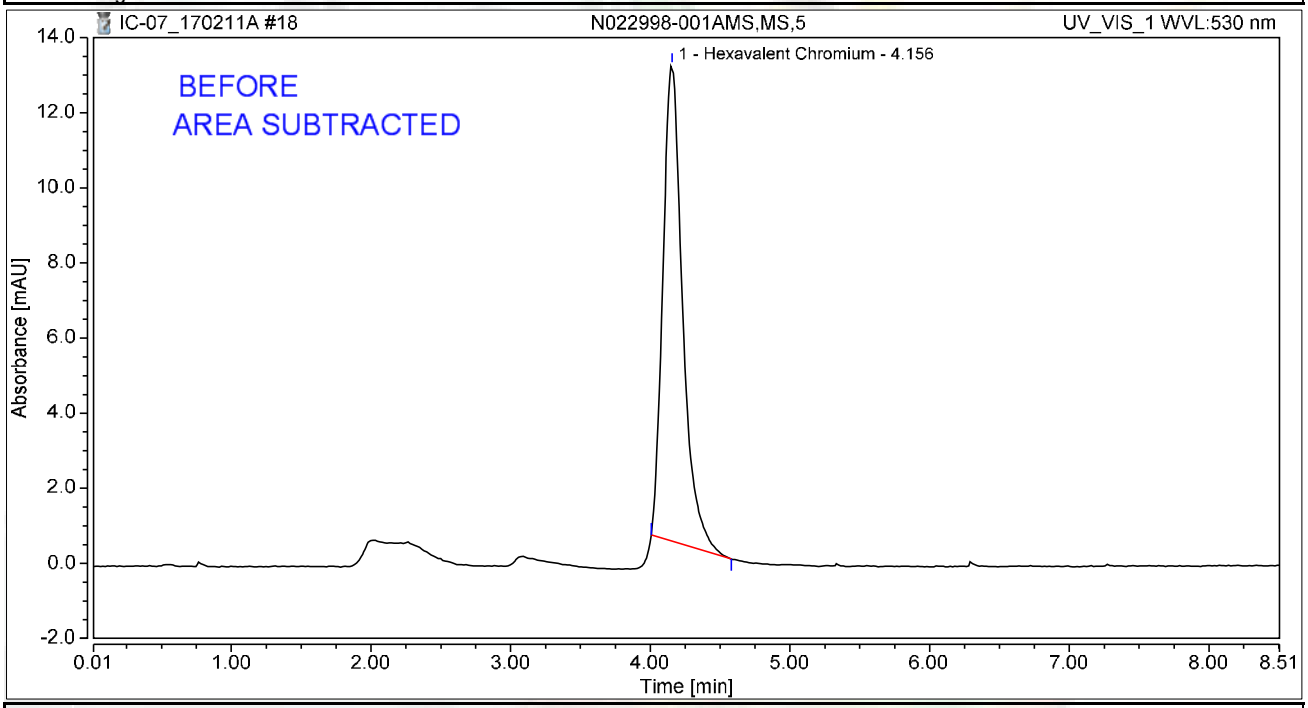
Reviewed by: Dionex 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.072	12.677	100.00	100.00	7.8118
Total:			**2.072**	**12.677**	**100.00**	**100.00**	

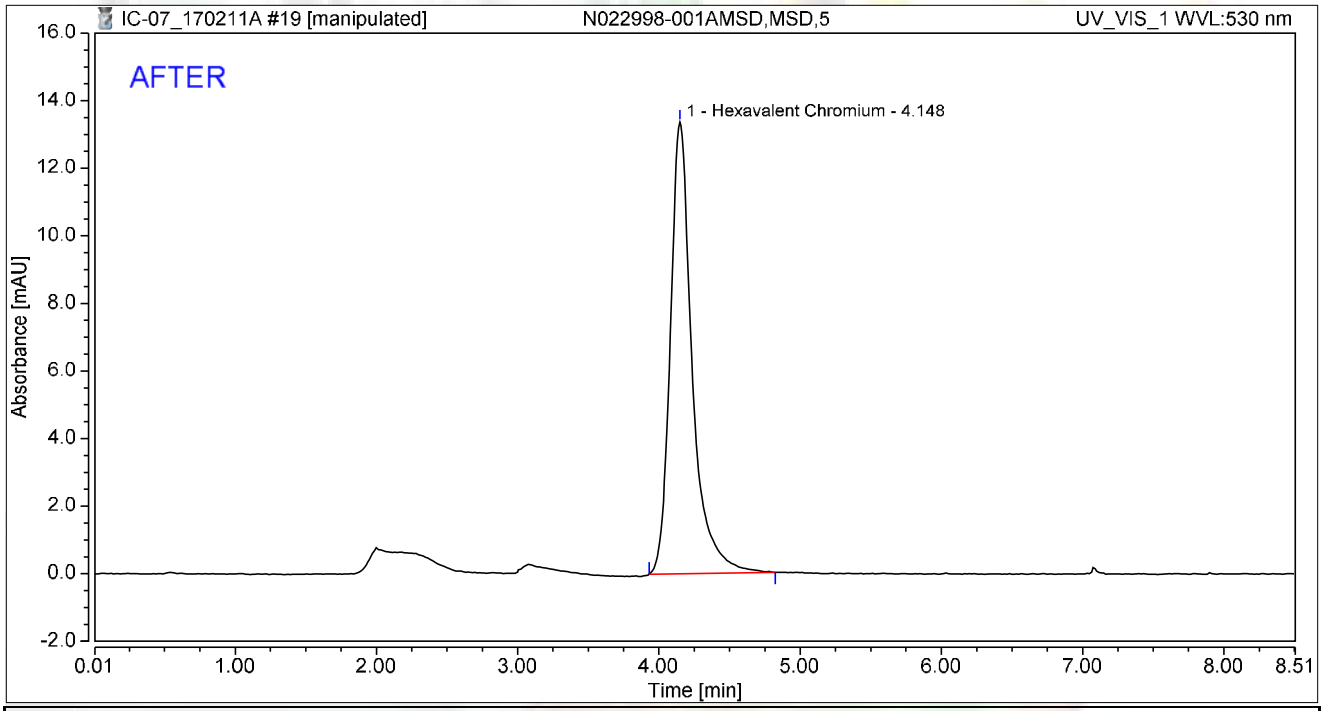
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.392	13.362	100.00	100.00	9.0187
Total:			**2.392**	**13.362**	**100.00**	**100.00**	

rba 2/14/2017

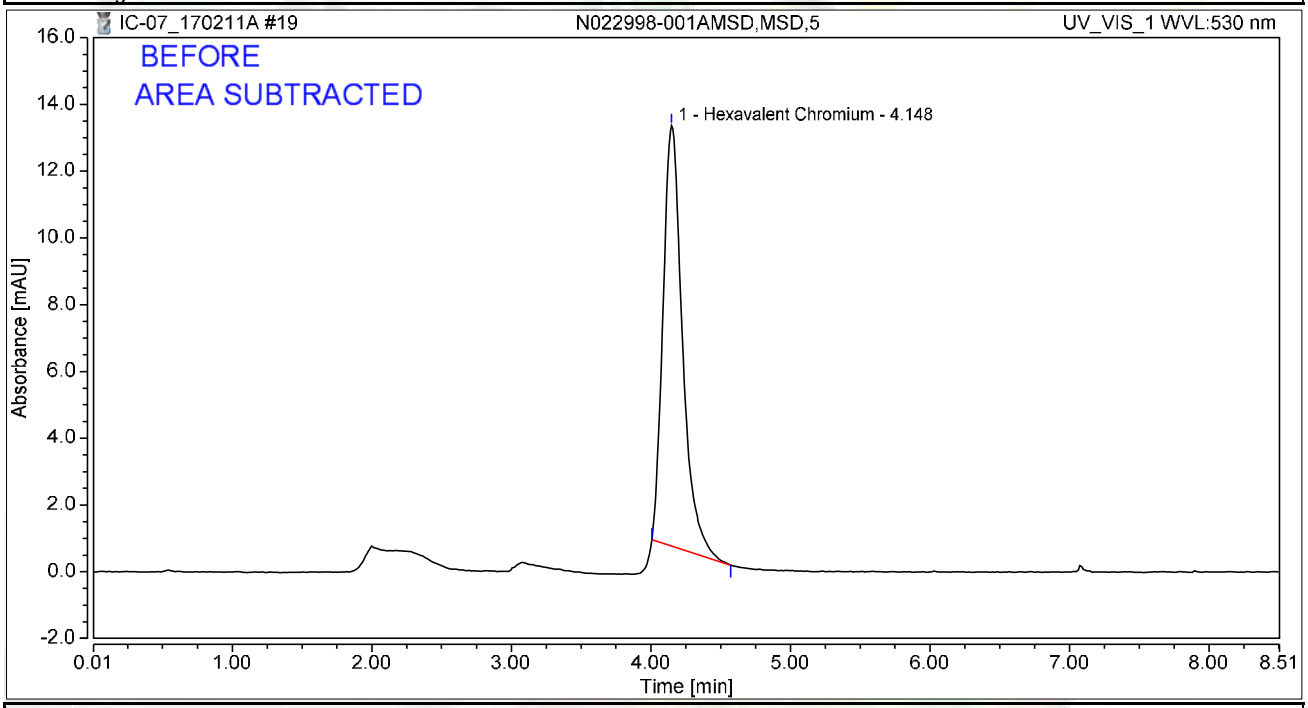
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.034	12.598	100.00	100.00	7.6691
Total:			**2.034**	**12.598**	**100.00**	**100.00**	

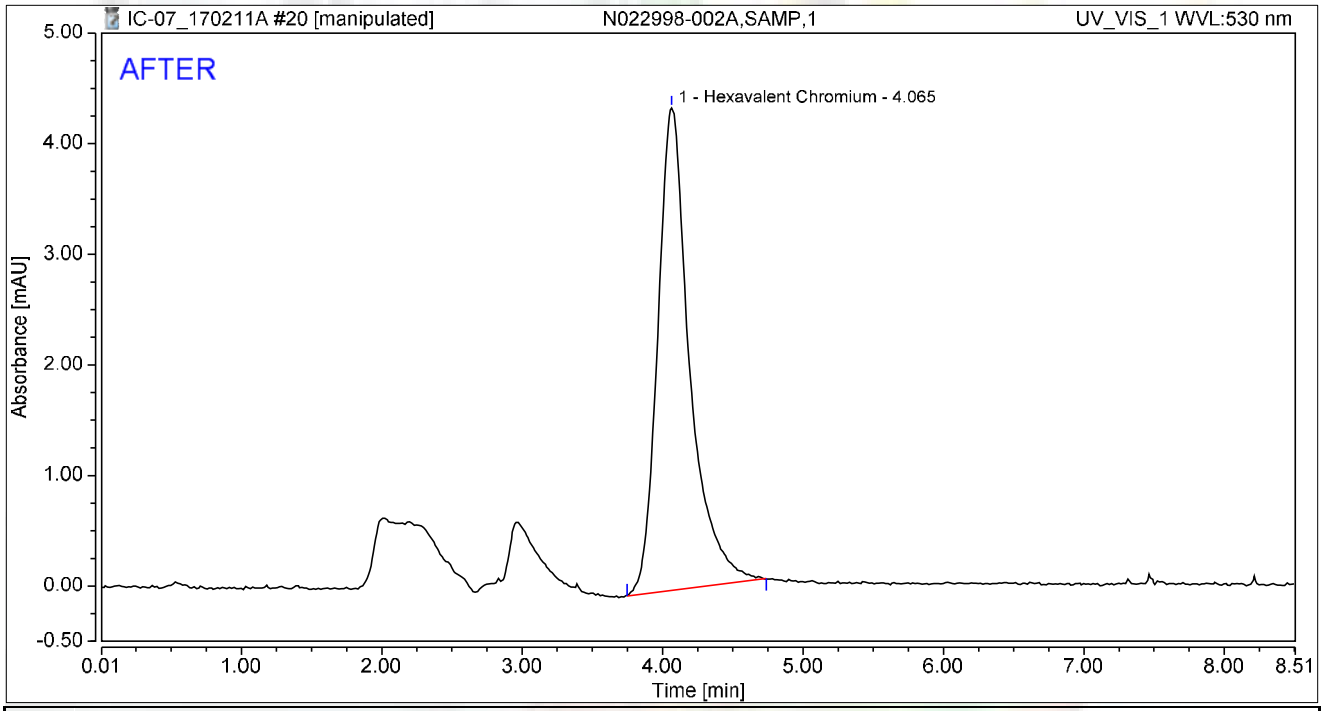
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	1.153	4.362	100.00	100.00	4.3453
Total:			**1.153**	**4.362**	**100.00**	**100.00**	

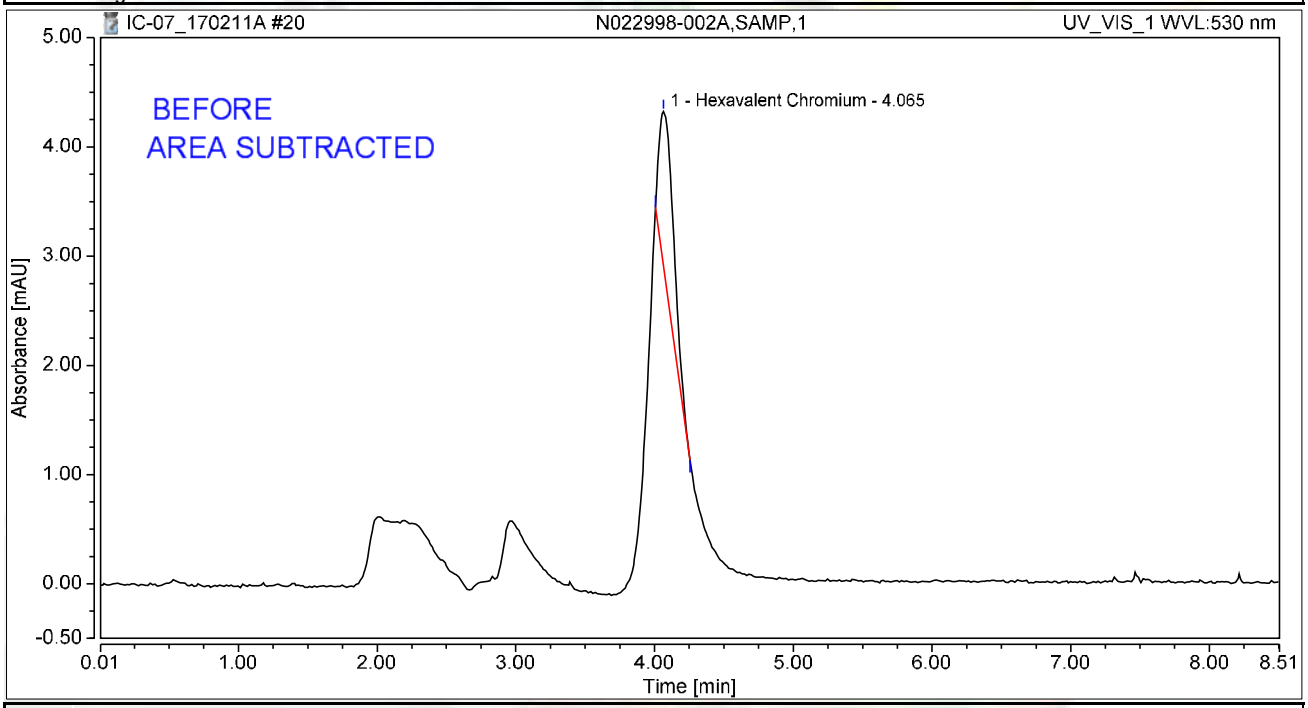
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.184	1.417	100.00	100.00	0.6918
Total:			**0.184**	**1.417**	**100.00**	**100.00**	

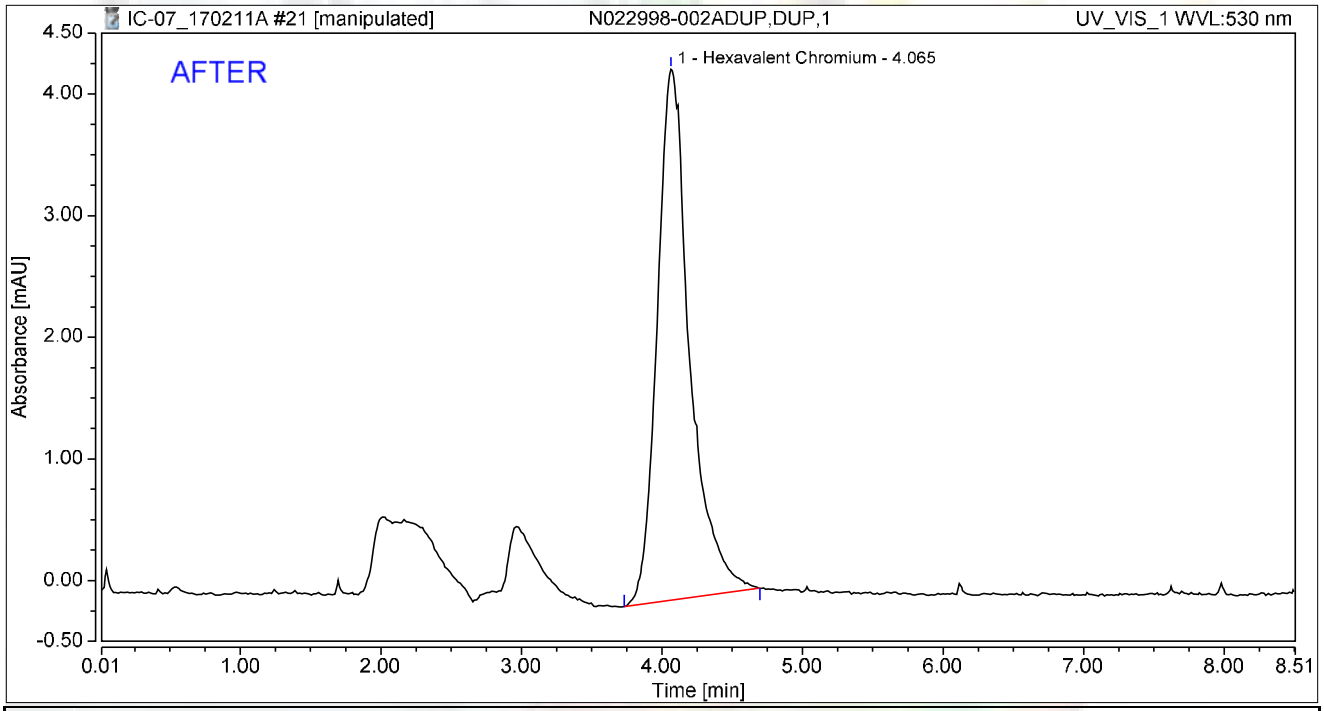
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	1.168	4.367	100.00	100.00	4.4039
Total:			**1.168**	**4.367**	**100.00**	**100.00**	

rba 2/14/2017

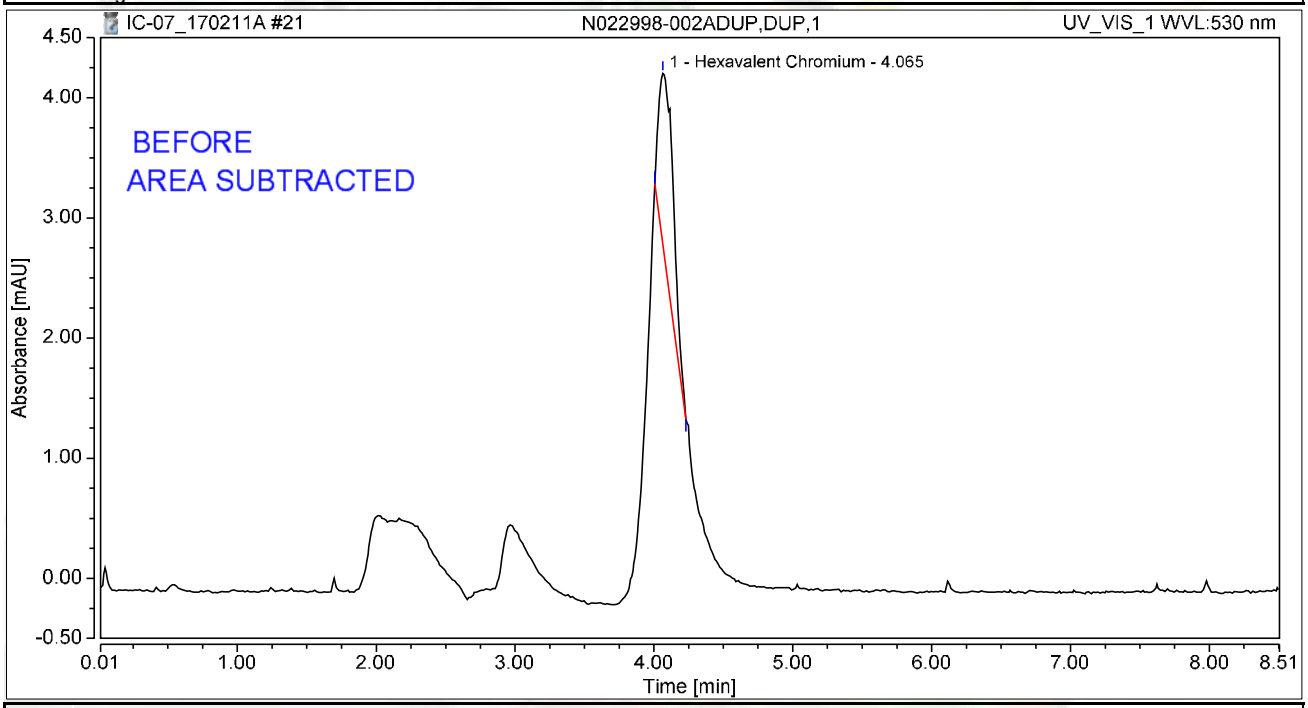
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002ADUP,DUP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.190	1.427	100.00	100.00	0.7156
Total:			**0.190**	**1.427**	**100.00**	**100.00**	

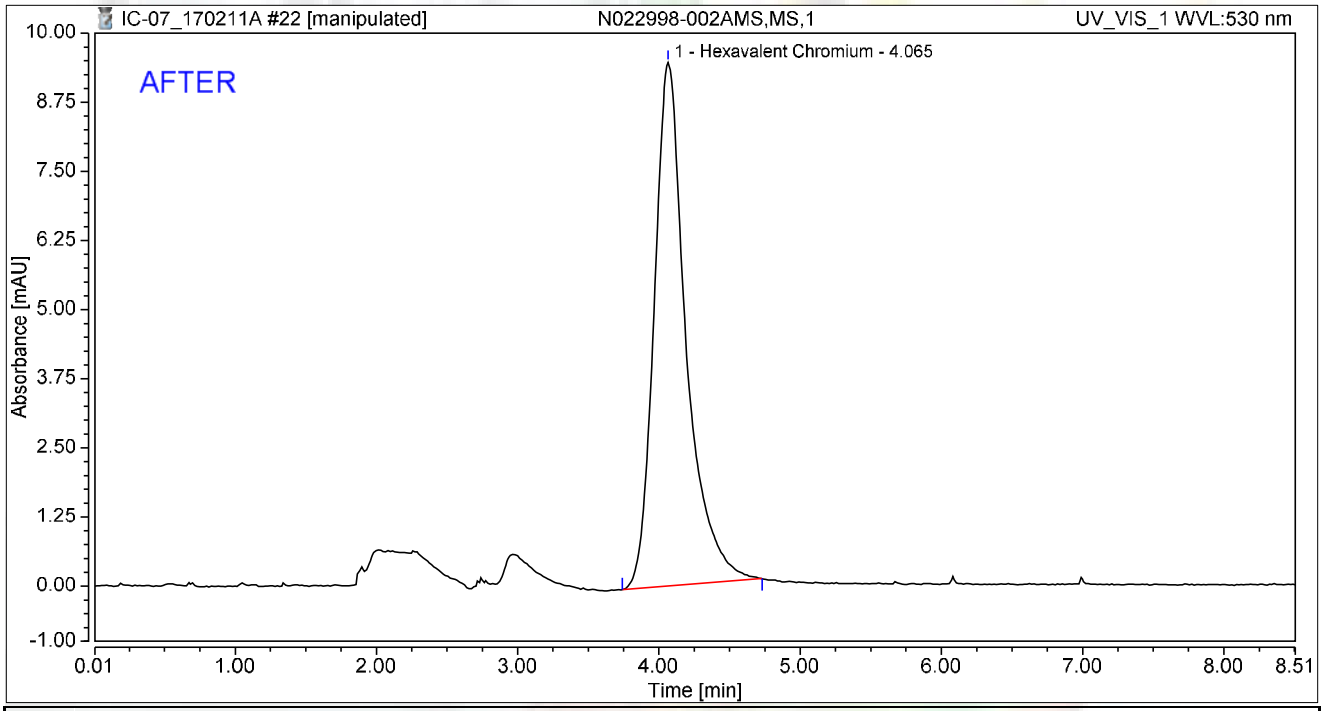
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	2.484	9.472	100.00	100.00	9.3657
Total:			**2.484**	**9.472**	**100.00**	**100.00**	

rba 2/14/2017

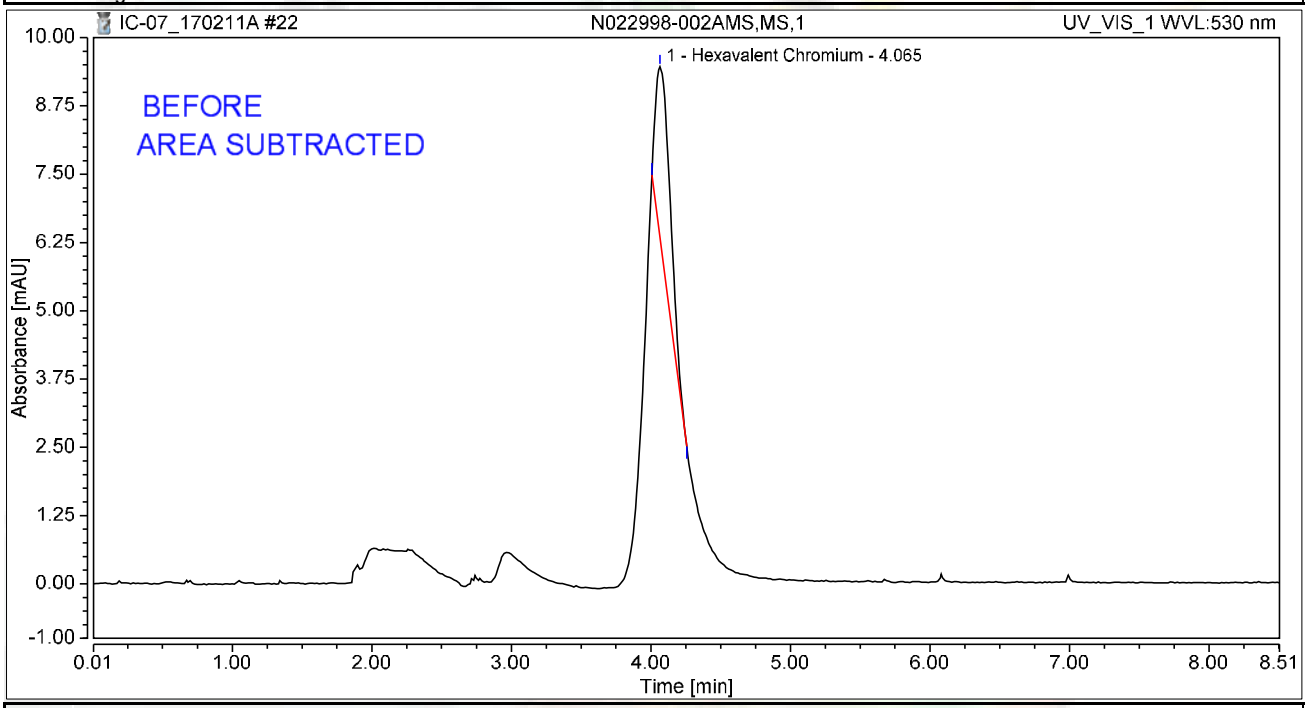
Reviewed by: Dianey 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.410	3.145	100.00	100.00	1.5439
Total:			**0.410**	**3.145**	**100.00**	**100.00**	

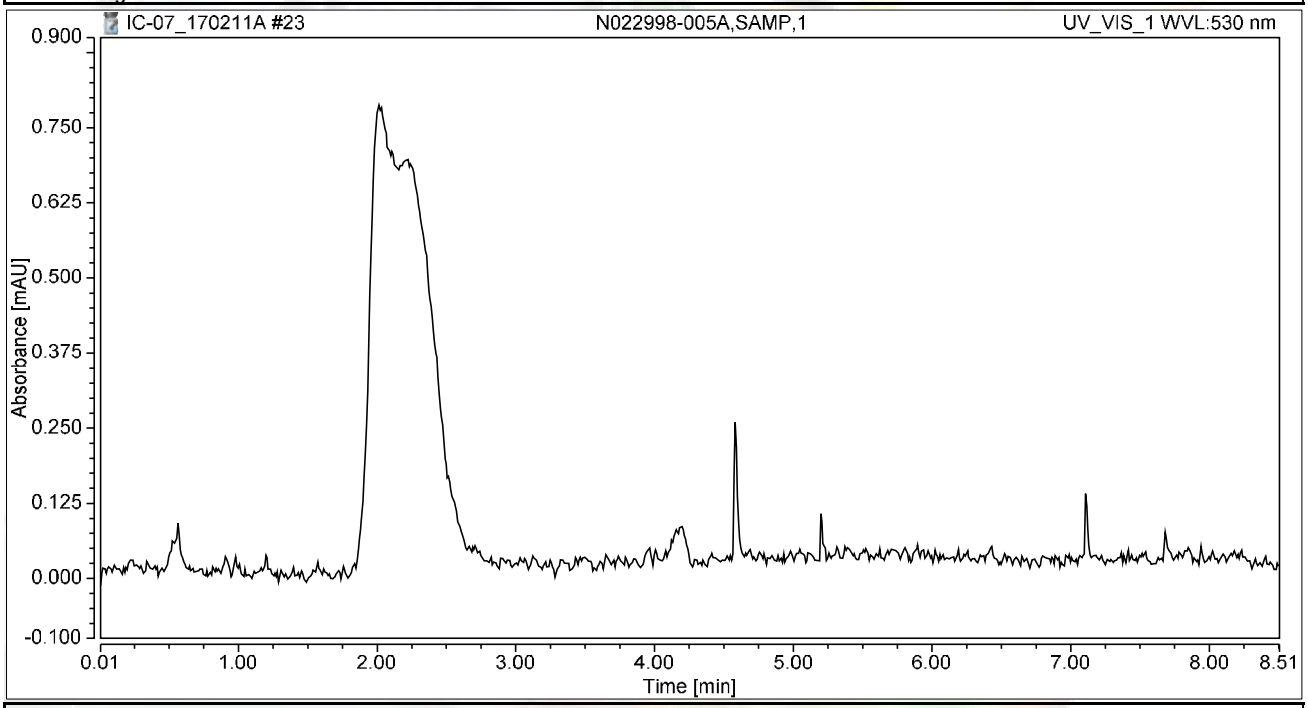
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

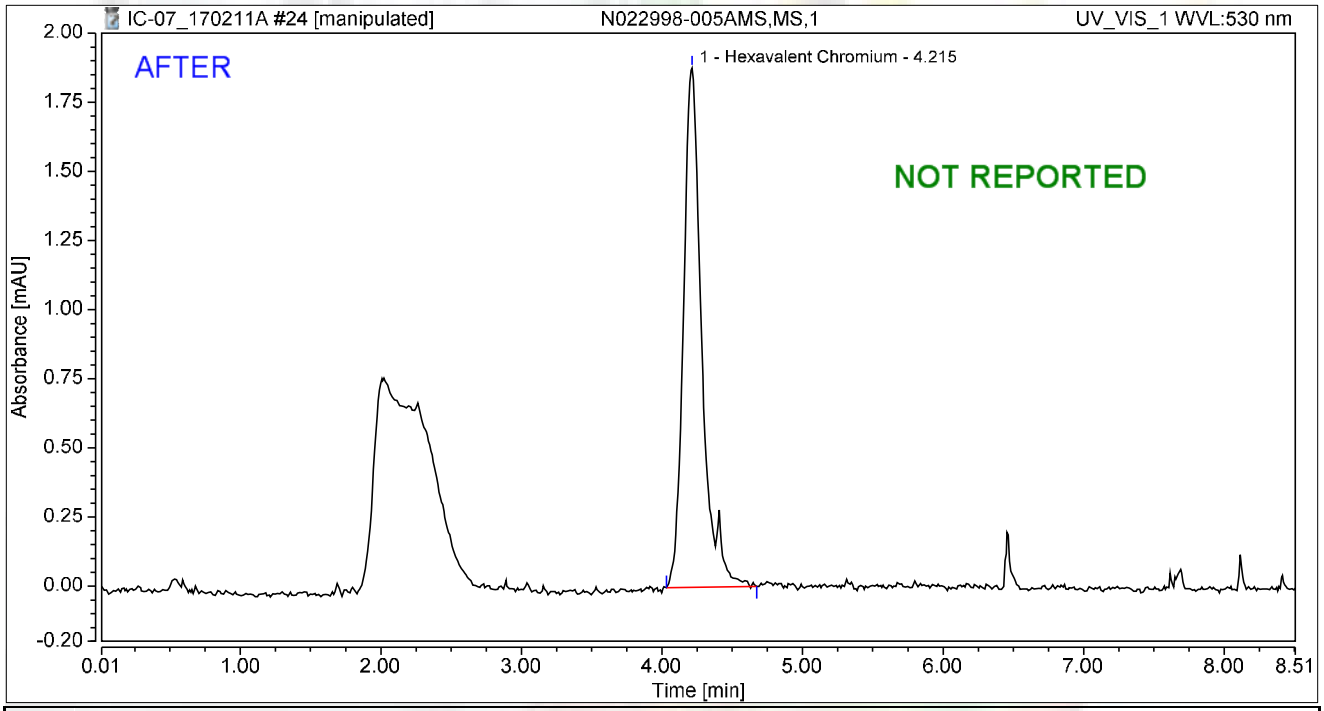
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.285	1.878	100.00	100.00	1.0734
Total:			**0.285**	**1.878**	**100.00**	**100.00**	

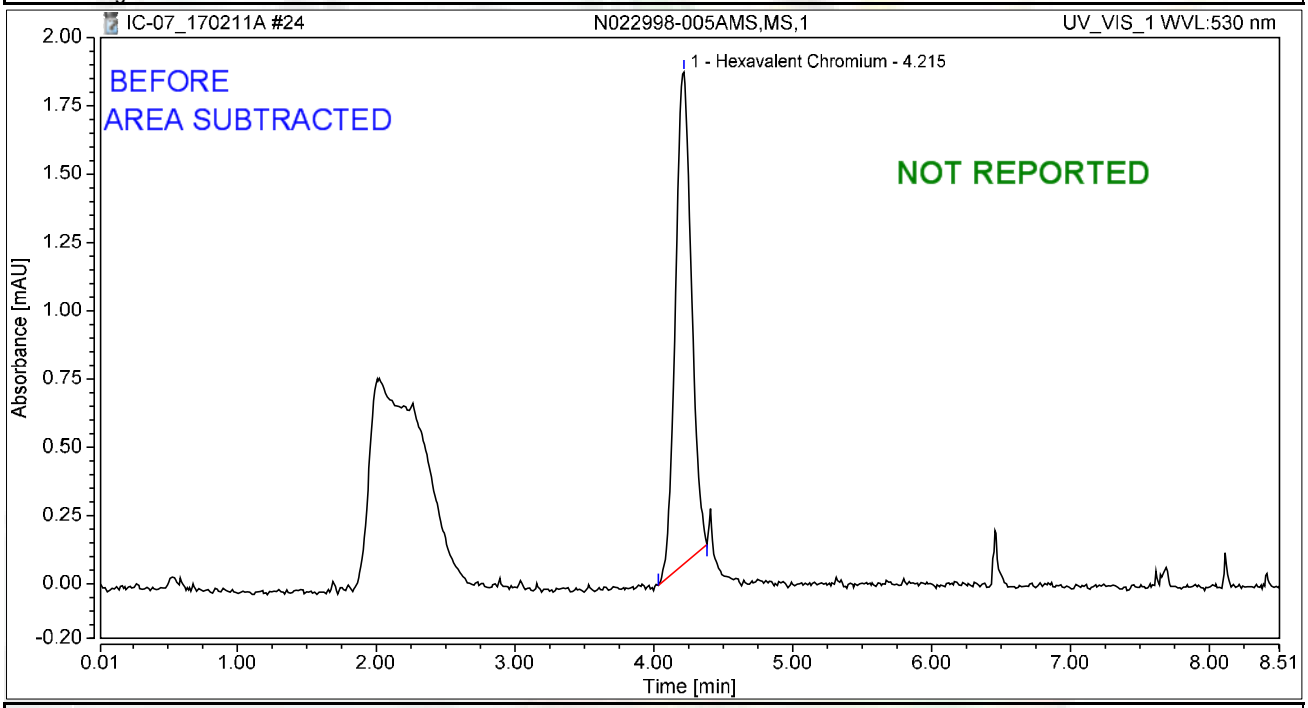
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.242	1.801	100.00	100.00	0.9105
Total:			**0.242**	**1.801**	**100.00**	**100.00**	

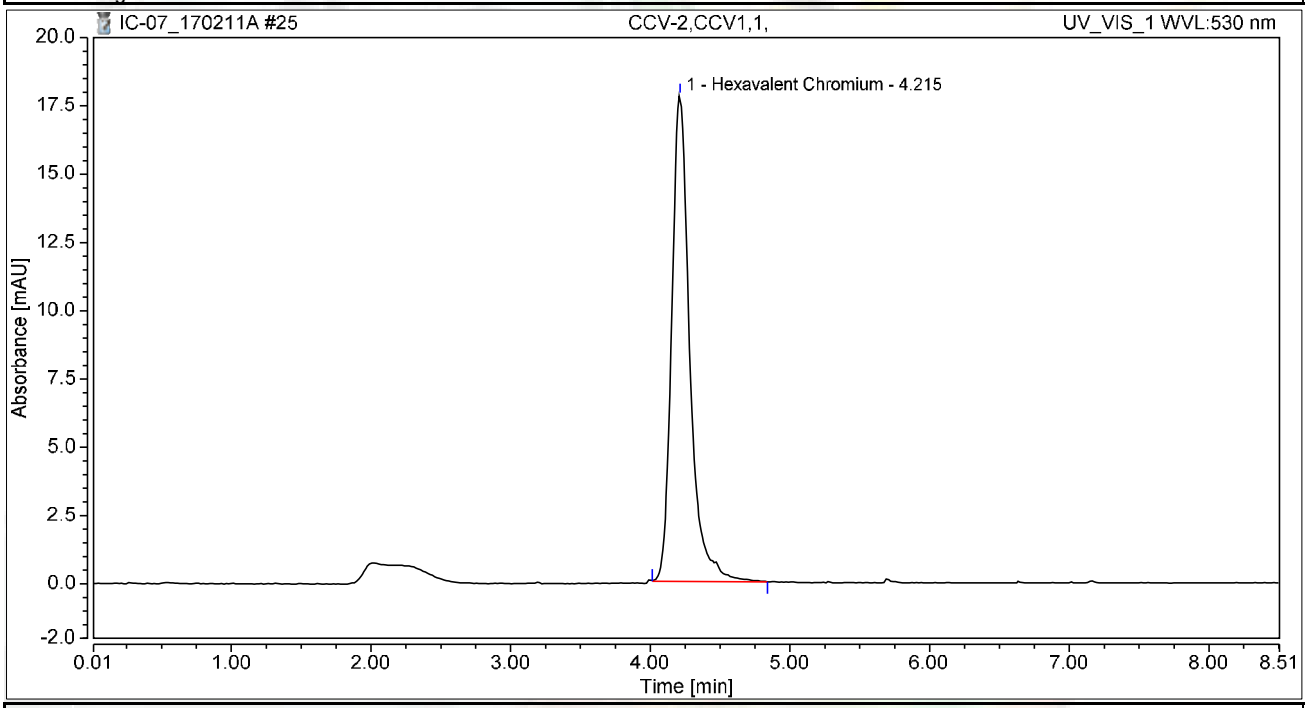
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

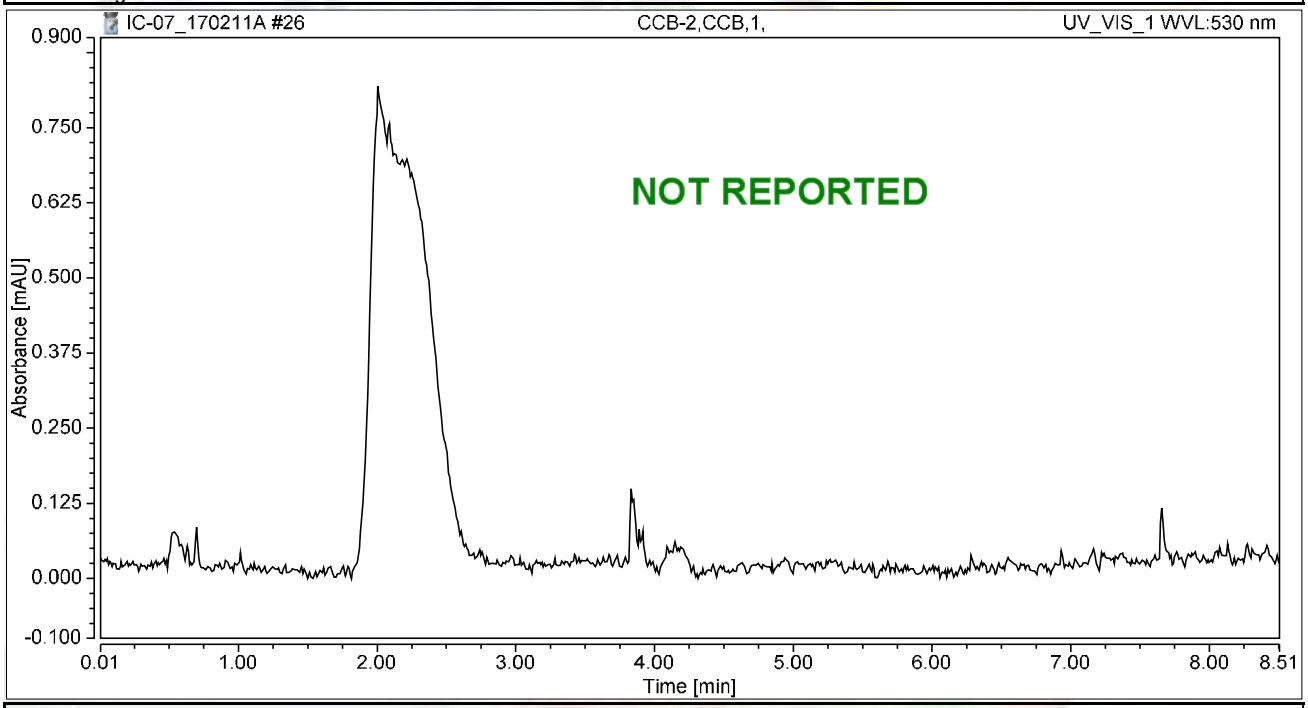
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.668	17.786	100.00	100.00	10.0579
Total:			**2.668**	**17.786**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

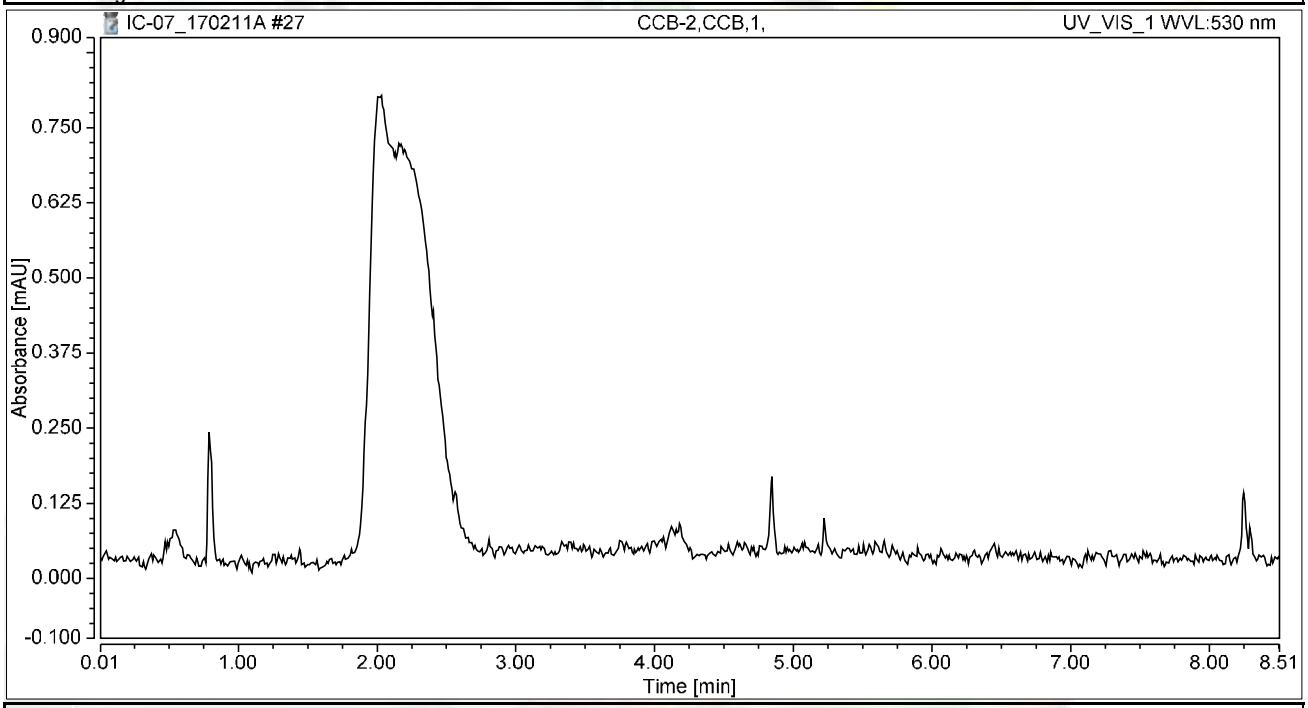
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

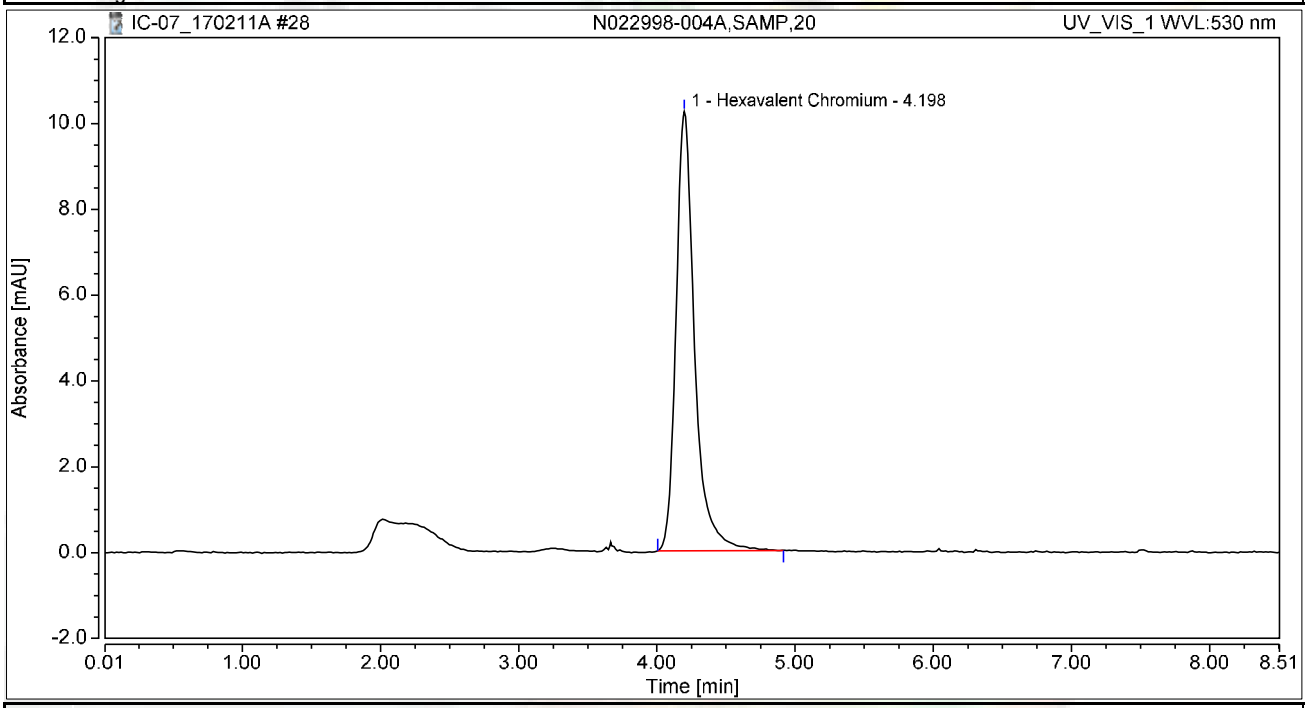
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-004A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

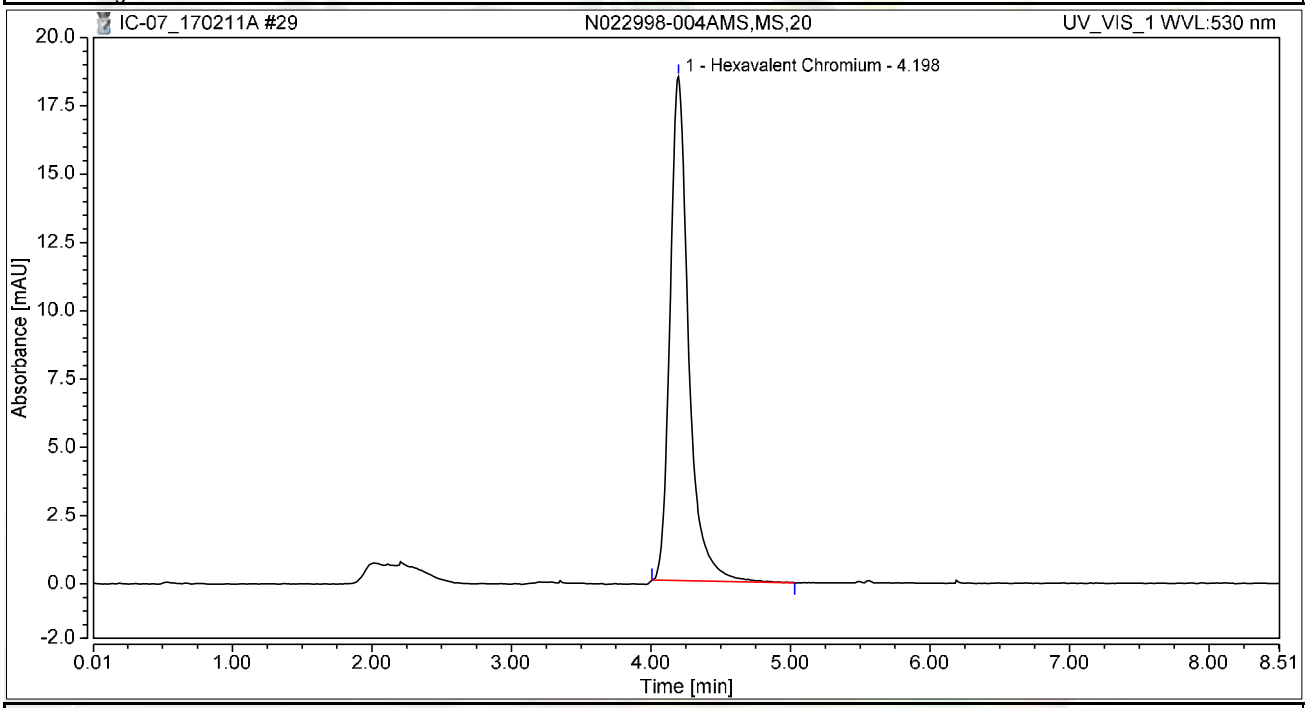
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.593	10.230	100.00	100.00	6.0052
Total:			**1.593**	**10.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-004AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

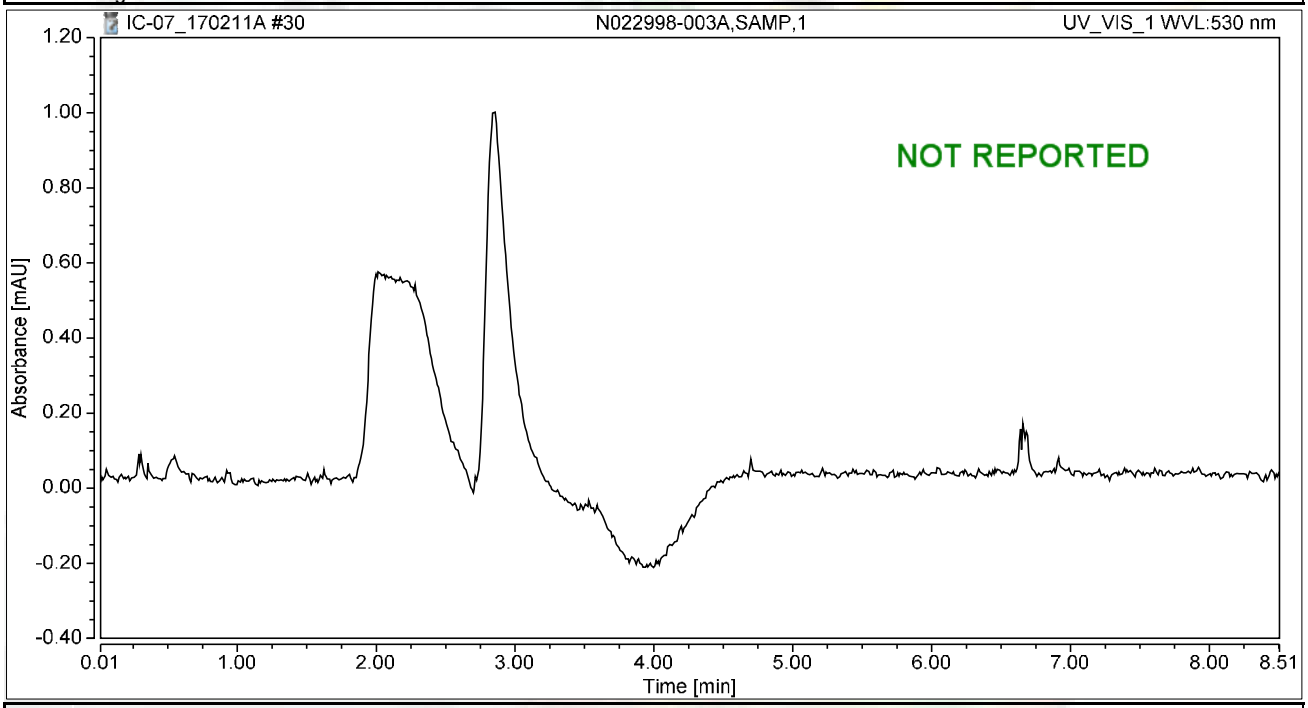
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.852	18.461	100.00	100.00	10.7538
Total:			**2.852**	**18.461**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

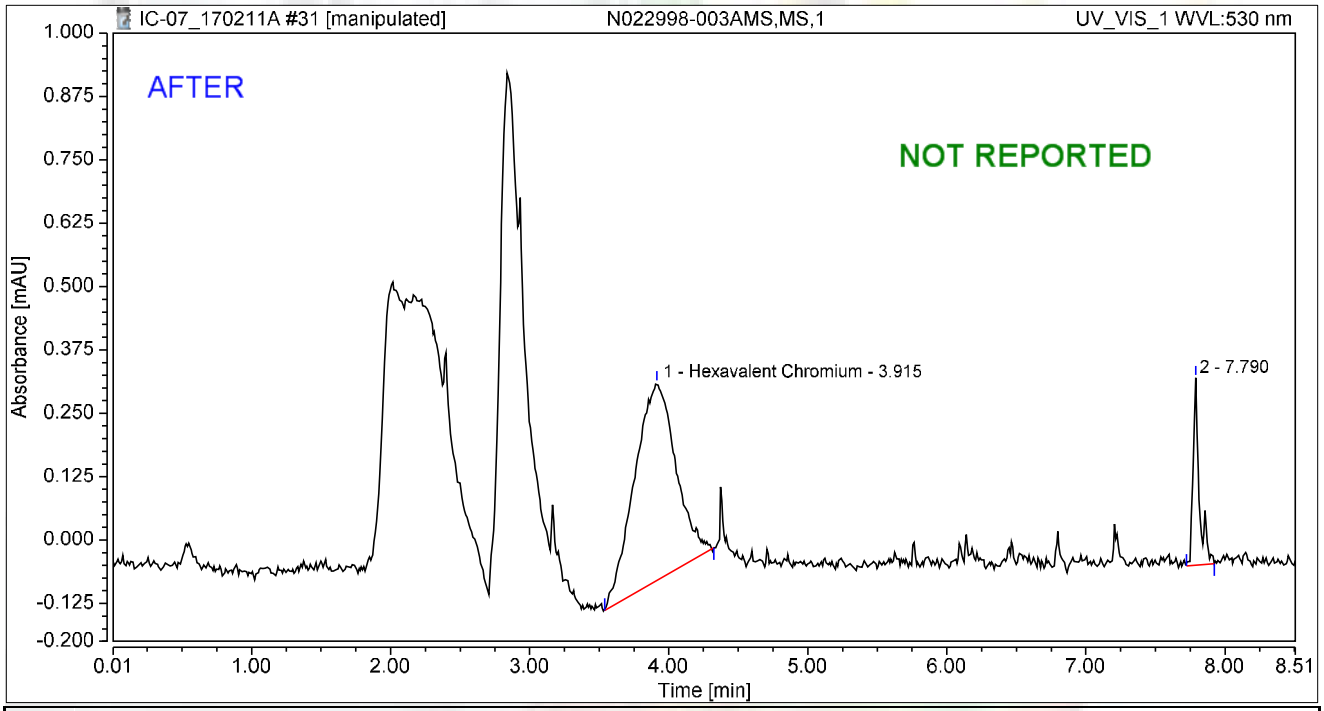
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.915	0.135	0.389	87.66	51.30	0.5080
2		7.790	0.019	0.370	12.34	48.70	n.a.
Total:			**0.154**	**0.759**	**100.00**	**100.00**	

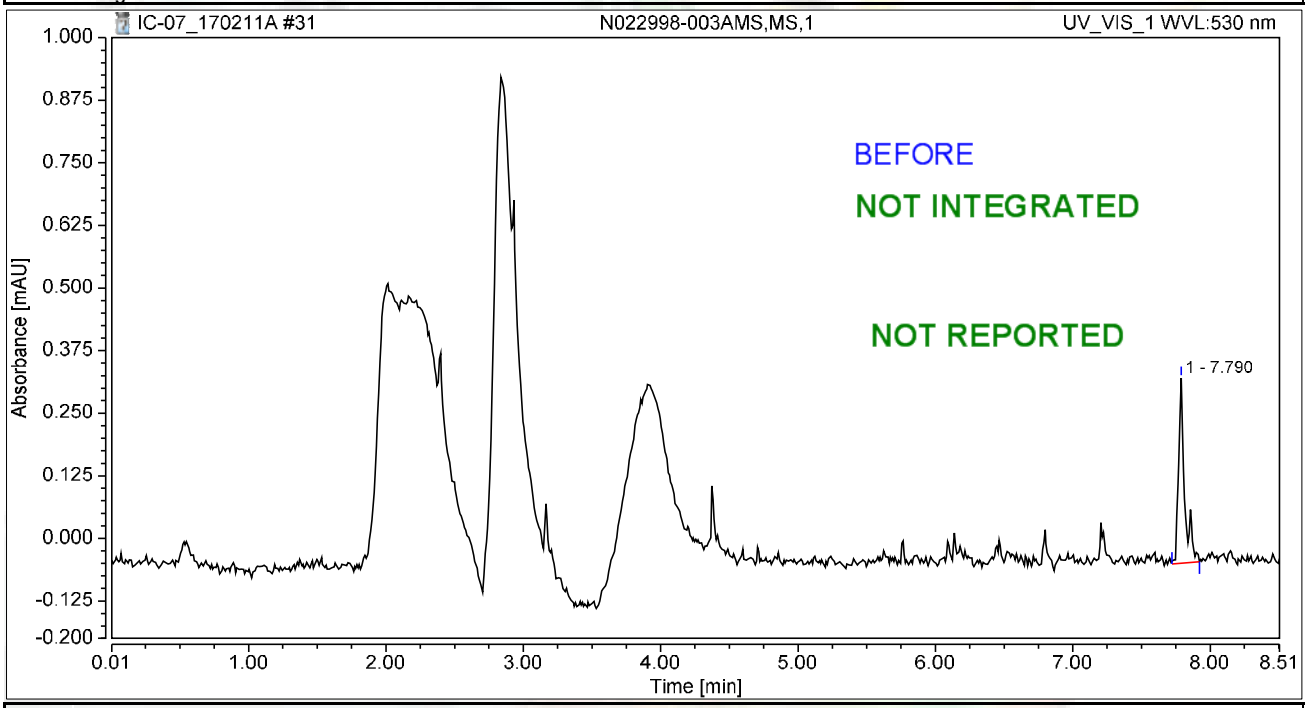
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.790	0.019	0.370	100.00	100.00	n.a.
Total:			**0.019**	**0.370**	**100.00**	**100.00**	

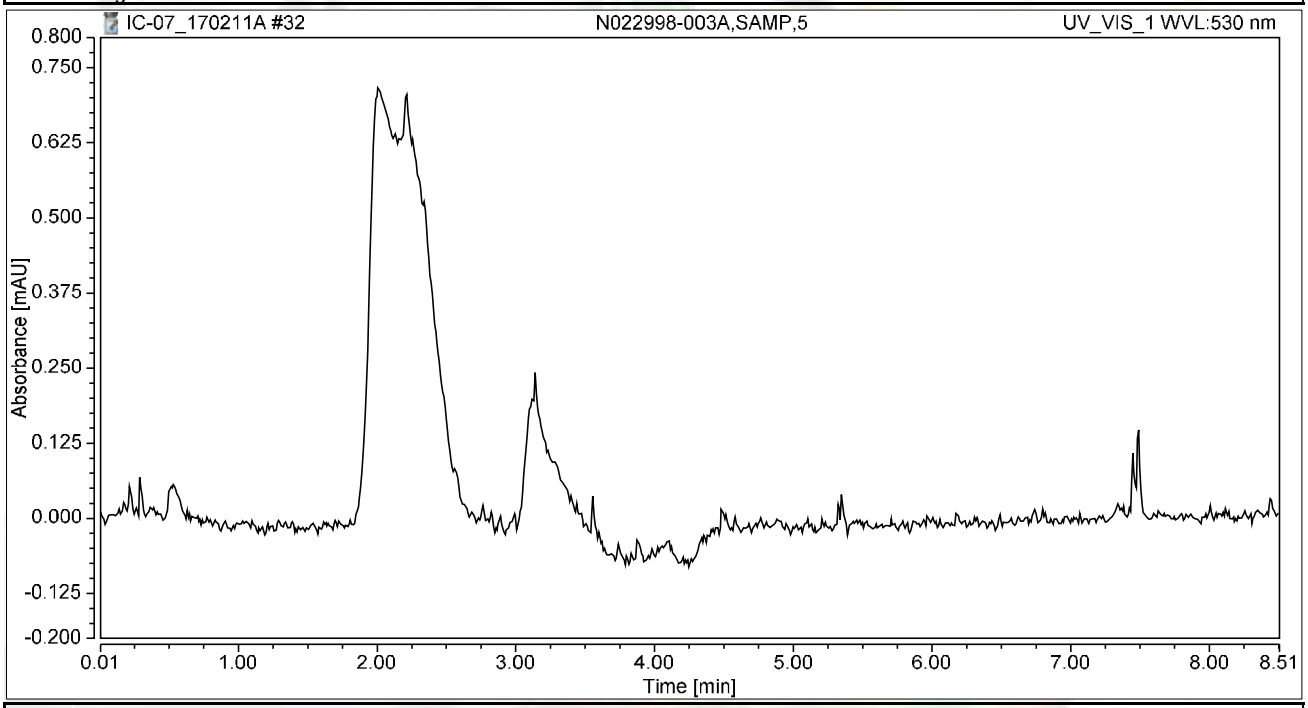
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

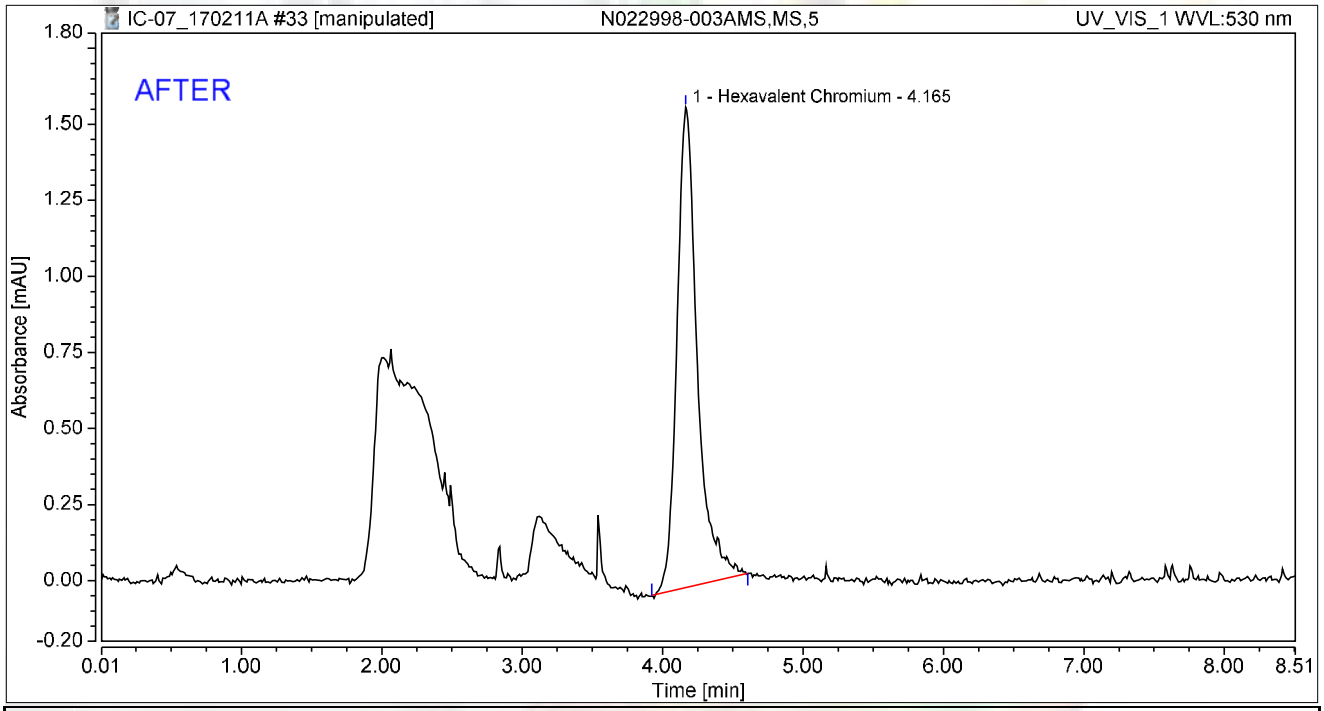
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	1.579	100.00	100.00	1.0008
Total:			**0.265**	**1.579**	**100.00**	**100.00**	

rba 2/14/2017

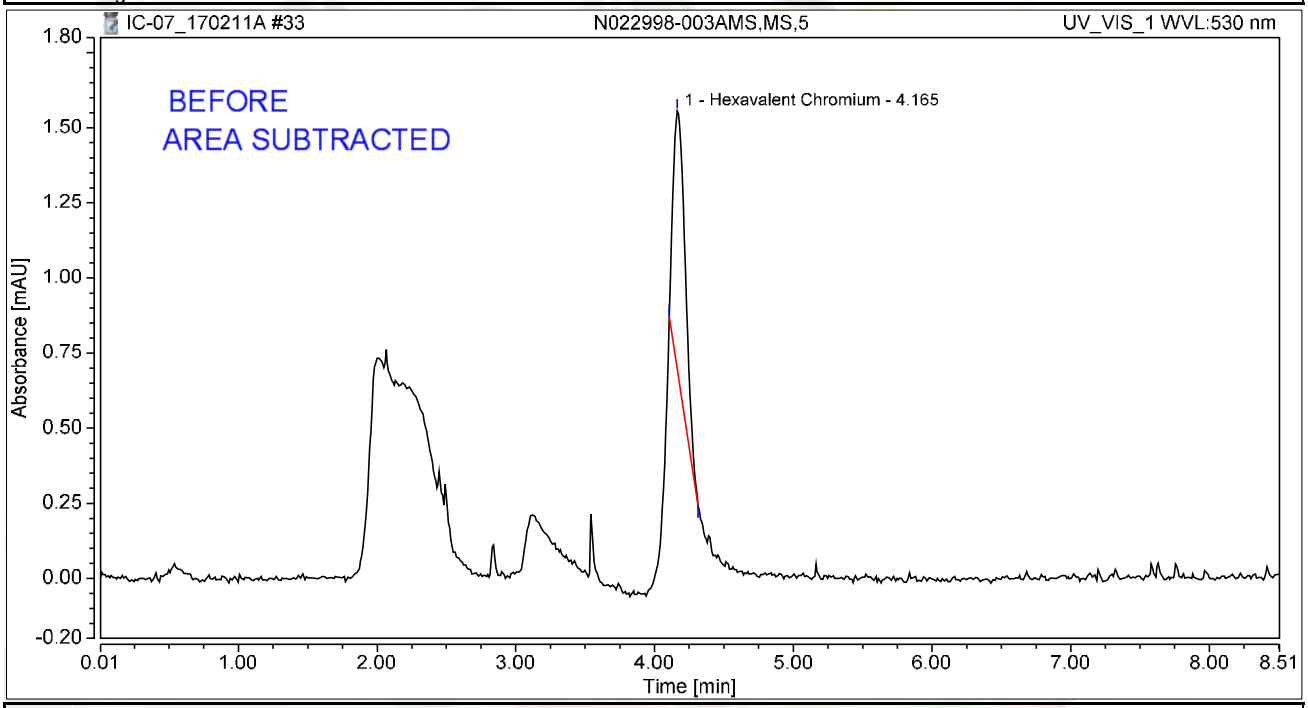
Reviewed by: Nancy 2/20/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-003AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.088	0.860	100.00	100.00	0.3334
Total:			**0.088**	**0.860**	**100.00**	**100.00**	

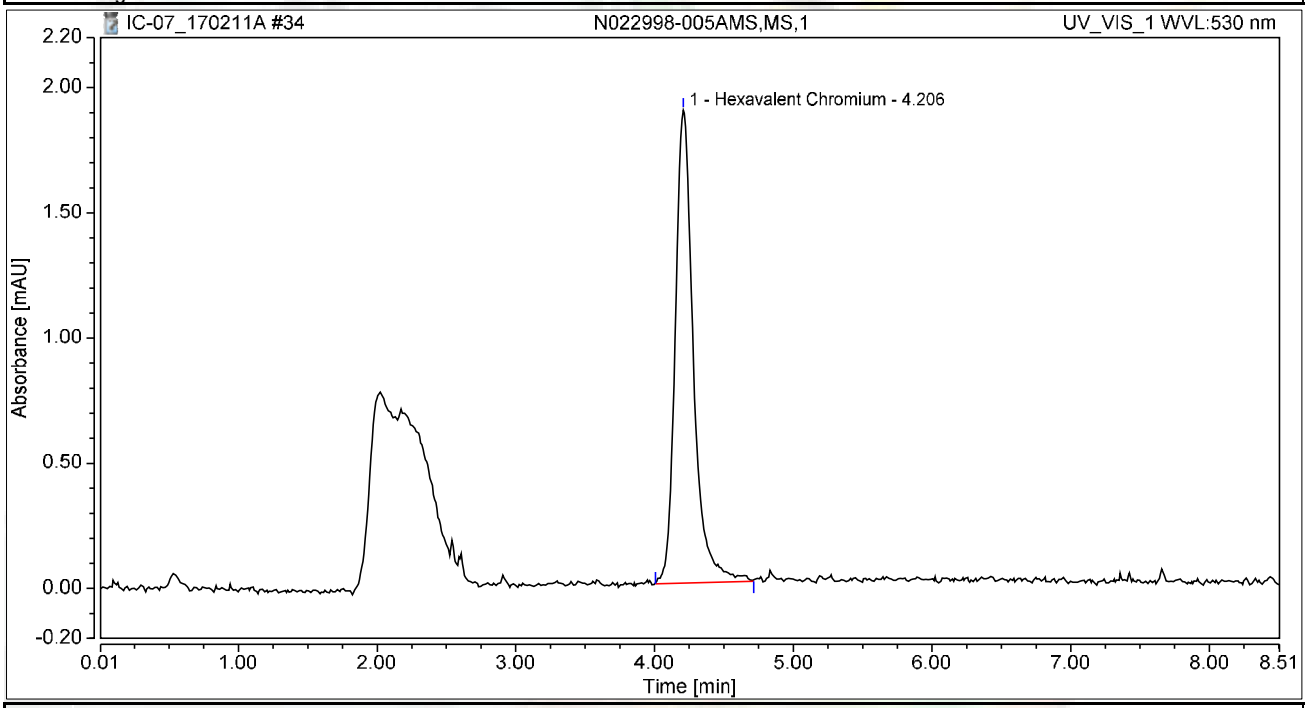
rba 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**N022998-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

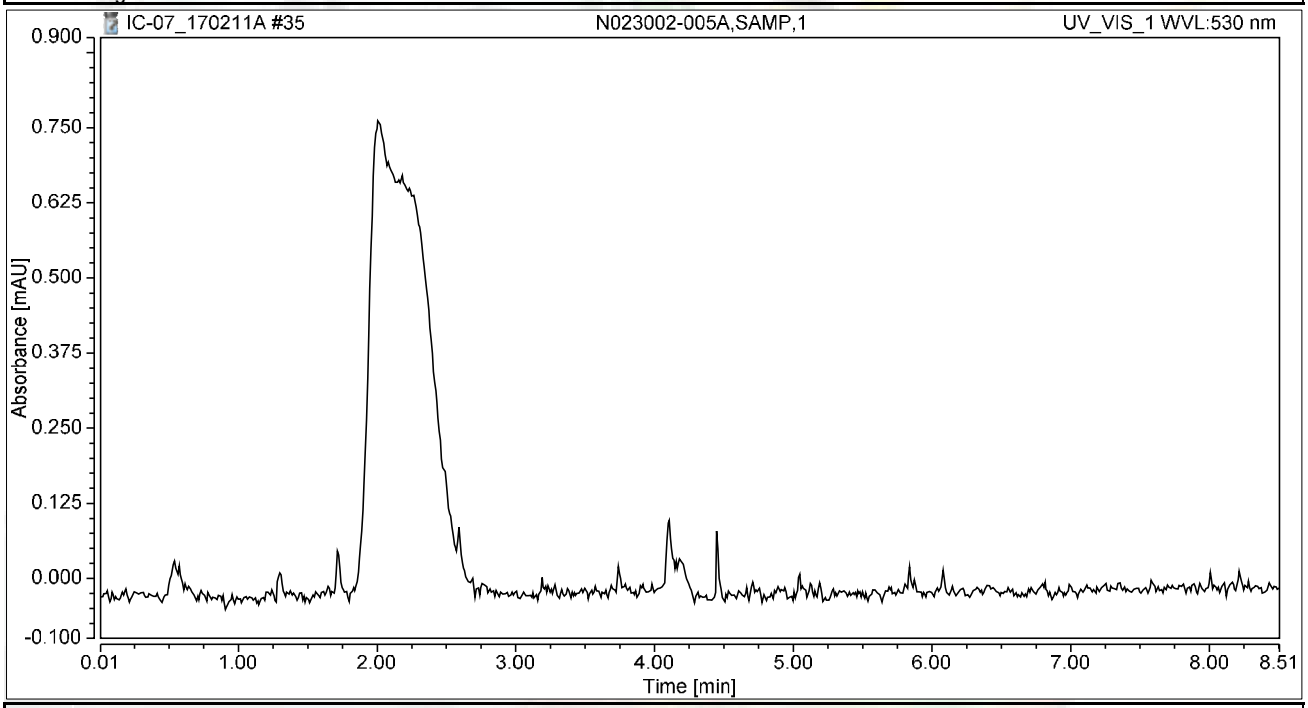
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.287	1.890	100.00	100.00	1.0825
Total:			**0.287**	**1.890**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

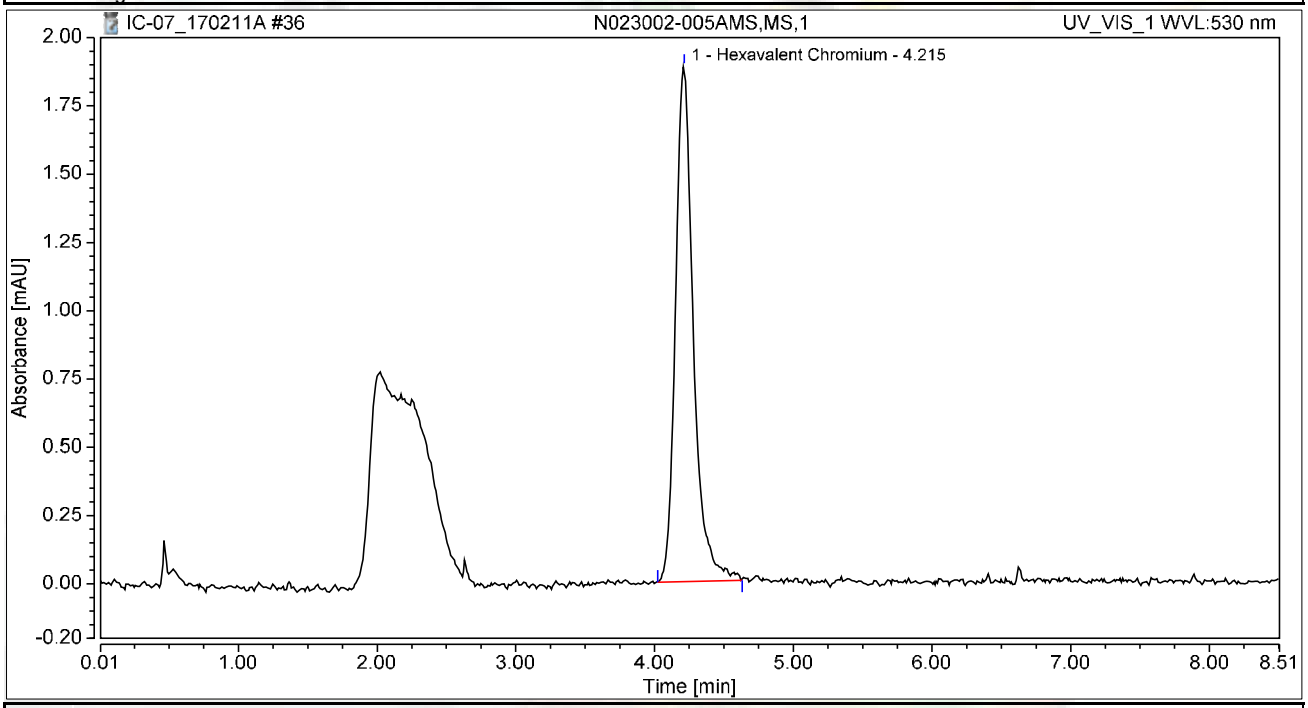
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

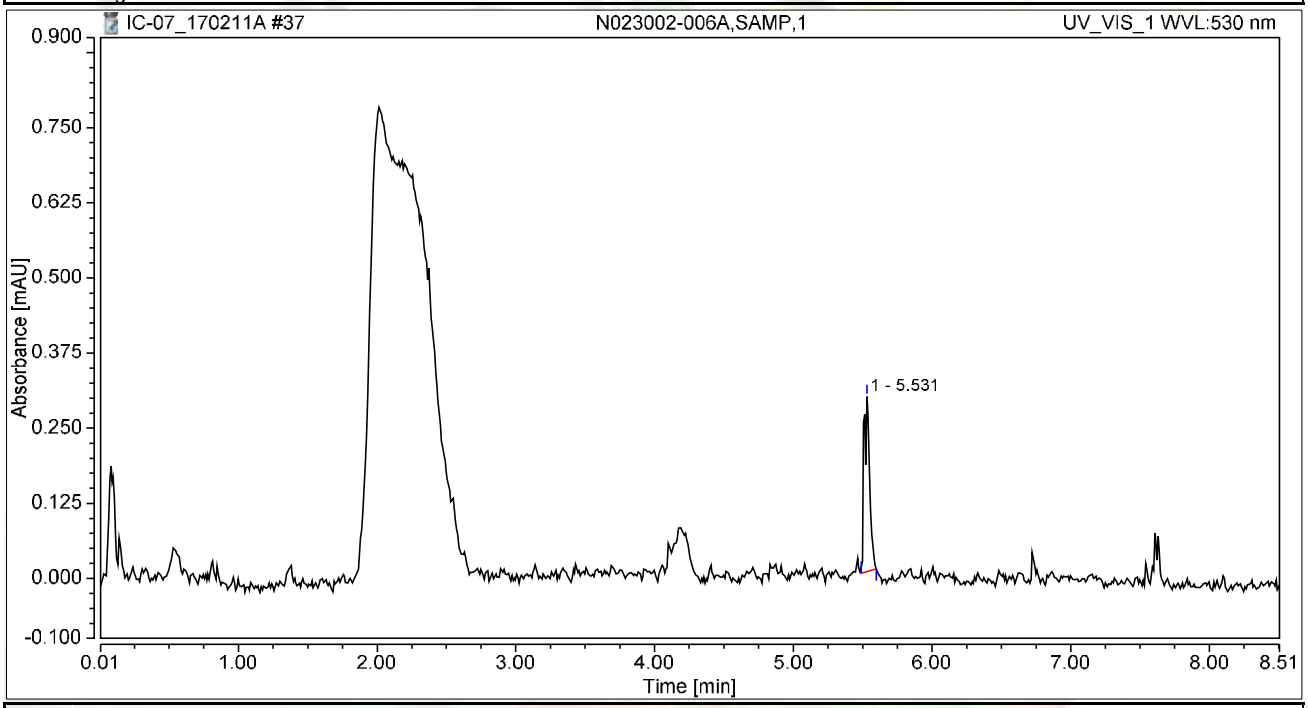
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.281	1.888	100.00	100.00	1.0591
Total:			**0.281**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

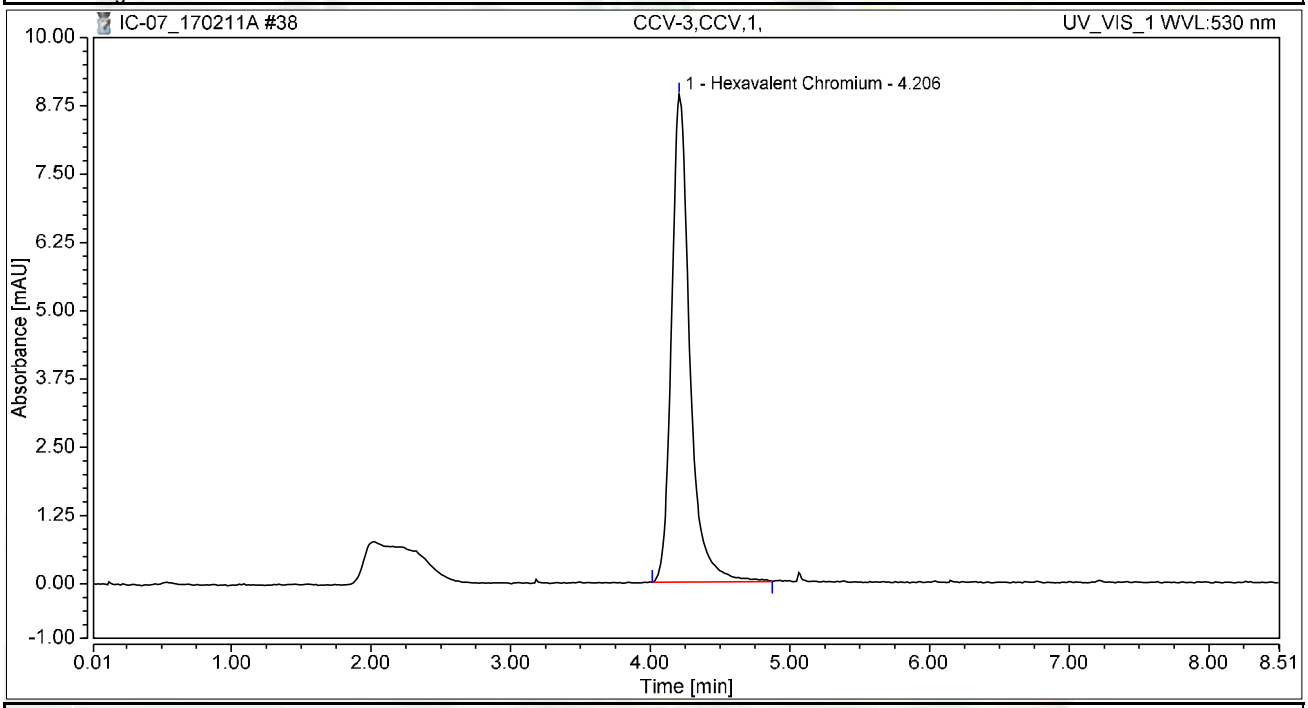
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.531	0.014	0.291	100.00	100.00	n.a.
Total:			**0.014**	**0.291**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

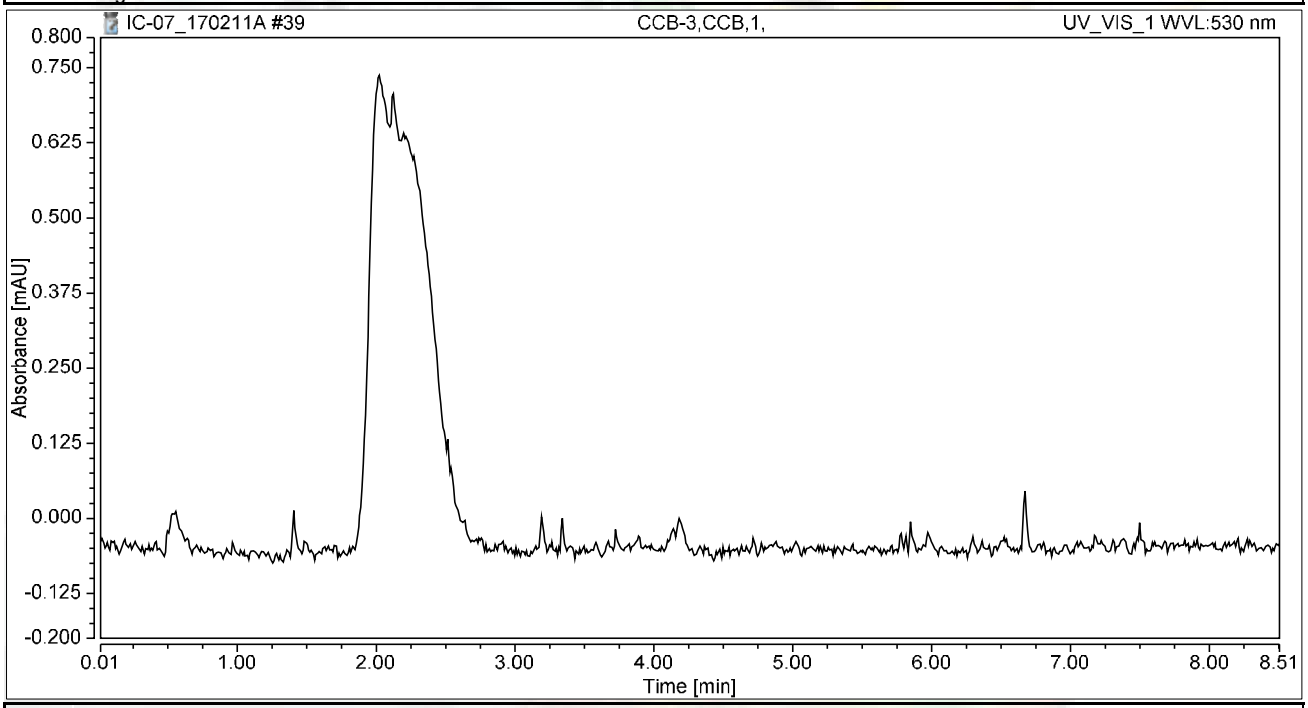
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.350	8.924	100.00	100.00	5.0881
Total:			**1.350**	**8.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

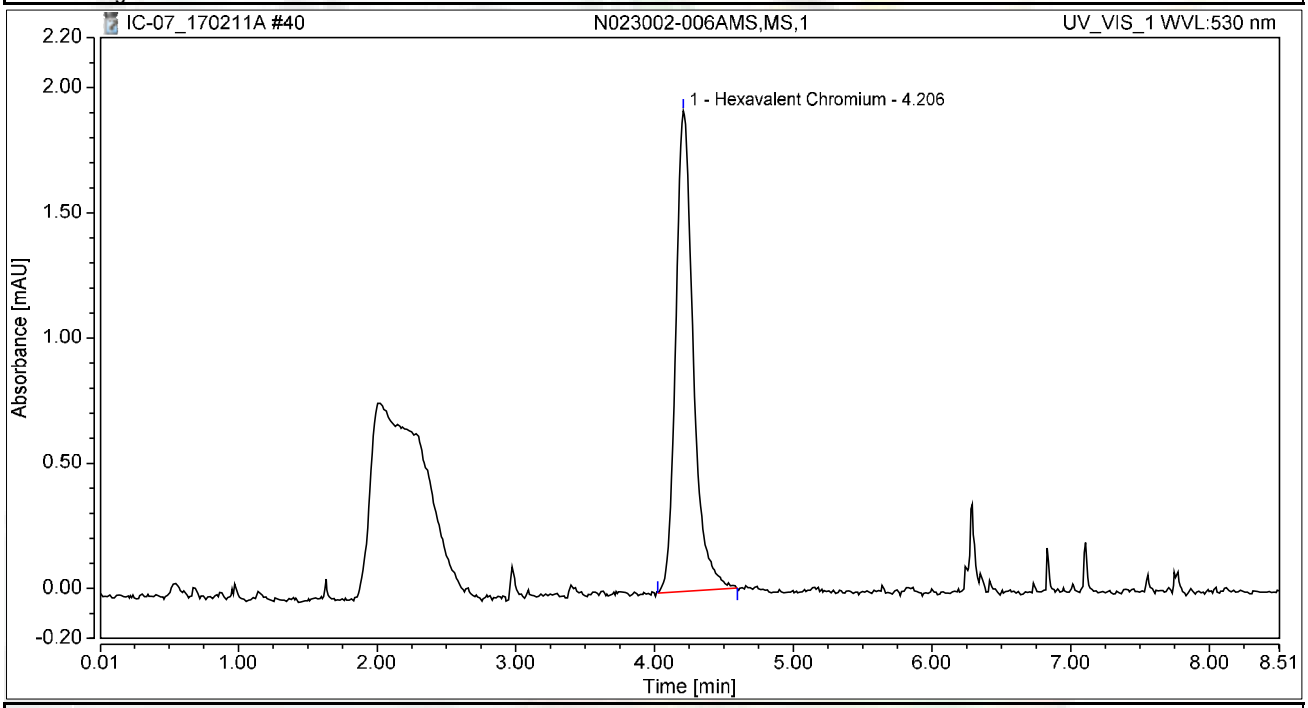
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023002-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

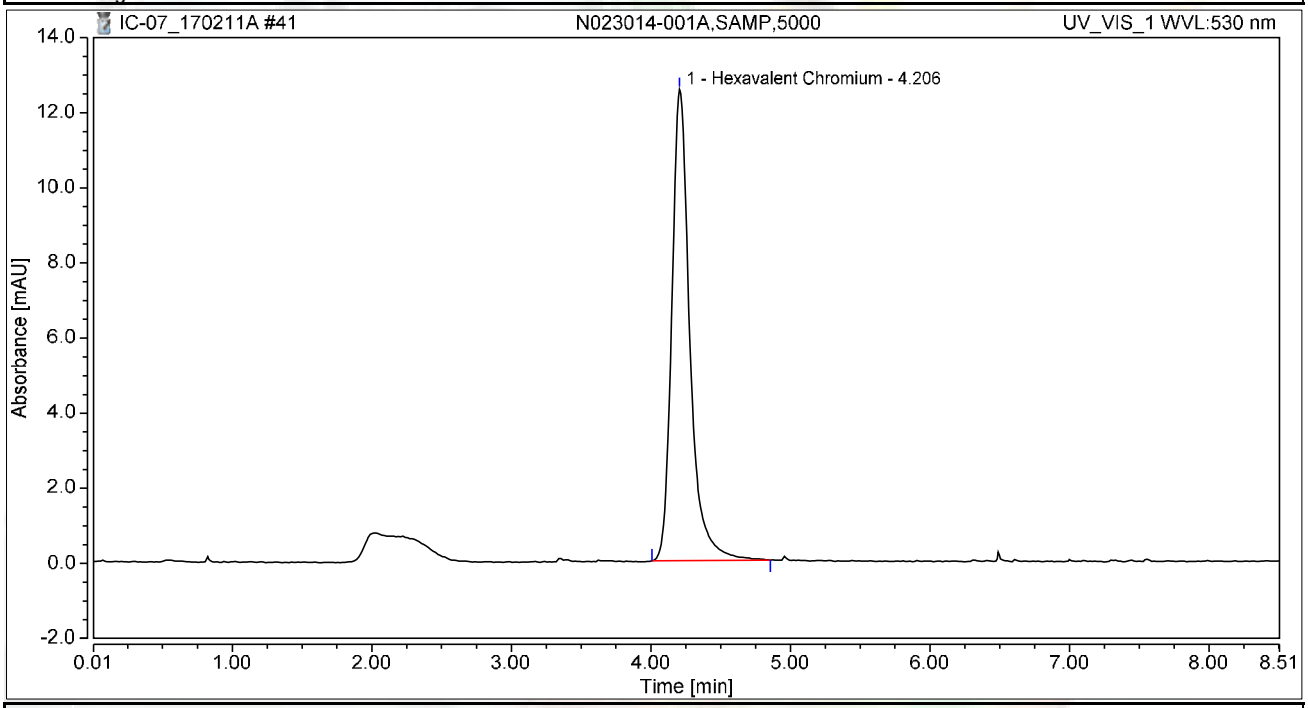
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.282	1.920	100.00	100.00	1.0628
Total:			**0.282**	**1.920**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-001A,SAMP,5000**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

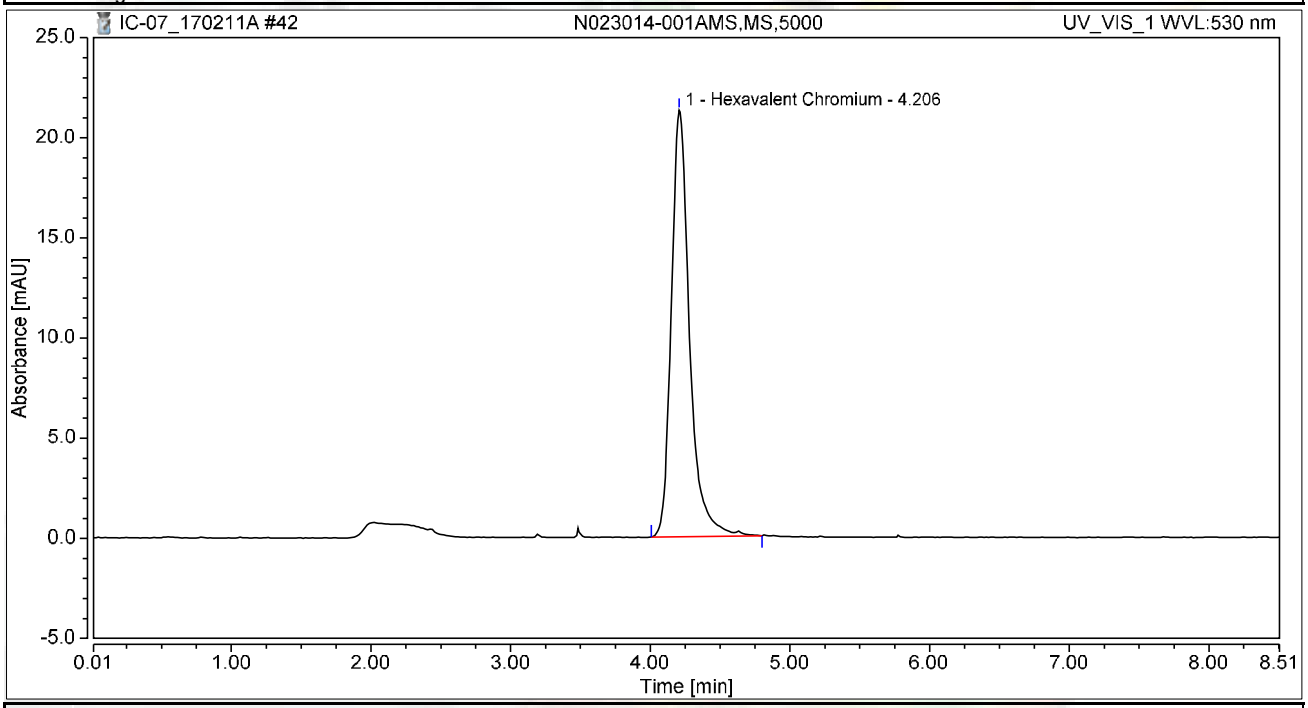
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.883	12.546	100.00	100.00	7.0983
Total:			**1.883**	**12.546**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-001AMS,MS,5000**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

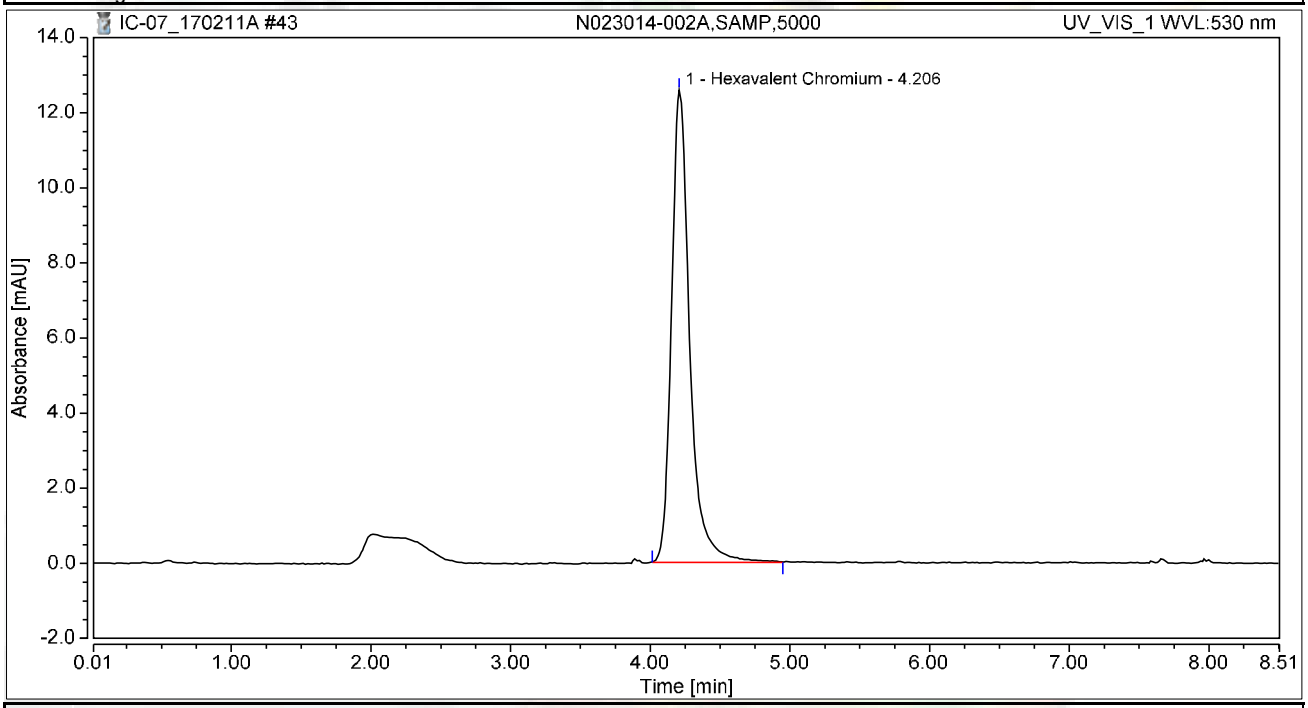
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.208	21.284	100.00	100.00	12.0938
Total:			**3.208**	**21.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-002A,SAMP,5000**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

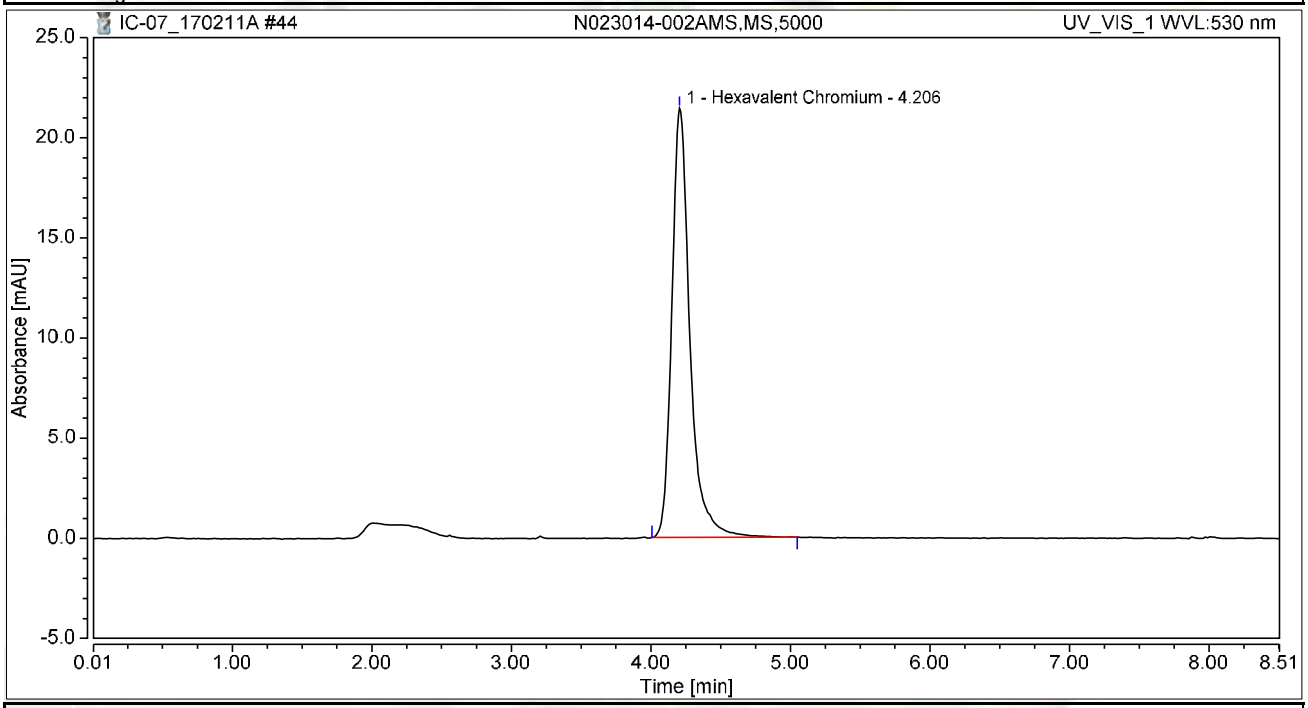
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.902	12.579	100.00	100.00	7.1705
Total:			**1.902**	**12.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-002AMS,MS,5000**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

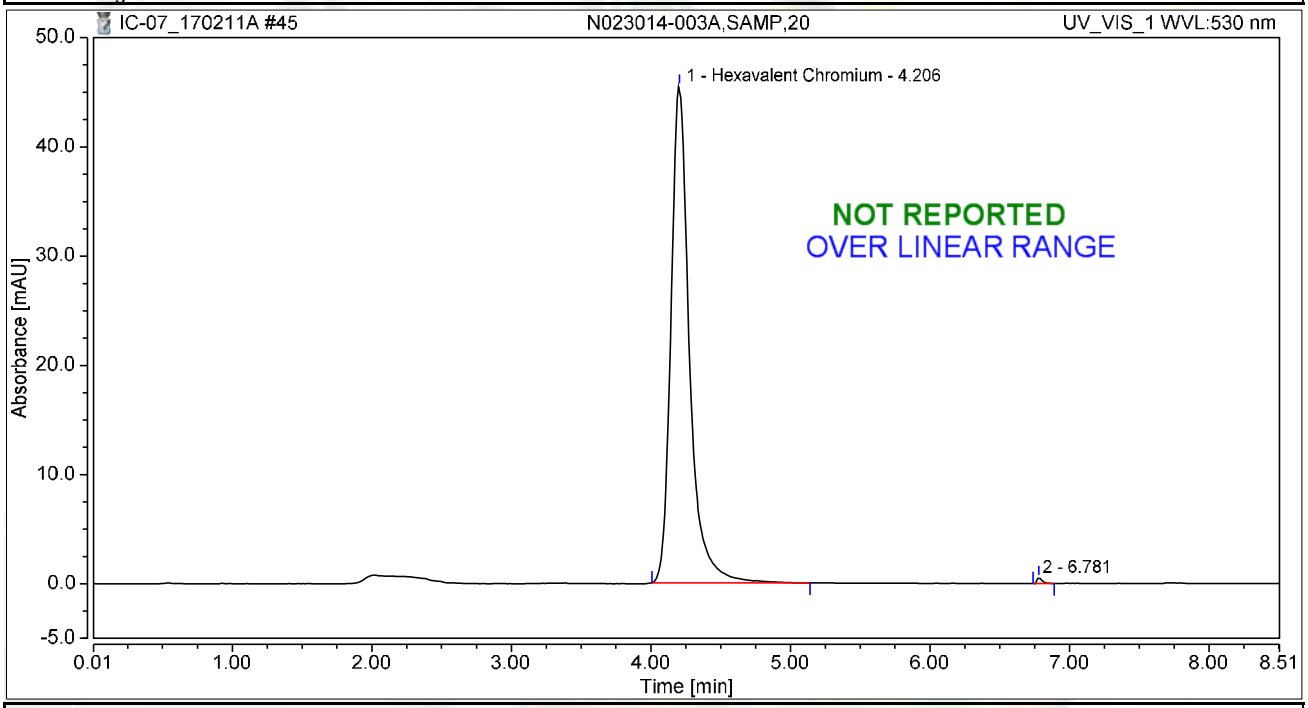
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.227	21.430	100.00	100.00	12.1659
Total:			**3.227**	**21.430**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

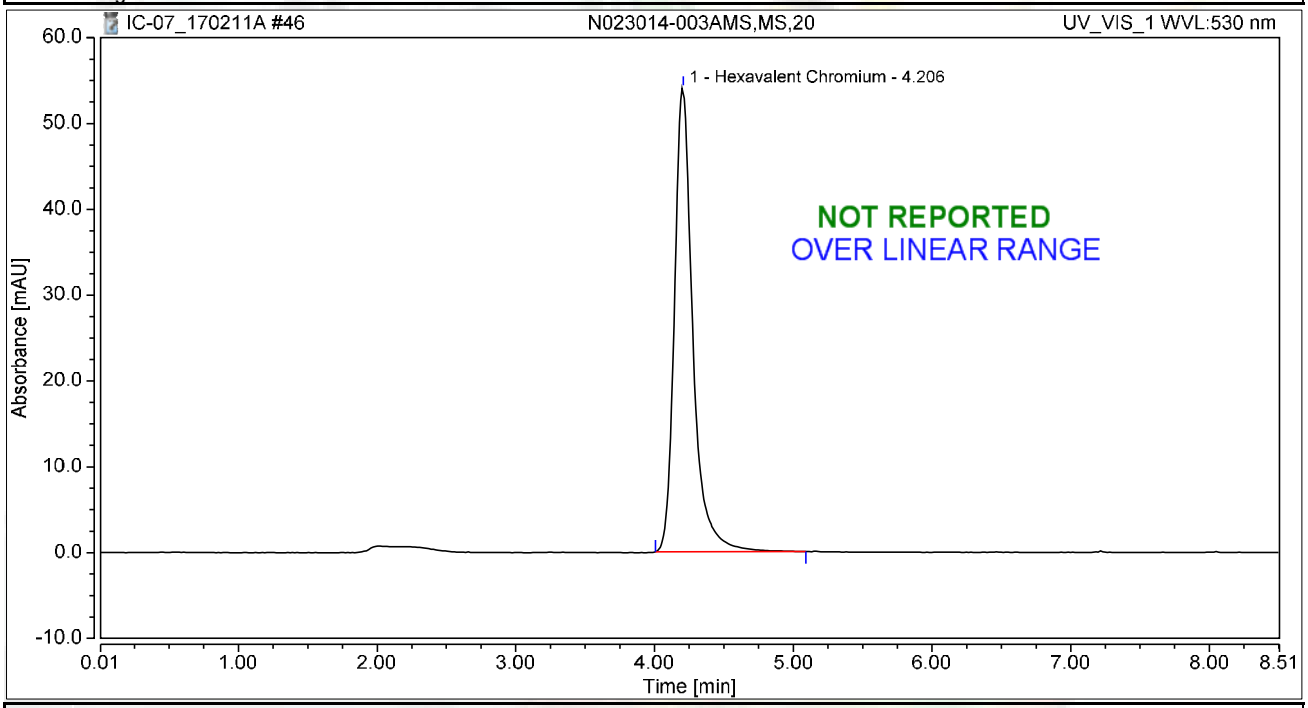
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	7.005	45.457	99.66	98.84	26.4089
2		6.781	0.024	0.534	0.34	1.16	n.a.
Total:			**7.029**	**45.991**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

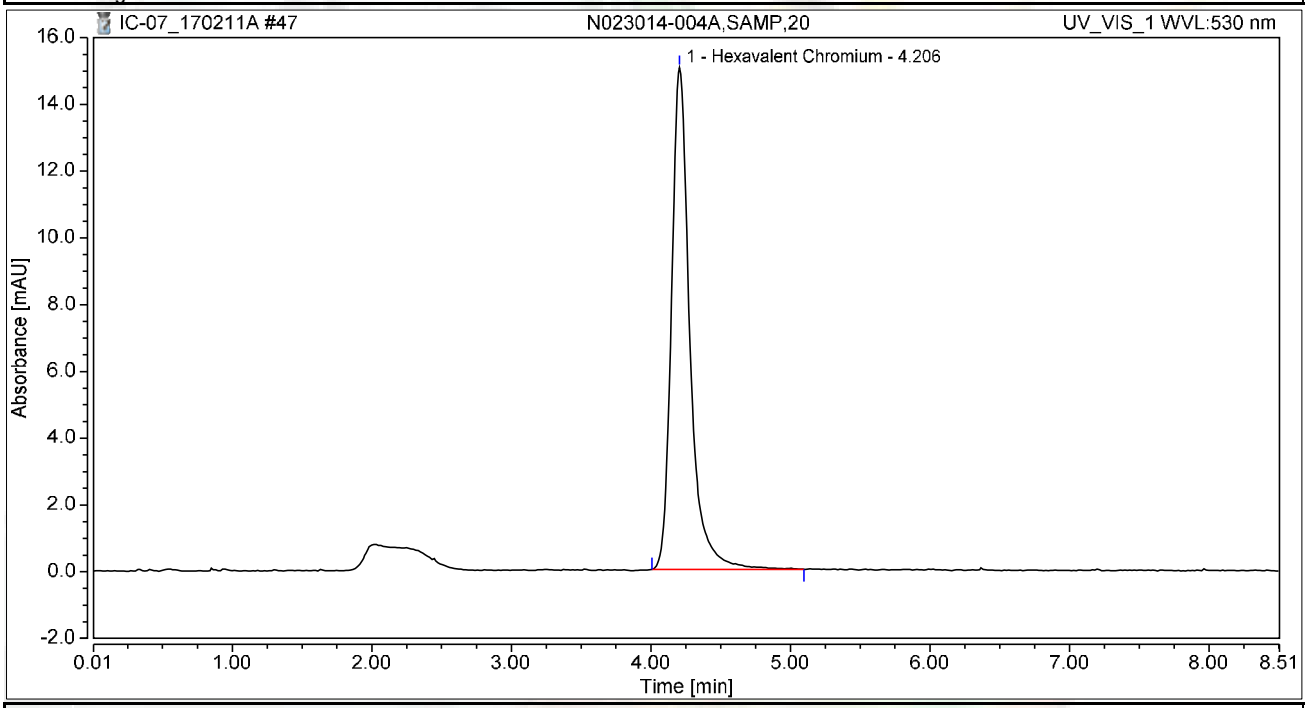
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	8.316	54.013	100.00	100.00	31.3519
Total:			**8.316**	**54.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-004A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

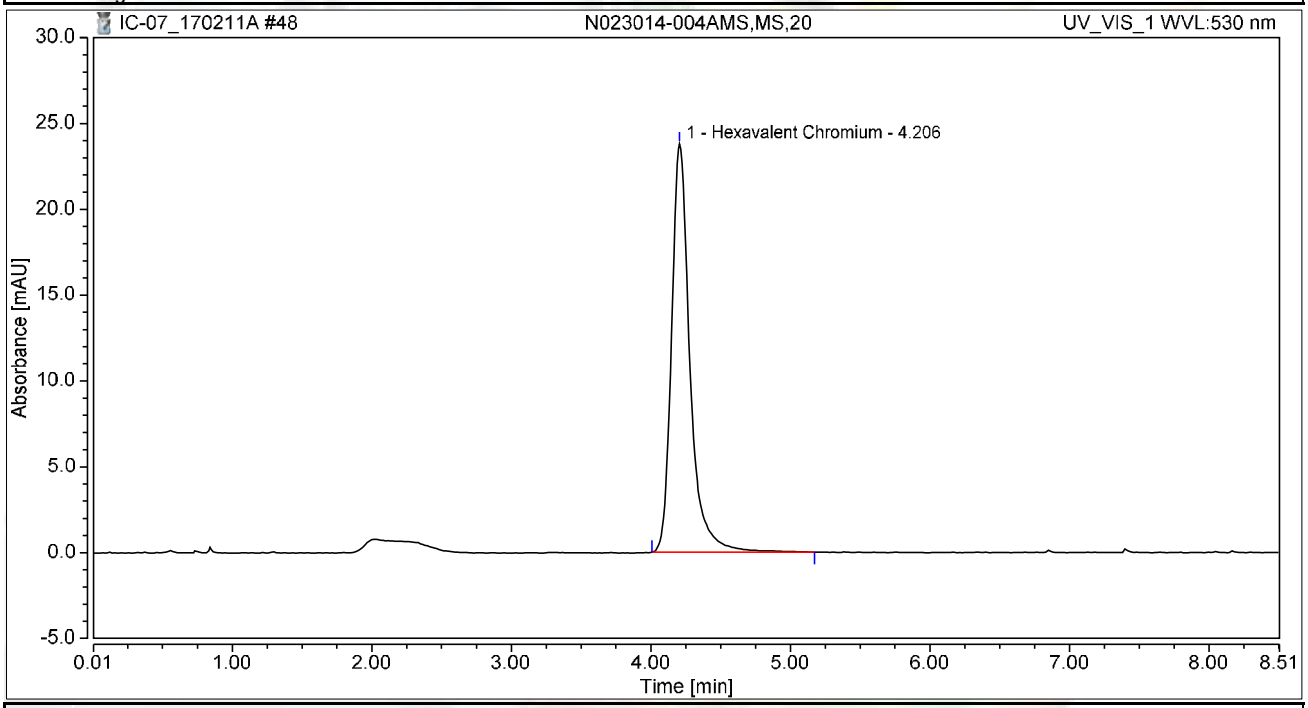
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.307	15.044	100.00	100.00	8.6973
Total:			**2.307**	**15.044**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-004AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

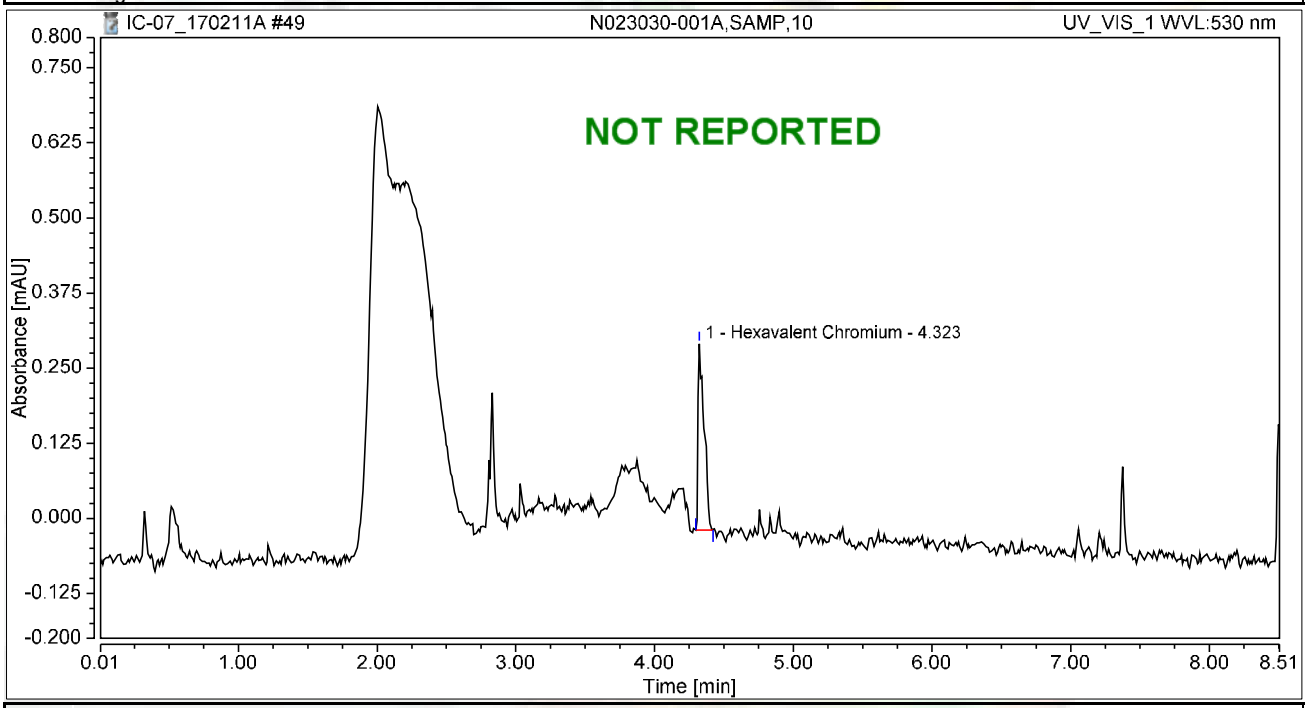
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.634	23.790	100.00	100.00	13.7020
Total:			**3.634**	**23.790**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

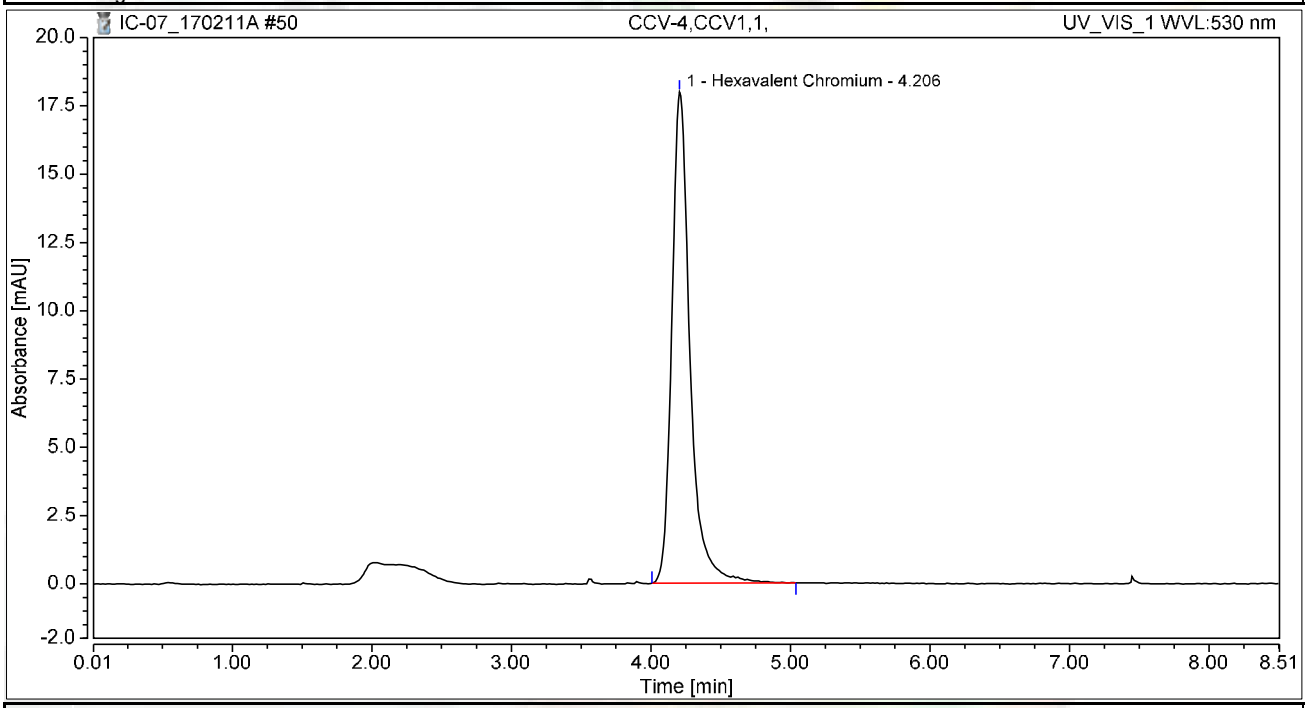
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.323	0.015	0.310	100.00	100.00	0.0583
Total:			**0.015**	**0.310**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

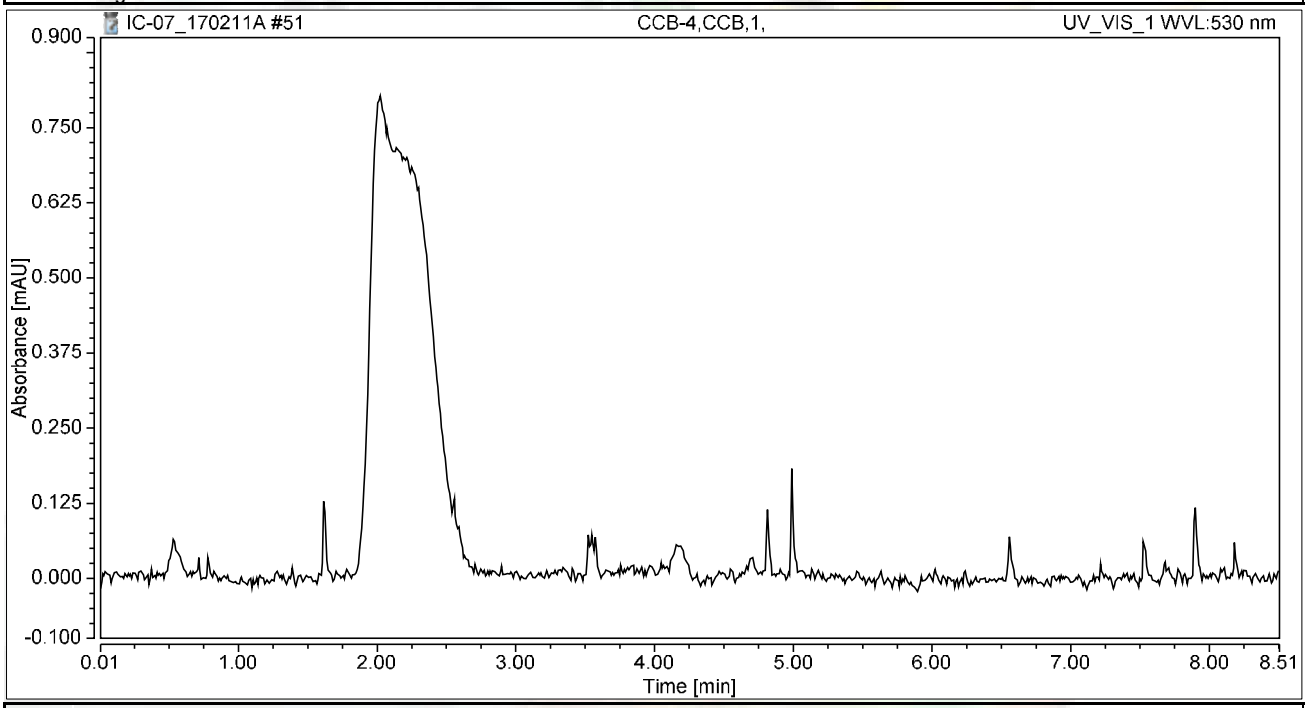
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.716	17.980	100.00	100.00	10.2408
Total:			**2.716**	**17.980**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

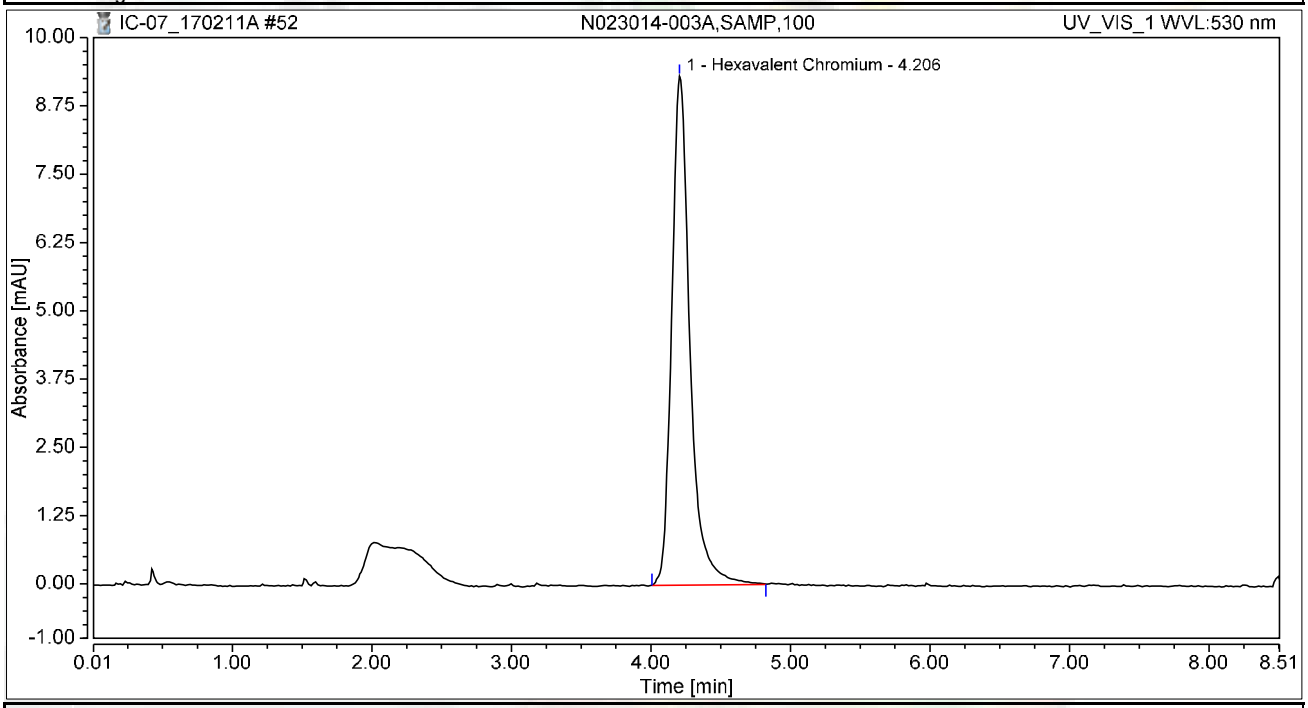
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

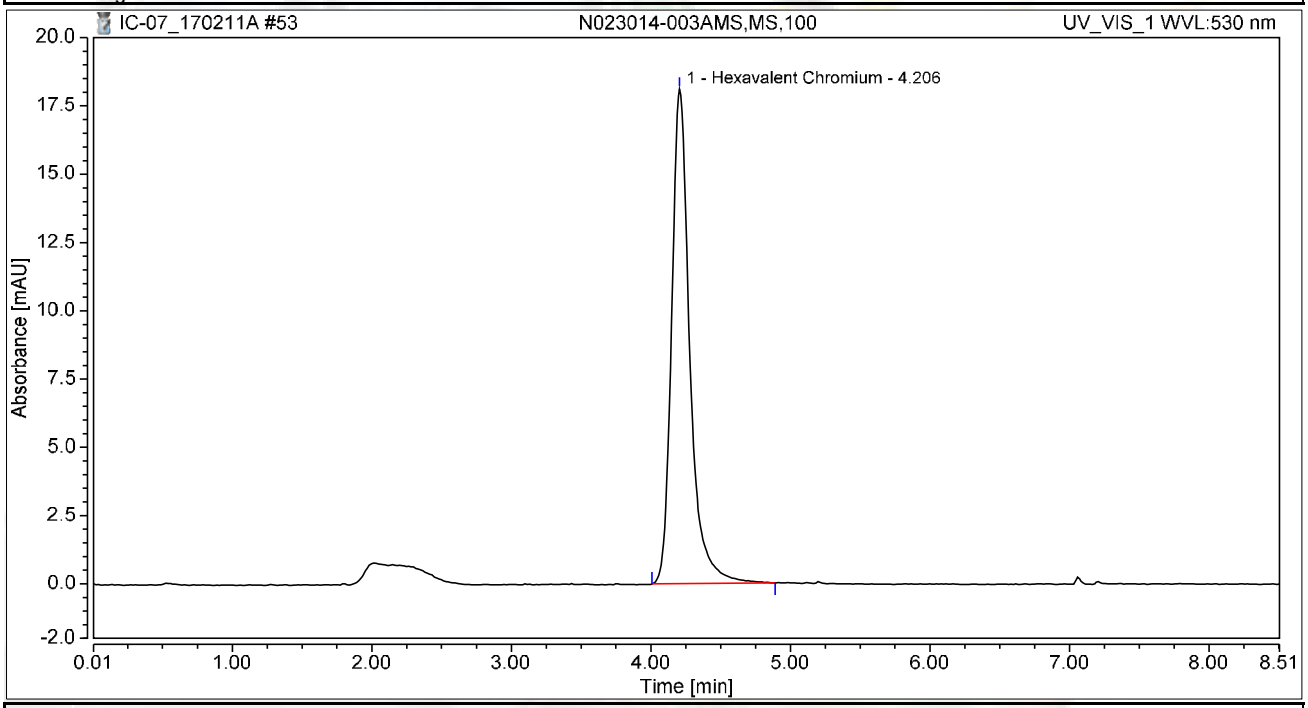
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.415	9.319	100.00	100.00	5.3363
Total:			**1.415**	**9.319**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-003AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

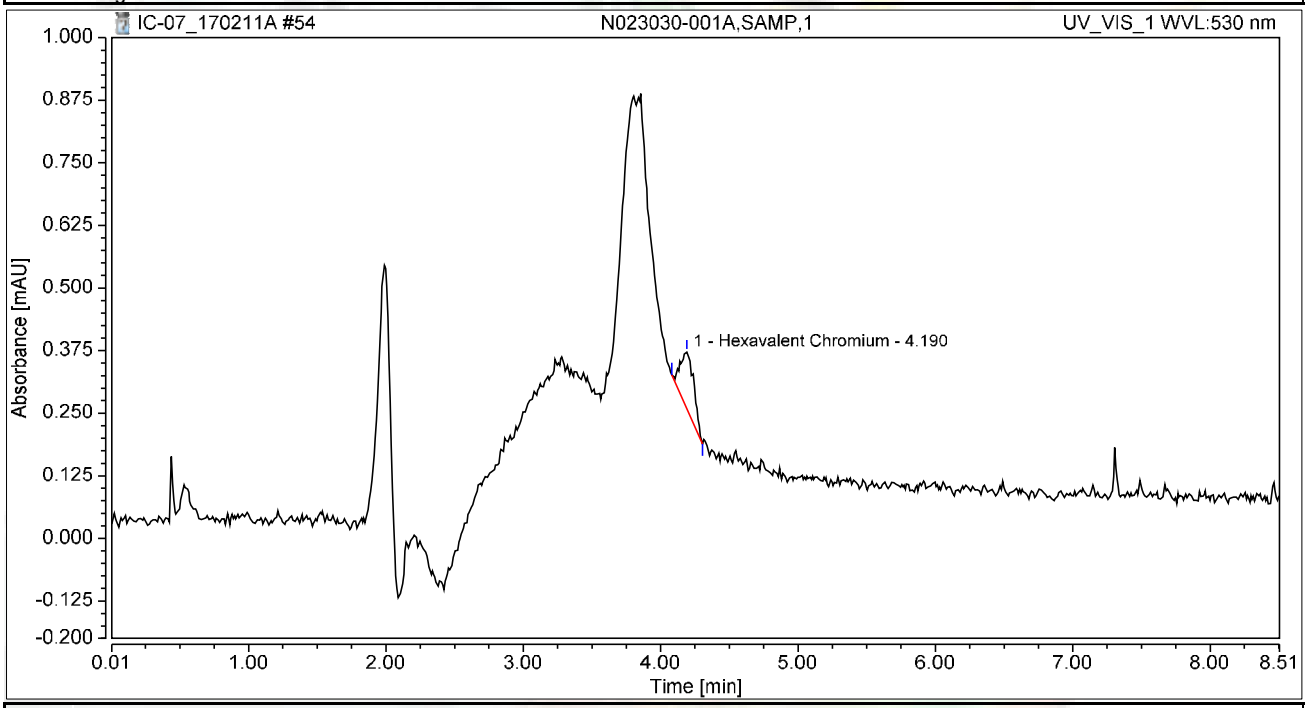
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.733	18.113	100.00	100.00	10.3047
Total:			**2.733**	**18.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

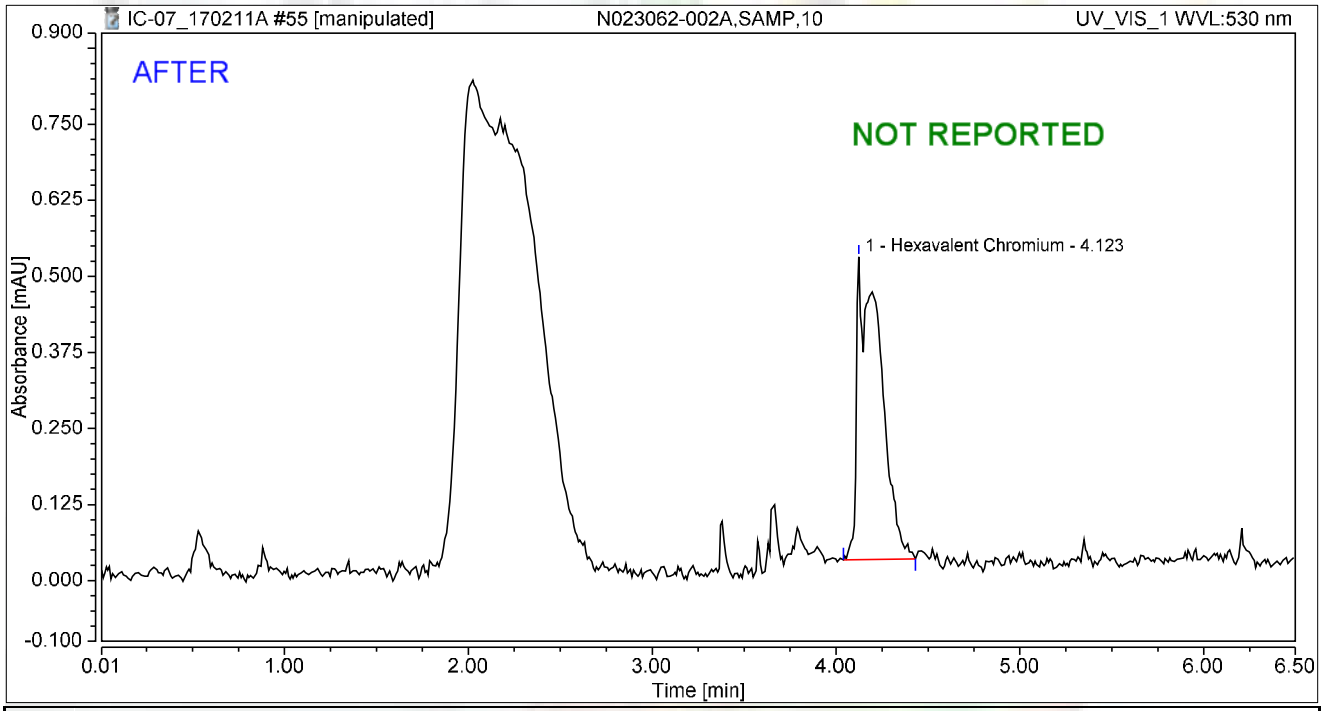
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.013	0.112	100.00	100.00	0.0488
Total:			**0.013**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,10**	*Run Time (min):*	**6.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.074	0.498	100.00	100.00	0.2808
Total:			**0.074**	**0.498**	**100.00**	**100.00**	

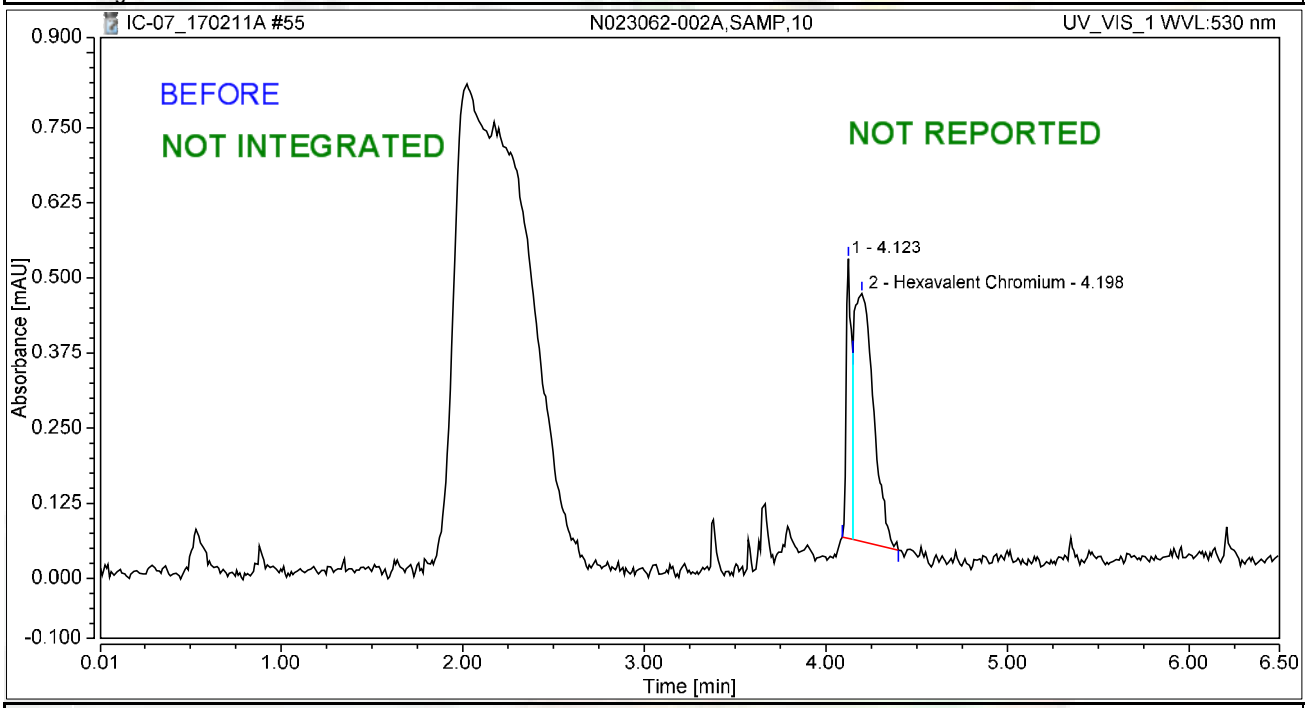
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,10**	*Run Time (min):*	**6.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.123	0.015	0.465	23.23	53.01	n.a.
2	Hexavalent Chromium	4.198	0.051	0.413	76.77	46.99	0.1921
Total:			**0.066**	**0.878**	**100.00**	**100.00**	

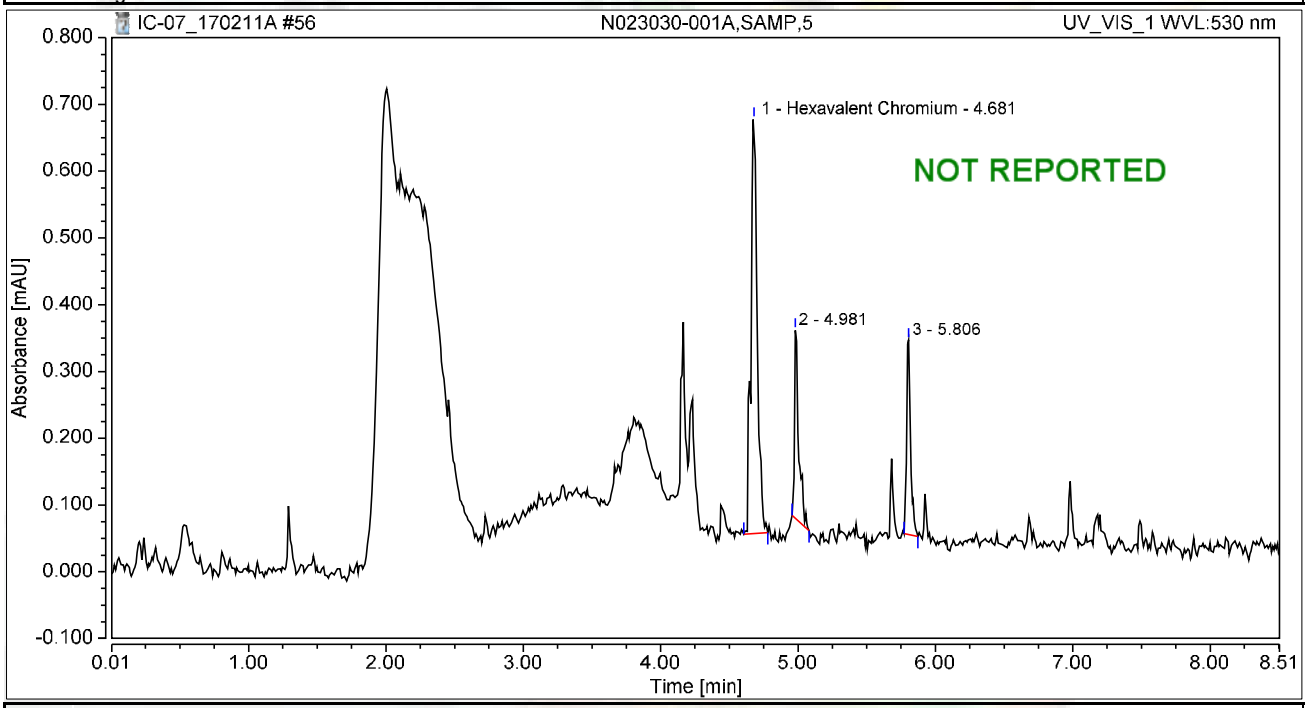
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.681	0.034	0.620	64.63	51.99	0.1286
2		4.981	0.009	0.282	17.86	23.62	n.a.
3		5.806	0.009	0.291	17.50	24.39	n.a.
Total:			**0.053**	**1.193**	**100.00**	**100.00**	

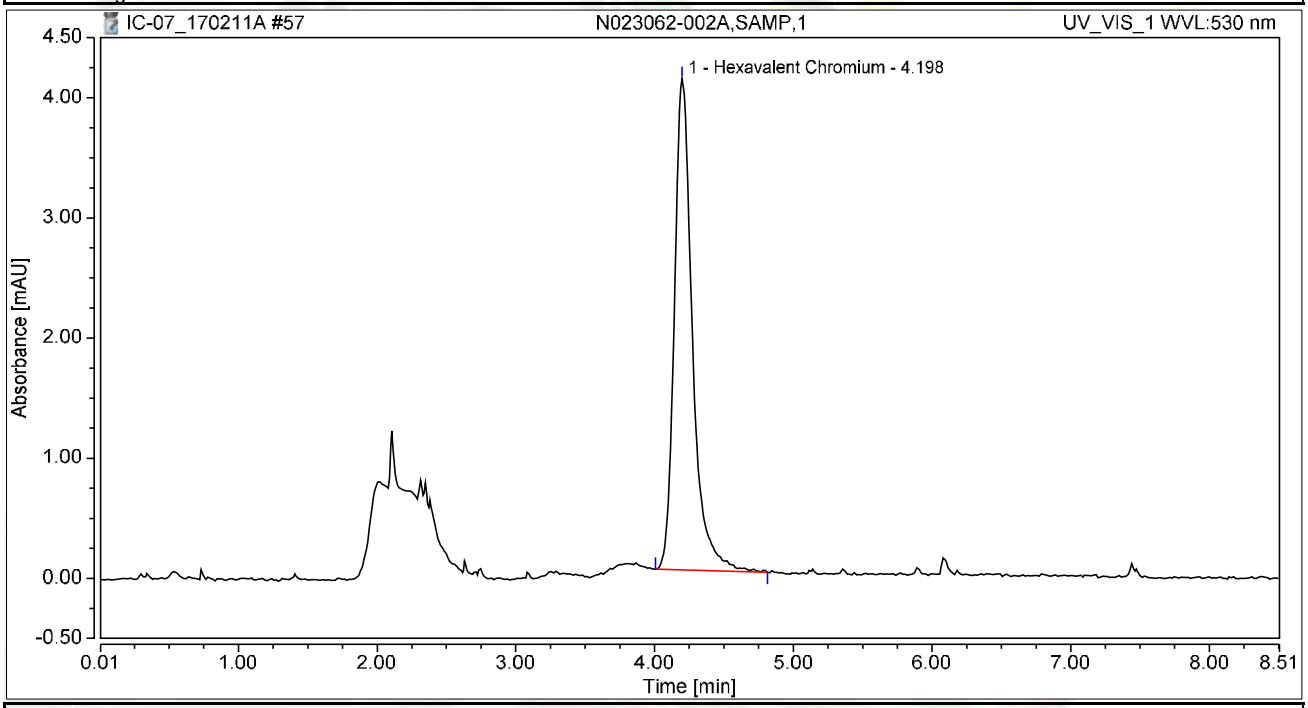
NOT REPORTED

Chromatogram and Results

Injection Details

Injection Name:	**N023062-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

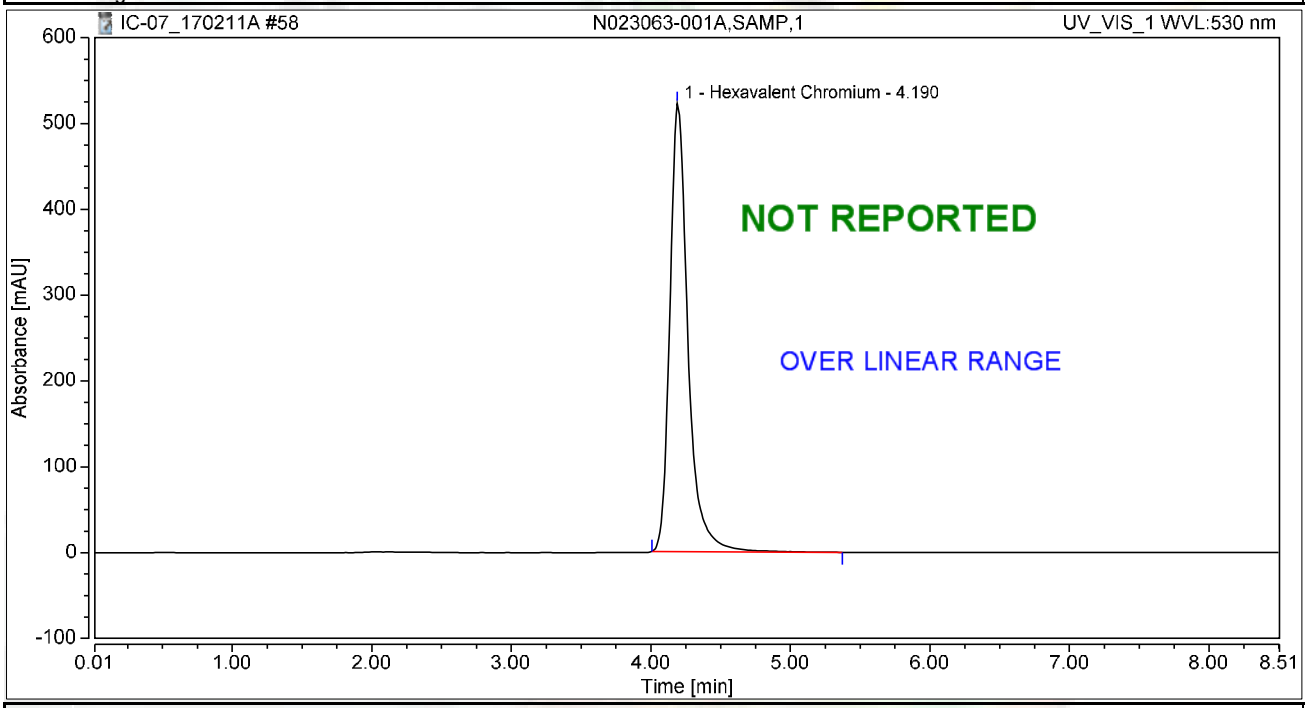
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.617	4.089	100.00	100.00	2.3256
Total:			**0.617**	**4.089**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023063-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

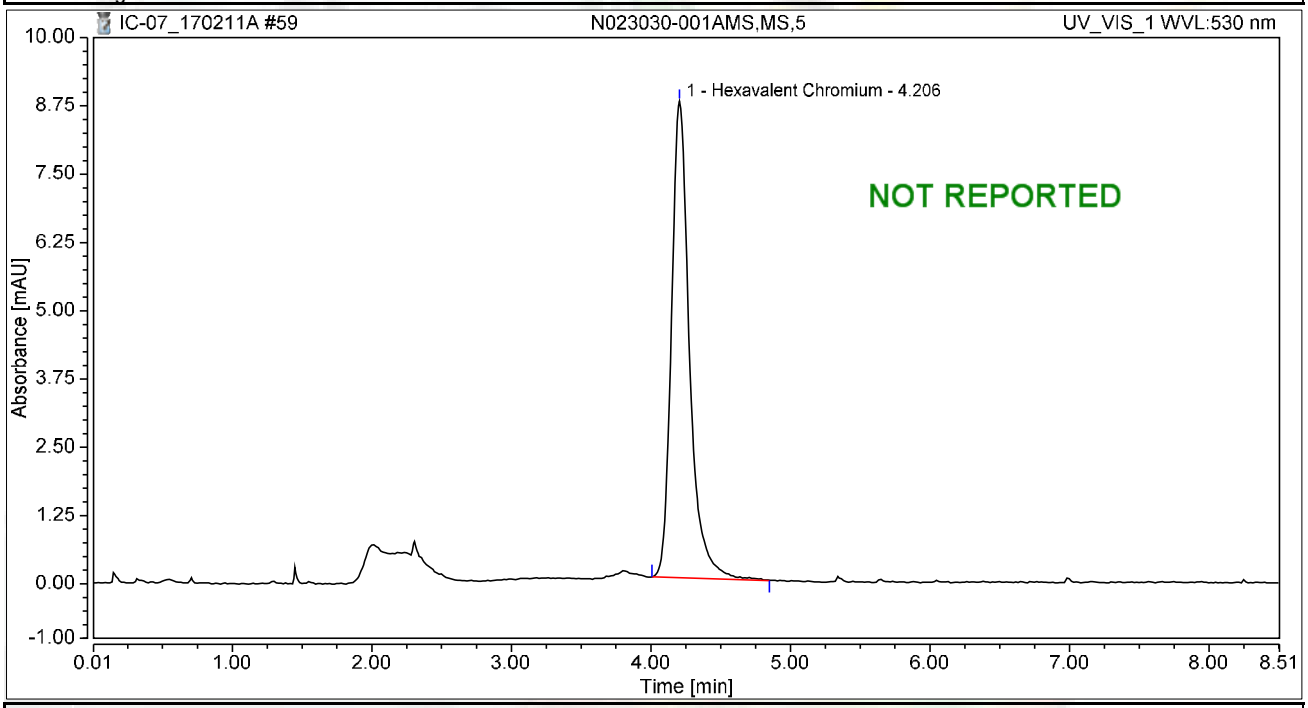
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	78.811	522.121	100.00	100.00	297.1243
Total:			**78.811**	**522.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

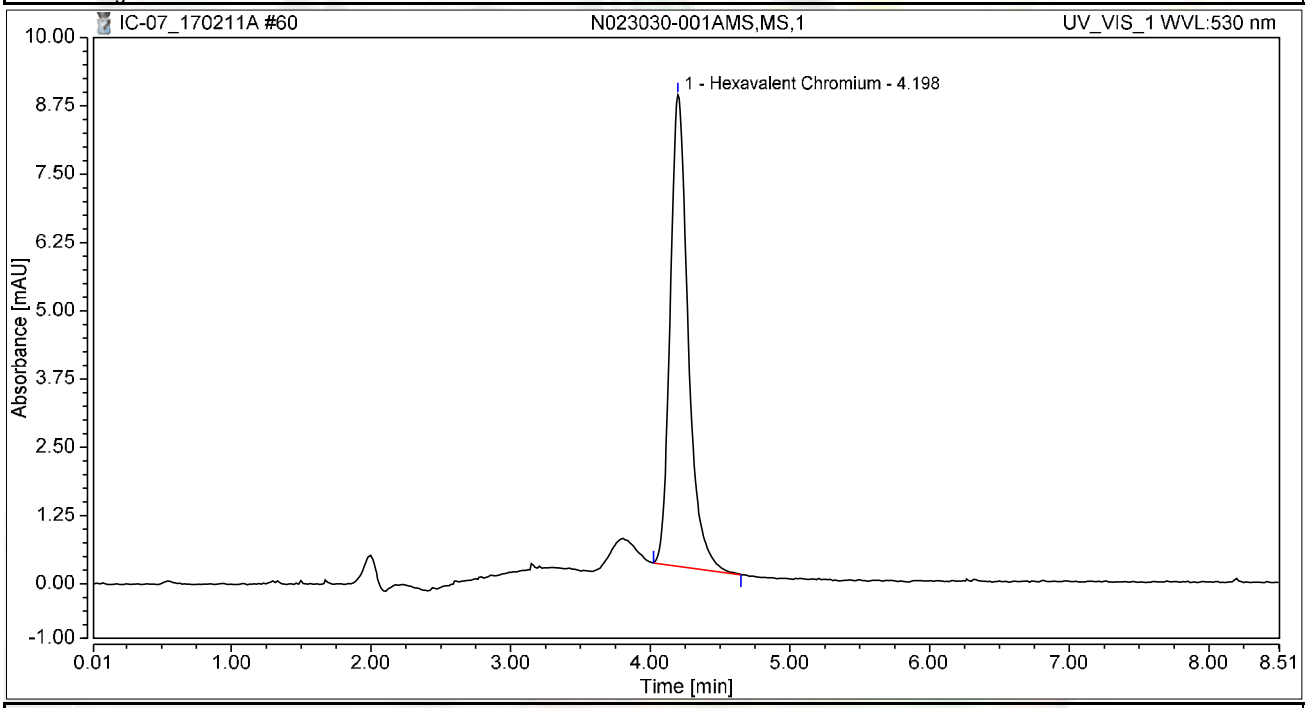
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.309	8.720	100.00	100.00	4.9351
Total:			**1.309**	**8.720**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023030-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

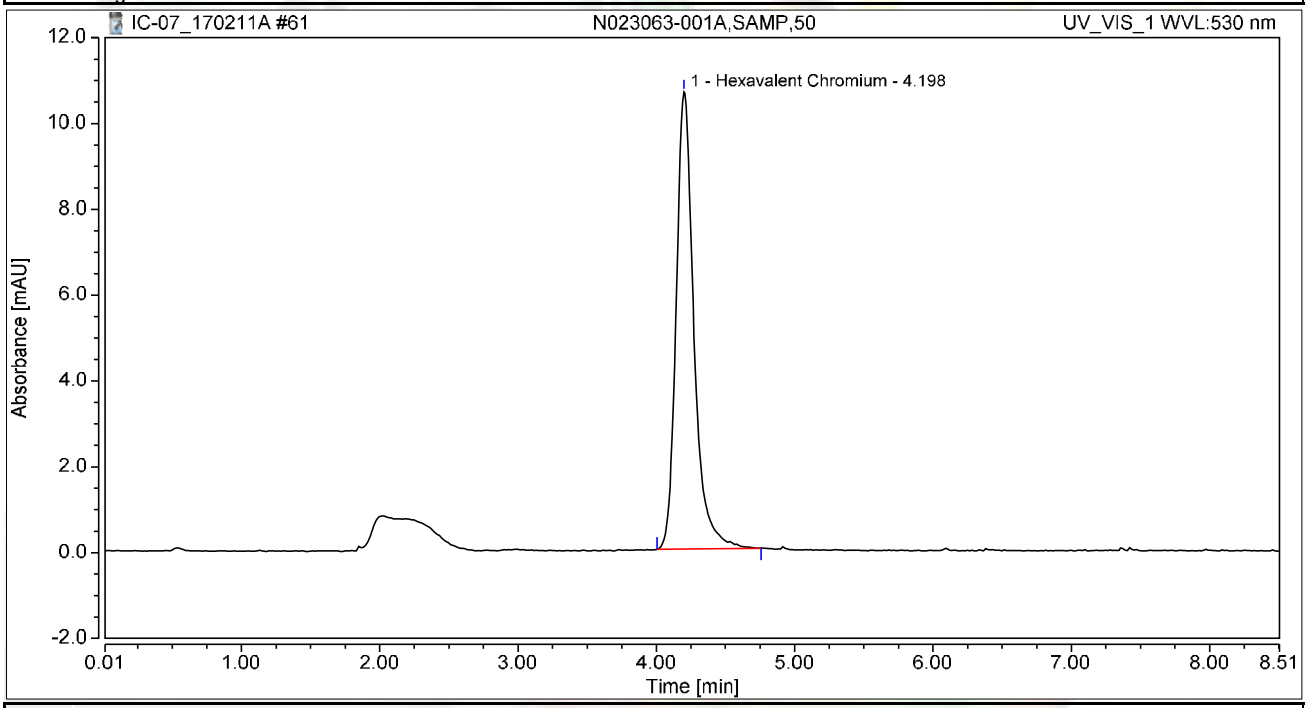
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.291	8.634	100.00	100.00	4.8659
Total:			**1.291**	**8.634**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023063-001A,SAMP,50**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

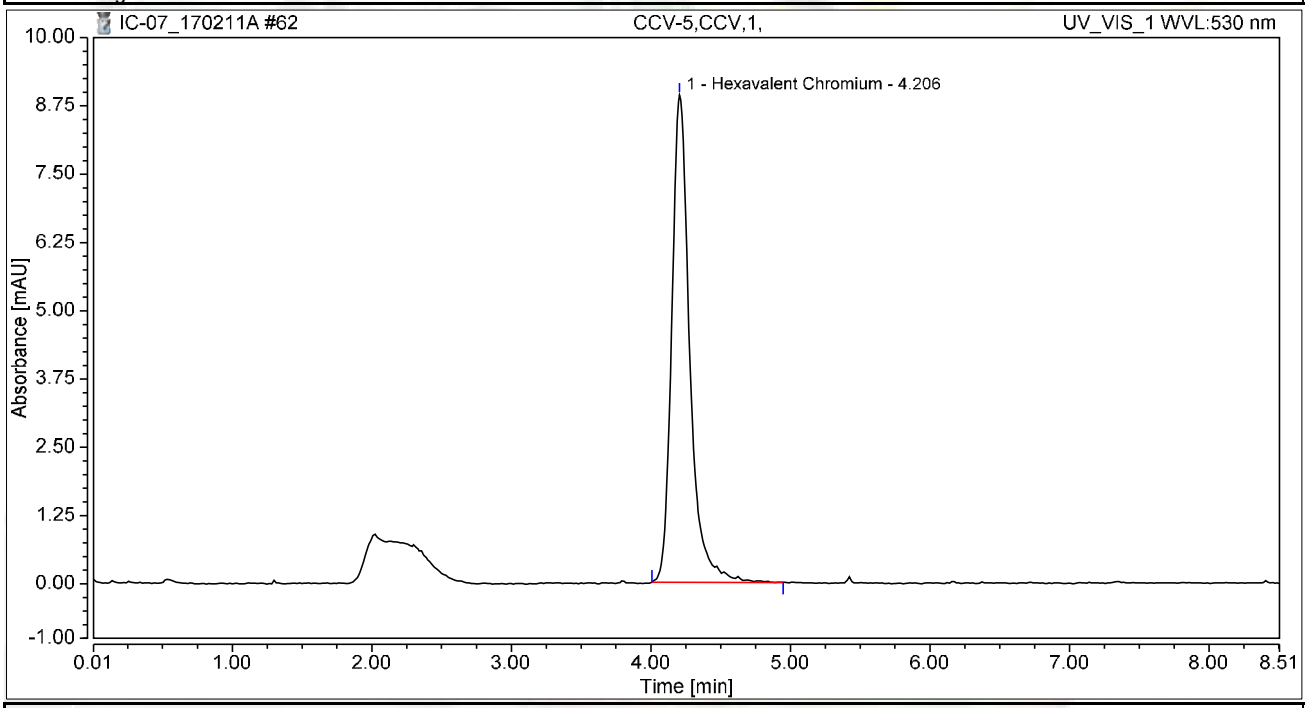
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.583	10.650	100.00	100.00	5.9682
Total:			**1.583**	**10.650**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

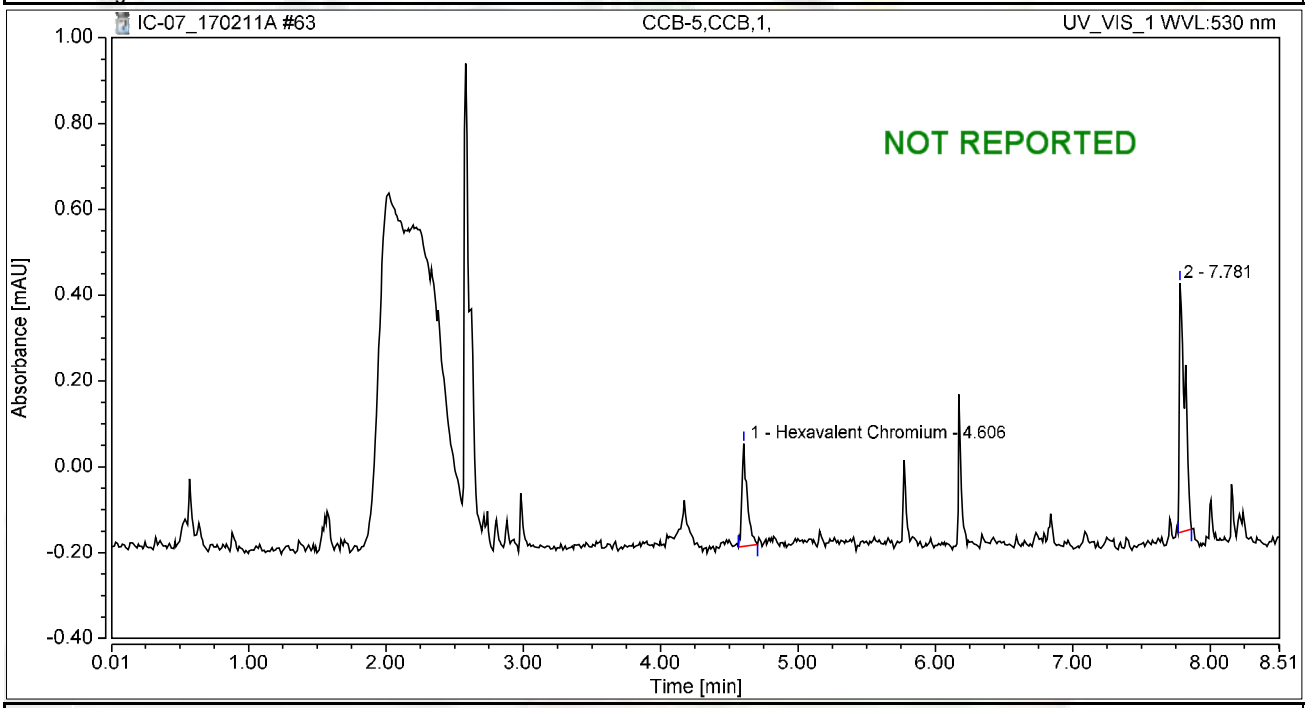
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.335	8.917	100.00	100.00	5.0332
Total:			**1.335**	**8.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

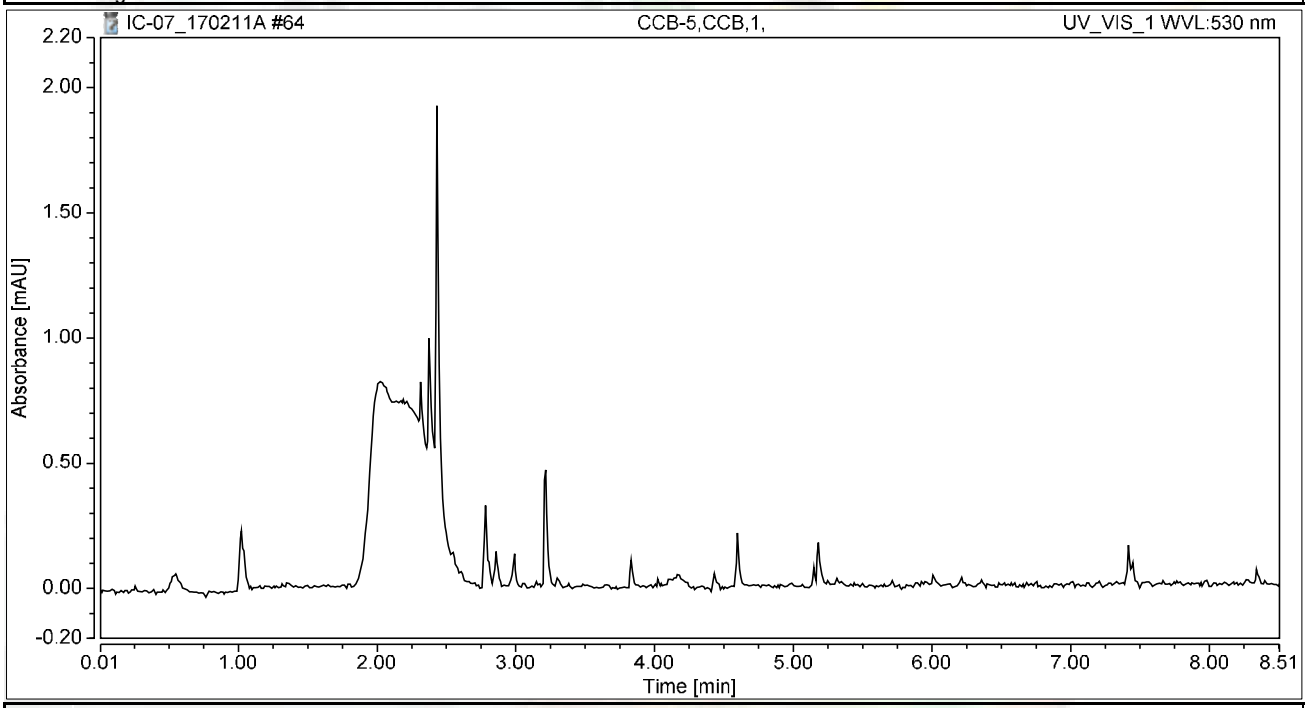
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.606	0.010	0.239	27.29	29.16	0.0373
2		7.781	0.026	0.581	72.71	70.84	n.a.
Total:			**0.036**	**0.821**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Feb/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/13/17 9:43 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/13/17 9:53 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/13/17 10:02 AM	Reported
15	MB-R113519	MBLK	1	Hexavalent Chromium	02/13/17 10:12 AM	Reported
16	LCS-R113519	LCS	1	Hexavalent Chromium	02/13/17 10:24 AM	Reported
17	N023014-006A	SAMP	5	Hexavalent Chromium	02/13/17 10:43 AM	Reported
18	N023014-006AMS	MS	5	Hexavalent Chromium	02/13/17 10:54 AM	Reported
19	N023014-006AMSD	MSD	5	Hexavalent Chromium	02/13/17 11:03 AM	Reported
20	N023014-005A	SAMP	1	Hexavalent Chromium	02/13/17 11:13 AM	Not Reported
21	N023014-005AMS	MS	1	Hexavalent Chromium	02/13/17 11:22 AM	Not Reported
22	N023014-007A	SAMP	1	Hexavalent Chromium	02/13/17 11:32 AM	Not Reported
23	N023014-007AMS	MS	1	Hexavalent Chromium	02/13/17 11:41 AM	Not Reported
24	N023014-008A	SAMP	1	Hexavalent Chromium	02/13/17 11:51 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/13/17 12:00 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/13/17 12:10 PM	Reported
27	N023014-008AMS	MS	1	Hexavalent Chromium	02/13/17 12:19 PM	Reported
28	N023014-009A	SAMP	1	Hexavalent Chromium	02/13/17 12:29 PM	Reported
29	N023014-009AMS	MS	1	Hexavalent Chromium	02/13/17 12:38 PM	Reported
30	N023014-005A	SAMP	5	Hexavalent Chromium	02/13/17 12:48 PM	Reported
31	N023014-005AMS	MS	5	Hexavalent Chromium	02/13/17 12:57 PM	Reported
32	N023014-007A	SAMP	5	Hexavalent Chromium	02/13/17 1:07 PM	Reported
33	N023014-007AMS	MS	5	Hexavalent Chromium	02/13/17 1:16 PM	Reported
34	N023014-008A	SAMP	5	Hexavalent Chromium	02/13/17 1:25 PM	Not Reported
35	N023014-008AMS	MS	5	Hexavalent Chromium	02/13/17 1:35 PM	Not Reported
36	N023028-001A	SAMP	1	Hexavalent Chromium	02/13/17 1:51 PM	Not Reported
37	N023028-002A	SAMP	1	Hexavalent Chromium	02/13/17 2:02 PM	Not Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/13/17 2:12 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/13/17 2:21 PM	Reported
40	N023028-003A	SAMP	1	Hexavalent Chromium	02/13/17 2:30 PM	Not Reported
41	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 2:40 PM	Not Reported
42	N023029-001AMS	MS	1	Hexavalent Chromium	02/13/17 2:49 PM	Reported

rba 2/19/2017

IC7 RBA 2/16/2017 9:38 AM

Nancy 2/22/2017

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023029-002A	SAMP	100	Hexavalent Chromium	02/13/17 2:59 PM	Reported
44	N023029-002AMS	MS	100	Hexavalent Chromium	02/13/17 3:08 PM	Reported
45	N023029-003A	SAMP	100	Hexavalent Chromium	02/13/17 3:18 PM	Not Reported
46	N023029-003AMS	MS	100	Hexavalent Chromium	02/13/17 3:27 PM	Not Reported
47	N023029-004A	SAMP	1	Hexavalent Chromium	02/13/17 3:37 PM	Reported
48	N023029-004ADUP	DUP	1	Hexavalent Chromium	02/13/17 3:46 PM	Reported
49	N023029-004AMS	MS	1	Hexavalent Chromium	02/13/17 3:56 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	02/13/17 4:05 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/13/17 4:15 PM	Reported
52	N023029-005A	SAMP	1	Hexavalent Chromium	02/13/17 4:24 PM	Reported
53	N023029-005AMS	MS	1	Hexavalent Chromium	02/13/17 4:33 PM	Reported
54	N023029-006A	SAMP	1	Hexavalent Chromium	02/13/17 4:43 PM	Reported
55	N023029-006AMS	MS	1	Hexavalent Chromium	02/13/17 4:52 PM	Reported
56	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 5:02 PM	Reported
57	N023028-001A	SAMP	20	Hexavalent Chromium	02/13/17 5:11 PM	Reported
58	N023028-001AMS	MS	20	Hexavalent Chromium	02/13/17 5:25 PM	Reported
59	N023028-002A	SAMP	10	Hexavalent Chromium	02/13/17 5:36 PM	Reported
60	N023028-002AMS	MS	10	Hexavalent Chromium	02/13/17 5:45 PM	Reported
61	N023028-003A	SAMP	20	Hexavalent Chromium	02/13/17 5:54 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/13/17 6:04 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/13/17 6:13 PM	Reported
64	N023028-003AMS	MS	20	Hexavalent Chromium	02/13/17 6:23 PM	Reported
65	N023029-003A	SAMP	50	Hexavalent Chromium	02/13/17 6:32 PM	Reported
66	N023029-003AMS	MS	50	Hexavalent Chromium	02/13/17 6:42 PM	Reported
67	N023043-001A	SAMP	1	Hexavalent Chromium	02/13/17 6:51 PM	Not Reported
68	N023043-002A	SAMP	1	Hexavalent Chromium	02/13/17 7:01 PM	Not Reported
69	N023043-003A	SAMP	1	Hexavalent Chromium	02/13/17 7:10 PM	Not Reported
70	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 7:20 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	02/13/17 7:29 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	02/13/17 7:39 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Feb/17 09:47:02**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/13/2017 09:23	Finished	
11	BLANK	2	1000	Unknown		02/13/2017 09:34	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/13/2017 09:43	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/13/2017 09:53	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/13/2017 10:02	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/13/2017 10:12	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/13/2017 10:24	Finished	LCS, IWST-161114D
17	N023014-006A,SAMF	9	1000	Unknown		02/13/2017 10:43	Finished	SAMP, 2>10mL
18	N023014-006AMS,MS	10	1000	Unknown		02/13/2017 10:54	Finished	MS (5ppb), IWST-161114D,2>1
19	N023014-006AMSD,M	11	1000	Unknown		02/13/2017 11:03	Finished	MSD (5ppb), IWST-161114D,2
20	N023014-005A,SAMF	12	1000	Unknown		02/13/2017 11:13	Finished	SAMP, 10mL
21	N023014-005AMS,MS	13	1000	Unknown		02/13/2017 11:22	Finished	MS (1ppb), IWST-161114D,10
22	N023014-007A,SAMF	14	1000	Unknown		02/13/2017 11:32	Finished	SAMP, 10mL
23	N023014-007AMS,MS	15	1000	Unknown		02/13/2017 11:41	Finished	MS (1ppb), IWST-161114D,10
24	N023014-008A,SAMF	16	1000	Unknown		02/13/2017 11:51	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		02/13/2017 12:00	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/13/2017 12:10	Finished	CCB R170123B
27	N023014-008AMS,MS	19	1000	Unknown		02/13/2017 12:19	Finished	MS (1ppb), IWST-161114D,10
28	N023014-009A,SAMF	20	1000	Unknown		02/13/2017 12:29	Finished	SAMP, 10mL
29	N023014-009AMS,MS	21	1000	Unknown		02/13/2017 12:38	Finished	MS (1ppb), IWST-161114D,10
30	N023014-005A,SAMF	22	1000	Unknown		02/13/2017 12:48	Finished	SAMP, 2>10mL
31	N023014-005AMS,MS	23	1000	Unknown		02/13/2017 12:57	Finished	MS (1ppb), IWST-161114D,2>1
32	N023014-007A,SAMF	24	1000	Unknown		02/13/2017 13:07	Finished	SAMP, 2>10mL
33	N023014-007AMS,MS	25	1000	Unknown		02/13/2017 13:16	Finished	MS (1ppb), IWST-161114D,2>1
34	N023014-008A,SAMF	26	1000	Unknown		02/13/2017 13:25	Finished	SAMP, 2>10mL
35	N023014-008AMS,MS	27	1000	Unknown		02/13/2017 13:35	Finished	MS (1ppb), IWST-161114D,2>1
36	N023028-001A,SAMF	29	1000	Unknown		02/13/2017 13:51	Finished	SAMP, 10mL
37	N023028-002A,SAMF	30	1000	Unknown		02/13/2017 14:02	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/13/2017 14:12	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/13/2017 14:21	Finished	CCB R170112D
40	N023028-003A,SAMF	33	1000	Unknown		02/13/2017 14:30	Finished	SAMP, 10mL
41	N023029-001A,SAMF	34	1000	Unknown		02/13/2017 14:40	Finished	SAMP, 10mL
42	N023029-001AMS,MS	35	1000	Unknown		02/13/2017 14:49	Finished	MS (1ppb), IWST-161114D,10
43	N023029-002A,SAMF	36	1000	Unknown		02/13/2017 14:59	Finished	SAMP, 0.1>10mL
44	N023029-002AMS,MS	37	1000	Unknown		02/13/2017 15:08	Finished	MS (5ppb), IWST-161114D,0.1
45	N023029-003A,SAMF	38	1000	Unknown		02/13/2017 15:18	Finished	SAMP, 0.1>10mL
46	N023029-003AMS,MS	39	1000	Unknown		02/13/2017 15:27	Finished	MS (5ppb), IWST-161114D,0.1
47	N023029-004A,SAMF	40	1000	Unknown		02/13/2017 15:37	Finished	SAMP, 10mL
48	N023029-004ADUP,D	41	1000	Unknown		02/13/2017 15:46	Finished	DUP, 10mL
49	N023029-004AMS,MS	42	1000	Unknown		02/13/2017 15:56	Finished	MS (1ppb), IWST-161114D,10
50	CCV-4,CCV1,1,	43	1000	Unknown		02/13/2017 16:05	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	44	1000	Unknown		02/13/2017 16:15	Finished	CCB R170112D
52	N023029-005A,SAMF	45	1000	Unknown		02/13/2017 16:24	Finished	SAMP, 10mL
53	N023029-005AMS,MS	46	1000	Unknown		02/13/2017 16:33	Finished	MS (1ppb), IWST-161114D,10
54	N023029-006A,SAMF	47	1000	Unknown		02/13/2017 16:43	Finished	SAMP, 10mL
55	N023029-006AMS,MS	48	1000	Unknown		02/13/2017 16:52	Finished	MS (1ppb), IWST-161114D,10
56	N023029-001A,SAMF	49	1000	Unknown		02/13/2017 17:02	Finished	SAMP, 10mL
57	N023028-001A,SAMF	50	1000	Unknown		02/13/2017 17:11	Finished	SAMP, 0.5>10mL
58	N023028-001AMS,MS	1	1000	Unknown		02/13/2017 17:25	Finished	MS (5ppb), IWST-161114D,0.5
59	N023028-002A,SAMF	2	1000	Unknown		02/13/2017 17:36	Finished	SAMP, 1>10mL
60	N023028-002AMS,MS	3	1000	Unknown		02/13/2017 17:45	Finished	MS (5ppb), IWST-161114D,1>1

rba 2/19/2017

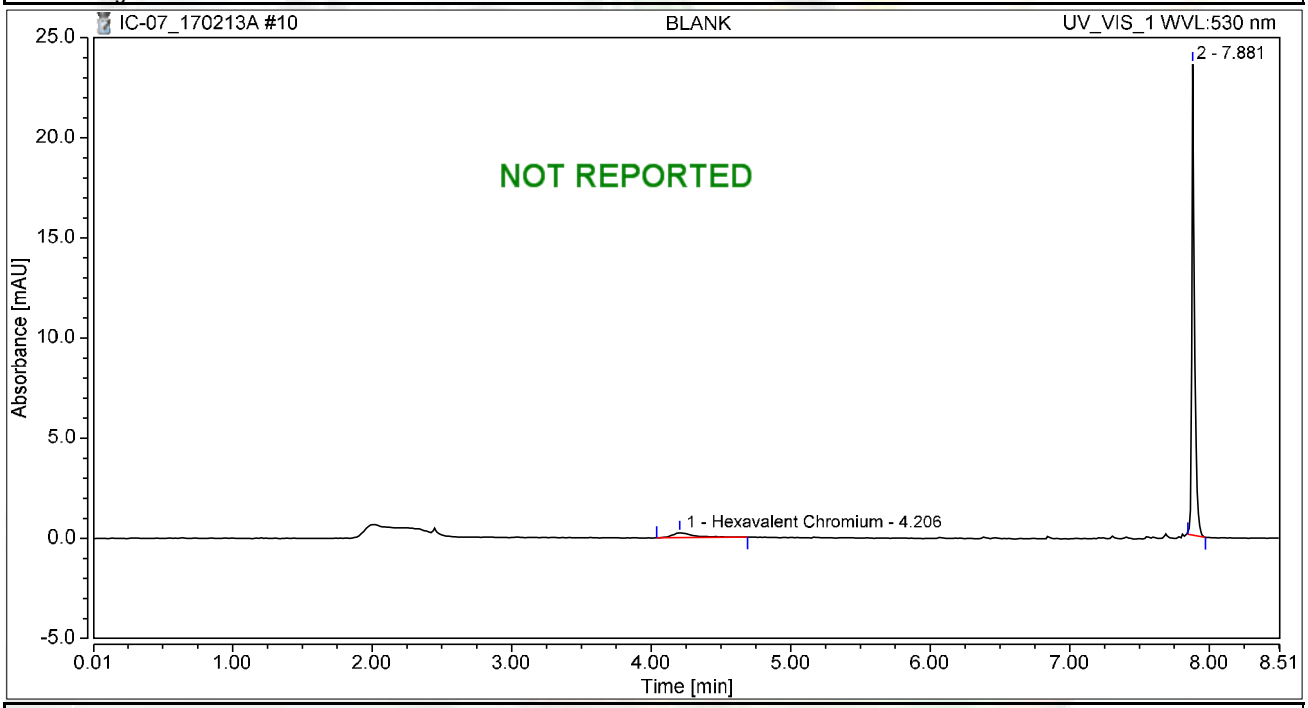
61	N023028-003A,SAMF	4	1000	Unknown		02/13/2017 17:54	Finished	SAMP,0.5>10mL
62	CCV-5,CCV,1,	5	1000	Unknown		02/13/2017 18:04	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	6	1000	Unknown		02/13/2017 18:13	Finished	CCB R170123B
64	N023028-003AMS,MS	7	1000	Unknown		02/13/2017 18:23	Finished	MS (5ppb), IWST-161114D,0.5
65	N023029-003A,SAMF	8	1000	Unknown		02/13/2017 18:32	Finished	SAMP,0.2>10mL
66	N023029-003AMS,MS	9	1000	Unknown		02/13/2017 18:42	Finished	MS (5ppb), IWST-161114D,0.2
67	N023043-001A,SAMF	10	1000	Unknown		02/13/2017 18:51	Finished	SAMP, 10mL
68	N023043-002A,SAMF	11	1000	Unknown		02/13/2017 19:01	Finished	SAMP, 10mL
69	N023043-003A,SAMF	12	1000	Unknown		02/13/2017 19:10	Finished	SAMP, 10mL
70	BLANK	13	1000	Unknown		02/13/2017 19:20	Finished	
71	CCV-6,CCV1,1,	14	1000	Unknown		02/13/2017 19:29	Finished	CCV @10ppb, IWST-161114C
72	CCB-6,CCB,1,	15	1000	Unknown		02/13/2017 19:39	Finished	CCB R170123B
73	SHUTDOWN	16	1000	Unknown		02/13/2017 19:48	Finished	
74	Eluent: R170209B	17	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R170213A	18	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

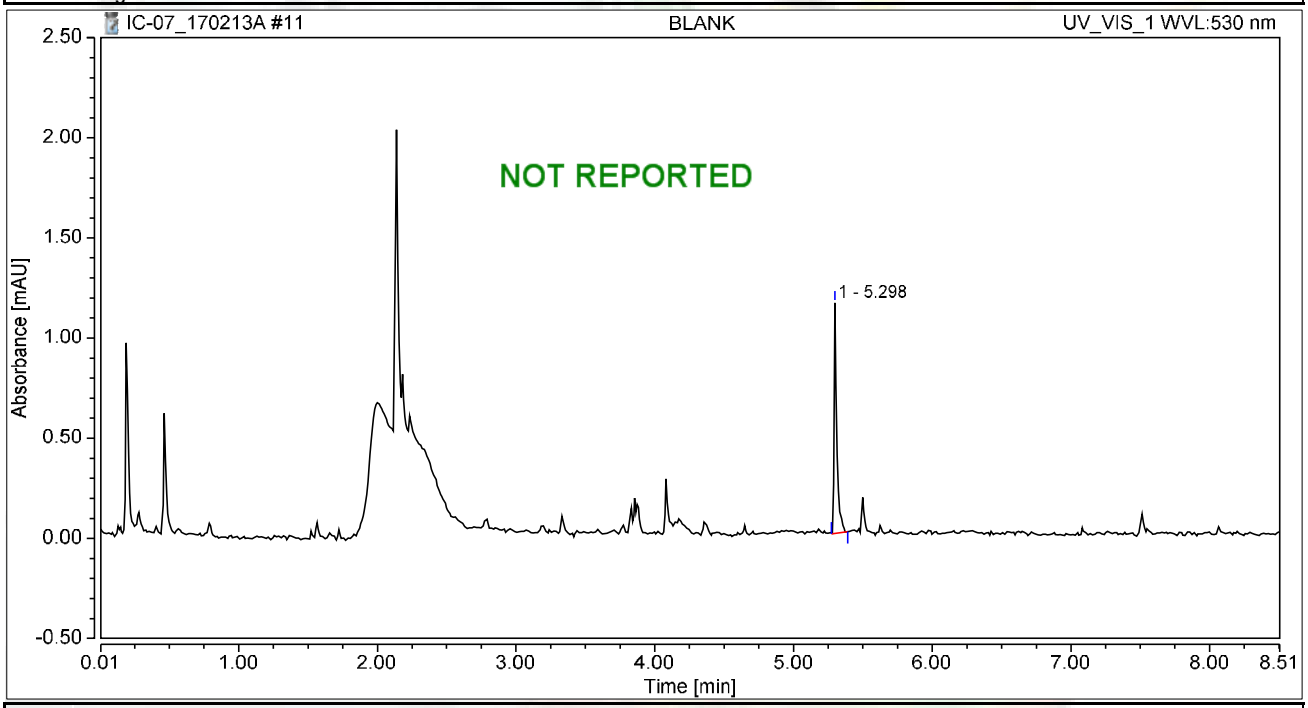
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.049	0.247	8.12	1.04	0.1859
2		7.881	0.558	23.526	91.88	98.96	n.a.
Total:			**0.607**	**23.774**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

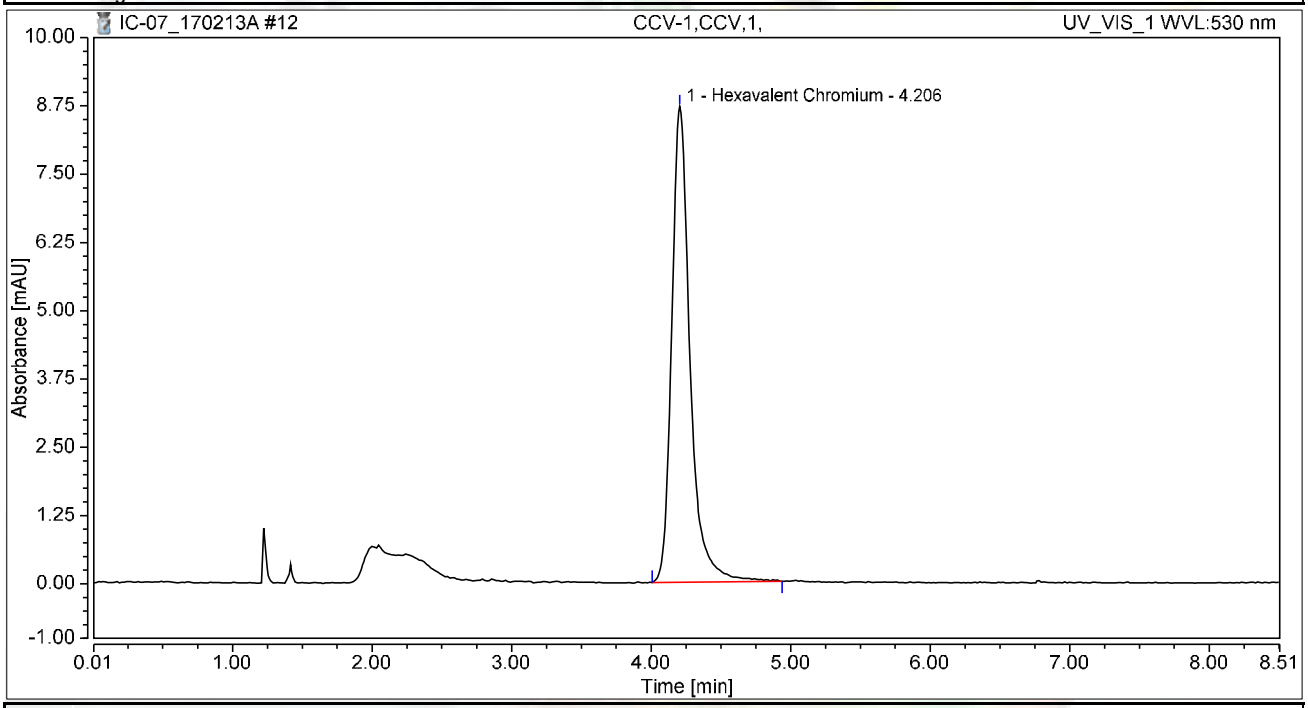
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.298	0.026	1.151	100.00	100.00	n.a.
Total:			**0.026**	**1.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

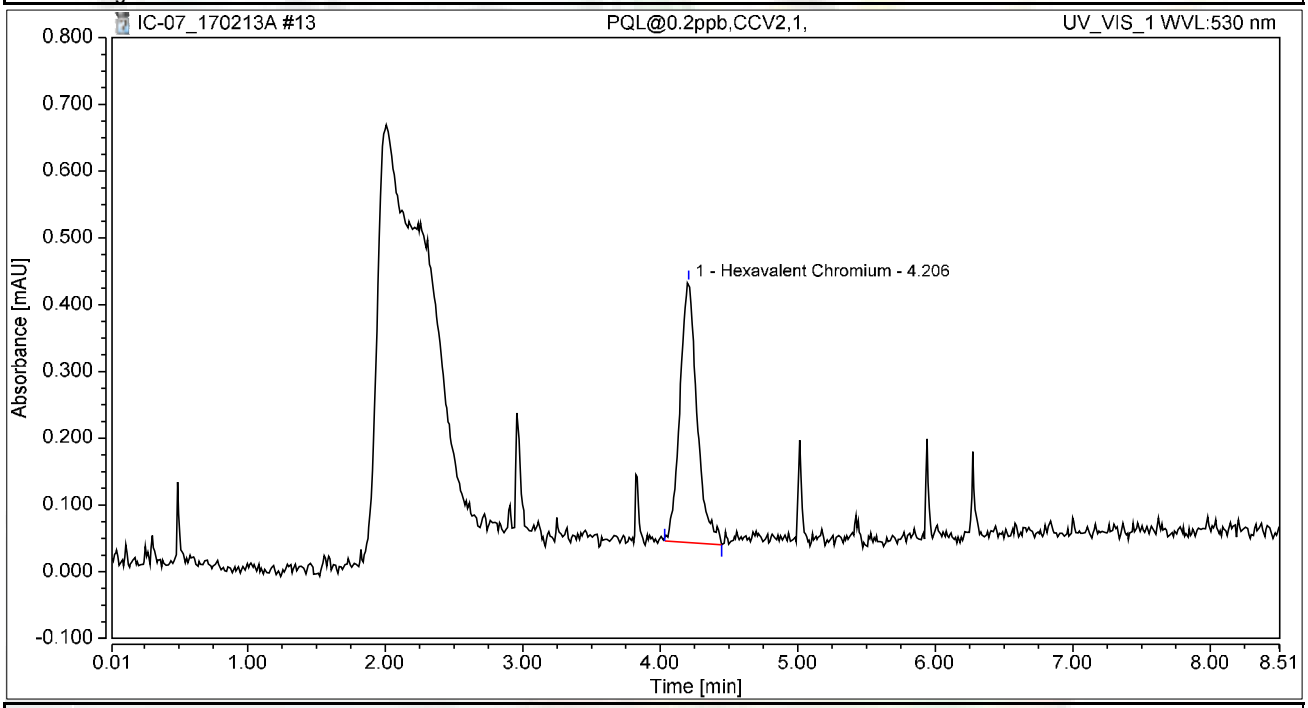
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.323	8.707	100.00	100.00	4.9895
Total:			**1.323**	**8.707**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

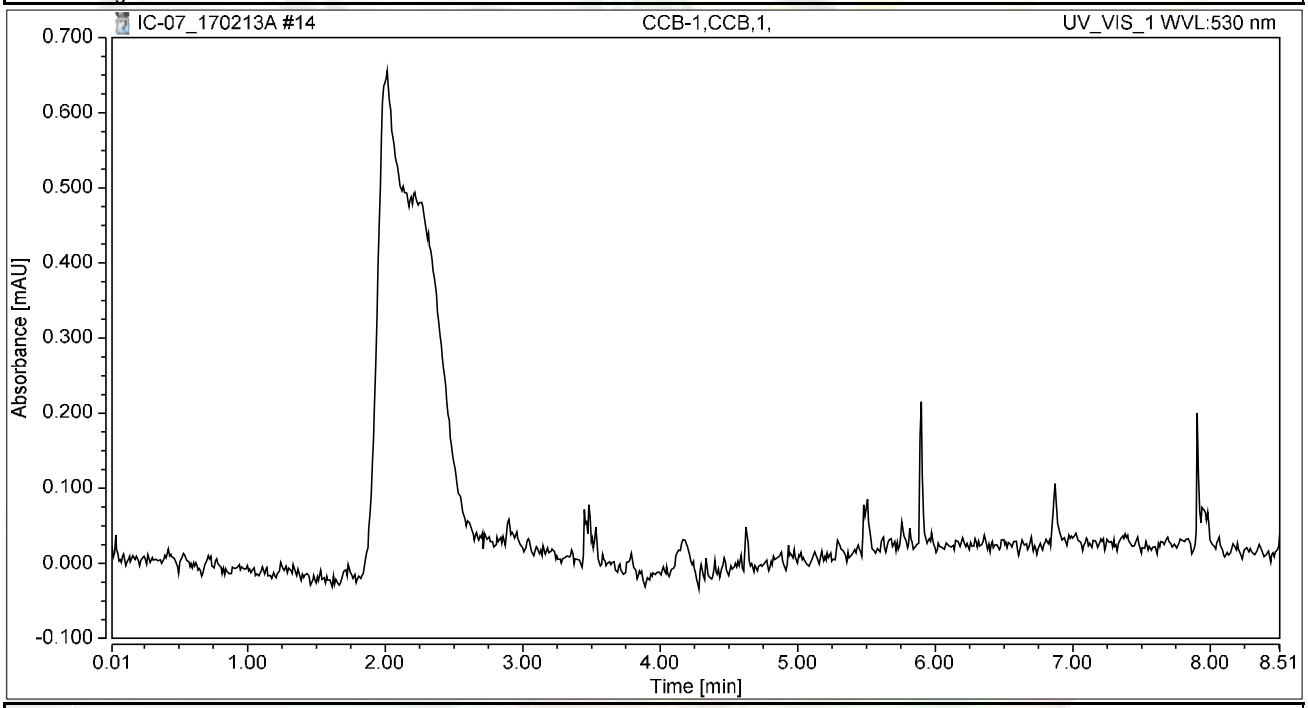
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.056	0.390	100.00	100.00	0.2124
Total:			**0.056**	**0.390**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

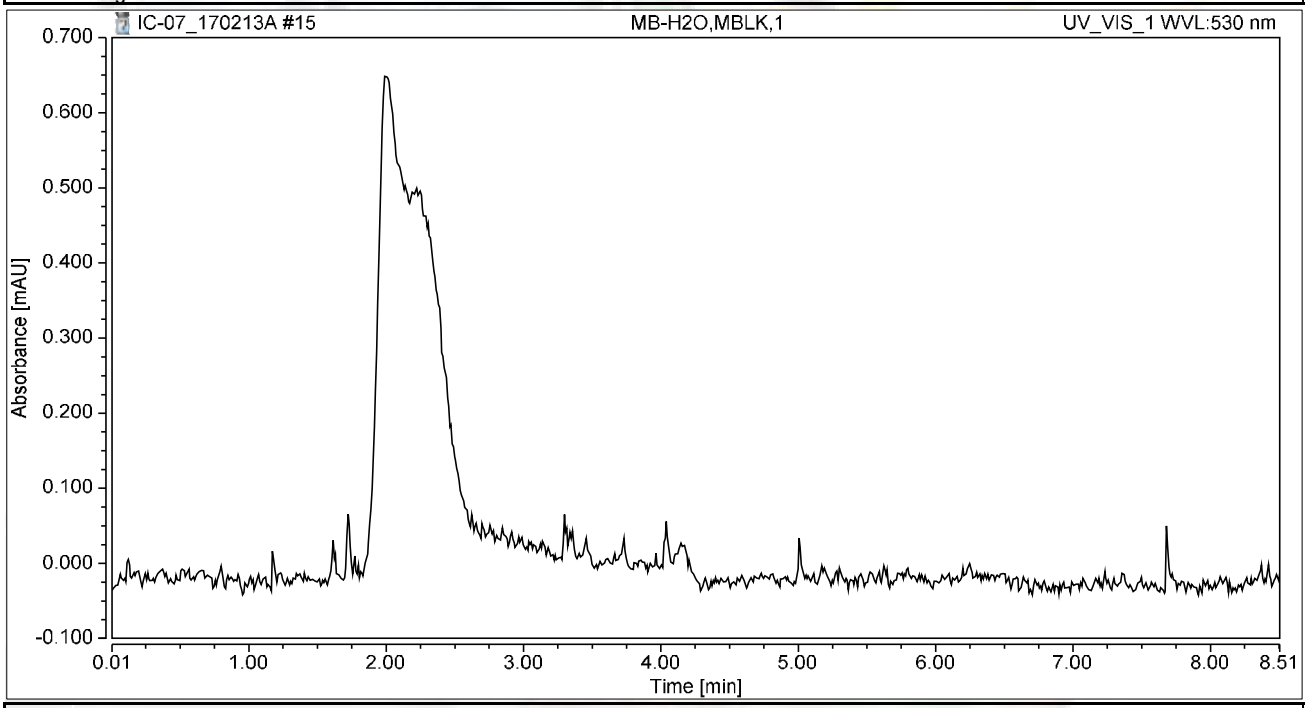
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

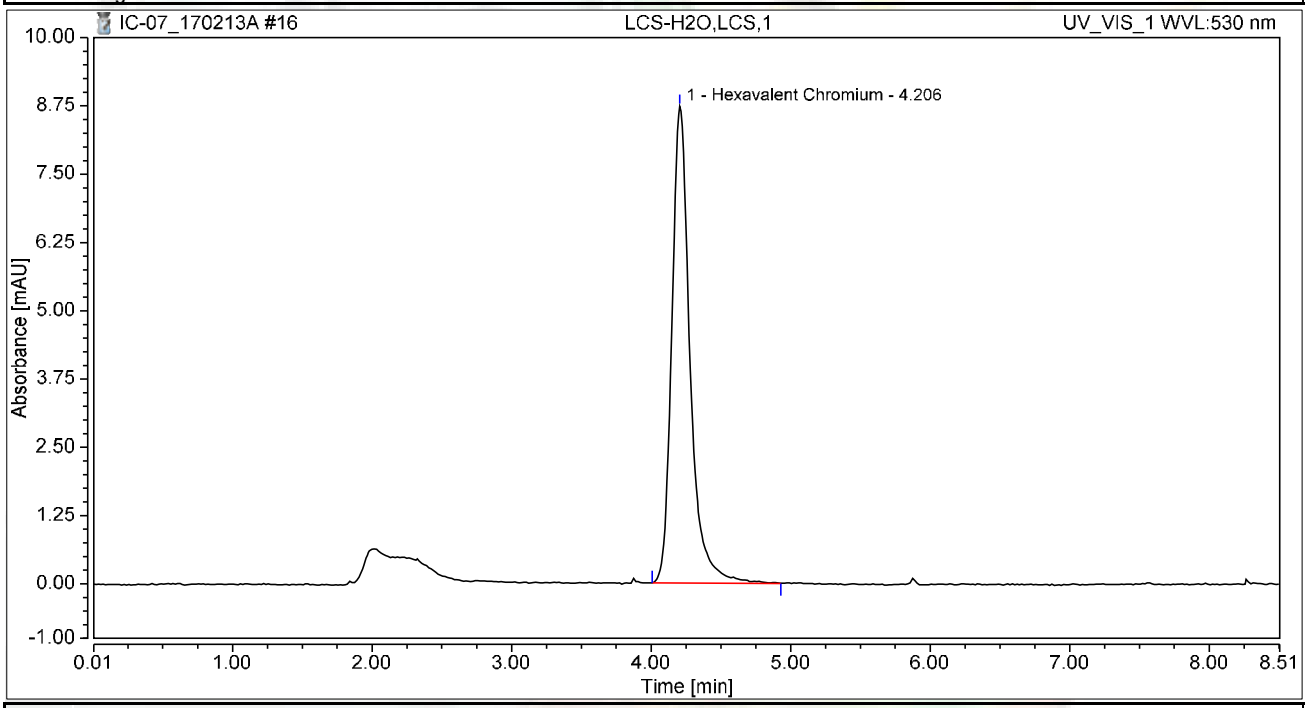
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

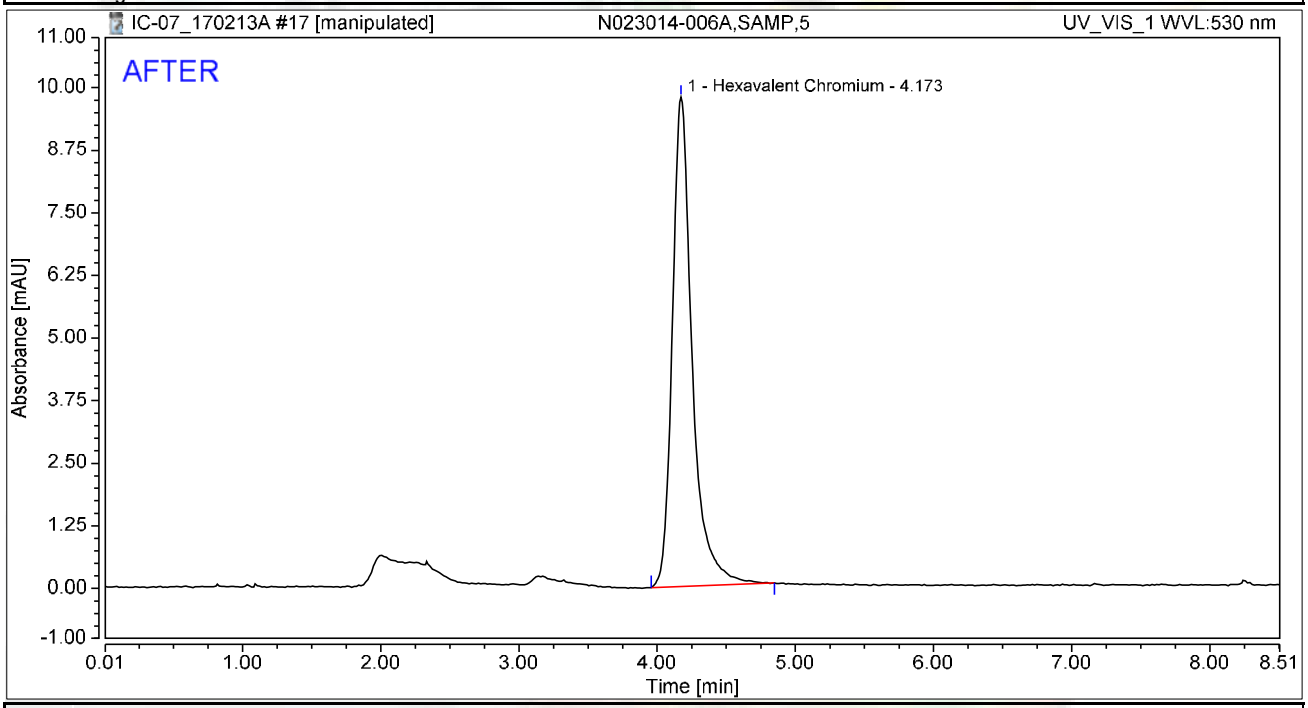
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.319	8.723	100.00	100.00	4.9729
Total:			**1.319**	**8.723**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.622	9.769	100.00	100.00	6.1161
Total:			**1.622**	**9.769**	**100.00**	**100.00**	

rba 2/19/2017

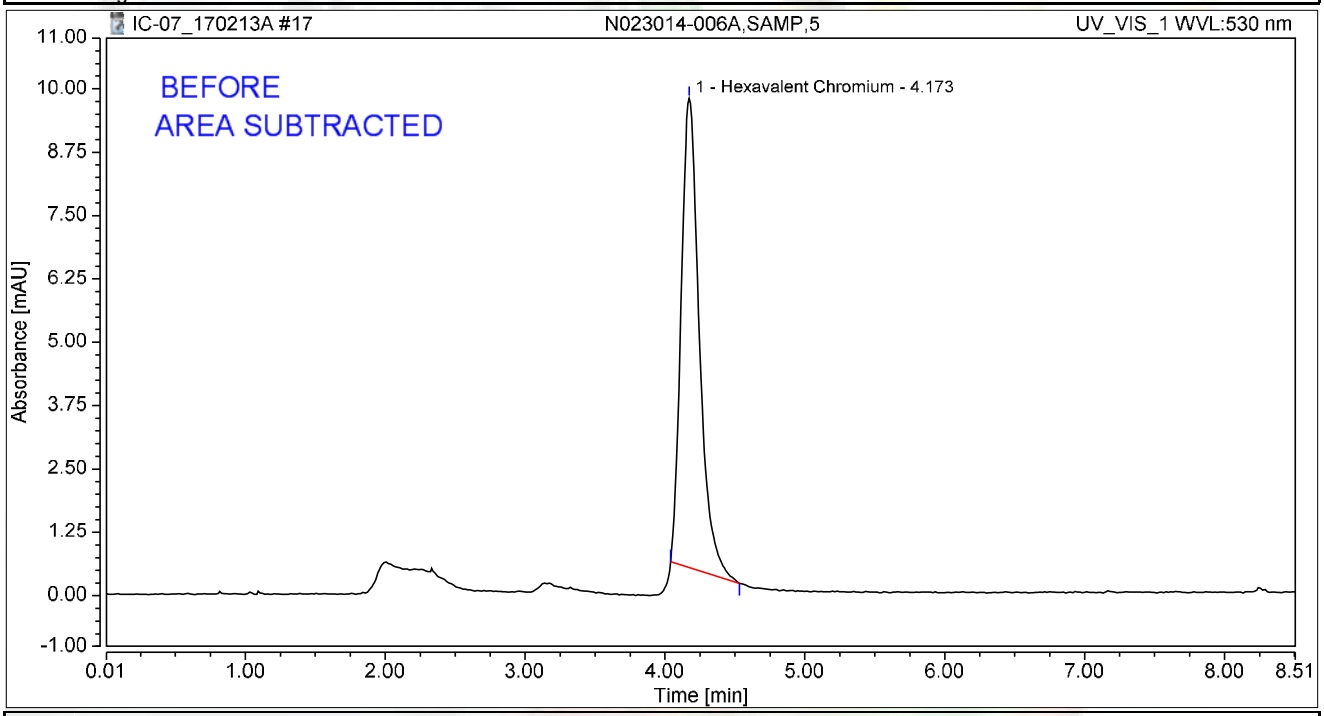
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.393	9.258	100.00	100.00	5.2510
Total:			**1.393**	**9.258**	**100.00**	**100.00**	

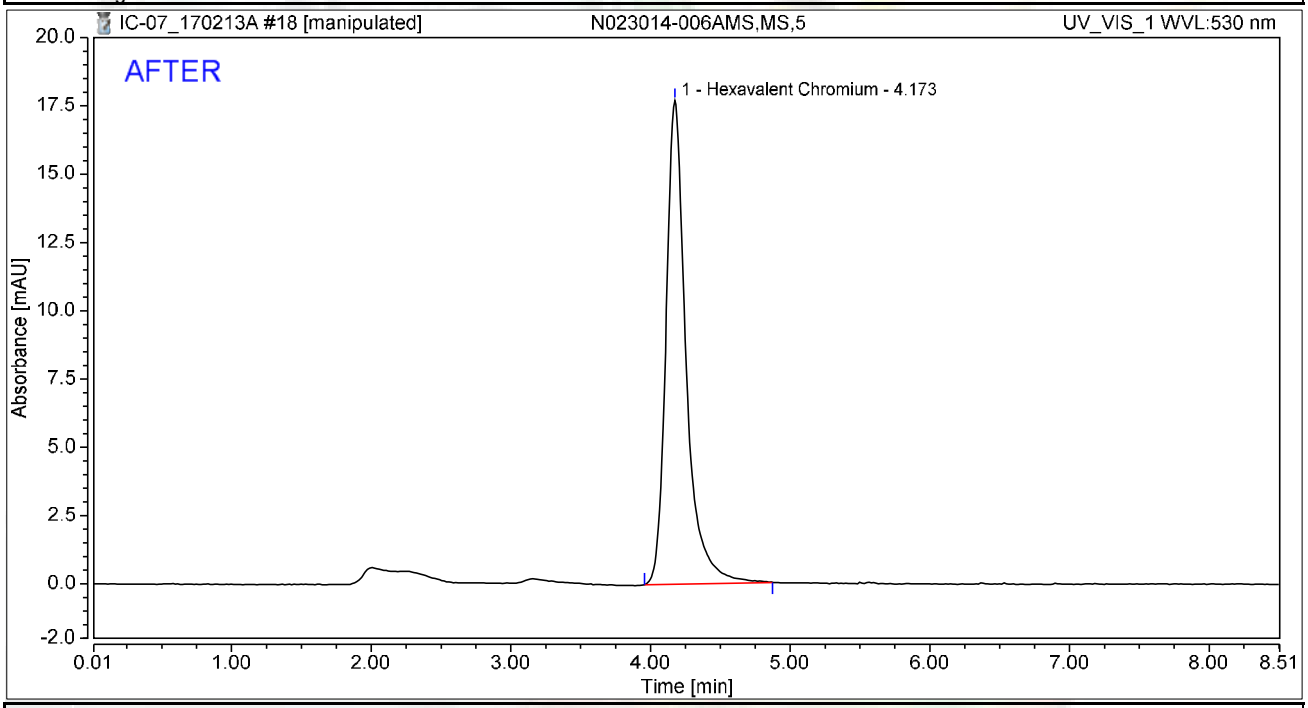
rba **2/19/2017**

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.950	17.711	100.00	100.00	11.1209
Total:			**2.950**	**17.711**	**100.00**	**100.00**	

rba 2/19/2017

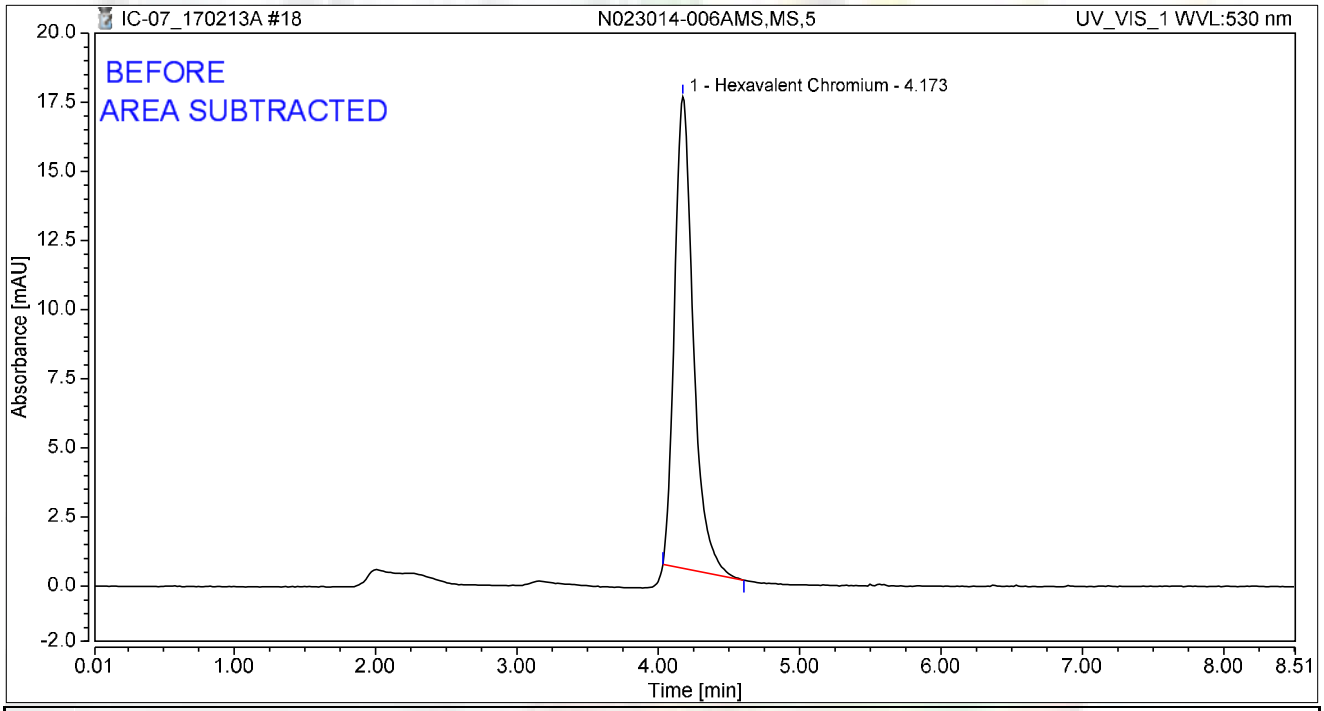
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.626	17.056	100.00	100.00	9.9021
Total:			**2.626**	**17.056**	**100.00**	**100.00**	

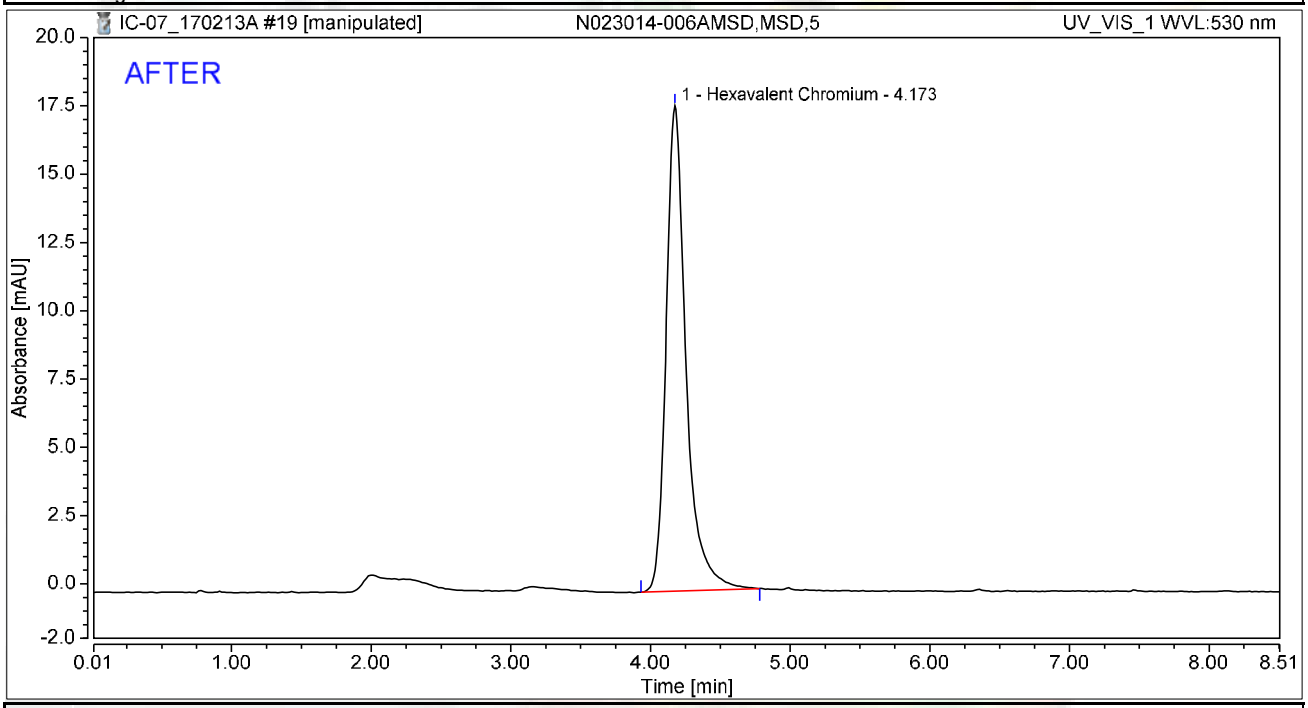
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMSD,MSD,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.940	17.775	100.00	100.00	11.0831
Total:			**2.940**	**17.775**	**100.00**	**100.00**	

rba 2/19/2017

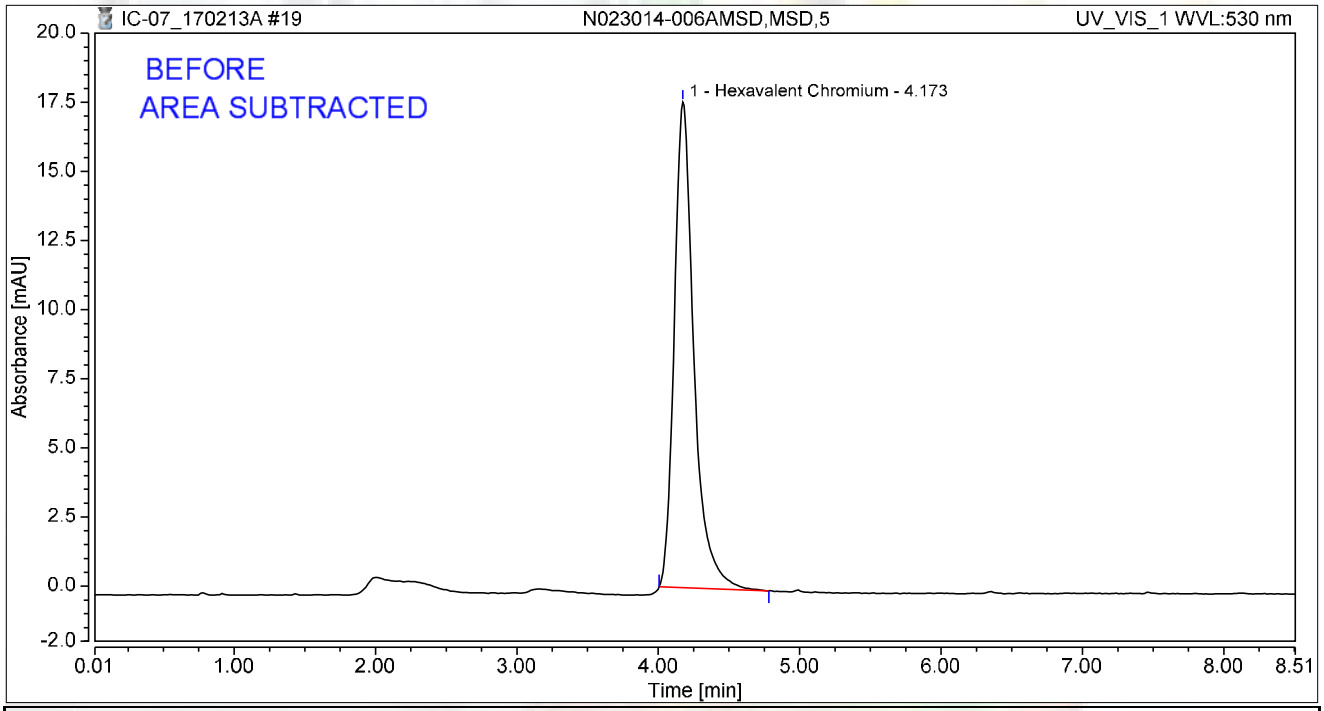
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMSD,MSD,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.831	17.565	100.00	100.00	10.6715
Total:			**2.831**	**17.565**	**100.00**	**100.00**	

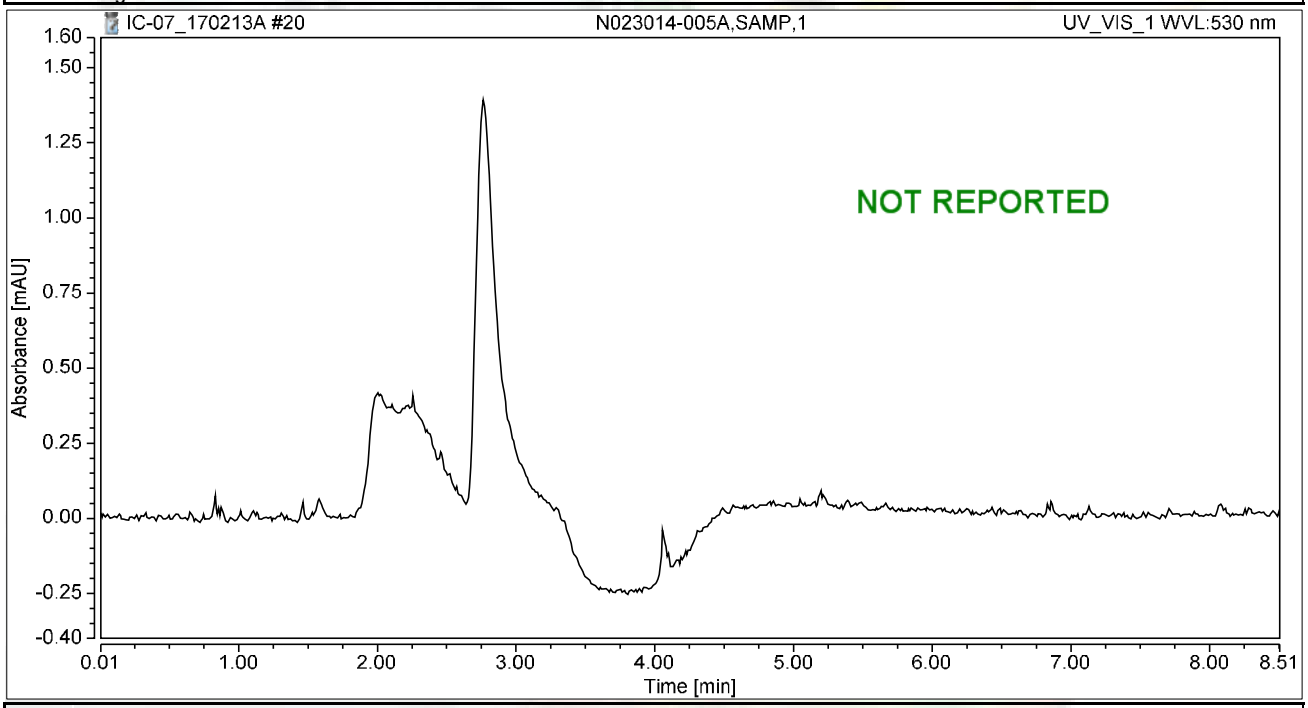
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

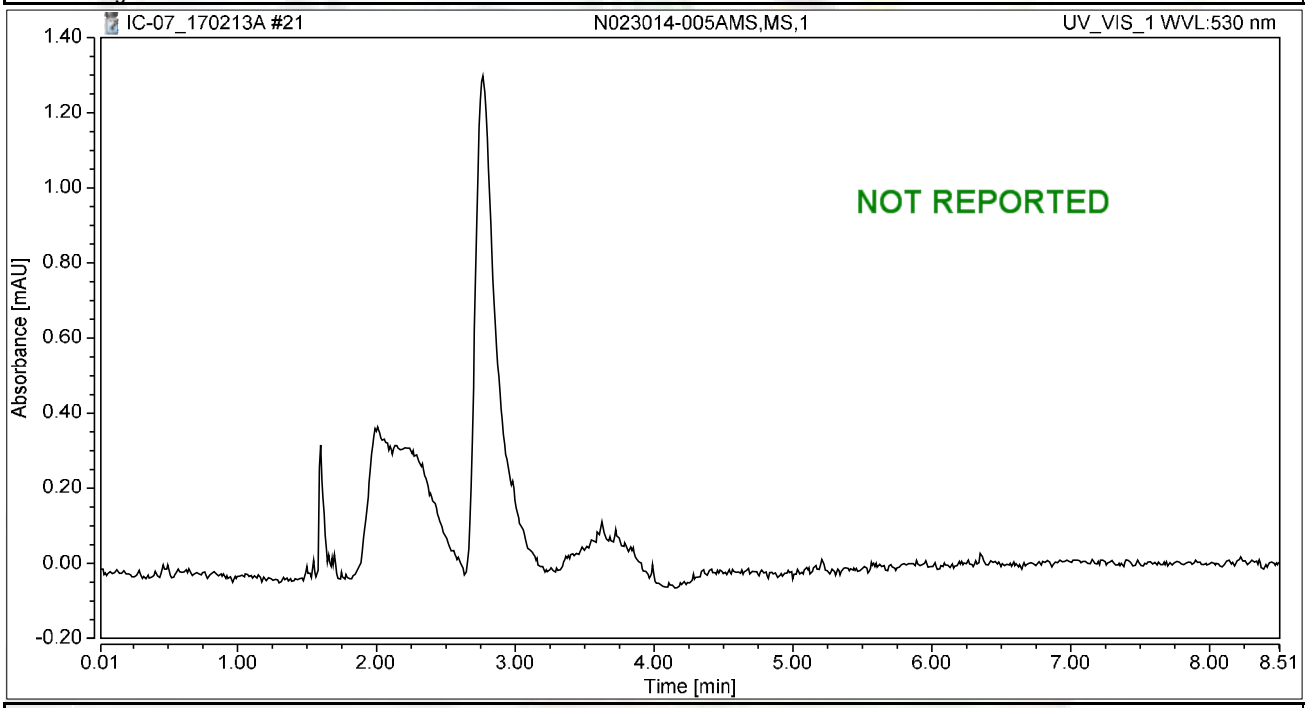
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

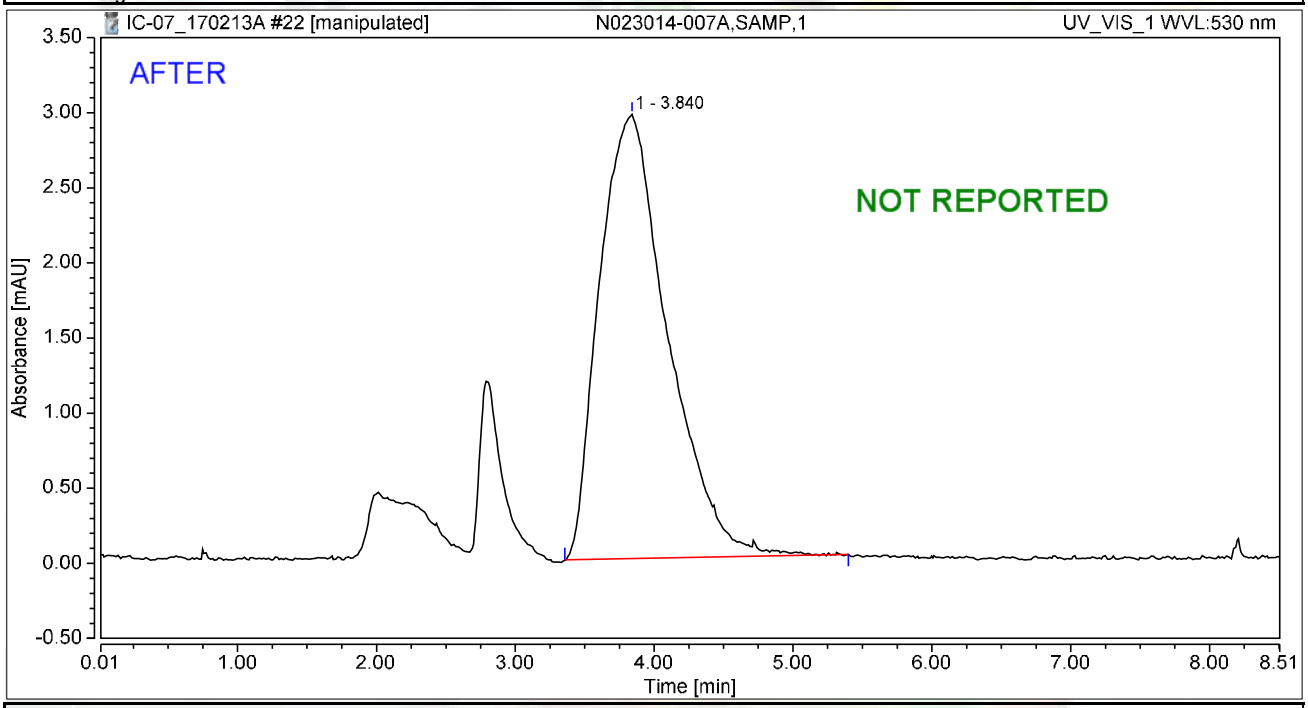
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.840	1.686	2.958	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.686**	**2.958**	**100.00**	**100.00**	

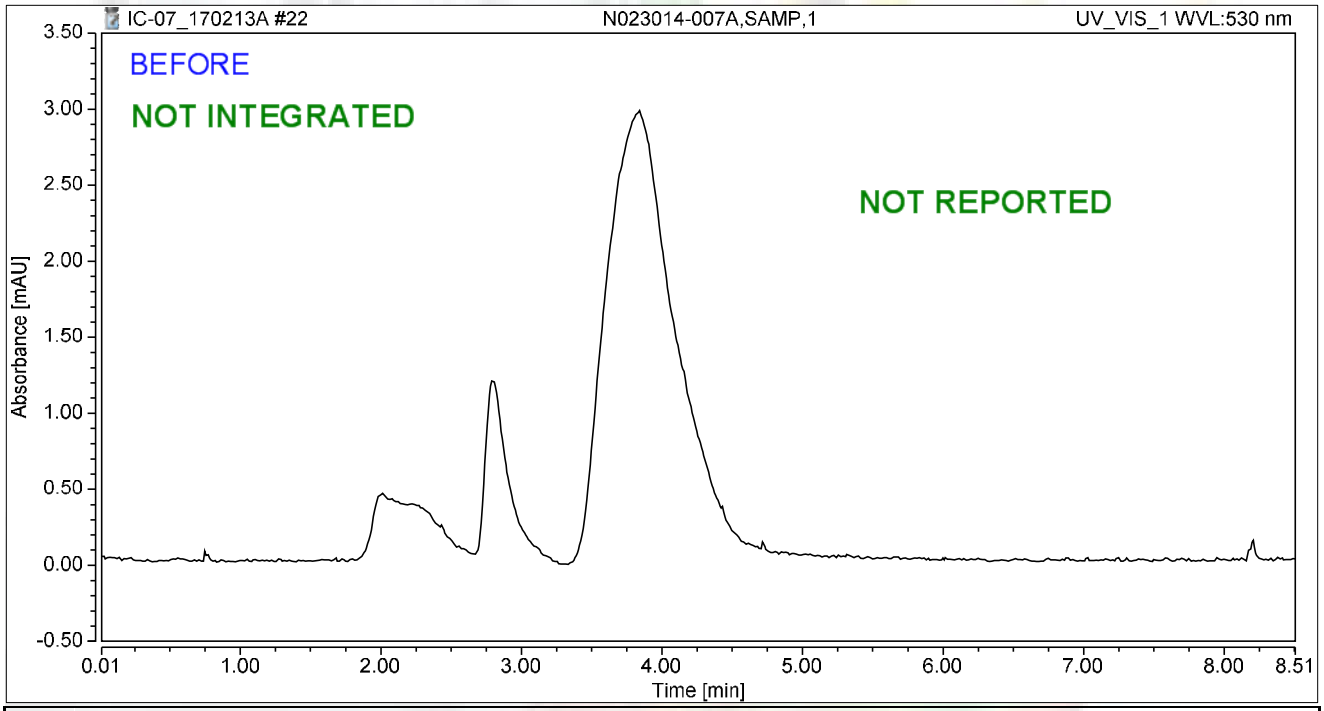
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

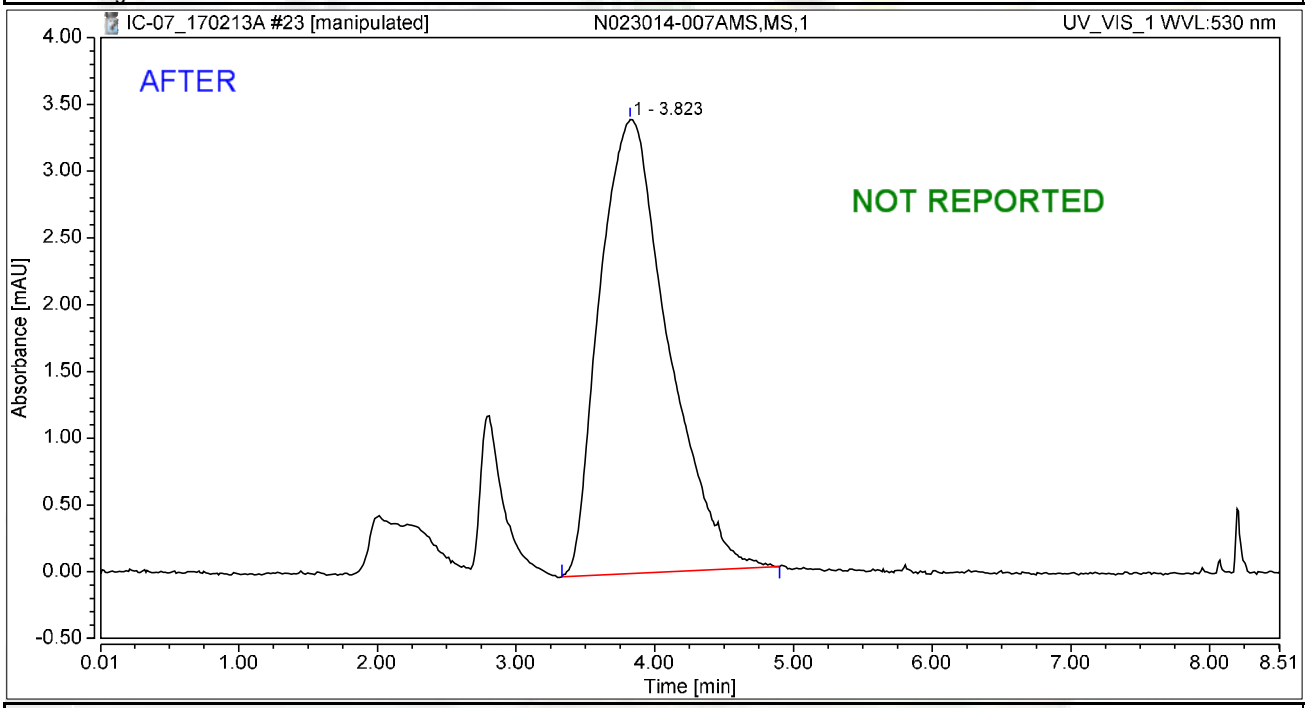
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.823	1.941	3.399	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.941**	**3.399**	**100.00**	**100.00**	

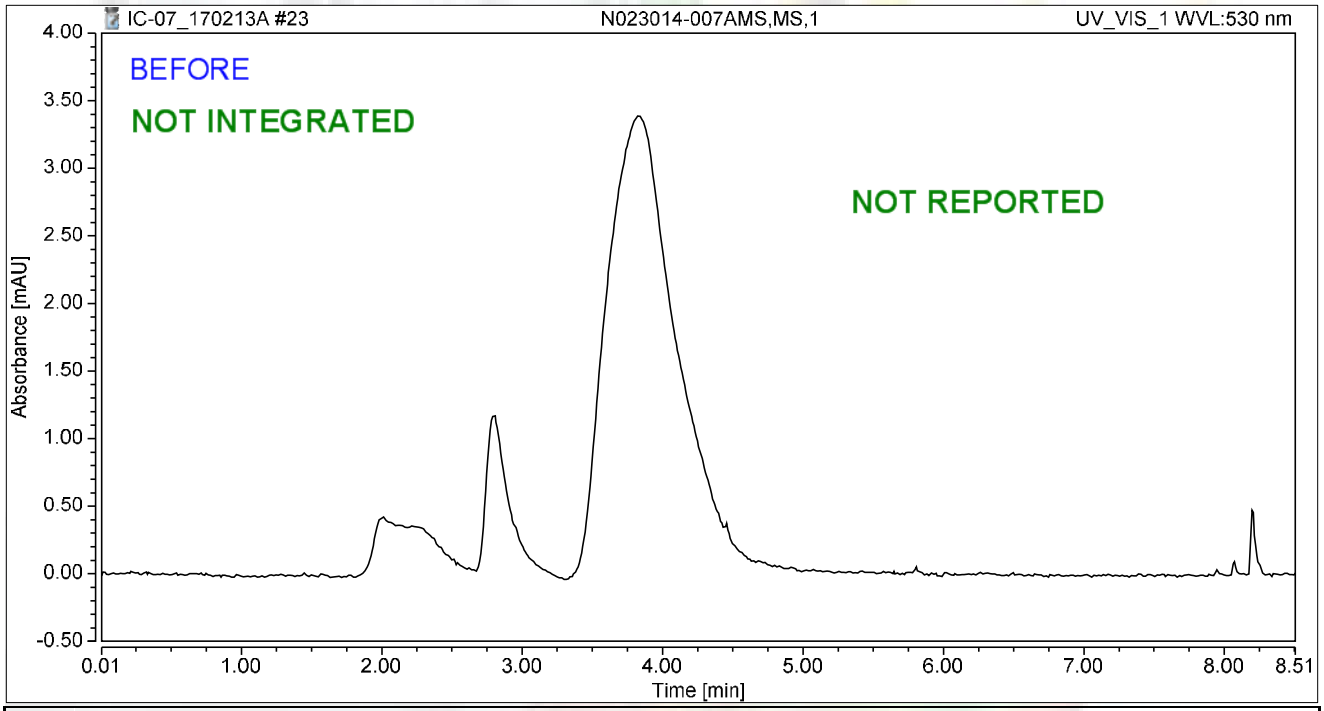
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

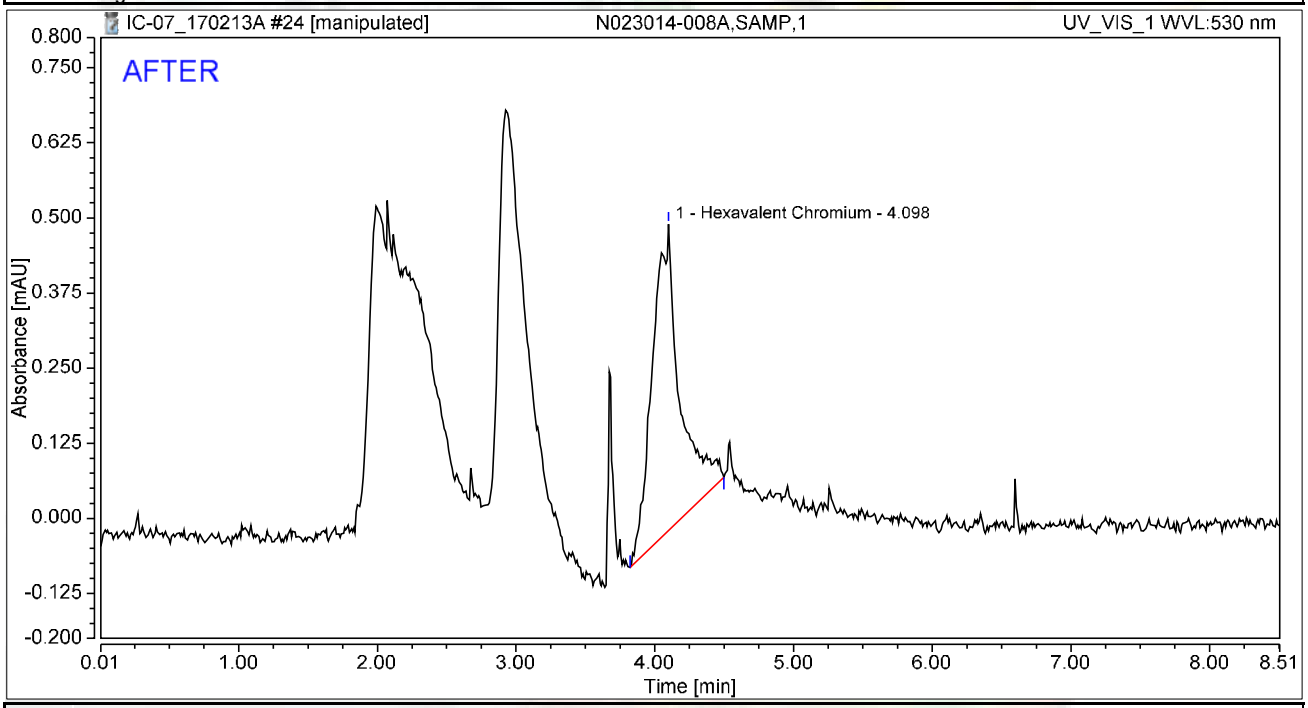
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.119	0.511	100.00	100.00	0.4478
Total:			**0.119**	**0.511**	**100.00**	**100.00**	

rba 2/19/2017

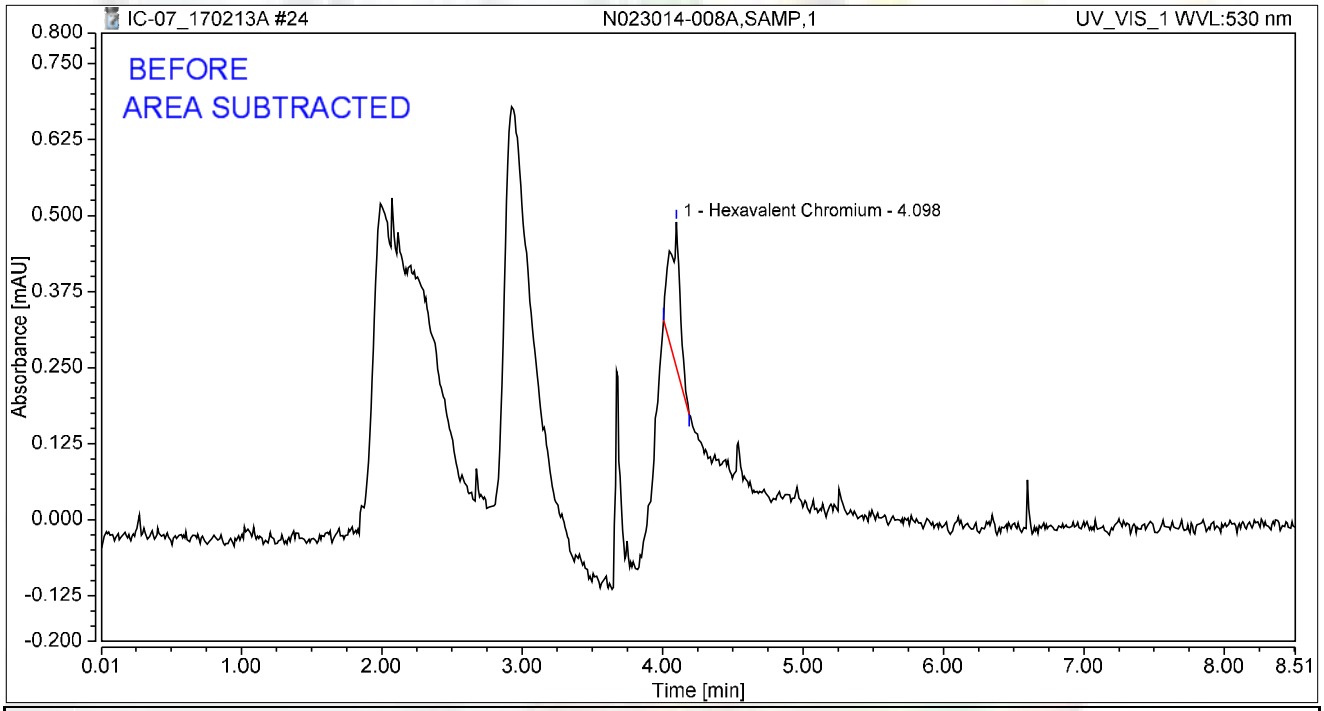
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.020	0.239	100.00	100.00	0.0756
Total:			**0.020**	**0.239**	**100.00**	**100.00**	

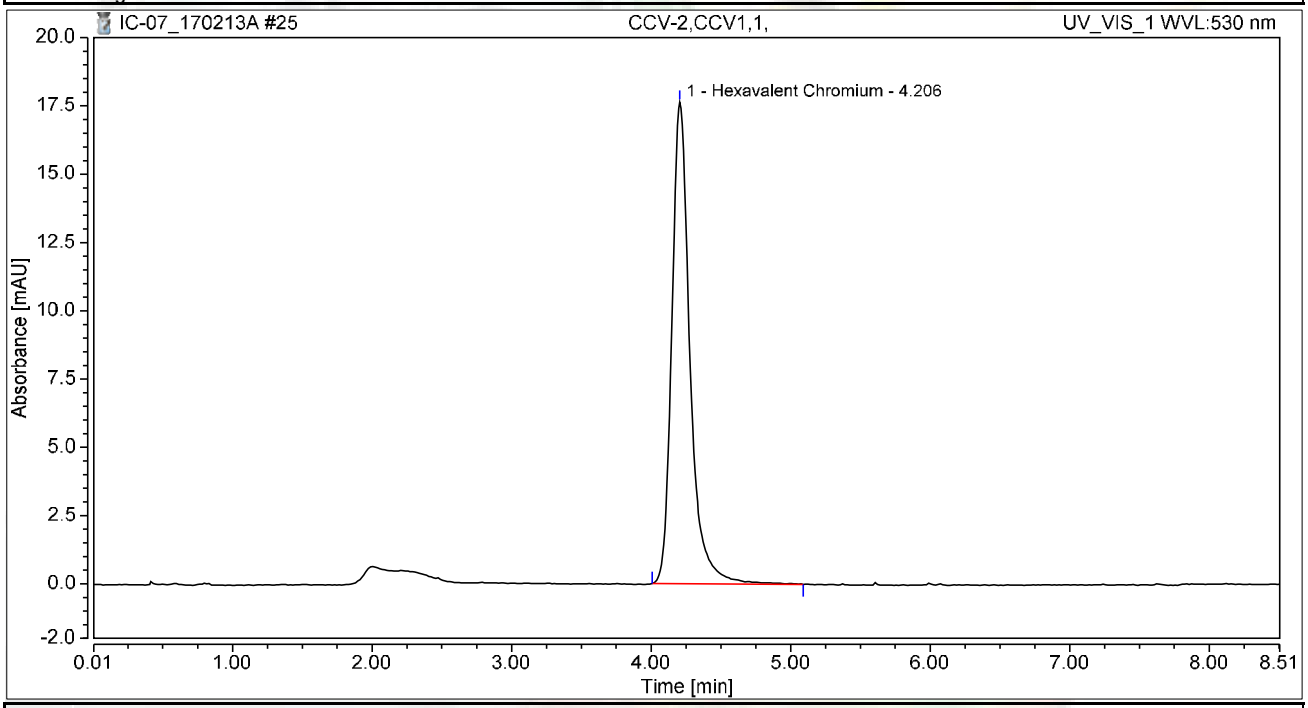
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

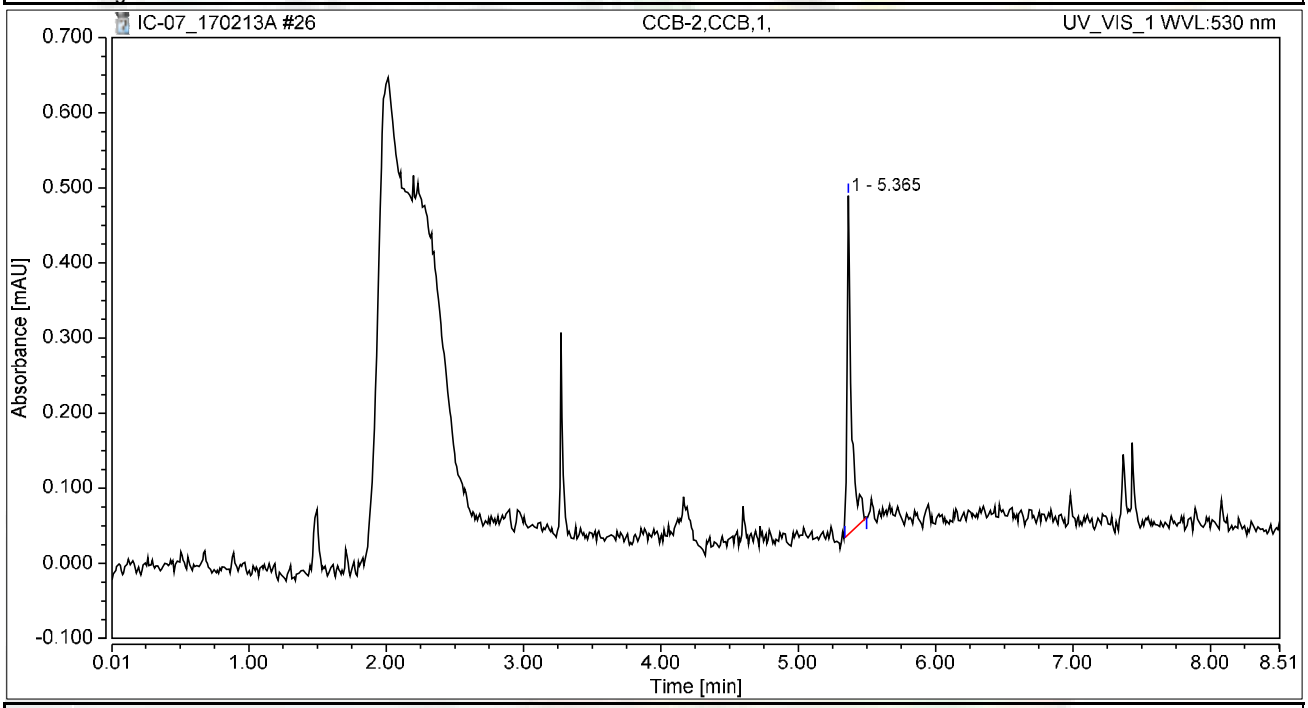
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.659	17.627	100.00	100.00	10.0234
Total:			**2.659**	**17.627**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

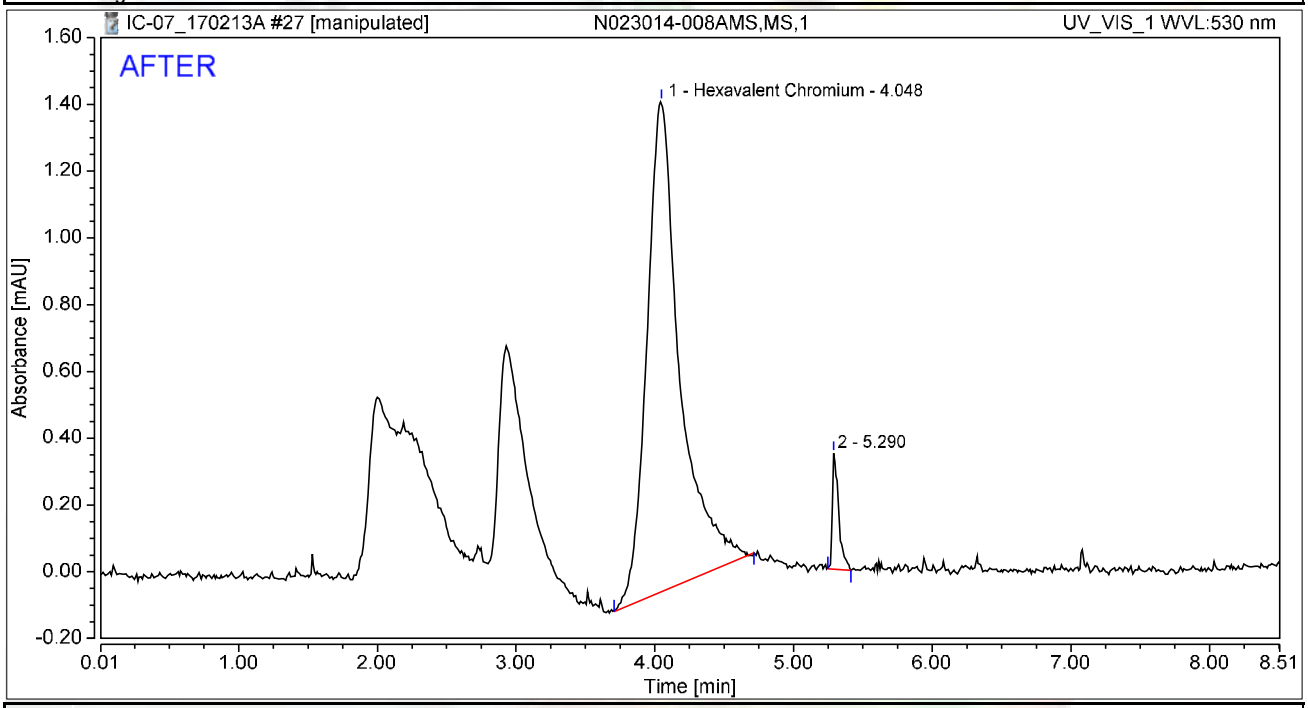
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.365	0.016	0.451	100.00	100.00	n.a.
Total:			**0.016**	**0.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.406	1.469	95.67	80.90	1.5295
2		5.290	0.018	0.347	4.33	19.10	n.a.
Total:			**0.424**	**1.816**	**100.00**	**100.00**	

rba 2/19/2017

Reviewed by: Nancy 2/22/2017

My first report/Integration

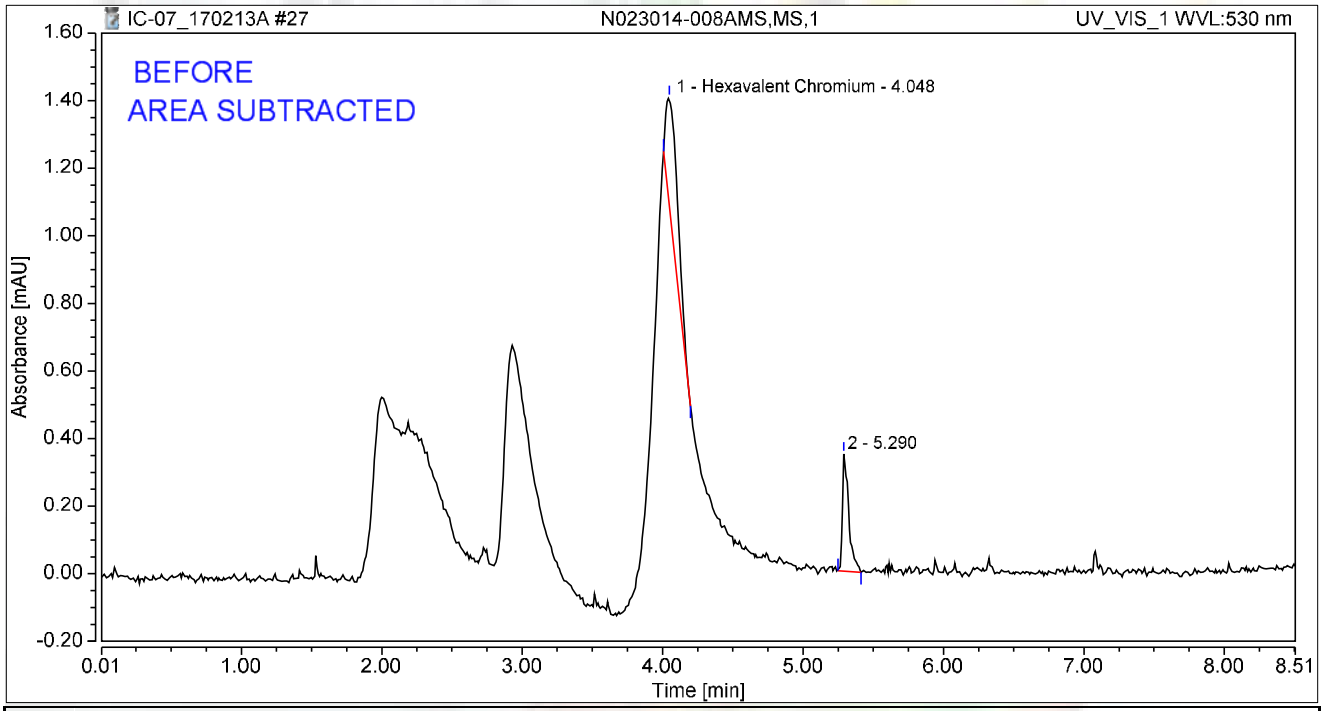
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.035	0.323	65.30	48.20	0.1303
2		5.290	0.018	0.347	34.70	51.80	n.a.
Total:			**0.053**	**0.670**	**100.00**	**100.00**	

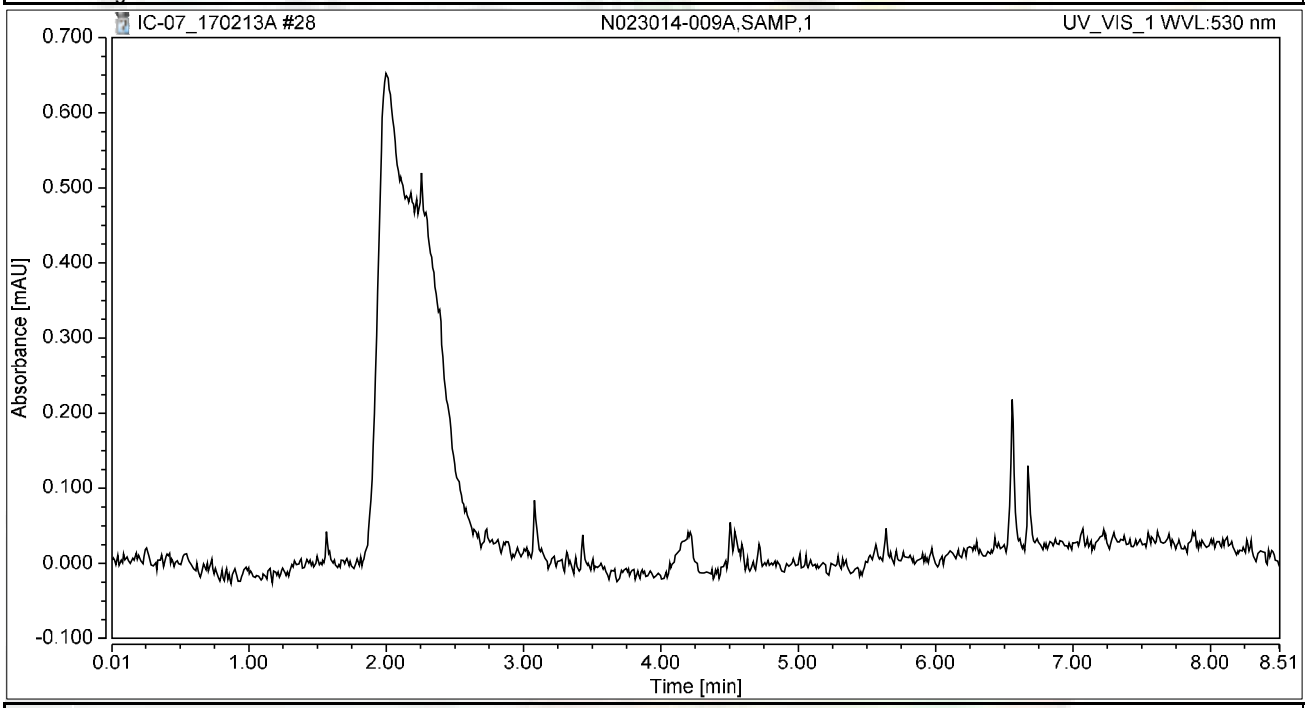
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

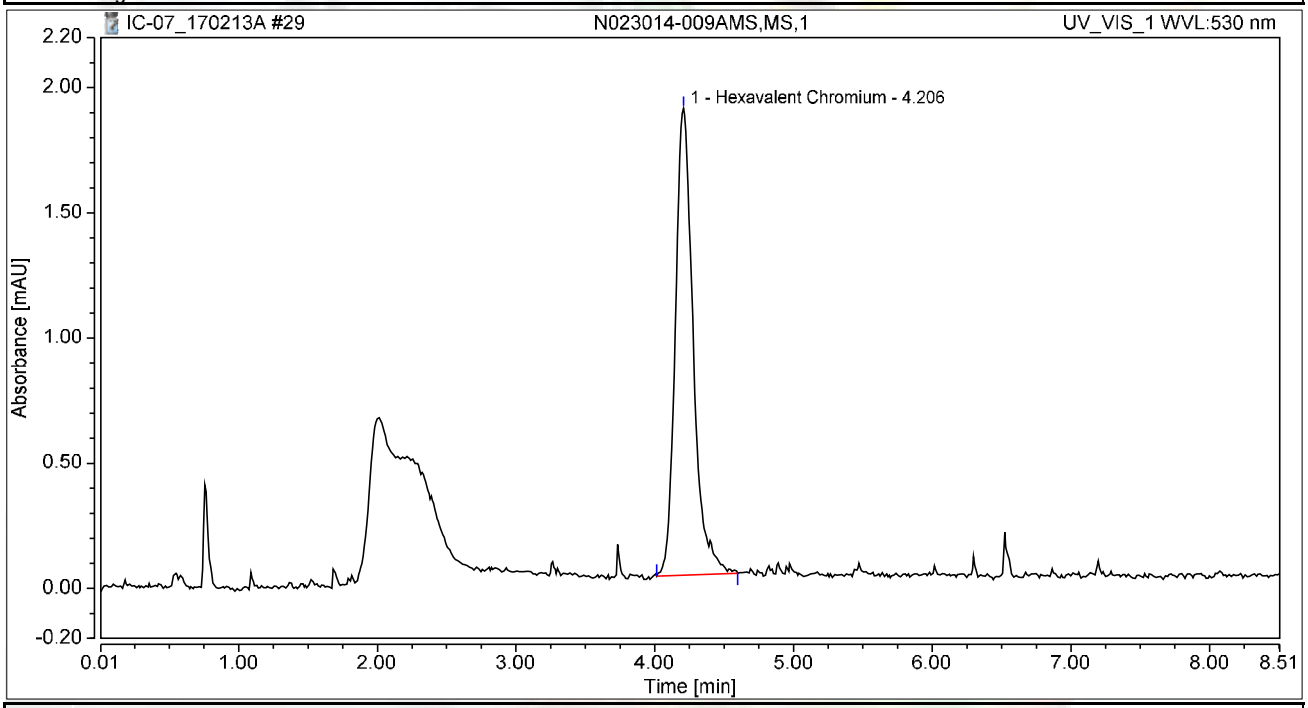
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

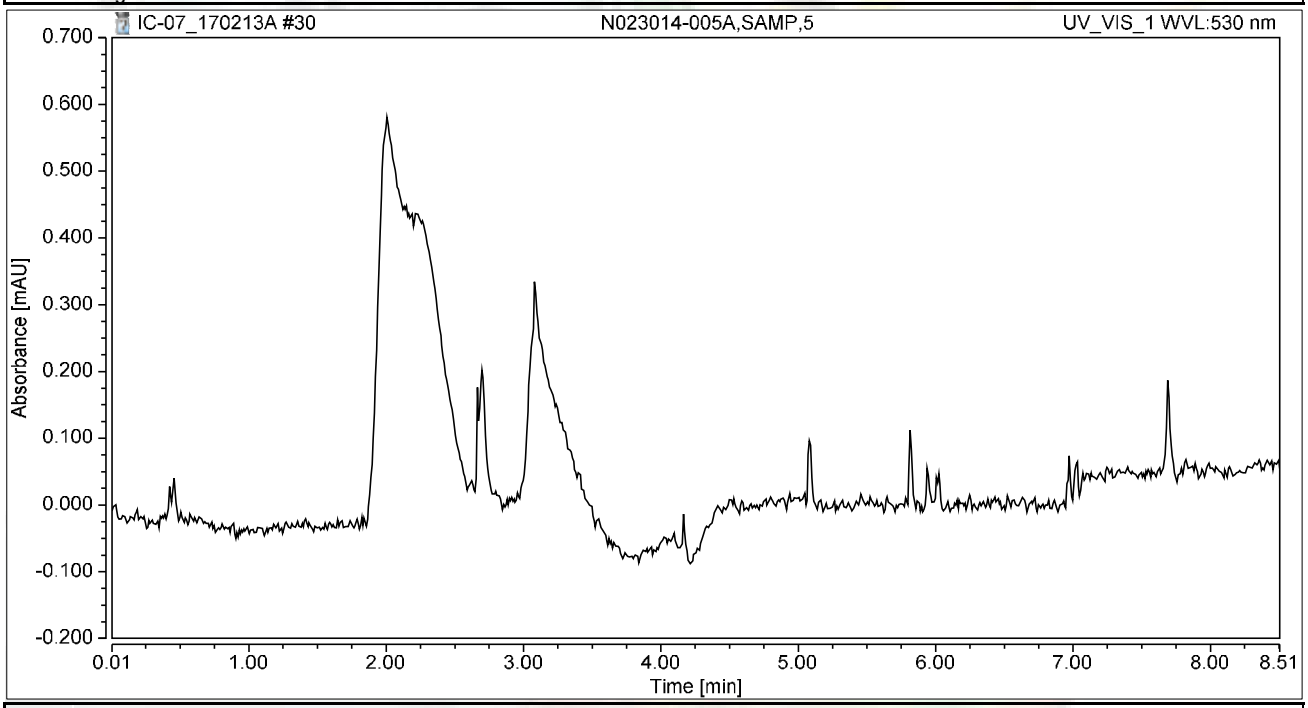
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.278	1.864	100.00	100.00	1.0479
Total:			**0.278**	**1.864**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

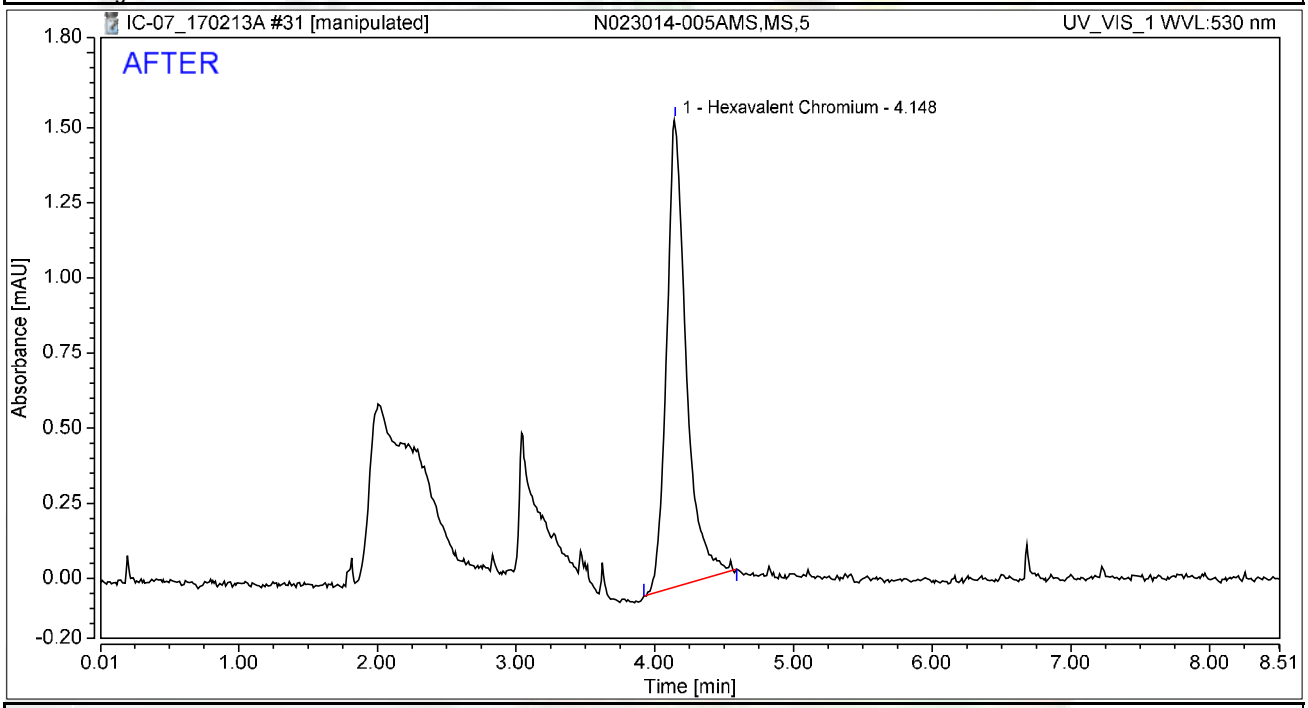
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.255	1.558	100.00	100.00	0.9596
Total:			**0.255**	**1.558**	**100.00**	**100.00**	

rba 2/19/2017

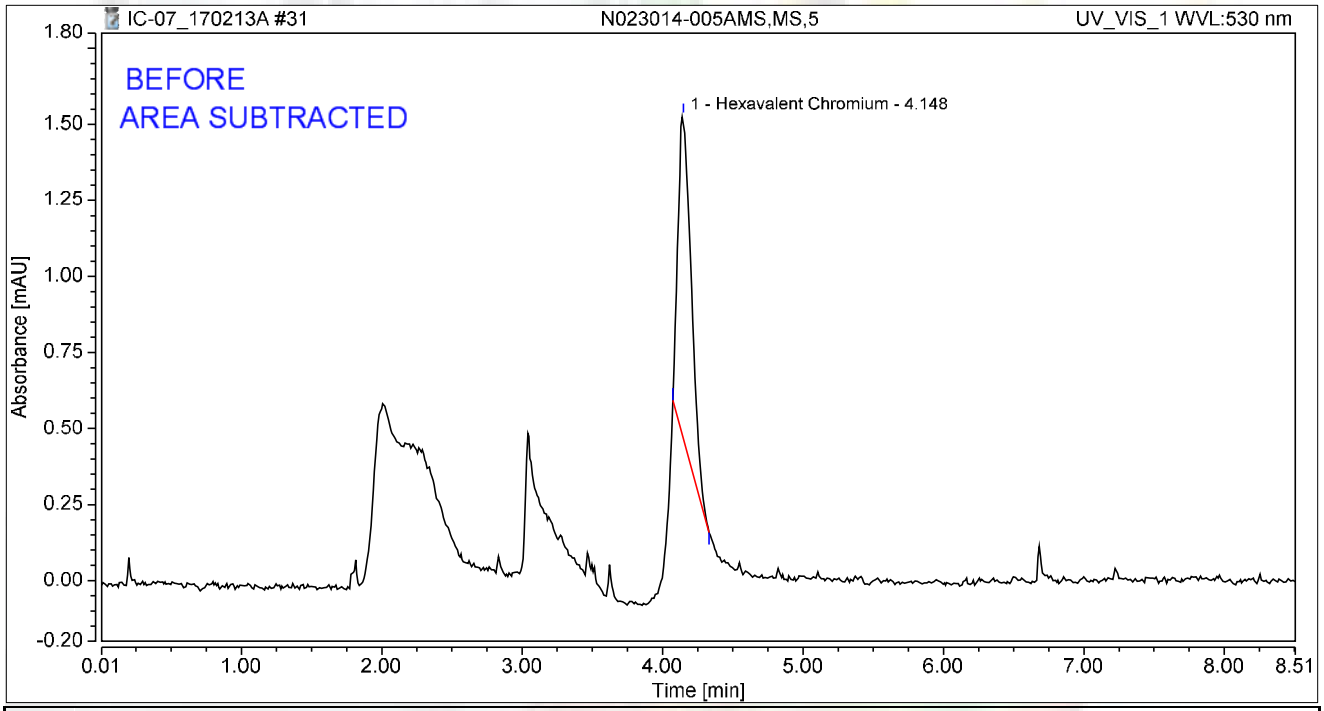
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.117	1.063	100.00	100.00	0.4399
Total:			**0.117**	**1.063**	**100.00**	**100.00**	

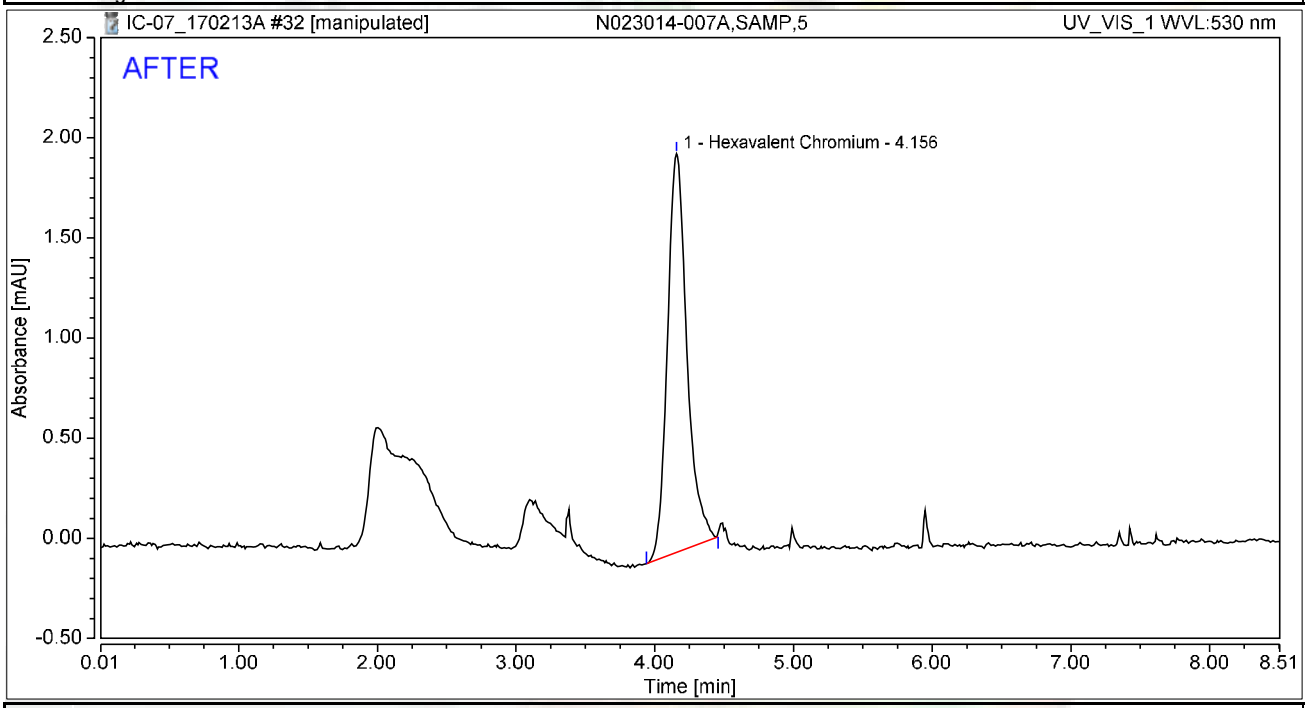
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.324	1.991	100.00	100.00	1.2208
Total:			**0.324**	**1.991**	**100.00**	**100.00**	

rba 2/19/2017

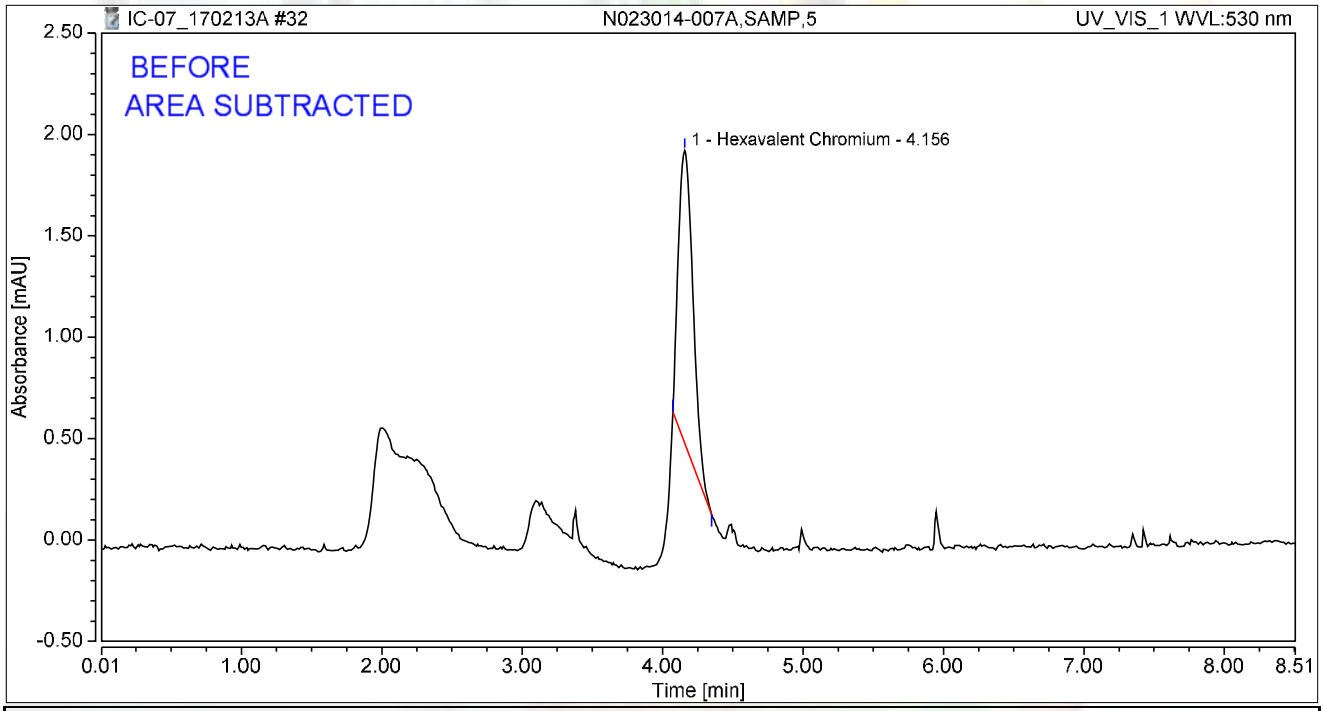
Reviewed
by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.175	1.442	100.00	100.00	0.6594
Total:			**0.175**	**1.442**	**100.00**	**100.00**	

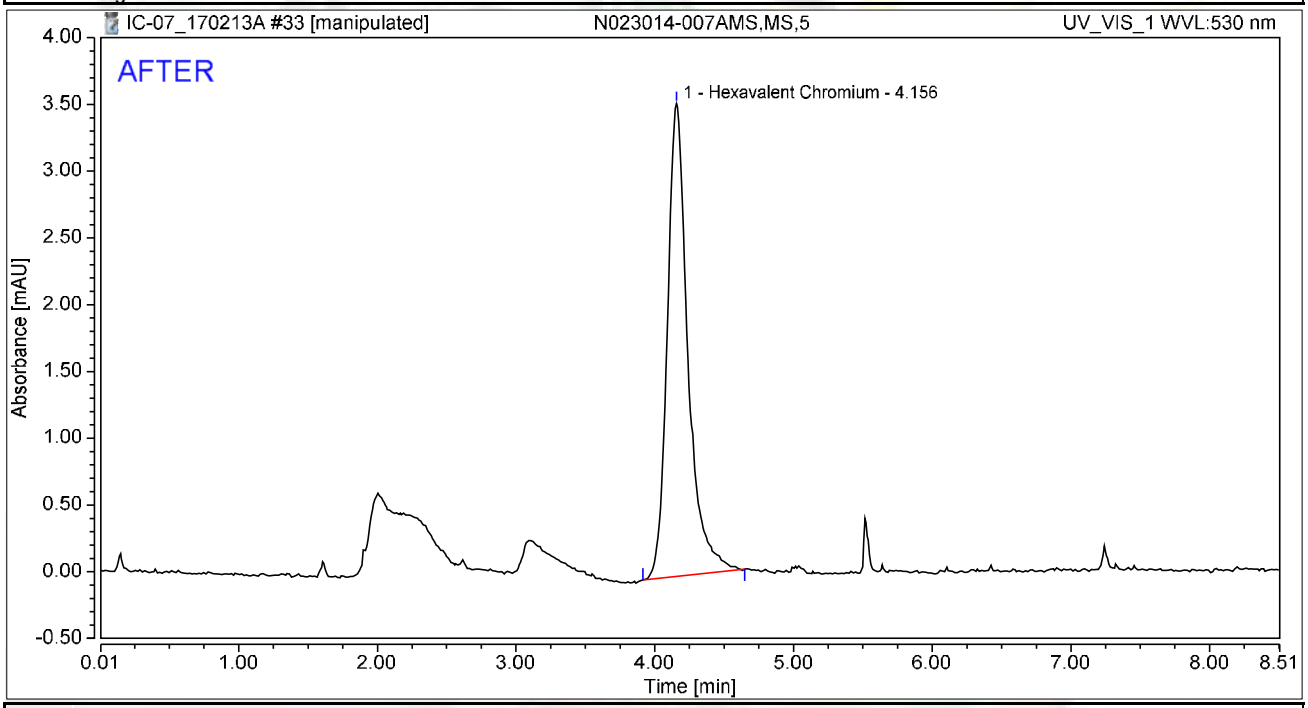
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.608	3.541	100.00	100.00	2.2927
Total:			**0.608**	**3.541**	**100.00**	**100.00**	

rba 2/19/2017

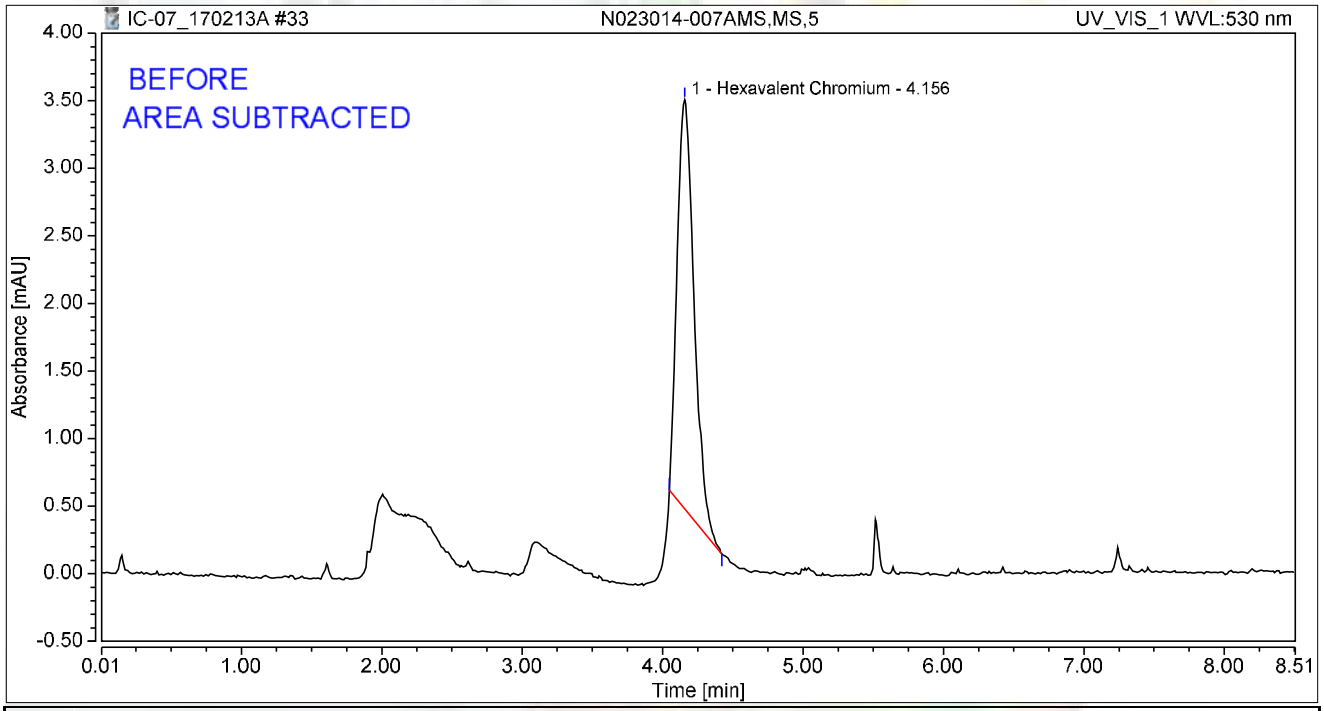
Reviewed
By Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.423	3.023	100.00	100.00	1.5943
Total:			**0.423**	**3.023**	**100.00**	**100.00**	

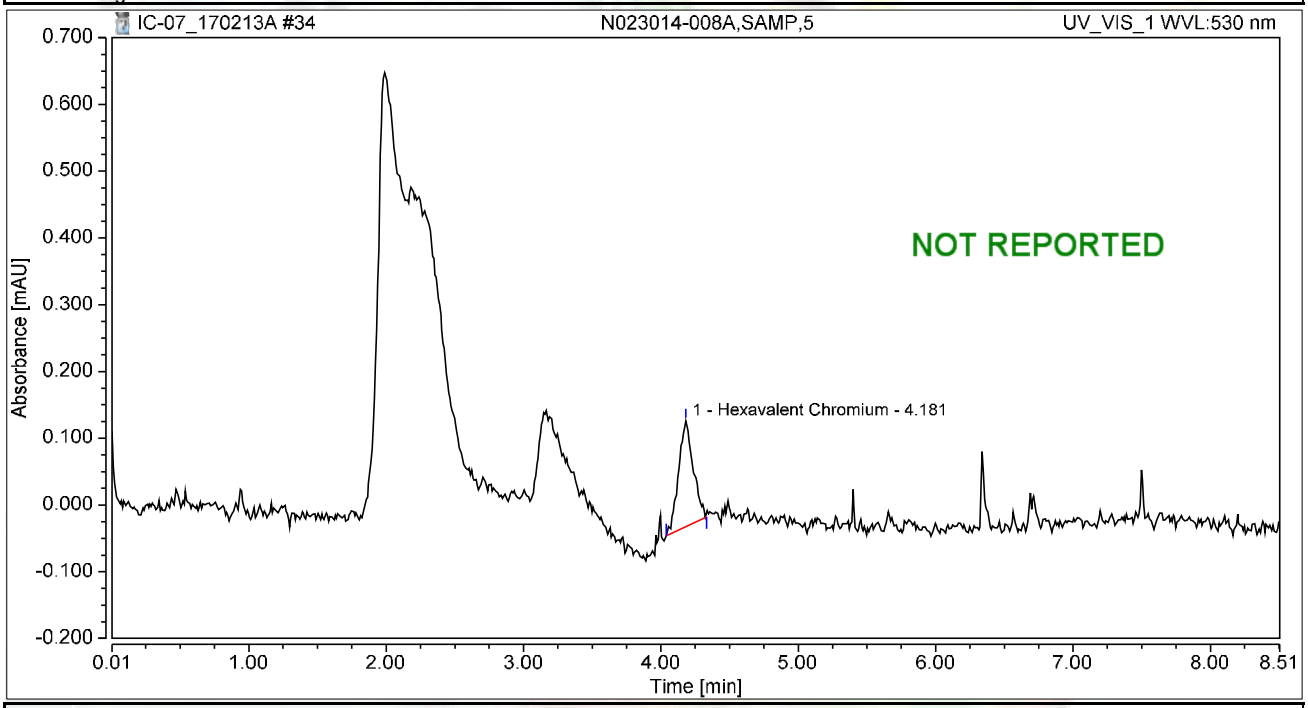
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

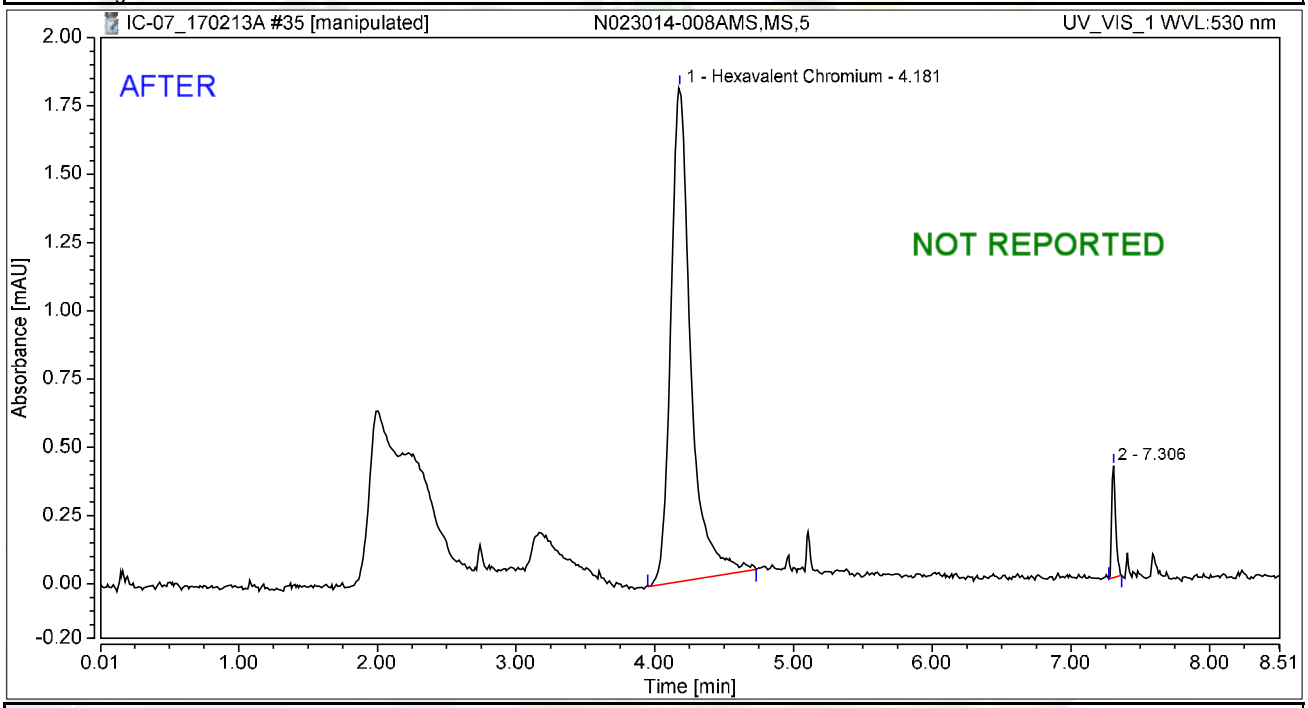
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.020	0.159	100.00	100.00	0.0743
Total:			**0.020**	**0.159**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.302	1.810	95.59	81.51	1.1404
2		7.306	0.014	0.411	4.41	18.49	n.a.
Total:			**0.316**	**2.220**	**100.00**	**100.00**	

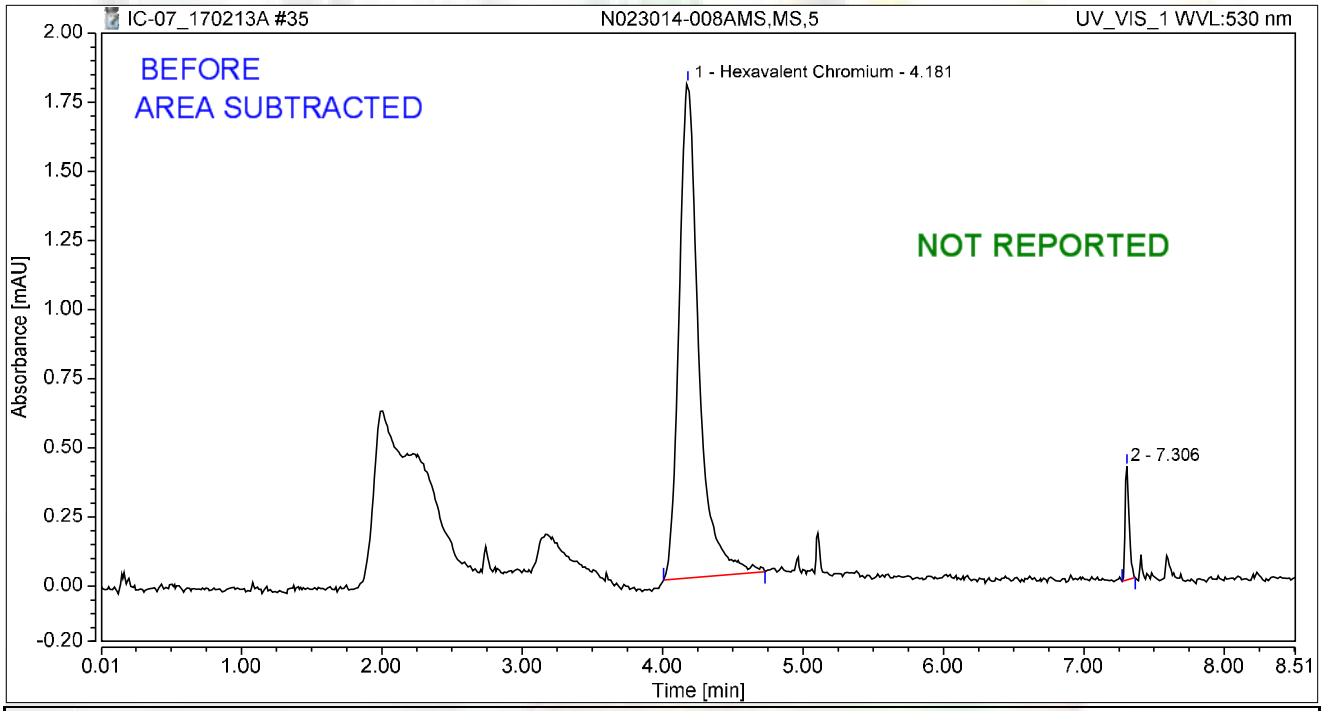
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.293	1.790	95.45	81.34	1.1029
2		7.306	0.014	0.411	4.55	18.66	n.a.
Total:			**0.306**	**2.200**	**100.00**	**100.00**	

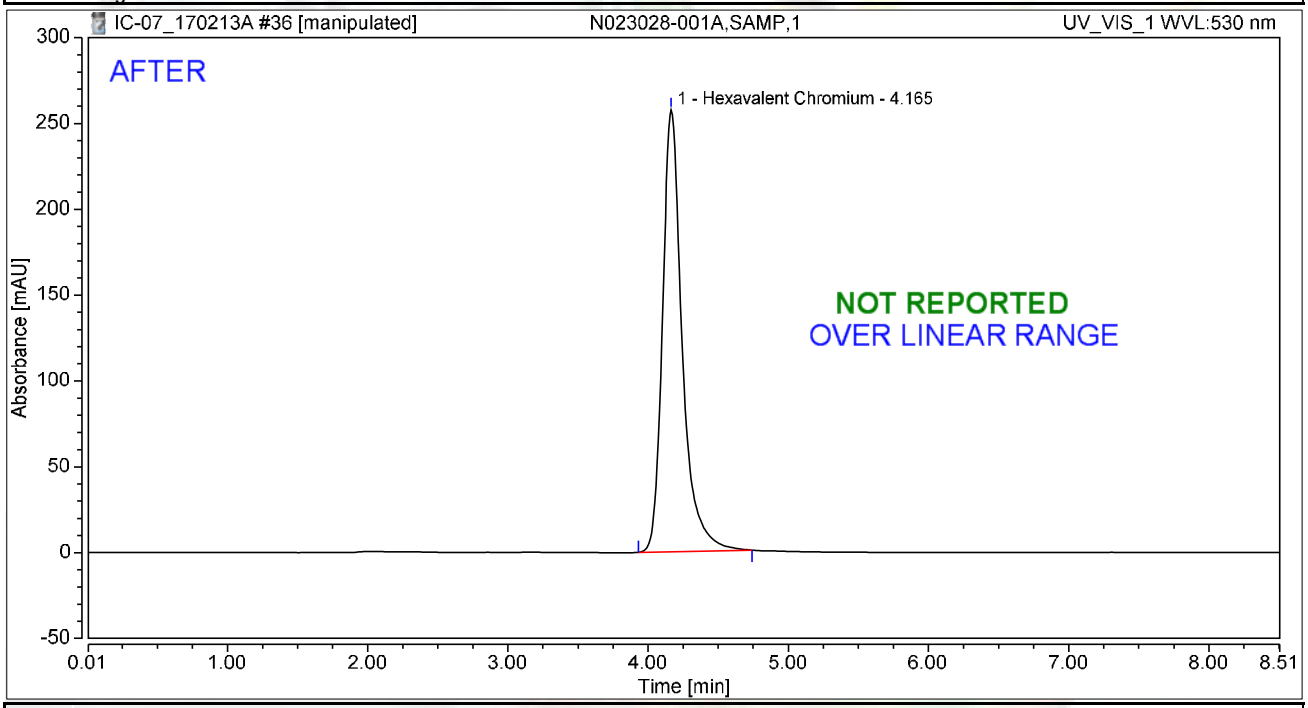
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	41.882	257.416	100.00	100.00	157.8977
Total:			**41.882**	**257.416**	**100.00**	**100.00**	

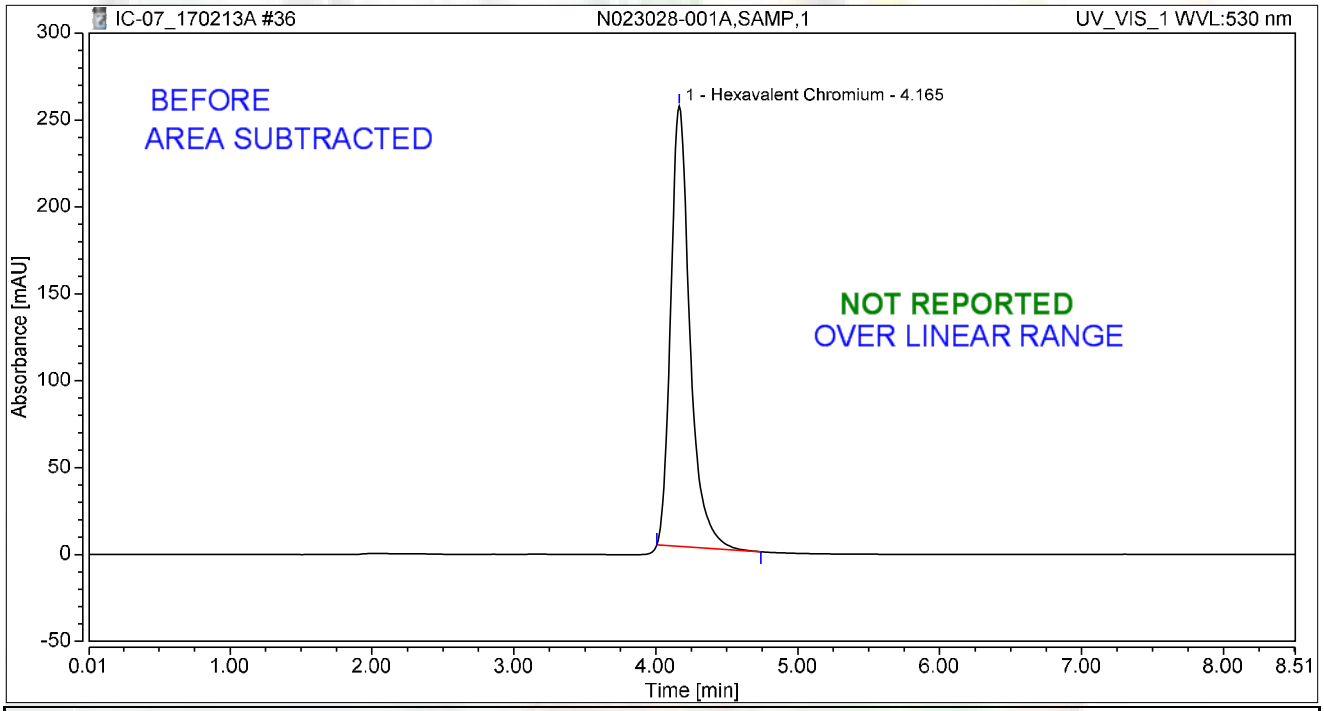
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	39.856	253.304	100.00	100.00	150.2598
Total:			**39.856**	**253.304**	**100.00**	**100.00**	

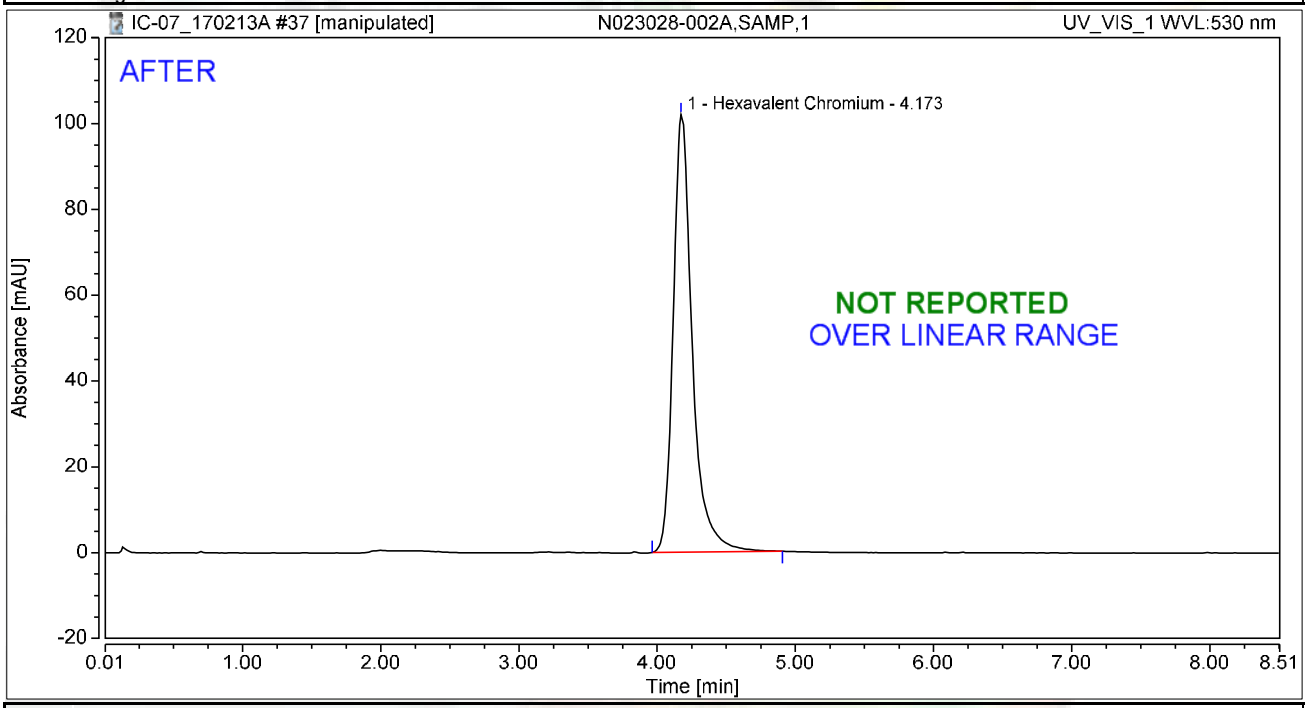
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	16.328	101.921	100.00	100.00	61.5562
Total:			**16.328**	**101.921**	**100.00**	**100.00**	

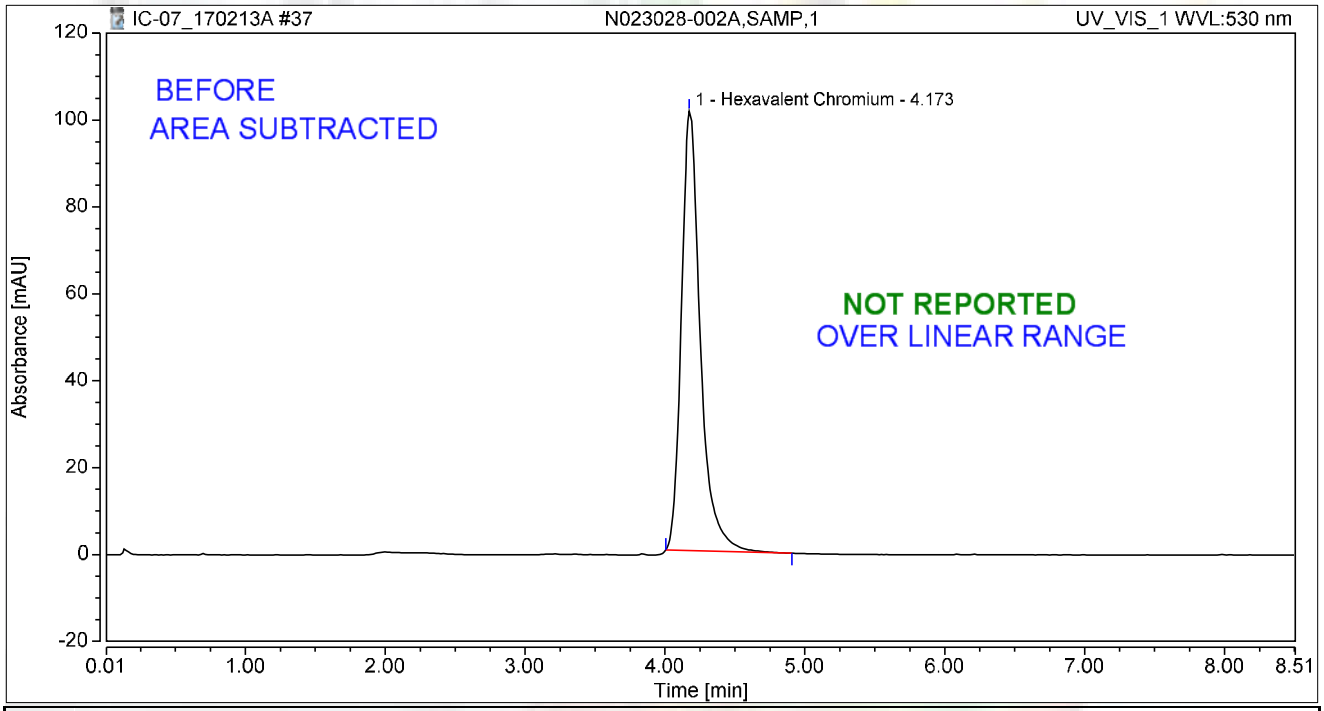
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	15.878	101.131	100.00	100.00	59.8597
Total:			**15.878**	**101.131**	**100.00**	**100.00**	

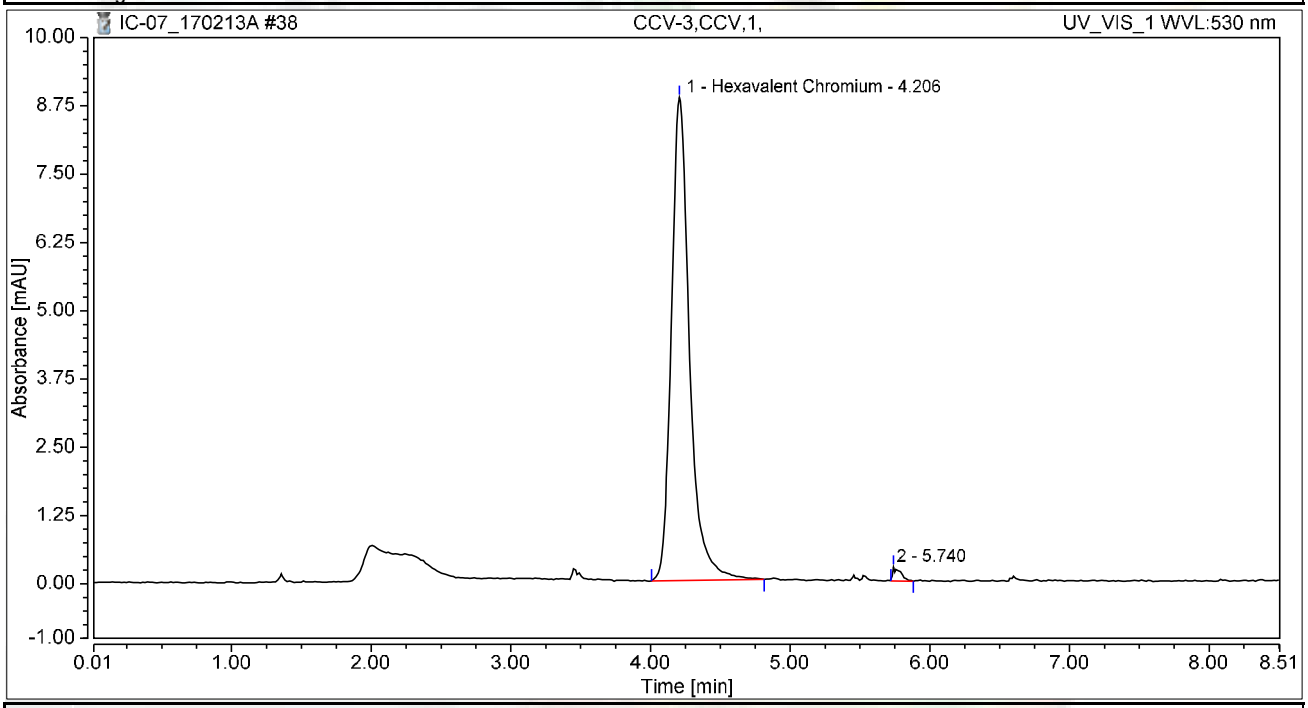
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

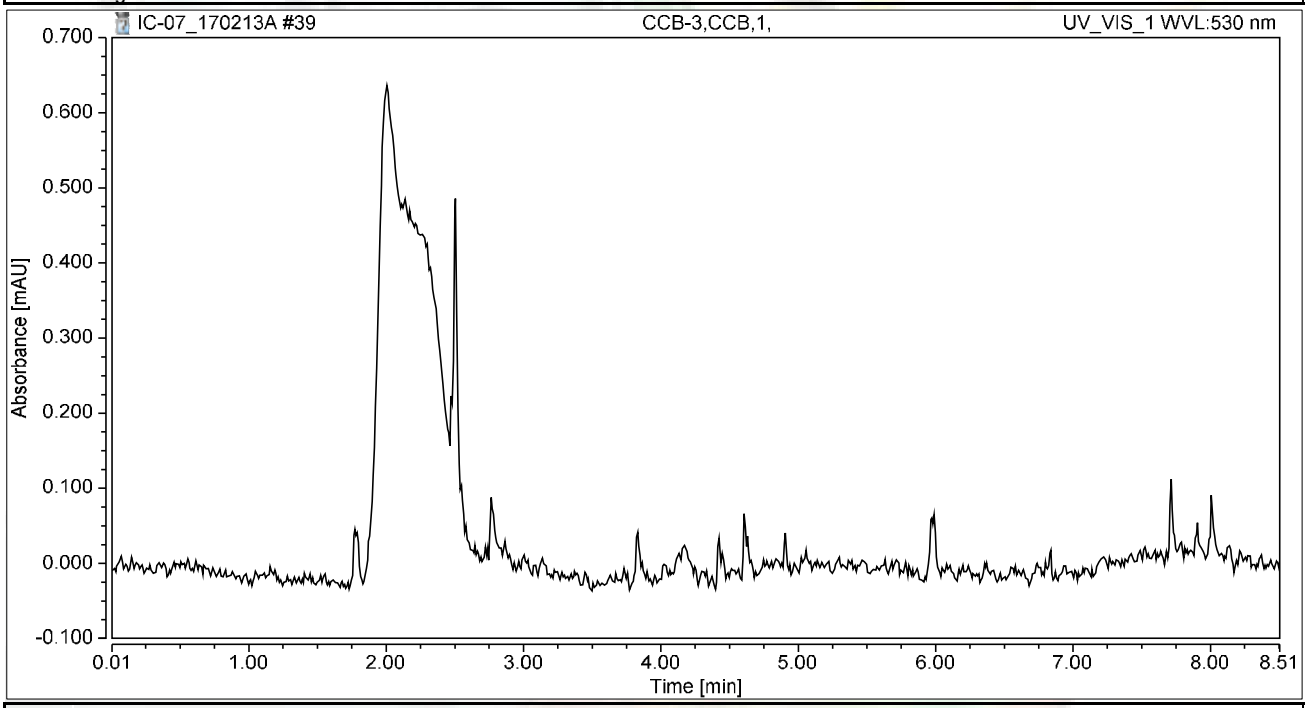
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.330	8.840	98.82	97.19	5.0150
2		5.740	0.016	0.255	1.18	2.81	n.a.
Total:			**1.346**	**9.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

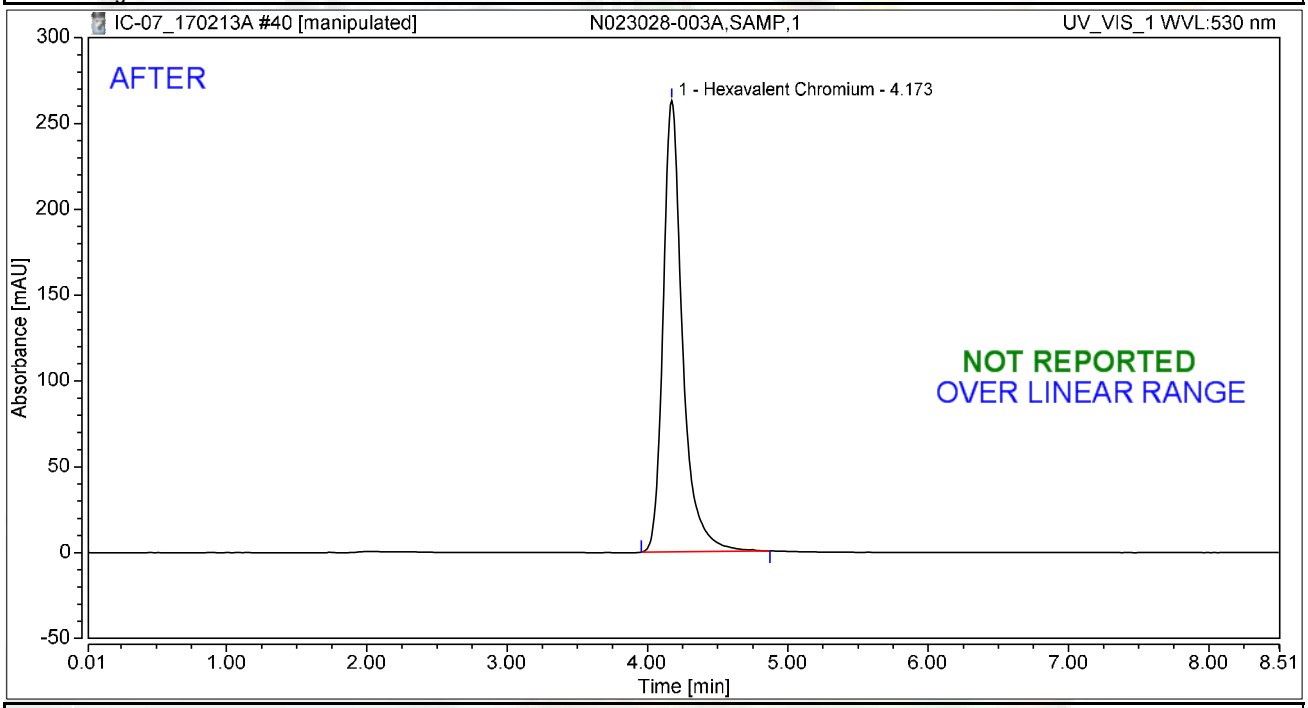
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	42.267	262.958	100.00	100.00	159.3499
Total:			**42.267**	**262.958**	**100.00**	**100.00**	

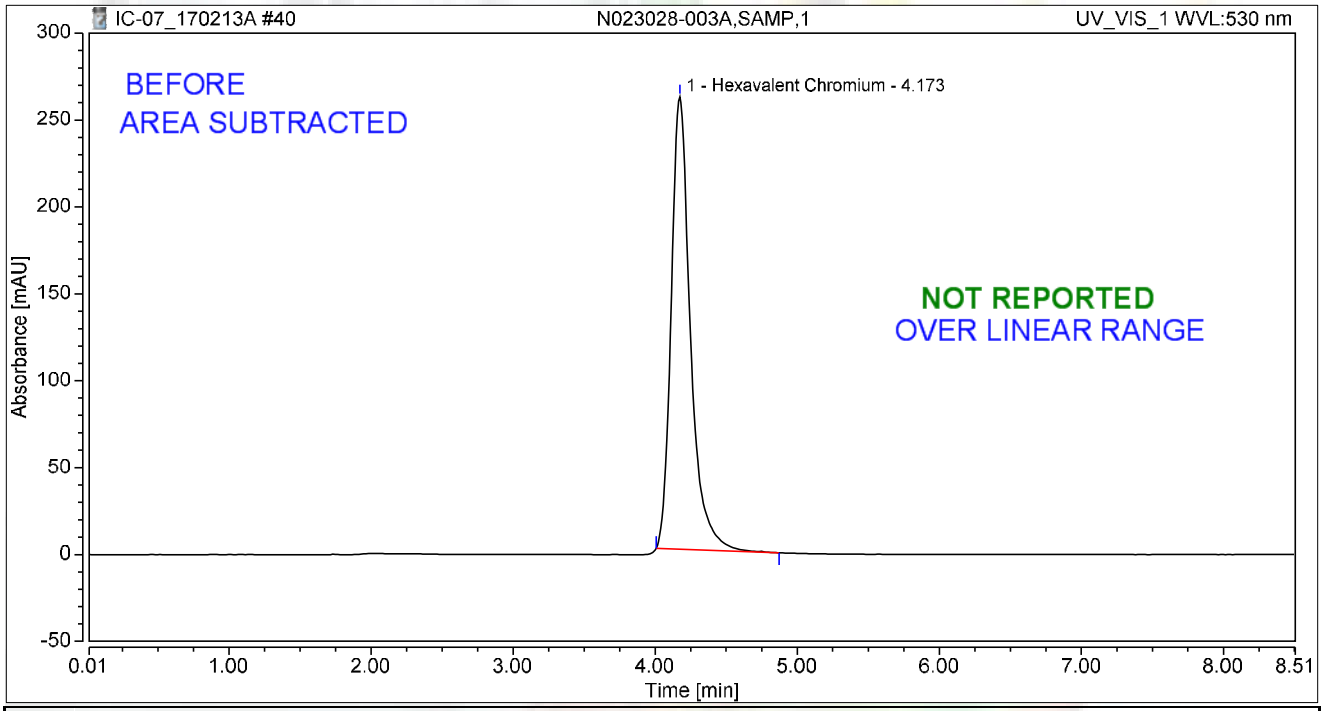
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	40.816	260.353	100.00	100.00	153.8787
Total:			**40.816**	**260.353**	**100.00**	**100.00**	

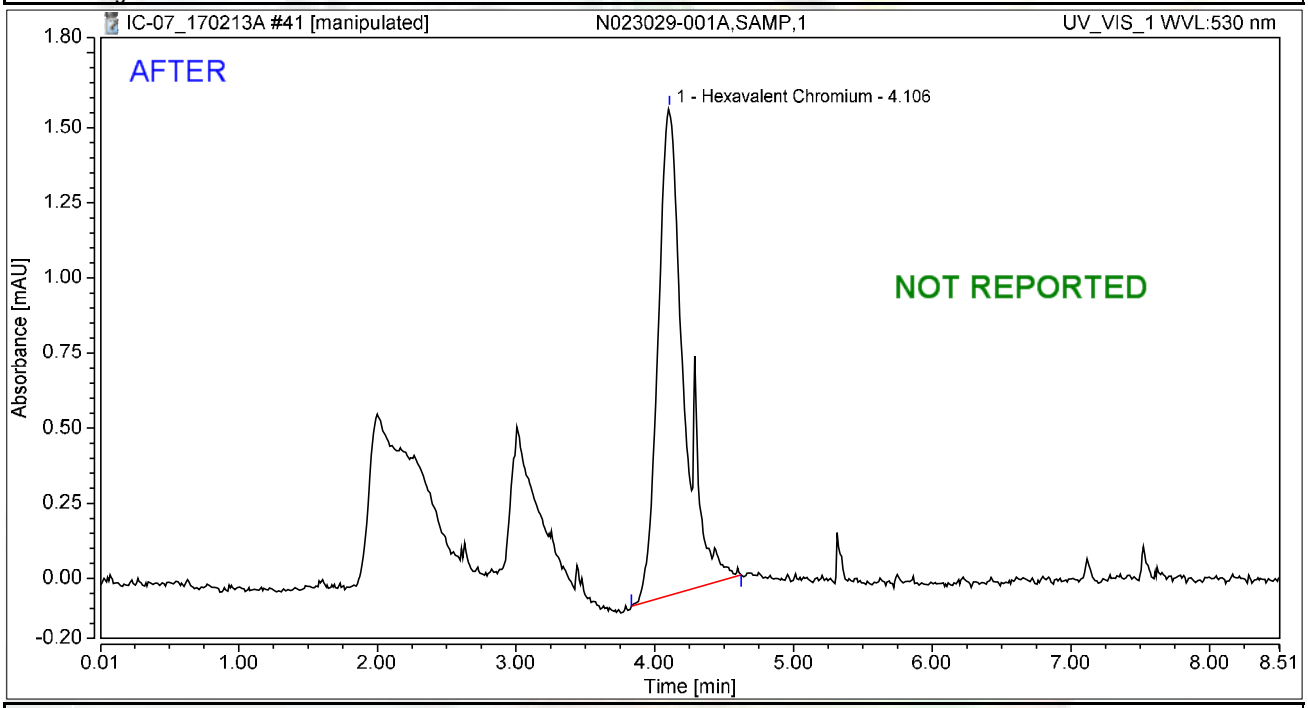
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.351	1.623	100.00	100.00	1.3249
Total:			**0.351**	**1.623**	**100.00**	**100.00**	

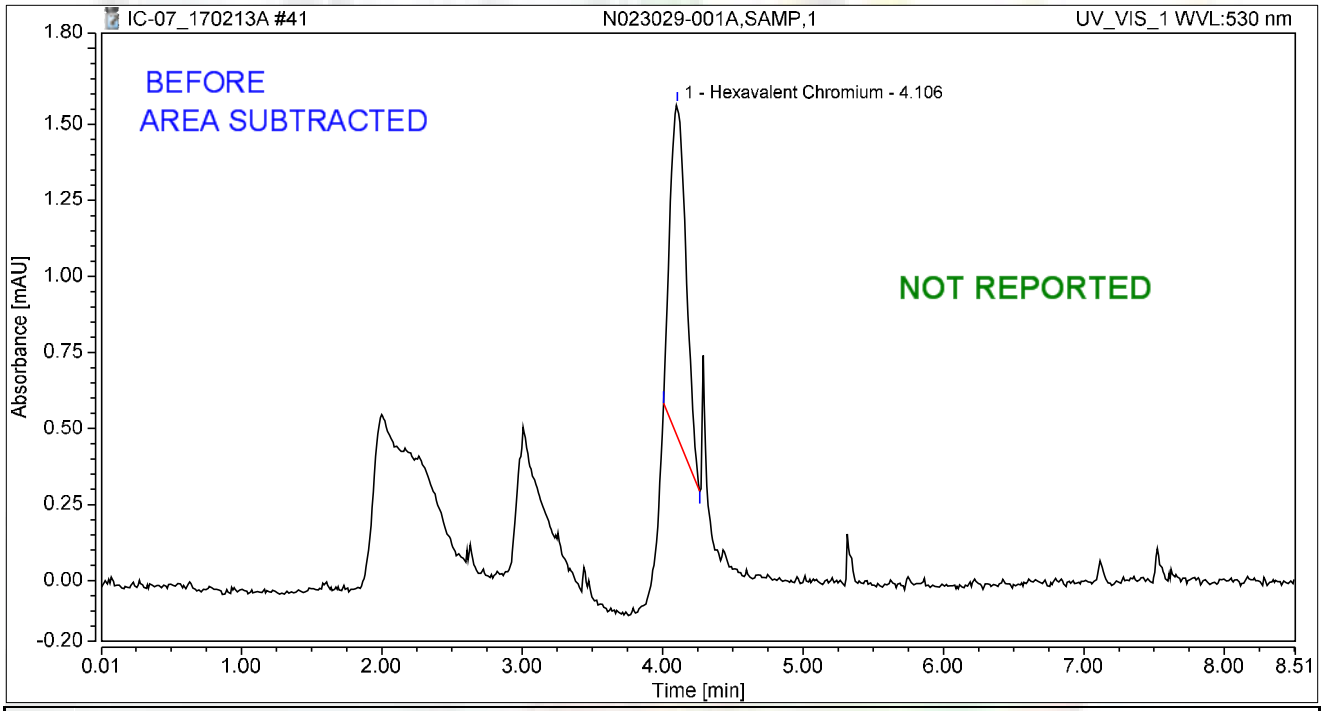
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.146	1.096	100.00	100.00	0.5507
Total:			**0.146**	**1.096**	**100.00**	**100.00**	

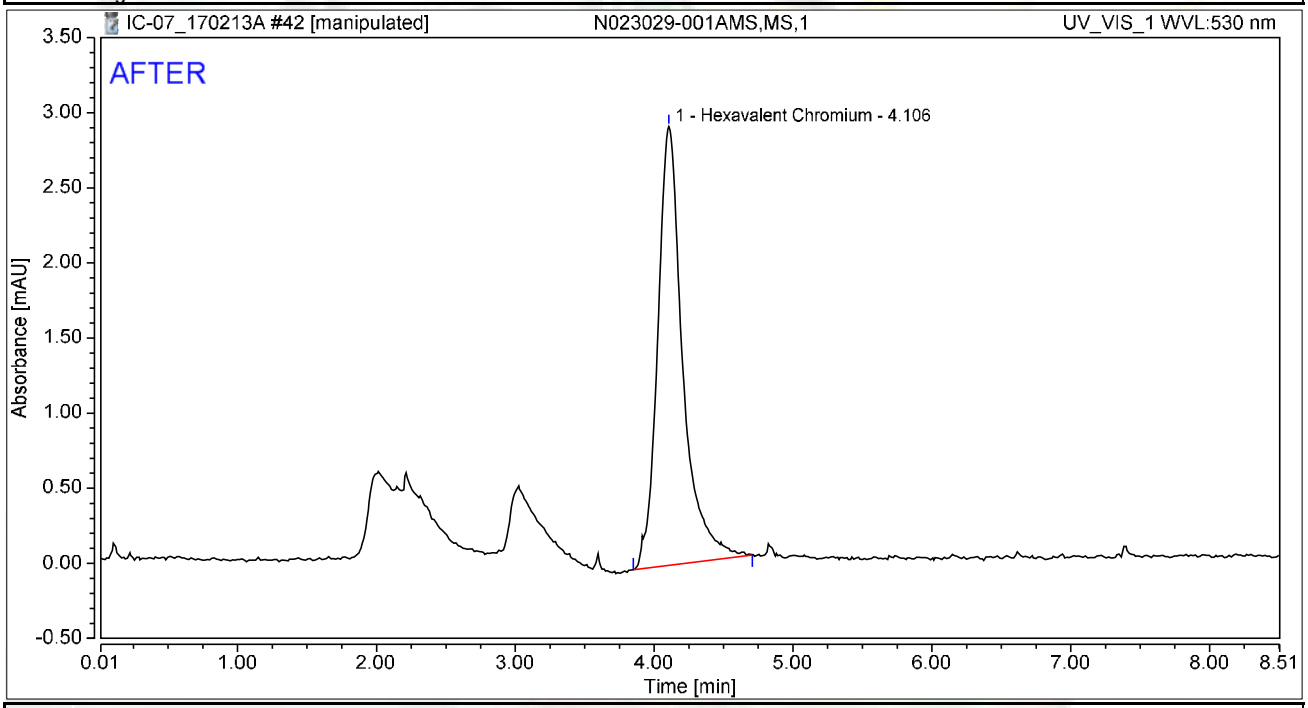
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.612	2.922	100.00	100.00	2.3057
Total:			**0.612**	**2.922**	**100.00**	**100.00**	

rba 2/19/2017

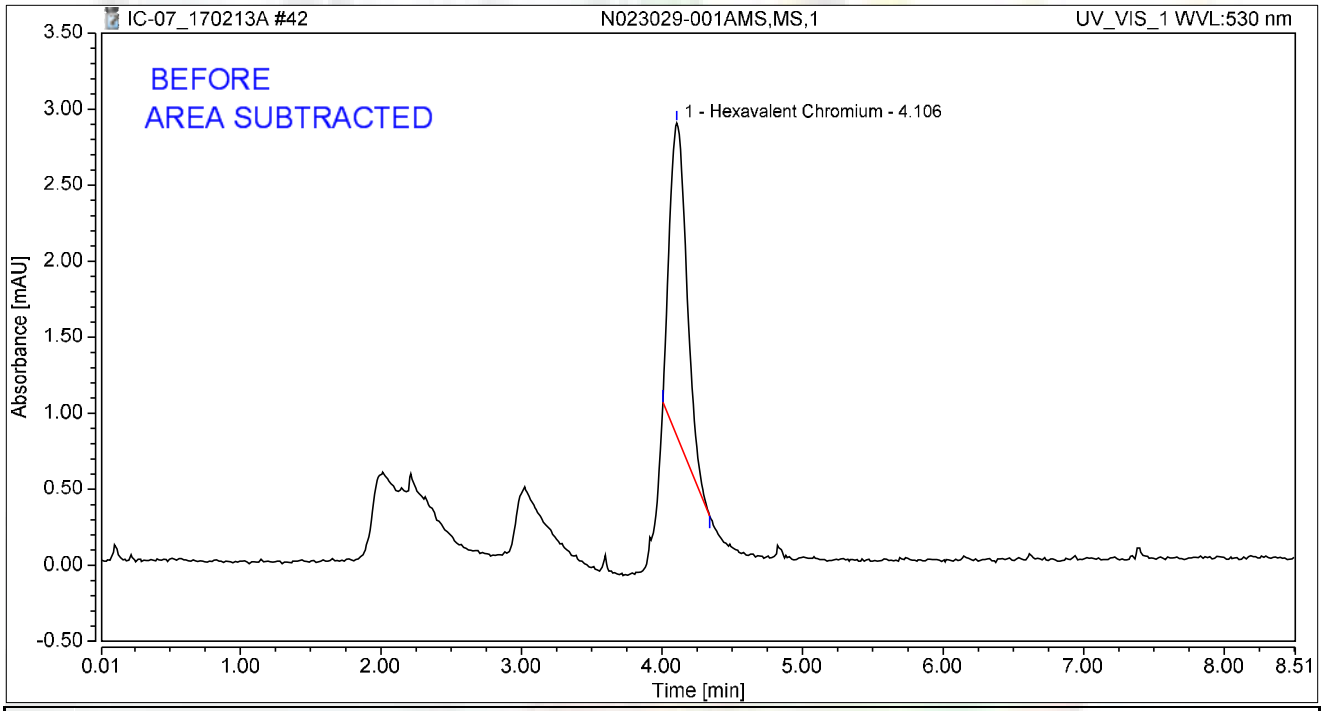
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.294	2.059	100.00	100.00	1.1091
Total:			**0.294**	**2.059**	**100.00**	**100.00**	

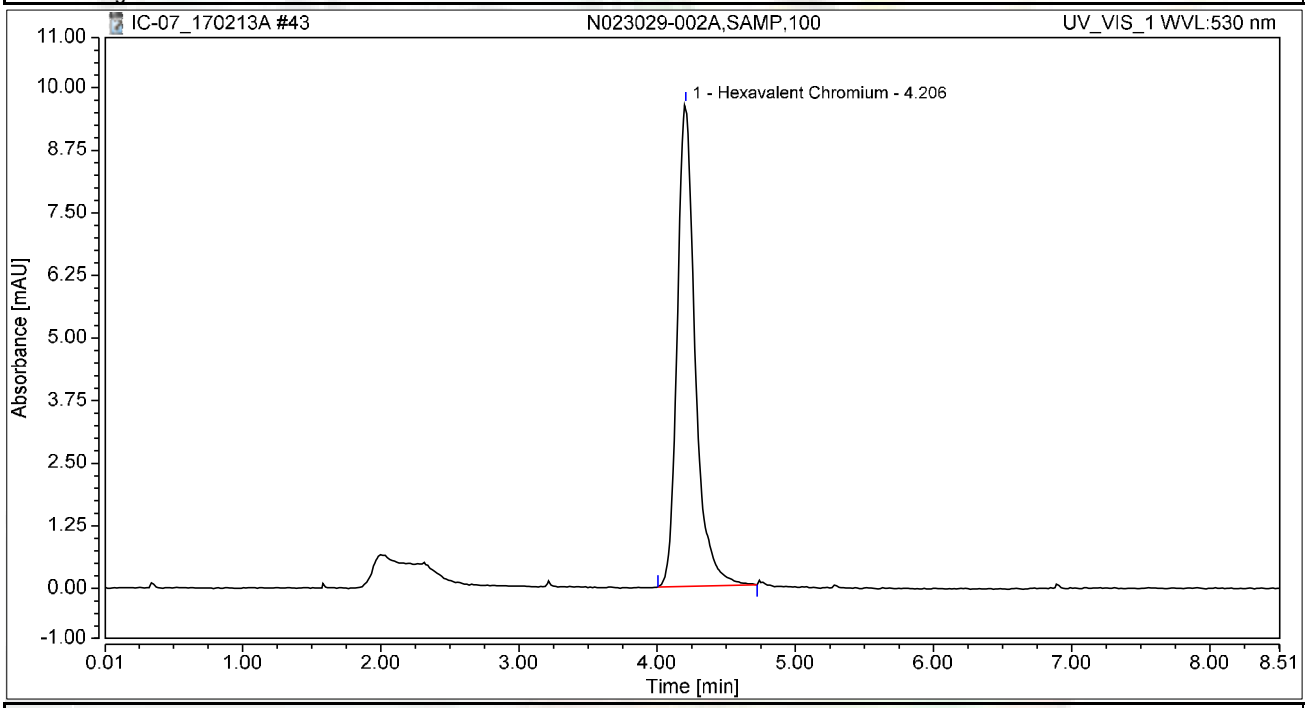
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-002A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

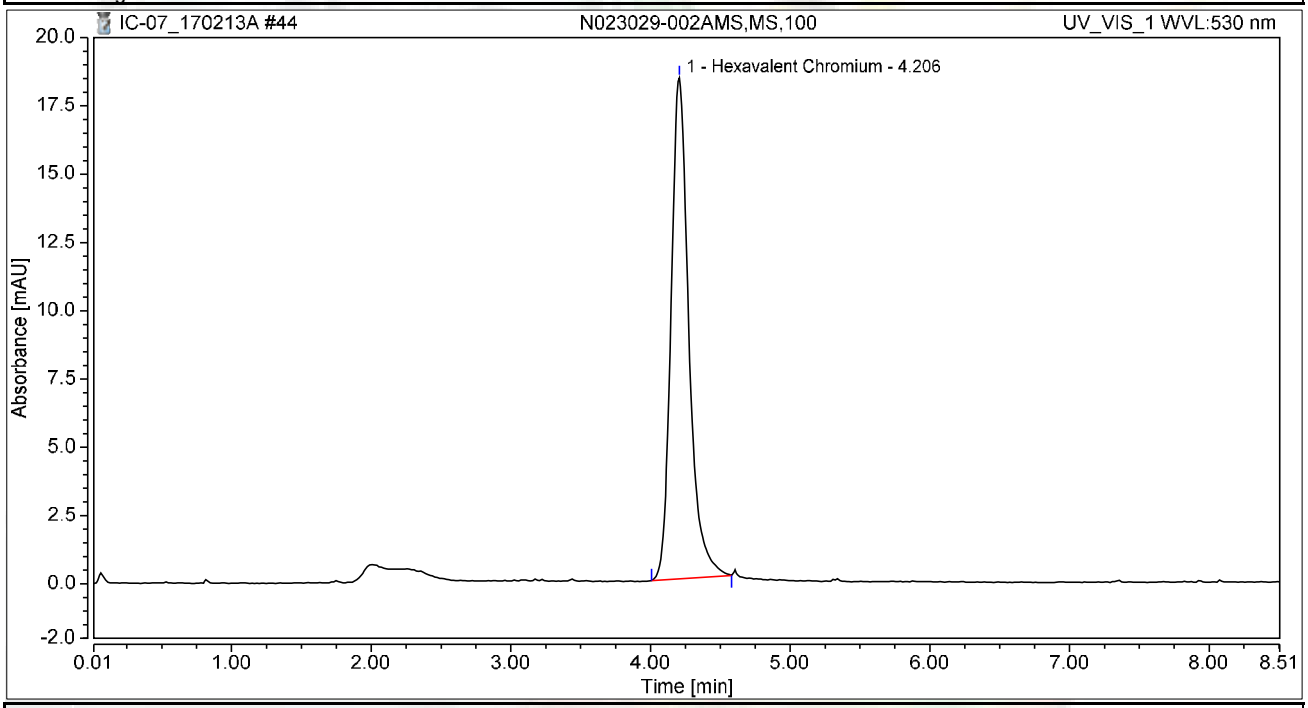
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.450	9.637	100.00	100.00	5.4662
Total:			**1.450**	**9.637**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-002AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

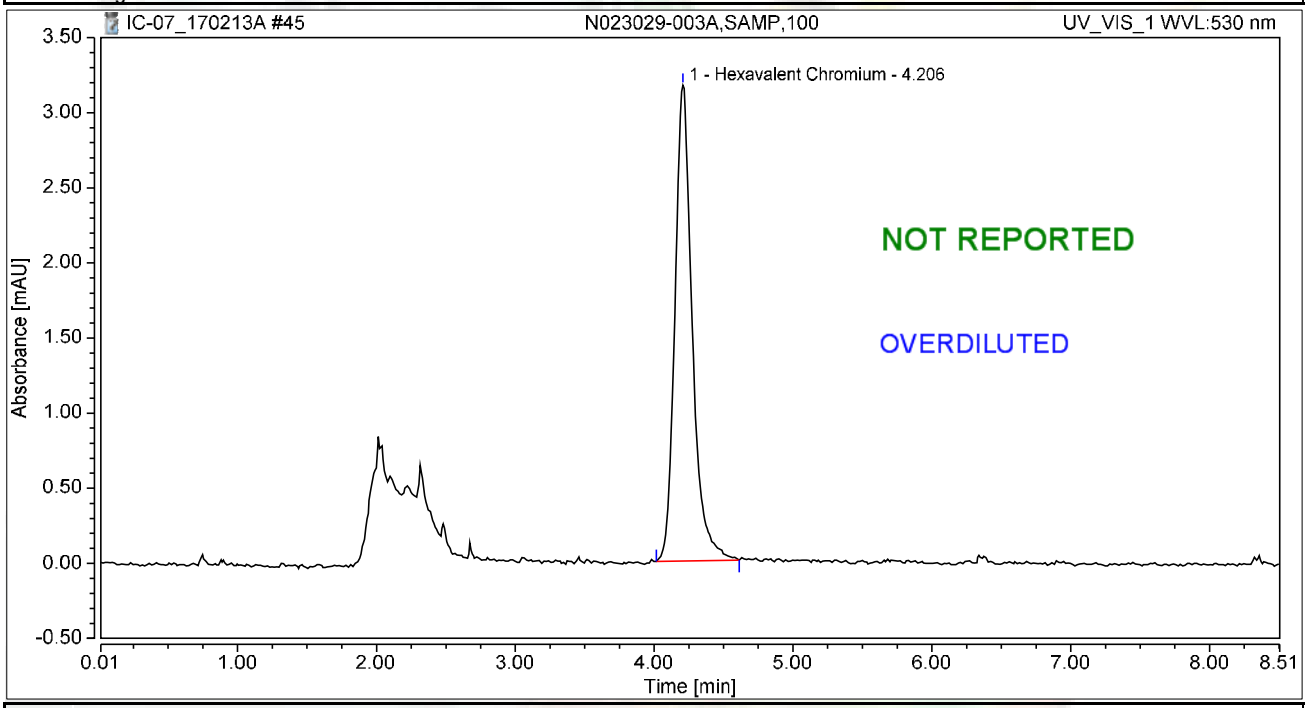
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.708	18.346	100.00	100.00	10.2097
Total:			**2.708**	**18.346**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

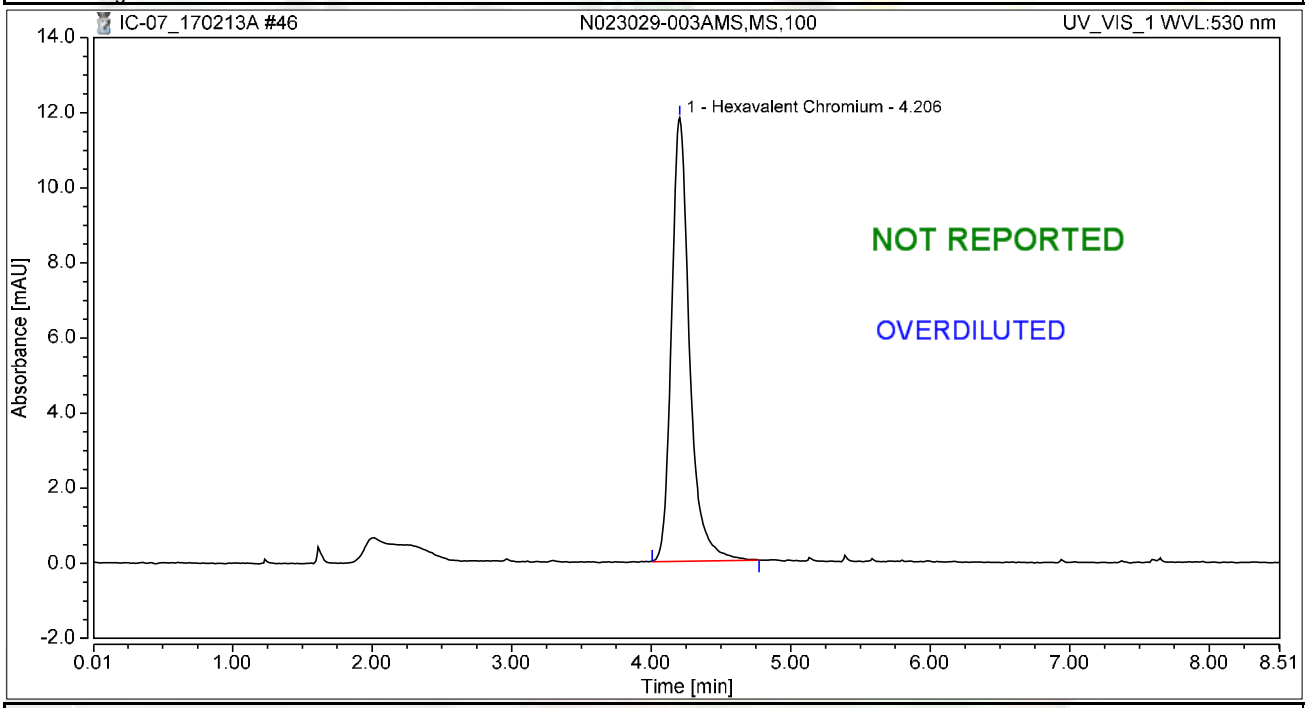
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.458	3.168	100.00	100.00	1.7278
Total:			**0.458**	**3.168**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

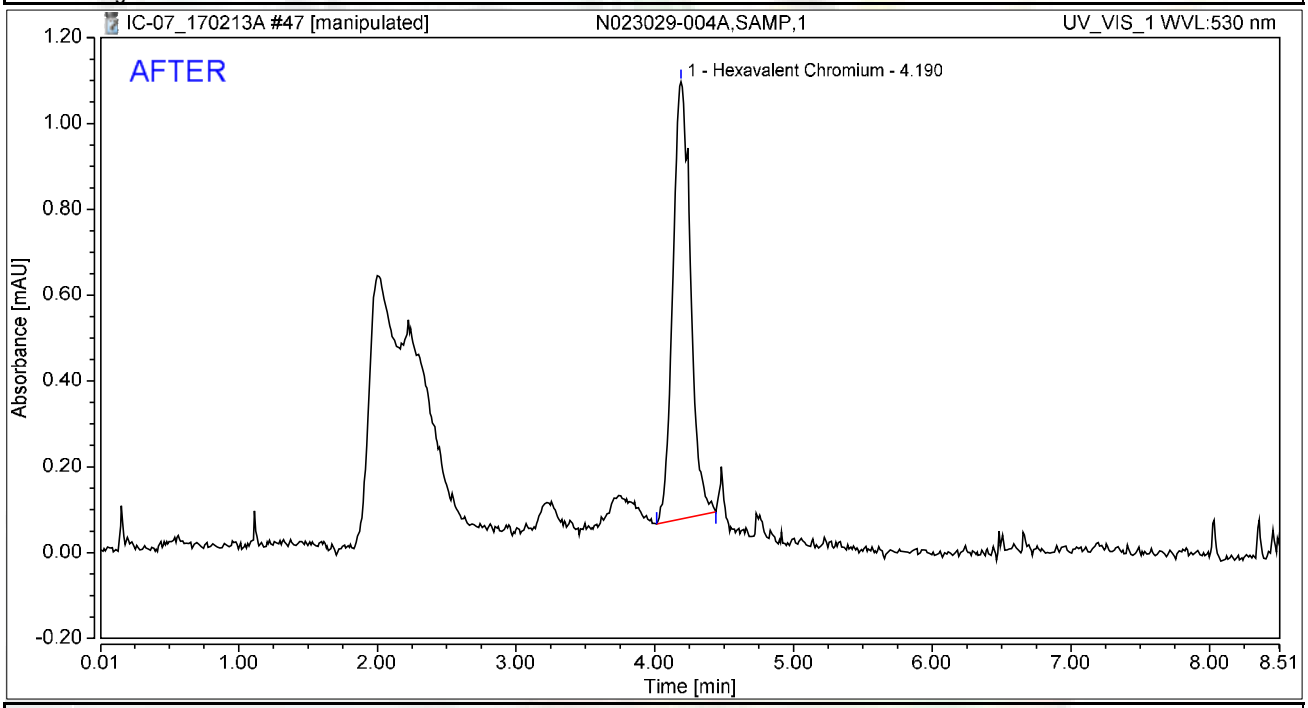
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.772	11.815	100.00	100.00	6.6805
Total:			**1.772**	**11.815**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.151	1.019	100.00	100.00	0.5703
Total:			**0.151**	**1.019**	**100.00**	**100.00**	

rba 2/19/2017

Reviewed by: Nancy 2/22/2017

My first report/Integration

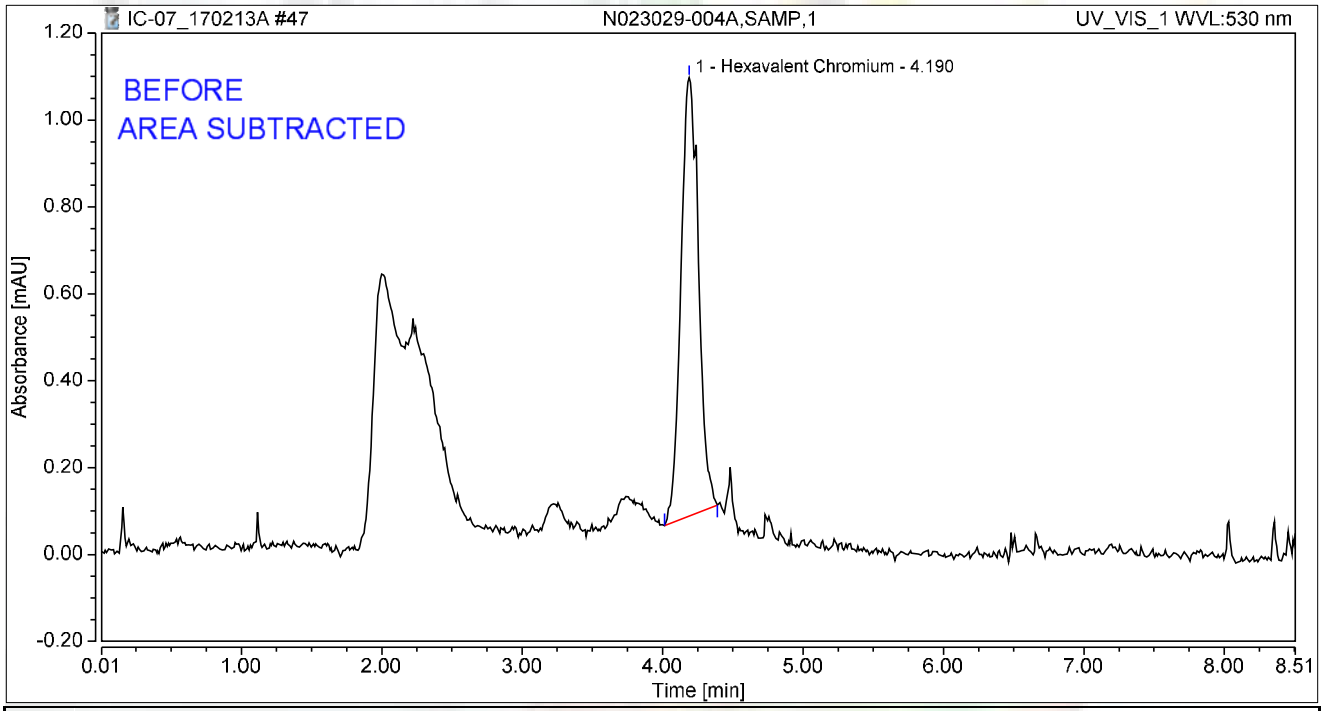
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.146	1.009	100.00	100.00	0.5518
Total:			**0.146**	**1.009**	**100.00**	**100.00**	

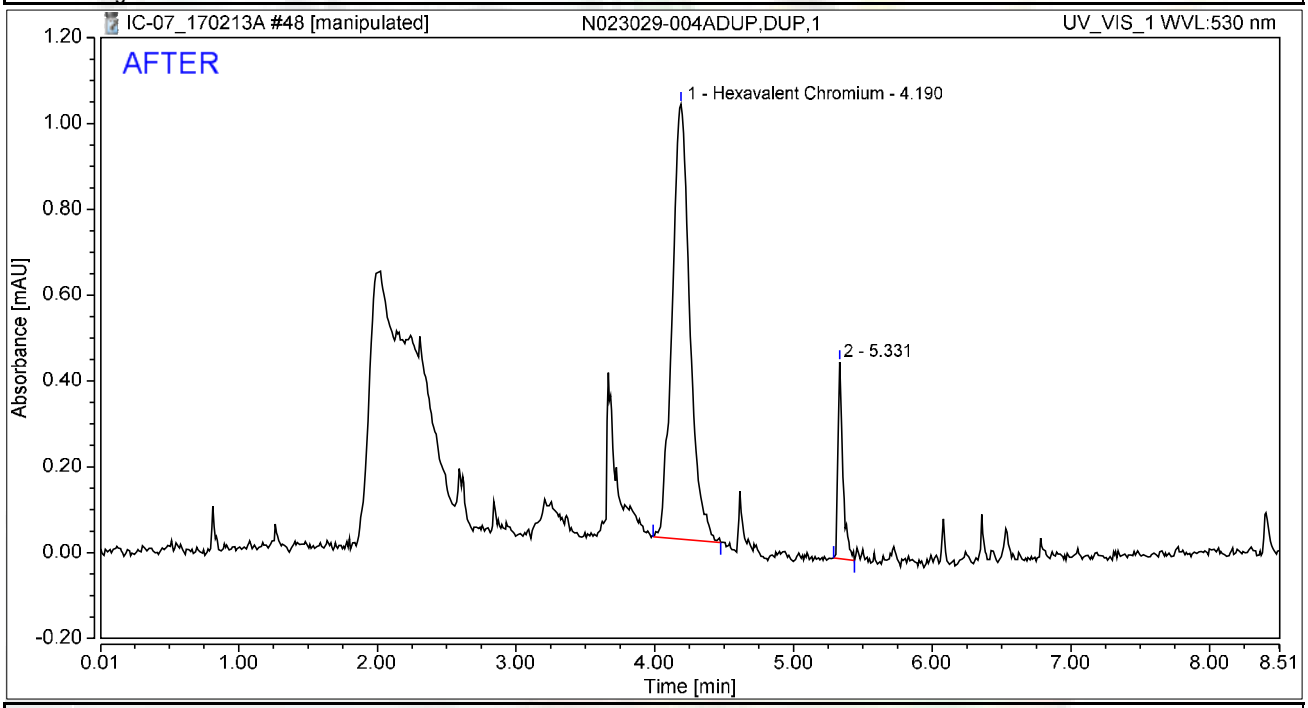
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.150	1.014	88.52	68.88	0.5648
2		5.331	0.019	0.458	11.48	31.12	n.a.
Total:			**0.169**	**1.472**	**100.00**	**100.00**	

rba 2/19/2017

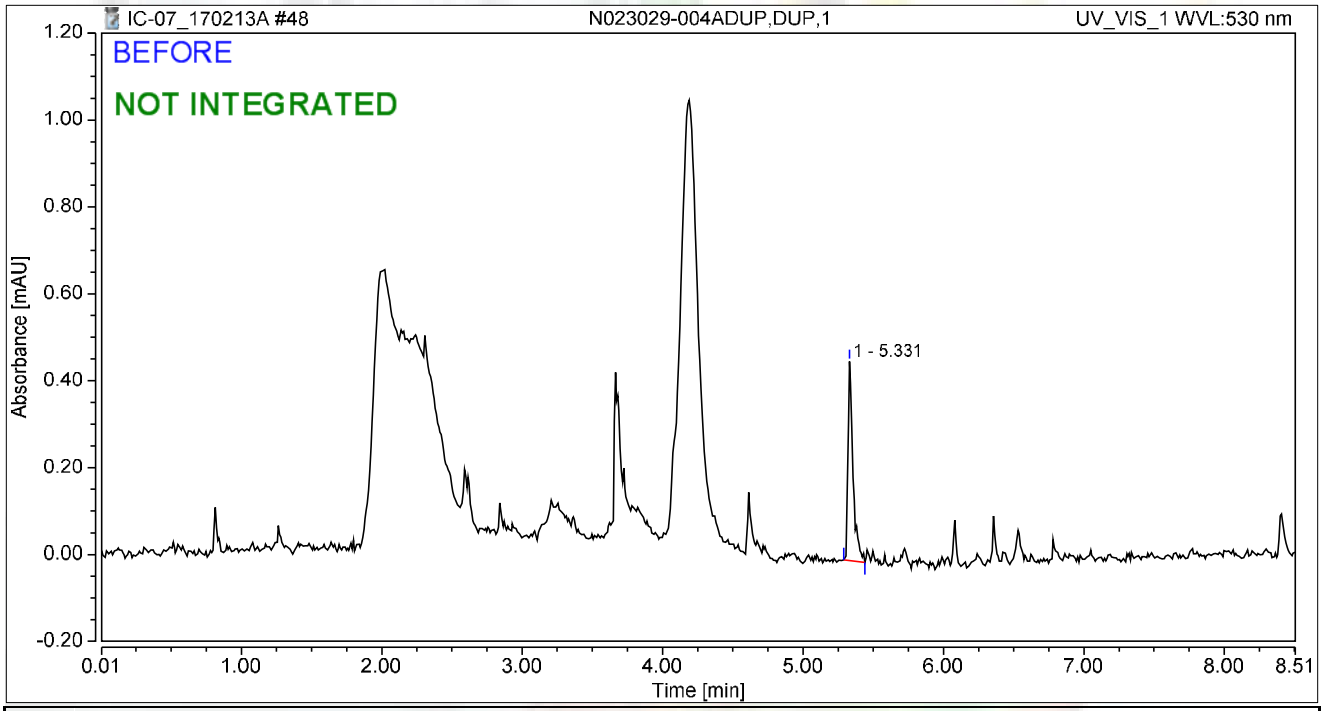
Reviewed by: Dionex 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.331	0.019	0.458	100.00	100.00	n.a.
Total:			**0.019**	**0.458**	**100.00**	**100.00**	

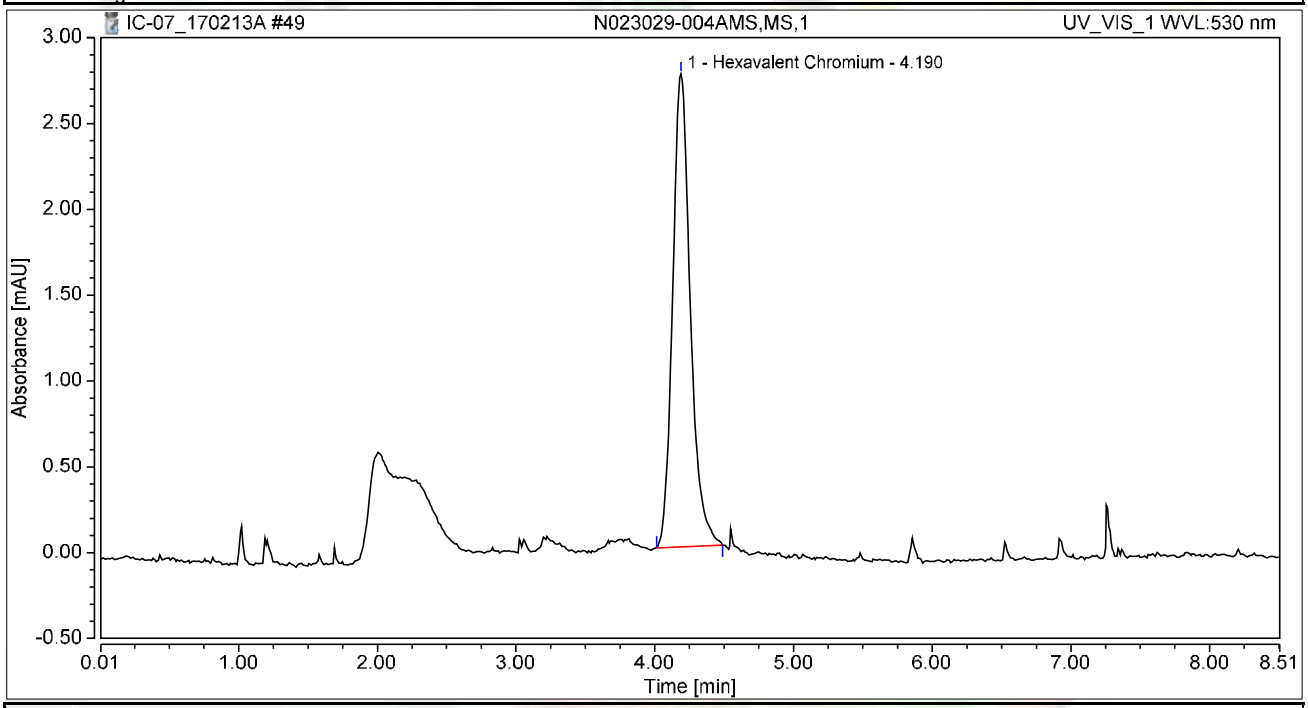
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

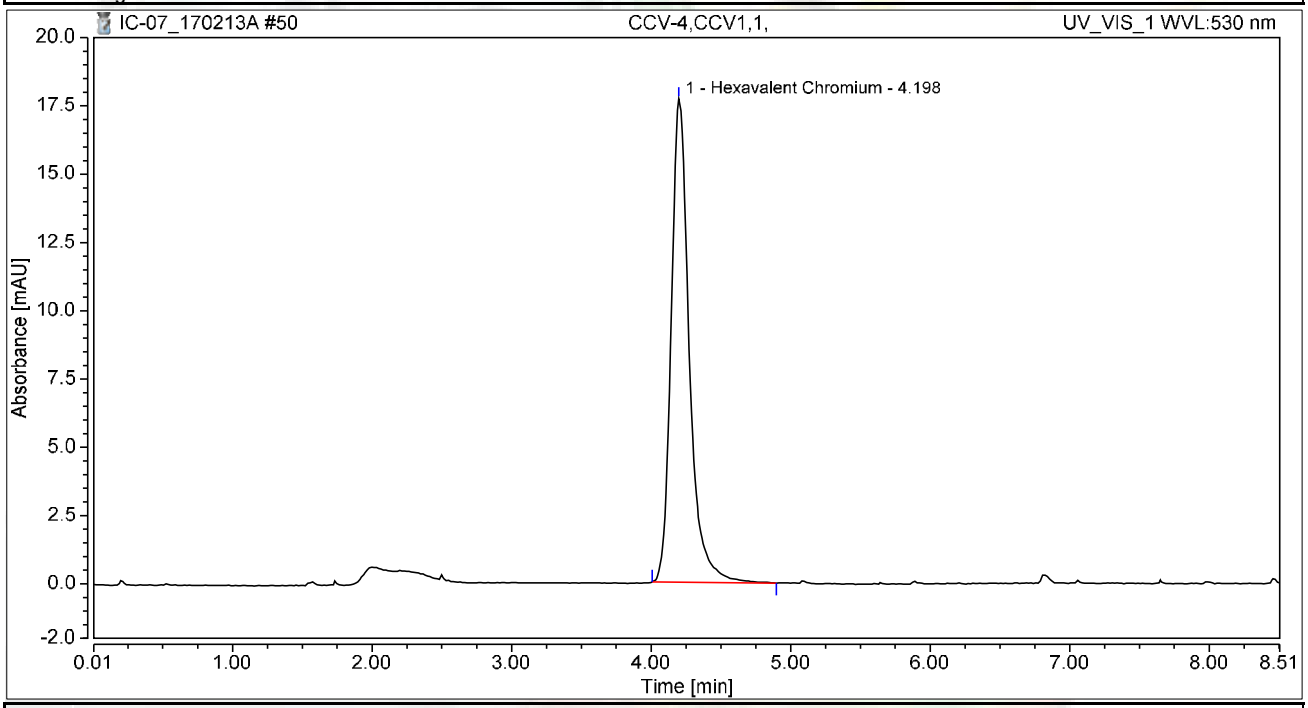
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.407	2.756	100.00	100.00	1.5332
Total:			**0.407**	**2.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

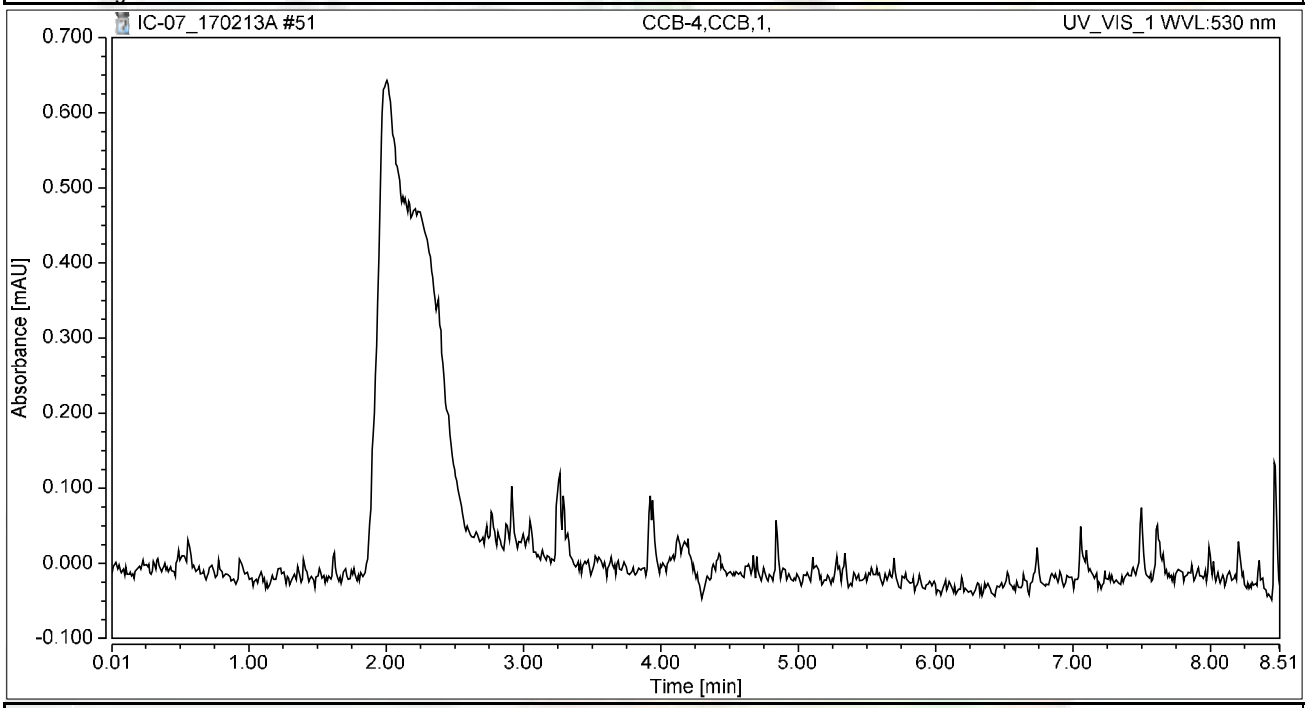
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.664	17.698	100.00	100.00	10.0432
Total:			**2.664**	**17.698**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

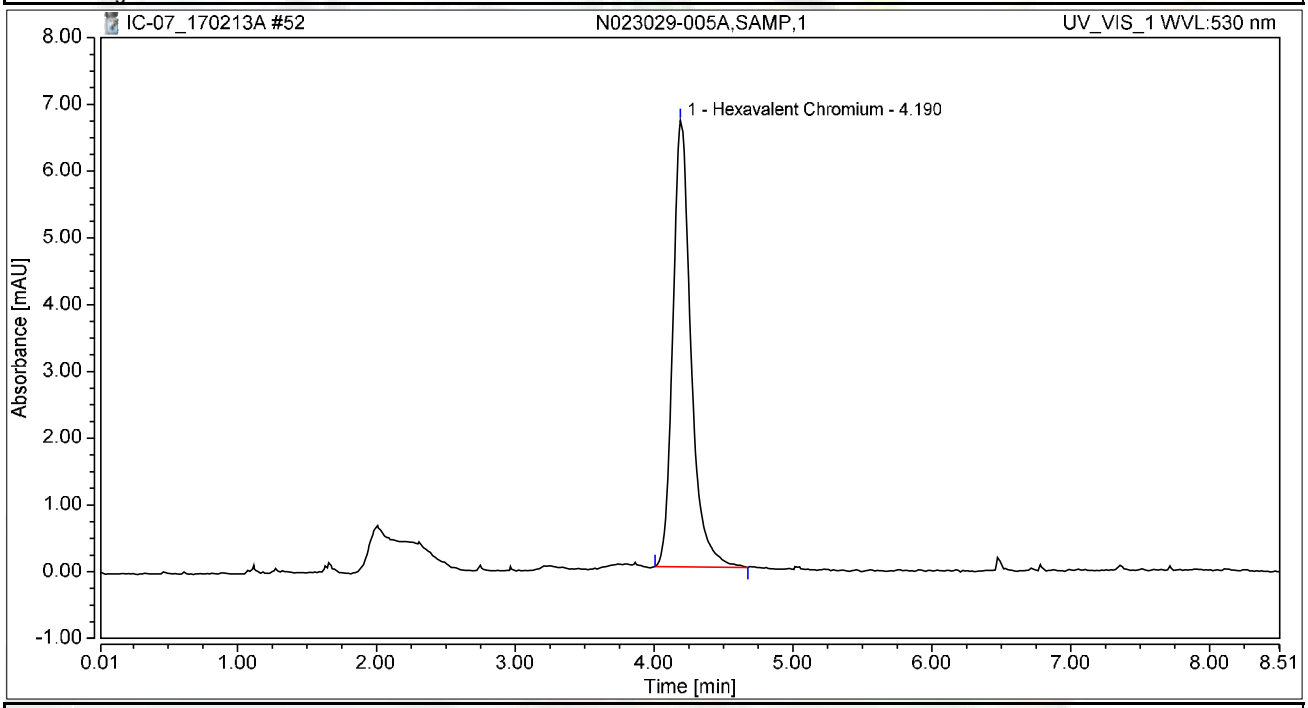
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

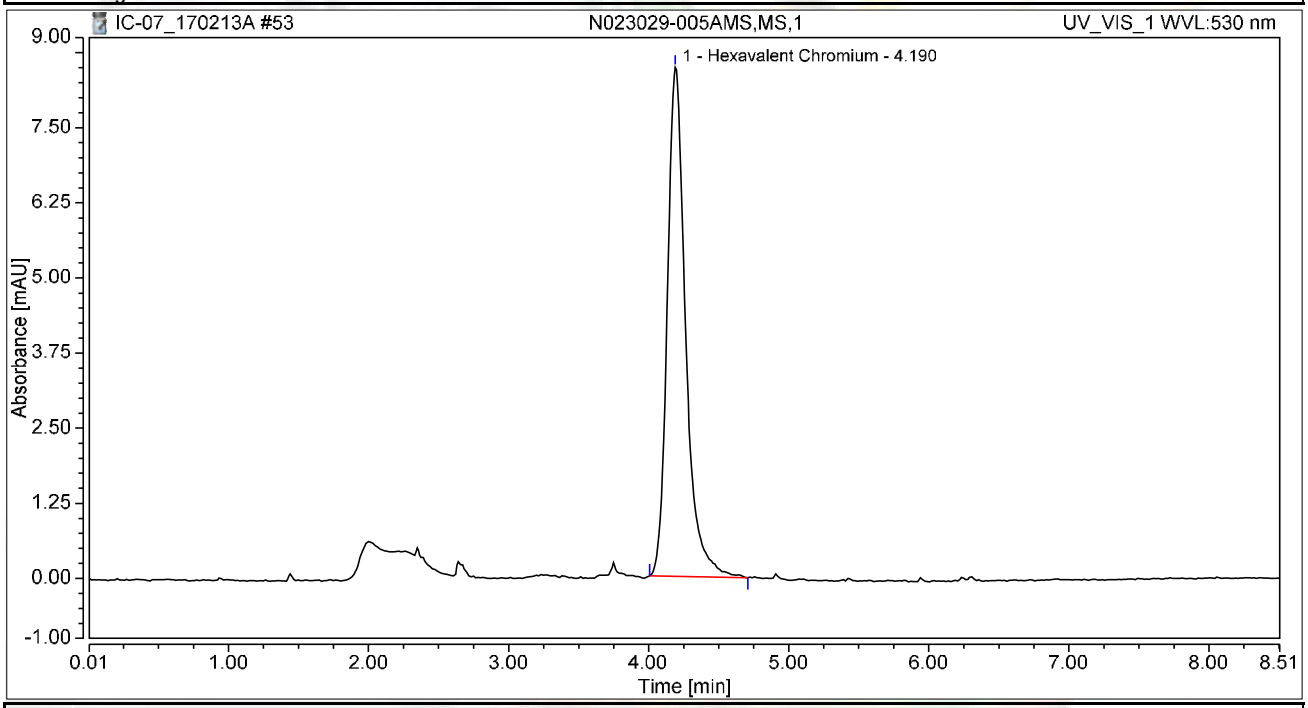
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.012	6.684	100.00	100.00	3.8166
Total:			**1.012**	**6.684**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

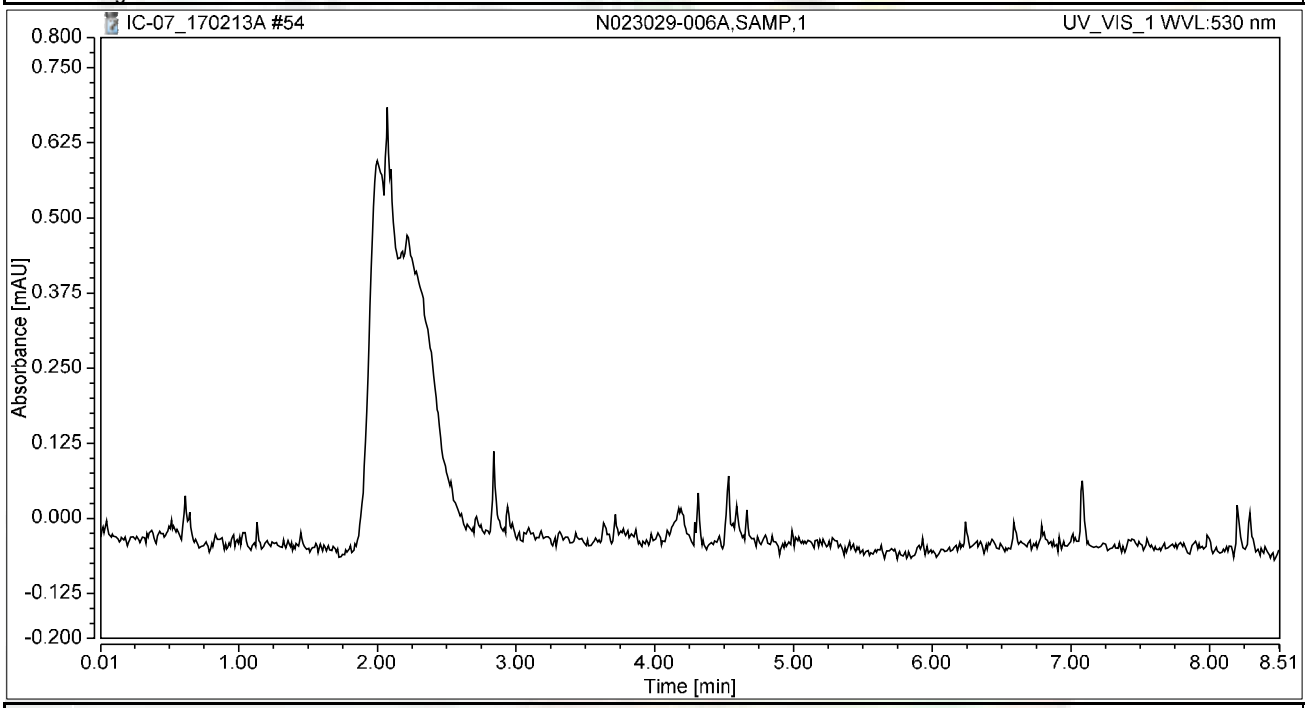
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.285	8.473	100.00	100.00	4.8448
Total:			**1.285**	**8.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

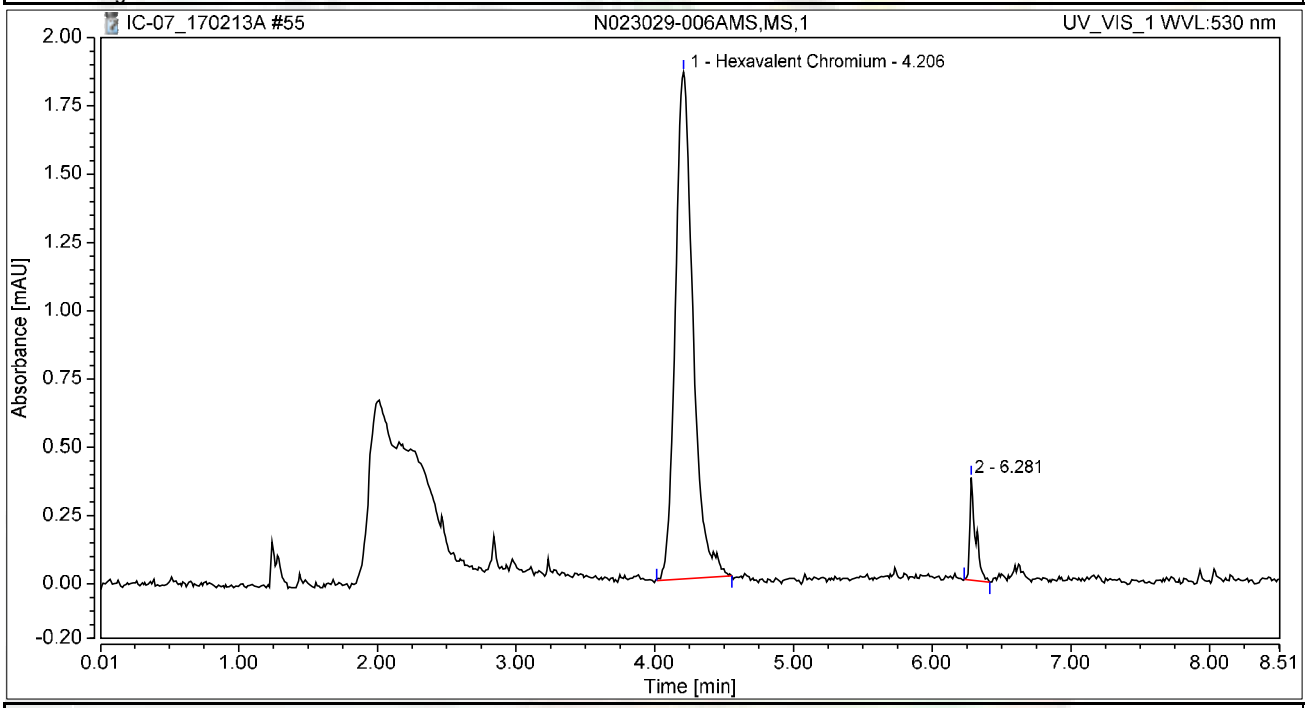
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

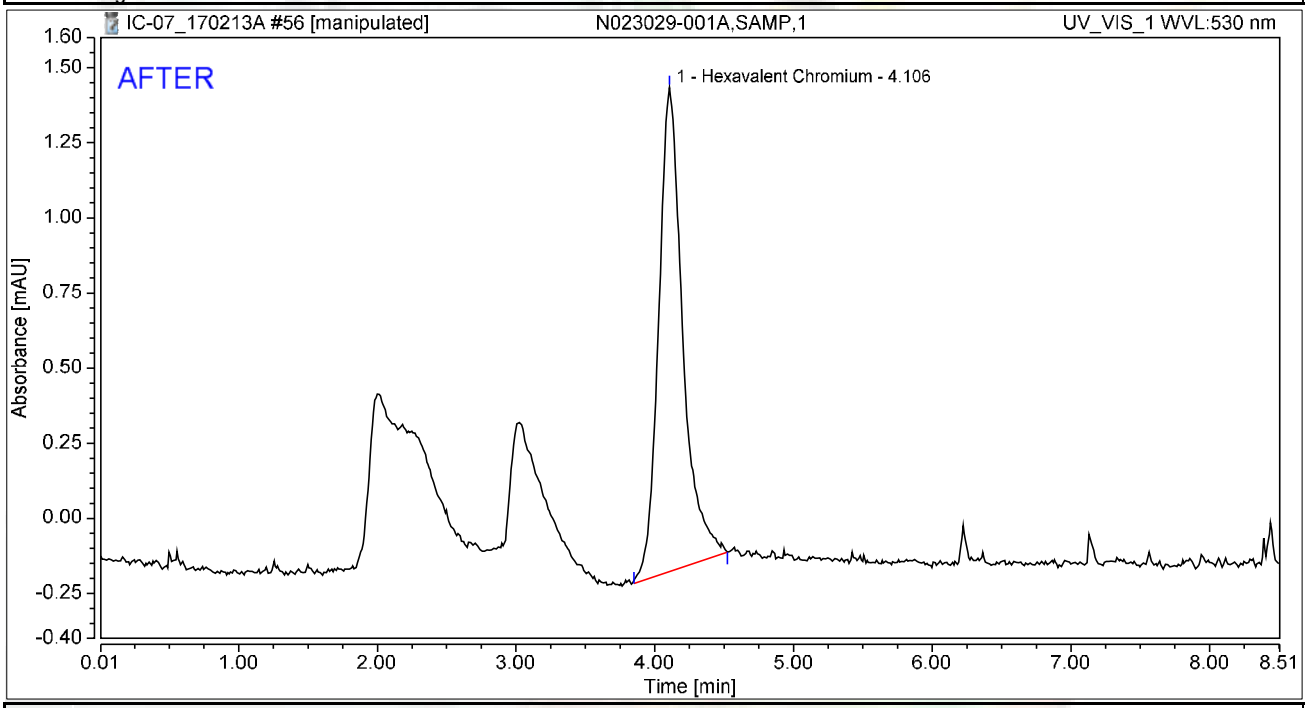
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.274	1.855	93.90	83.20	1.0323
2		6.281	0.018	0.375	6.10	16.80	n.a.
Total:			**0.292**	**2.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.326	1.612	100.00	100.00	1.2274
Total:			**0.326**	**1.612**	**100.00**	**100.00**	

rba 2/19/2017

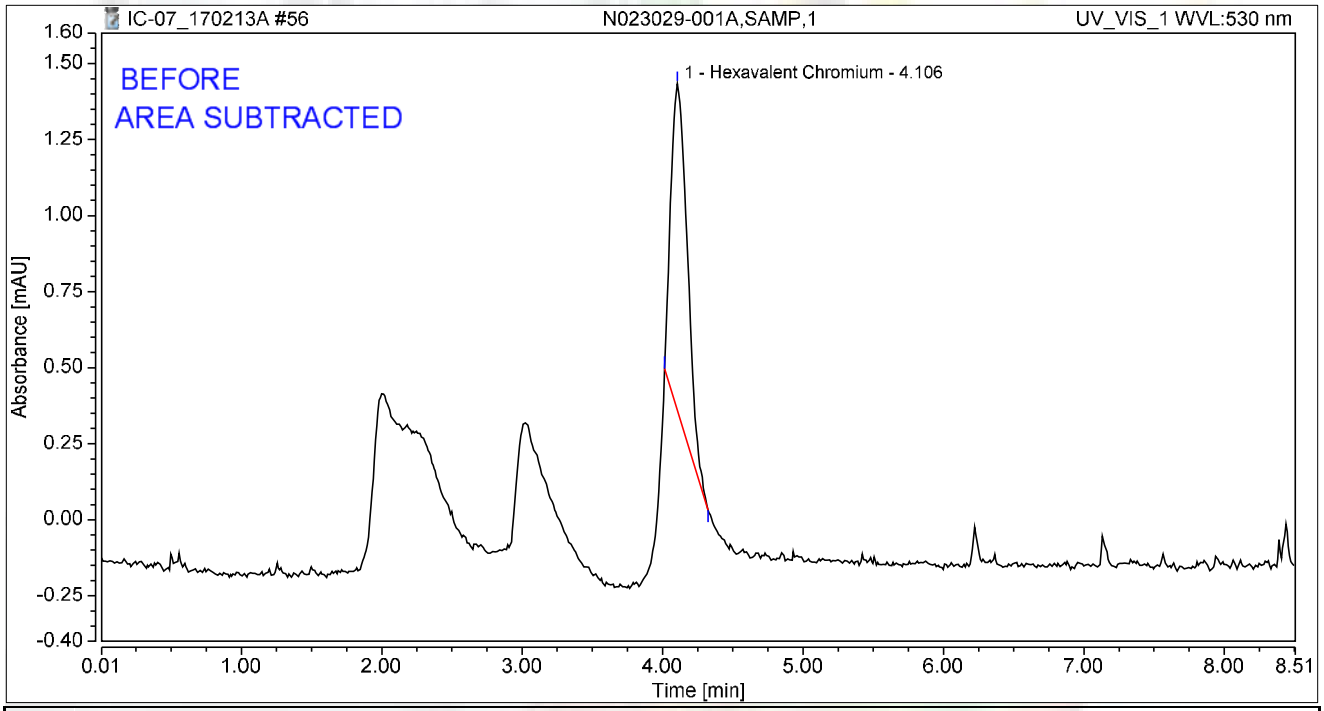
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.147	1.075	100.00	100.00	0.5531
Total:			**0.147**	**1.075**	**100.00**	**100.00**	

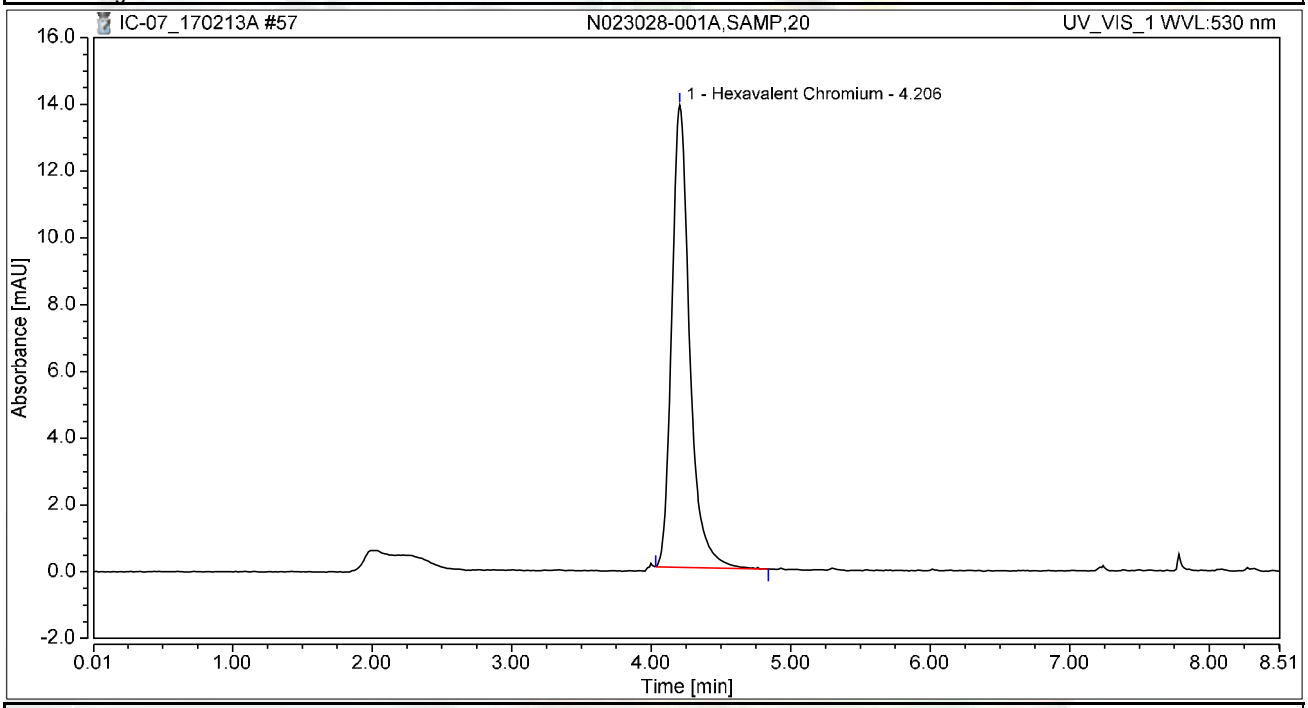
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

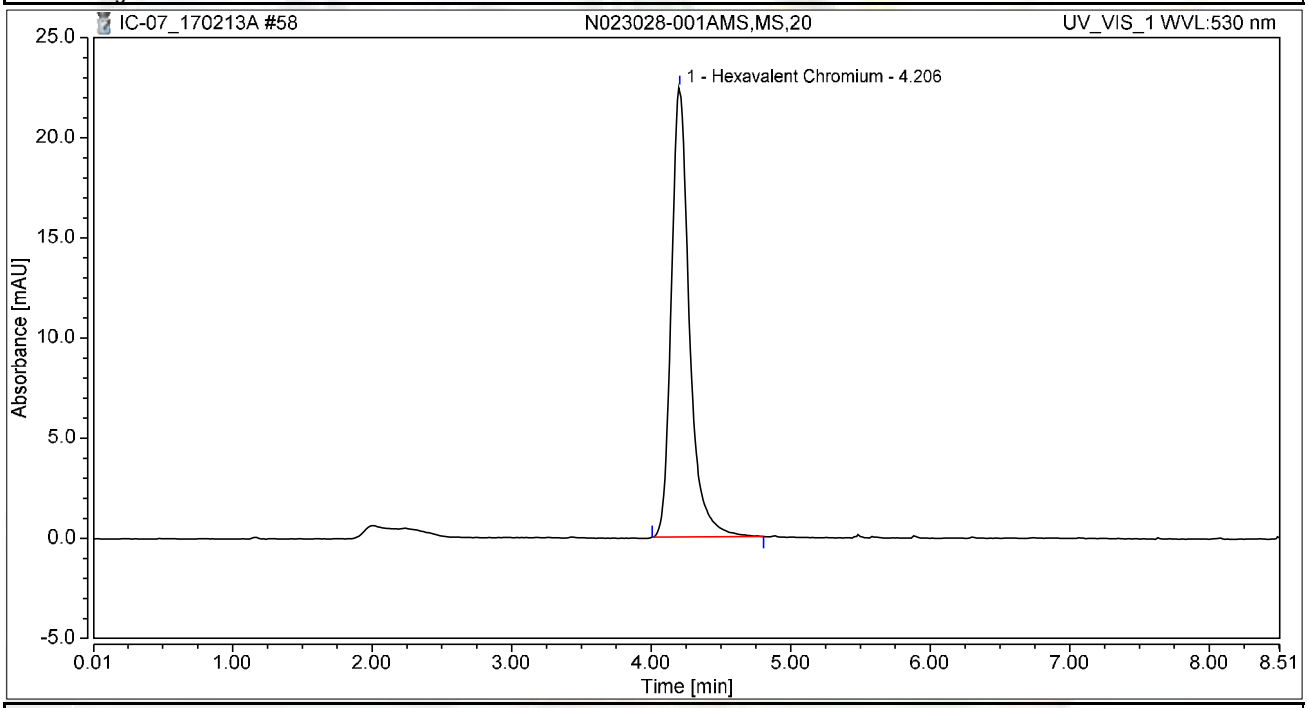
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.063	13.858	100.00	100.00	7.7773
Total:			**2.063**	**13.858**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

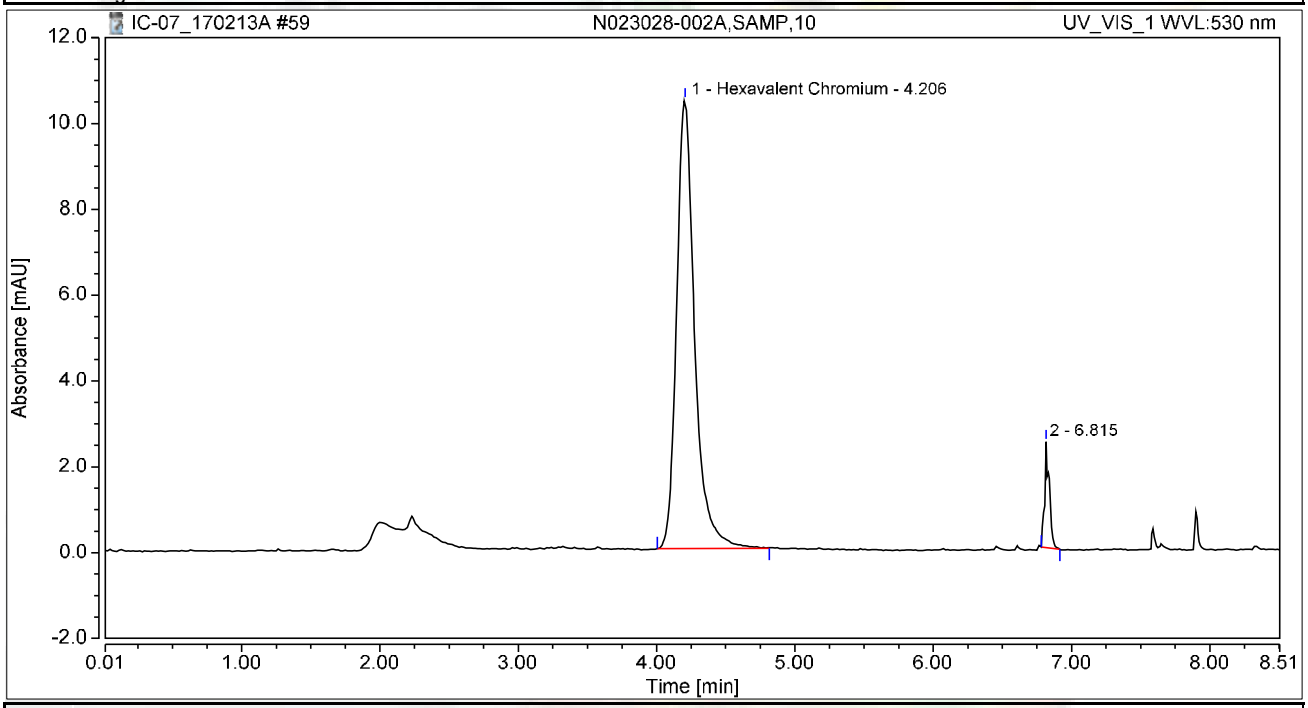
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.372	22.439	100.00	100.00	12.7136
Total:			**3.372**	**22.439**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

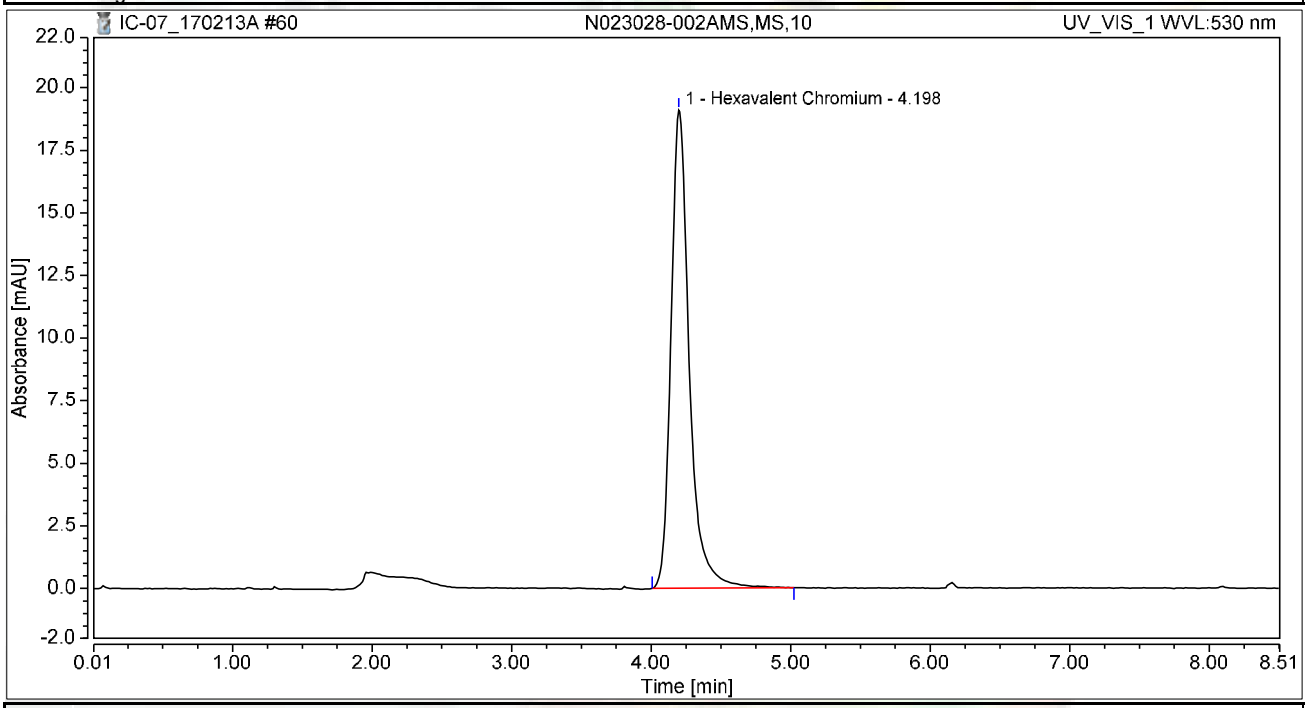
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.581	10.448	94.18	80.91	5.9615
2		6.815	0.098	2.465	5.82	19.09	n.a.
Total:			**1.679**	**12.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

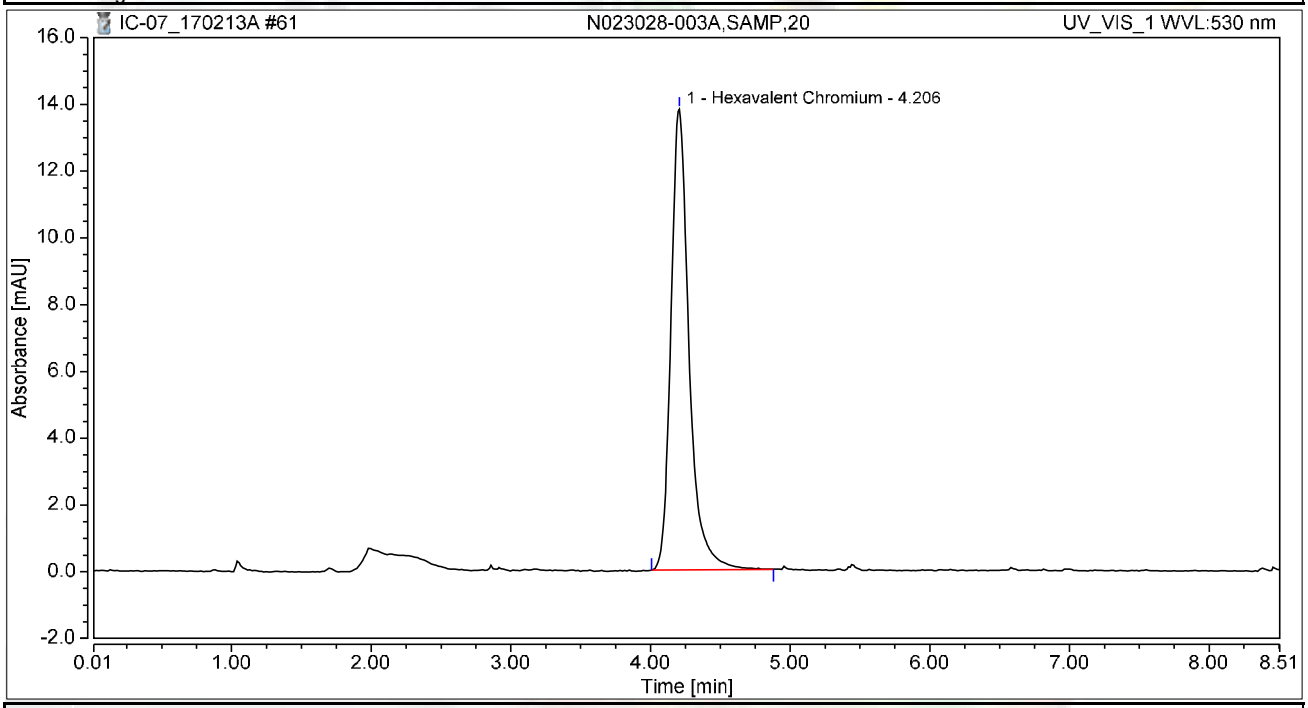
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.904	19.104	100.00	100.00	10.9465
Total:			**2.904**	**19.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

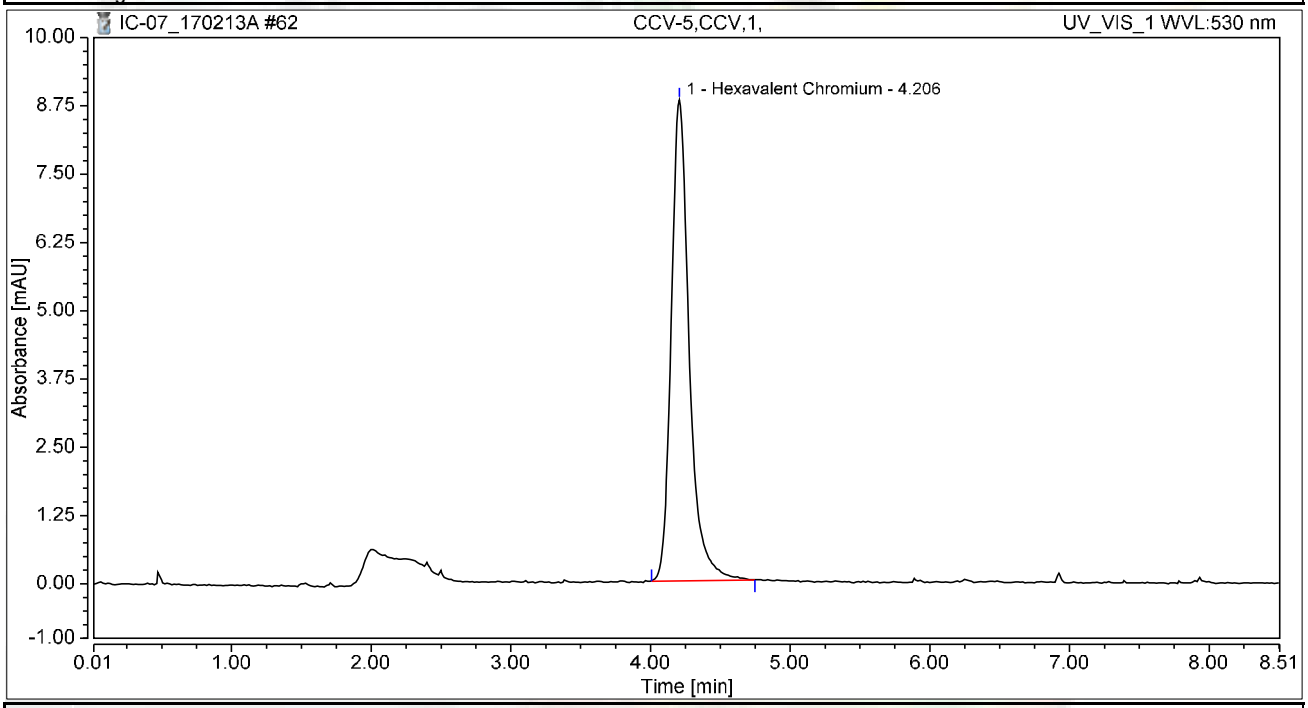
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.079	13.810	100.00	100.00	7.8393
Total:			**2.079**	**13.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

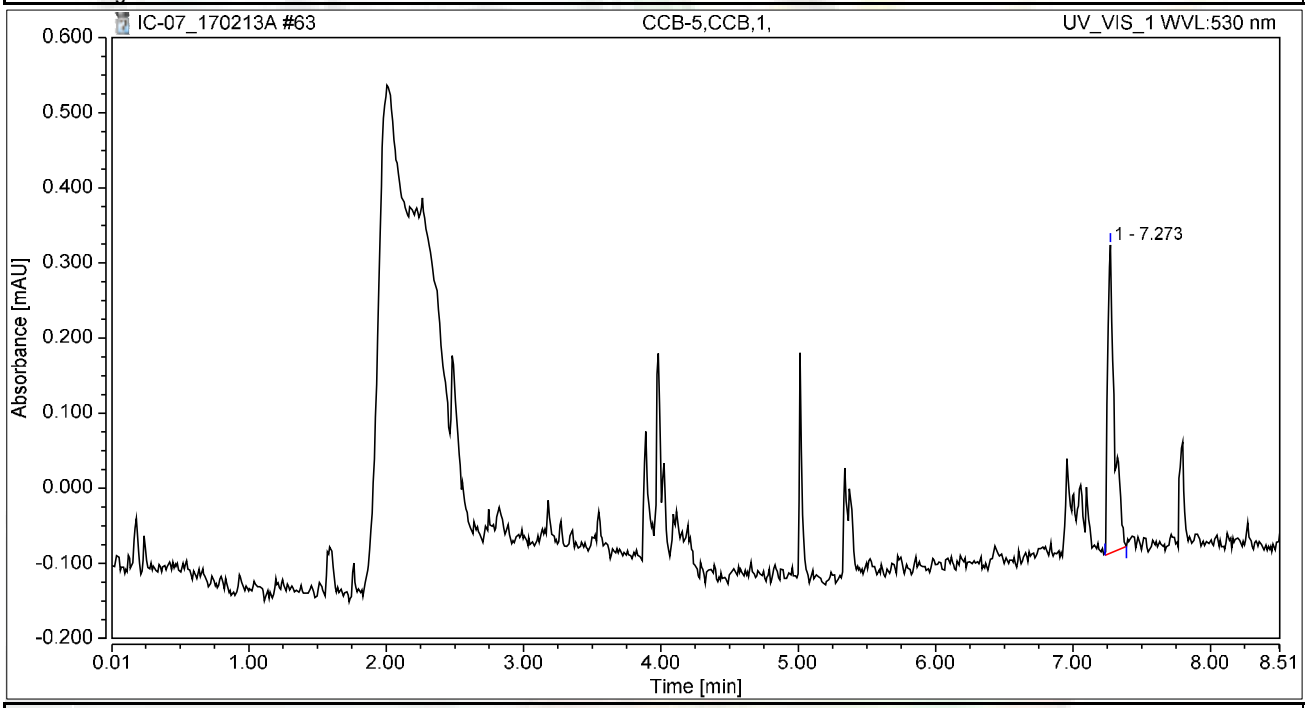
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.317	8.810	100.00	100.00	4.9652
Total:			**1.317**	**8.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

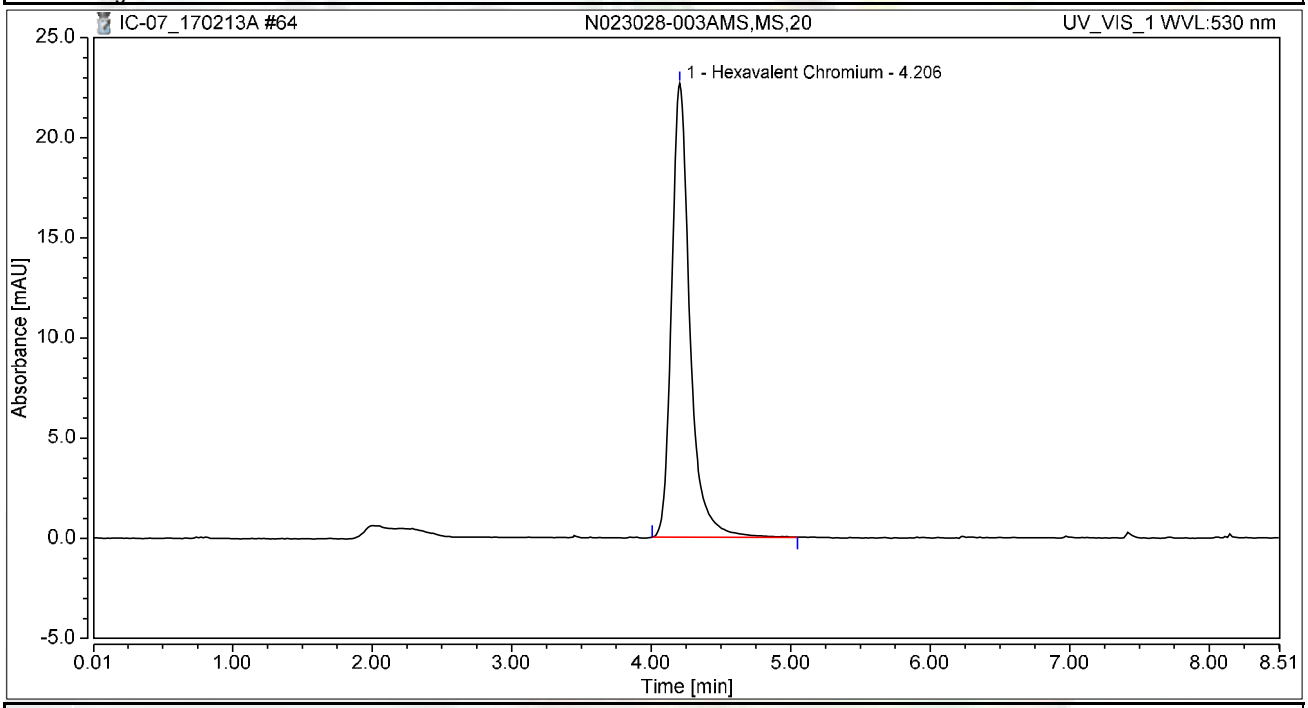
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.273	0.023	0.410	100.00	100.00	n.a.
Total:			**0.023**	**0.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

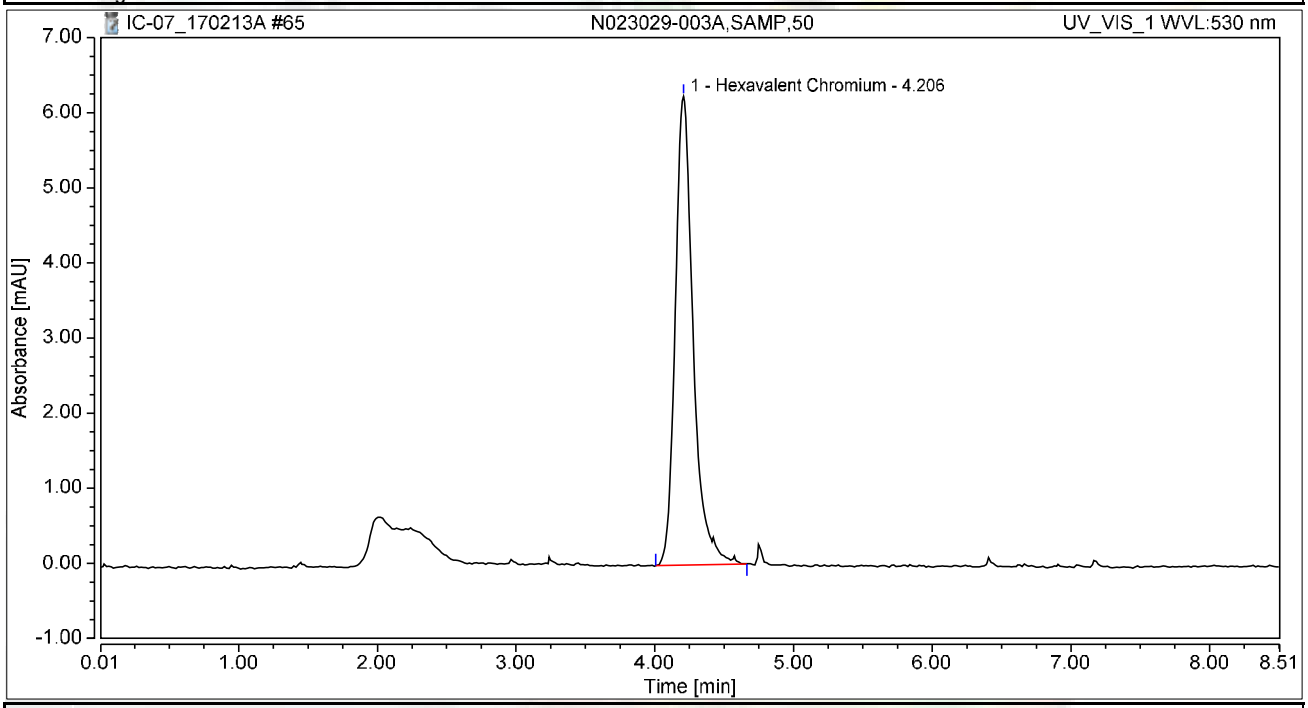
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.439	22.661	100.00	100.00	12.9651
Total:			**3.439**	**22.661**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003A,SAMP,50**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

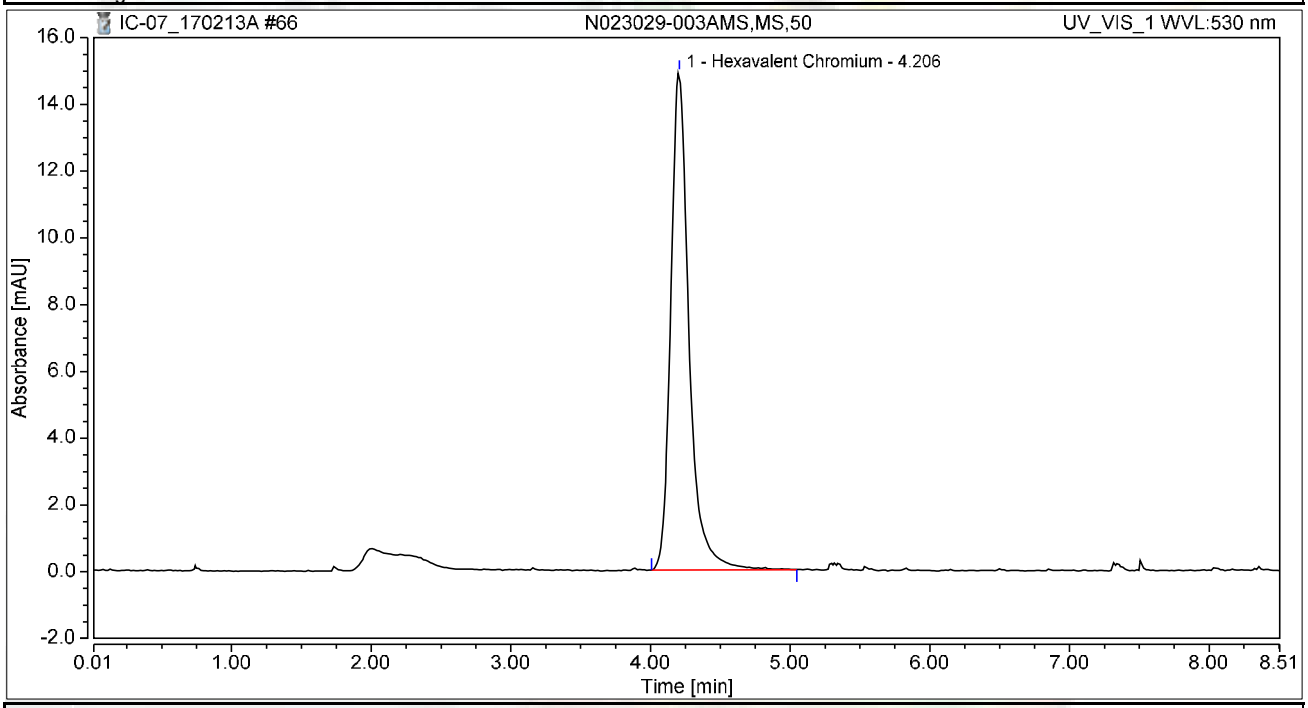
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.933	6.242	100.00	100.00	3.5179
Total:			**0.933**	**6.242**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003AMS,MS,50**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

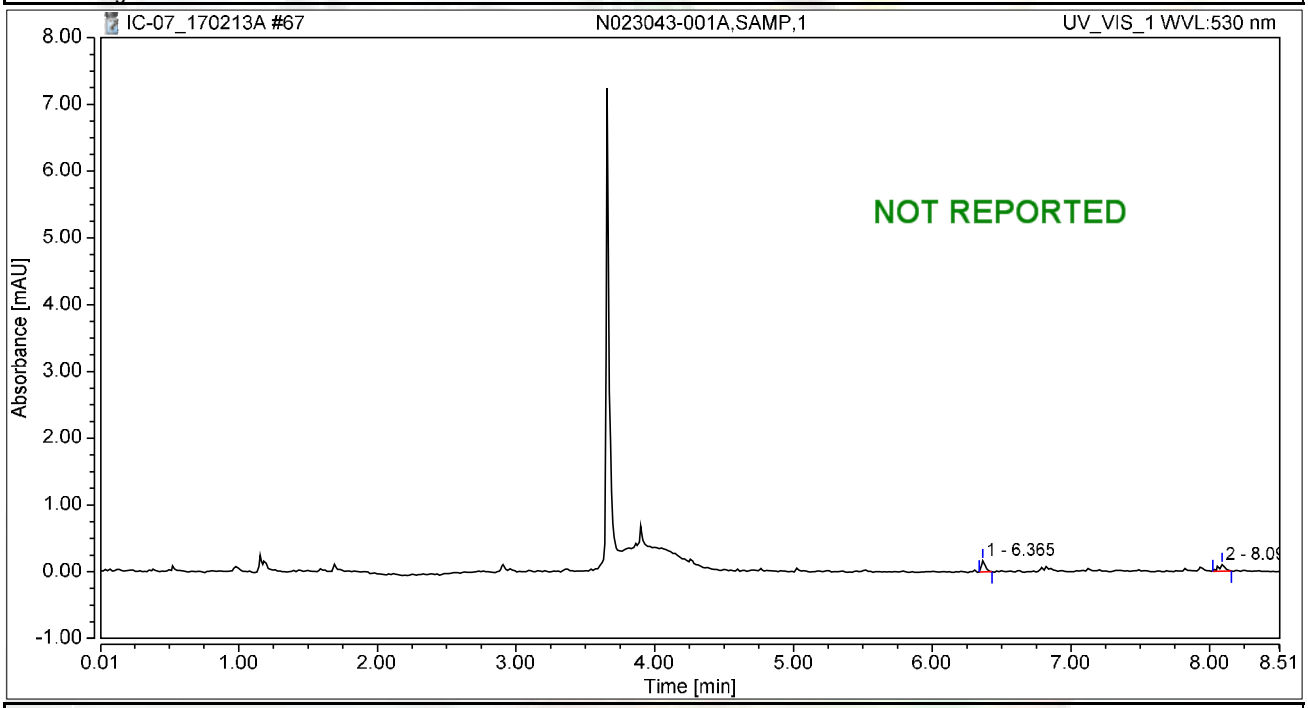
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.260	14.910	100.00	100.00	8.5208
Total:			**2.260**	**14.910**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

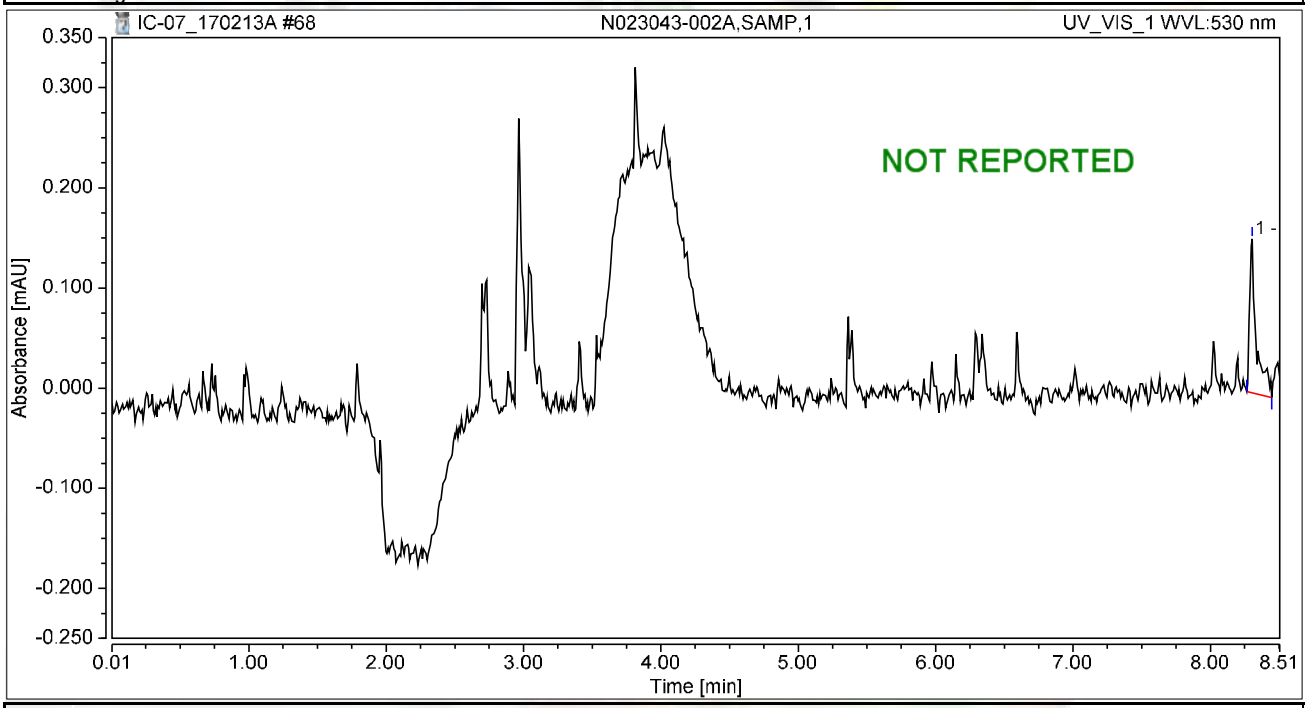
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.365	0.005	0.163	49.52	62.92	n.a.
2		8.090	0.005	0.096	50.48	37.08	n.a.
Total:			**0.010**	**0.259**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

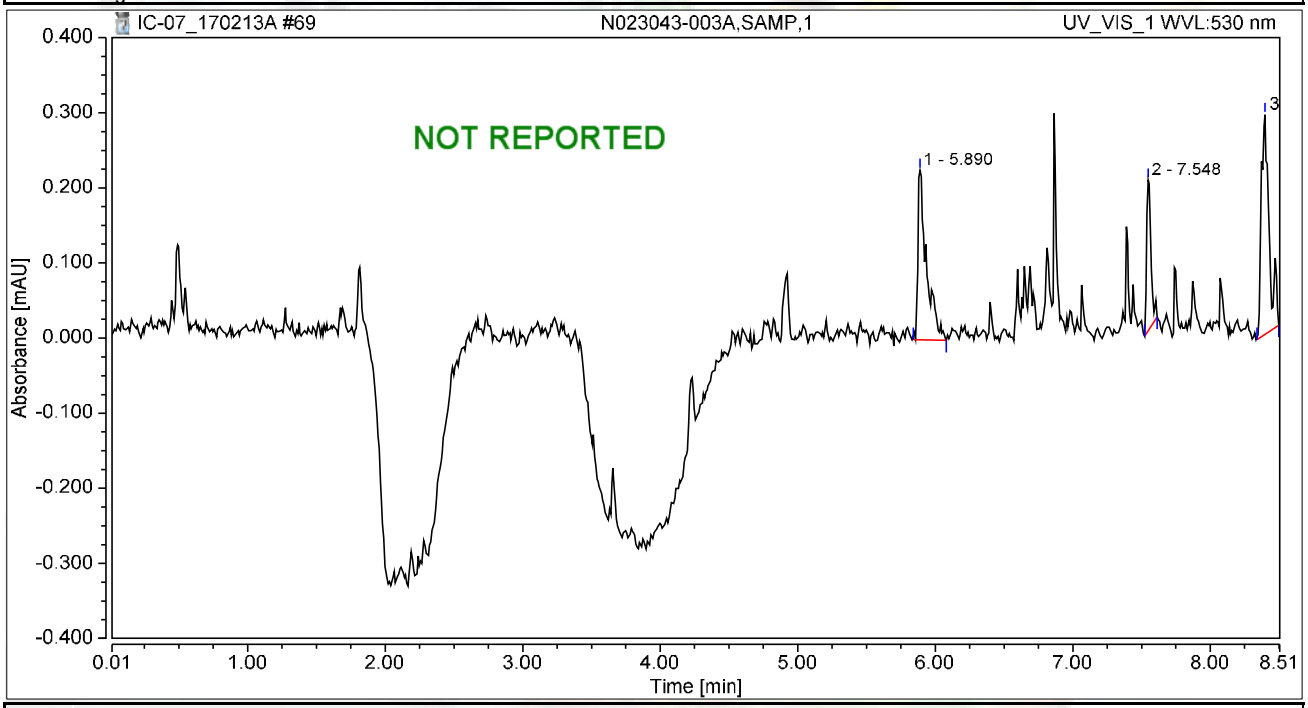
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.306	0.009	0.154	100.00	100.00	n.a.
Total:			**0.009**	**0.154**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

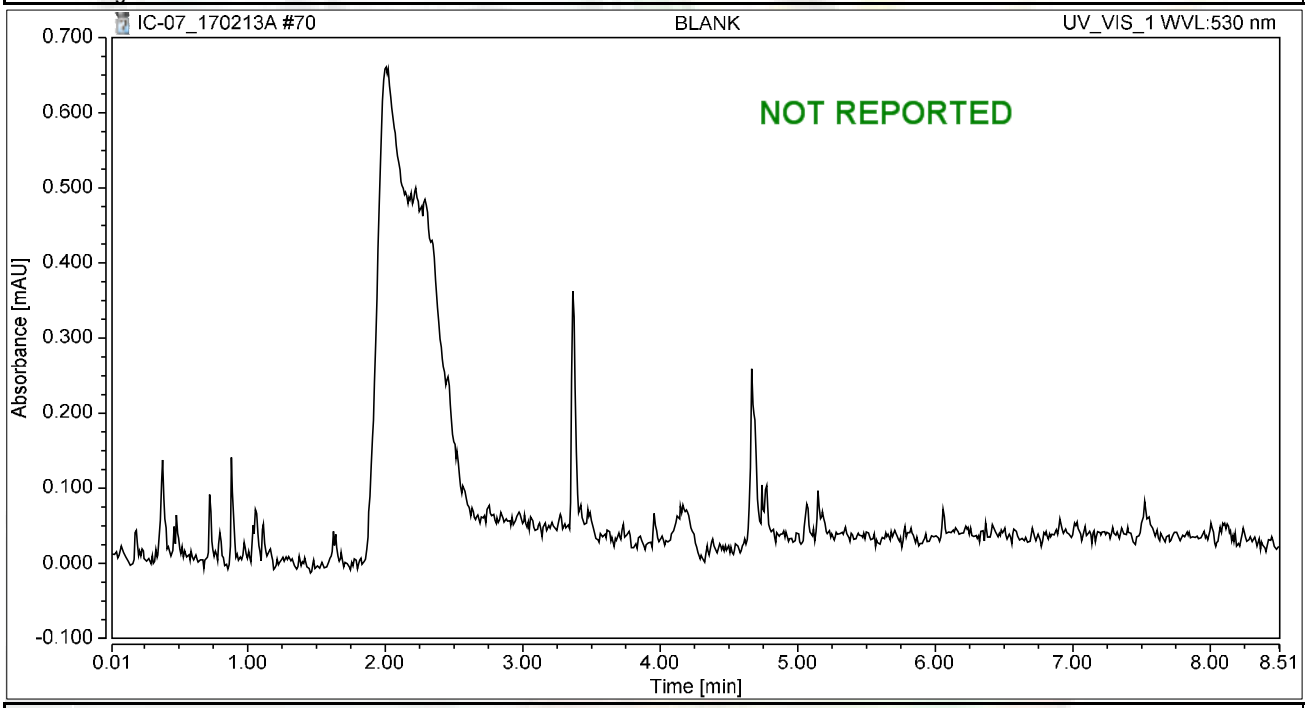
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.890	0.016	0.225	38.02	31.38	n.a.
2		7.548	0.007	0.201	17.57	27.96	n.a.
3		8.398	0.019	0.292	44.41	40.66	n.a.
Total:			**0.042**	**0.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

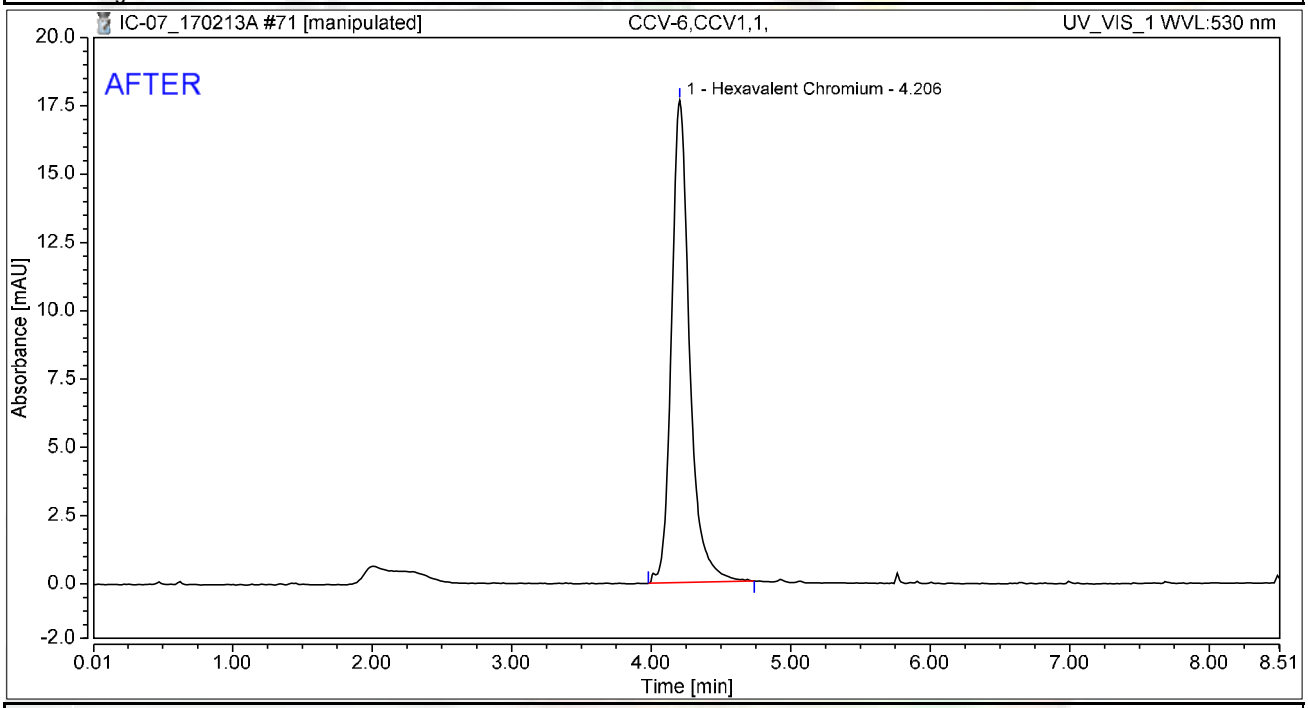
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.659	17.665	100.00	100.00	10.0261
Total:			**2.659**	**17.665**	**100.00**	**100.00**	

rba **2/19/2017**

Reviewed by: Nancy 2/22/2017

My first report/Integration

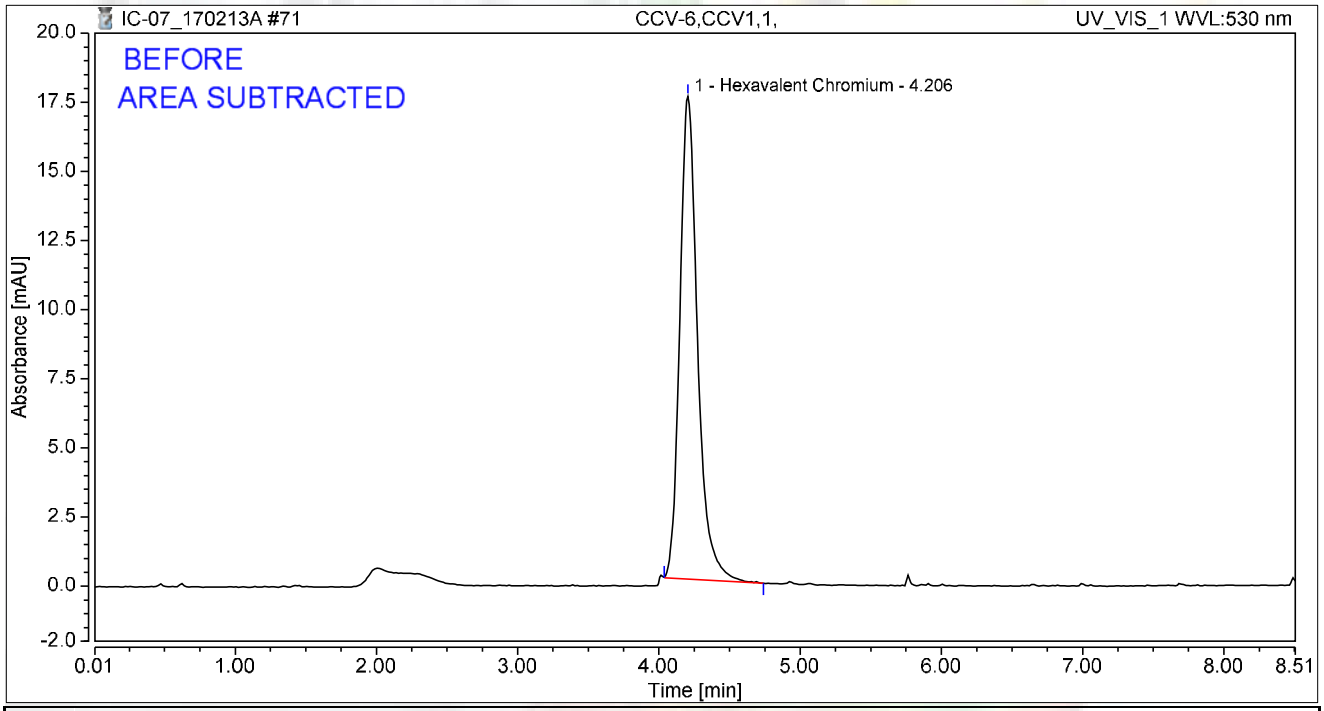
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.550	17.457	100.00	100.00	9.6154
Total:			**2.550**	**17.457**	**100.00**	**100.00**	

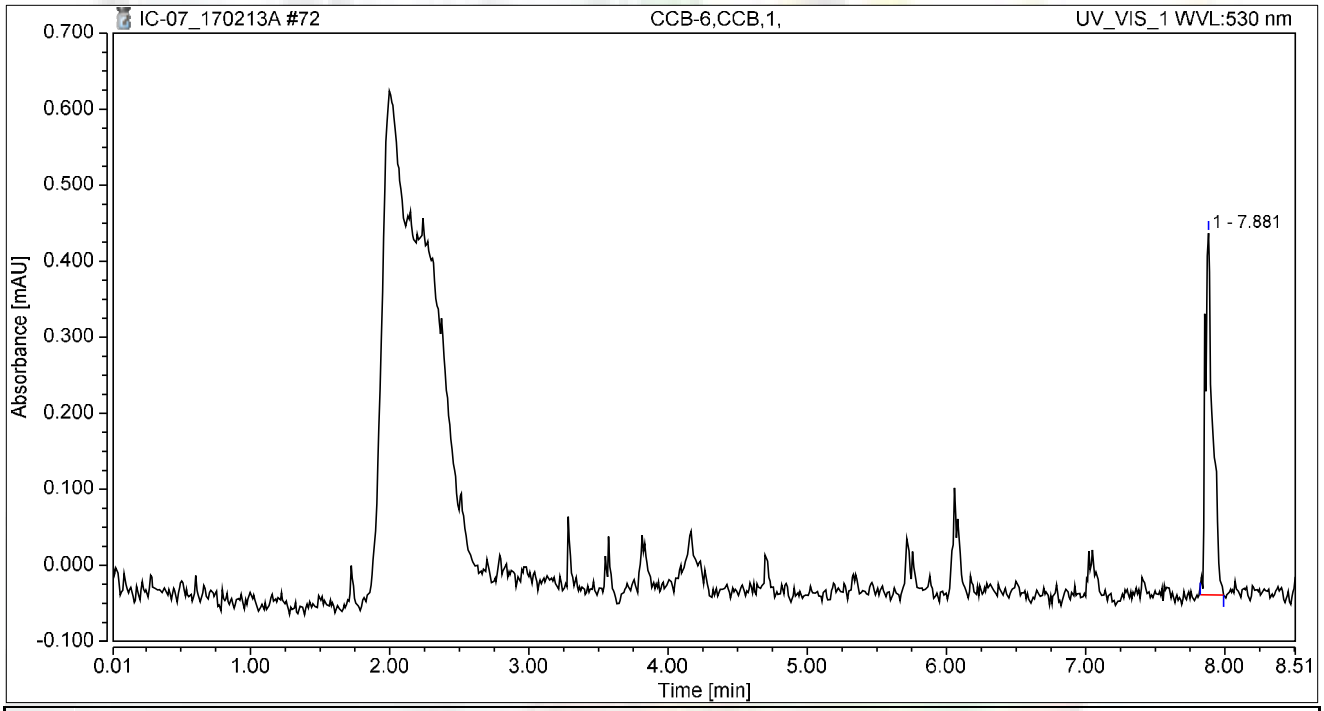
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.881	0.029	0.476	100.00	100.00	n.a.
Total:			**0.029**	**0.476**	**100.00**	**100.00**	

STANDARDS LOG

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
9/14/15	Hexadecane & Stearic Acid Std	ISSTI509 14D	4 mg/mL	ACCU STANDARD	215041058	9/14/15		4/8/25	LSR
↓	↓	↓ E	↓	↓	↓	↓		↓	↓
9/28/15	EPA 1664 STANDARD (MS/MSD)	ISSTI509 28A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4130	9/28/15	10/19/15	8/31/18	LSR
11/4/15	Nitrite as N	ISSTI511 04A	1000 ppm	Absolute Stds	102615	11/4/15	11/10/15	10/26/17	2
12/7/15	Hexadecane & Stearic Acid Std	ISSTI512 07A	4 mg/mL	ACCU STANDARD	215041058	12/7/15	12/31/15	4/8/25	LSR
↓	↓	B	↓	↓	↓	↓	1/8/16	↓	↓
↓	↓	C	↓	↓	↓	↓	1/19/16	↓	↓
↓	↓	D	↓	↓	↓	↓	2/5/16	↓	↓
↓	↓	E	↓	↓	↓	↓	2/22/16	↓	↓
12/8/15	EPA 1664 STD (MS/MSD)	ISST 512 08A	4000 µg/mL	ULTRA SCIENTIFIC	CM-4129	12/8/15	12/31/15	8/31/18	LSR
01/05/16	1000 ppm Hexavalent Chromium	ISST 601 05A	1000 ppm	HIGH-PURITY	1533405	01/05/16	01/07/16	06/30/17	[illegible]
2/11/16	Hexadecane & Stearic Acid Std	ISSTI602 11A	4 mg/mL	ACCU STANDARD	216011074	2/11/16	02/24/16	1/12/26	LSR
↓	↓	B	↓	↓	↓	↓	3/14/16	↓	↓
↓	↓	C	↓	↓	↓	↓	4/7/16	↓	↓
↓	↓	D	↓	↓	↓	↓	5/23/16	↓	↓
↓	↓	E	↓	↓	↓	↓	6/23/16	↓	↓
2/11/16	Fluoride, 1000 ppm	ISST 602 11F	1000 ppm	Absolute Stds	012116	2/11/16	2/12/16	1/21/19	2
	Chloride, 1000 ppm	G	↓	↓	010816	↓	↓	1/8/19	↓
	Nitrite, 1000 ppm	H	↓	↓	010816	↓	↓	1/8/18	↓

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	VG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/14/16	1 ppm Cr^{6+} (1°)	IWST 161114C	ISST - 160817A	1000 ppm	100
	1 ppm Cr^{6+} (2°)	IWST 161114D	ISST - 160105A	1000 ppm	100
11/22/16	1000 ppm Talc	IWST 161122A	CINN - 140317A	–	1.0g

Logbook #2
Inorganics WK Std Log

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
100 ml	1ppm	H2O	–	–	5/14/17	4/19		RBA
100ml	1ppm	H2O	–	–	5/14/17	6/30/17		RBA
1000ml	1000ppm	H2O	–	–	11/22/17	5/9/17		LSR

ASSET Laboratories

* Working std expiration date must not exceed the manufacturer's expiration date.

ASSET LABORATORIES
CALIFORNIA
Santa Fe Springs, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

Logbook #2
Inorganics WK Std Log

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1511069G	99.9%	9/7/16			MG	
↓ J	↓	↓	↓	↓	↓	11-12-16	11-12-18	↓	
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	N25C014	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 10053 µS/cm	LSS	CC15087		9/9/16	10/18/16	7/8/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-06	-	9/12/16	10/3/16	10/3/19	LSR	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	3056C514	>98.0%	9/16/16			L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
↓ B	Ammonium Hydroxide	BDH	7216050	-	9/21/16	10/13/16	10/31/18	LSR	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15030	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR	
↓ 161012B	Sulfuric Acid	EMD	56194	-	↓	10/27/16	10/27/18	LSR	#8651

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161012C	Stannous Chloride	LSS	160624C	–	10/12/16			LSR	
CINV-161013A	CITRIC ACID	ALFA AESAR	X15A002	99.100%	10/18/16			LSR	LIMS 3652
CINV-161025A	Buffer pH 7	VWR	4609097	–	10/26/16	11/10/16	9/20/18	LSR	
B	Buffer pH 4		4608A00	–		11/15/16	7/2018		
C	Conductivity Std, 1.413 mS/cm		CC15045	–		11/21/16	6/15/17		
D	pH electrode storage Soln		A6189	–			7/2018		
E	electrode internal fill soln	Thermo Scientific	UW1	–					
CINV-161026A	Sodium Hydroxide, pellet	MACRON	7708-06	–	10/26/16	12/6/16	12/6/19 ~~12/12/18~~	LSR	NSA
B	Ammonium Hydroxide	VWR	7216050			12/12/16	6/2019		/NSA
C	Potassium Hydroxide	JT Baker	116209						
CINV-161026D	Sodium Hydrogen Sulfate	Sigma Aldrich	MKBR1820V	–	10/26/16			LSR	#8668
CINV-161028A	Ammonium Sulfate	LABCHEM	F258-19	–	10/28/16	12/9/16	12/9/19	LSR	/NSA
B				–		12/30/16	12/30/19		/NSA
C				–		1/13/17	1/13/20		NSA
D				–		1/25/17	1/25/20		NSA
CINV-161103A	HEXANES	EMD Chemicals	56139	–	11/3/16	11/18/16	11/18/18	LSR	8686
B				–		11/29/16	11/29/18		8687
C				–			12/19/16		8688
D				–			12/21/16		8689
CINV-161104A	Conductivity Std, 99890 µS/cm	LSS	CC15165	–	11/4/16	12/29/16	5/11/17	LSR	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	–	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	–	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16	12/13/16	12/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161213B	Methyl Alcohol	Honeywell	4609D54	–	12/14/16	12/30/16	3/2018	LSR	/RMA
CINV-161214A	Buffer, pH 10	VWR	CC15355	–		2/8/17	10/3/17	LSR	
B	Conductivity Std, 1413 µS/cm		C692002	–		2/2/17	12/2017	LSR	
C	Turbidity Std, 5.0 NTU	Amco Clear	16030808	99.9%	12/20/16			MG	
CINV-161220A	Methyl Alcohol	Tedia				2/8/17	2/8/19		
B									
C									
D									
E			–	–	–				
F	–	–	161128-A	–					
G	stannous chloride	LSS		–	–			–	
H			CC15085	–	12/16/16	1/16/17	7/8/17	MG	
CINV-161220I	conductivity Std 10,000	VWR	CC15261	–	12/19/16	1/25/17	9/2/17		
J	100,000		7216080	–	12/28/16	1/8/17	1/3/19	MG	/RMA
CINV-161228A	Ammonium Hydroxide	VWR		–		2/7/17	2/7/19		/RMA
161228B			140227	–					
161228C	1-5 Diphenylcarbohydrazide	J.T Baker							

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-~~1~~1225D	Magnesium Chloride Hexahydrate	VWR	16C524	-	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F258-19	-	12/28/16	2/9/17	2/9/20		/ NBA
F									
G									
H									
I	Methanol	Omni soly	J6238	99.9%					
J	Sulfuric Acid								
~~CINV 1/23/17~~									
CINV170123A	Ammonium Persulfate	BDH	3056C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C0356/9	85%	1/25/17	1		[illegible]	
B	Buffer, pH 4	VWR	4610A50	-			9/2018	LSR	
C	Buffer, pH 7		4611C60	-			10/2018	LSR	
D	Buffer, pH 7 (LCS)	Thermo Scientific	UQ1	-			10/2018	LSR	
E	Conductivity Std, 10,000 uS/cm	Ricca	2611936	-			10/2018	LSR	
F	Conductivity Std, 1413 uS/cm	Mettler Toledo	16G205006	-			7/20/18	LSR	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr^{6+})	R160919D	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000
10% H_2SO_4	R160920A	#8529	10 mL	100
~~1,5-Diphen~~ 1,5-Diphenylcarbazide soln	↓ B	CINV-150106G / #8323	0.25g / 50mL	50
Buffer (Cr^{6+})	R160920C	CINV-160624D / CINV-160609A	3.3g / 6.5mL	100
0.02 N H_2SO_4	R160920D	R 160831B	~~[illegible]~~ 200mL	1000
Eluent (Cr^{6+})	R160920E	CINV-160624D / CINV-160609A	66g / 13mL	2000
ASCORBIC ACID SOLUTION	R160921A	CINV141126A / #8319	6g / 2mL	100
Post Column Rgt (Cr^{6+})	R160921B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000
Digestion solution	R160922A	CINV-160721A / #8396	90g / 60g	3000
20% $NaHSO_4$	R160922B	CINV-150311A	800g	4L
ASCORBIC ACID SOLUTION	R160923A	CINV 141126A / #8319	6g / 2mL	100
Buffer (Cr^{6+})	R160923B	CINV-160624D / CINV-160609A	66g / 130mL	2000
5N HNO_3 Cret	R160924A	#8559	138mL	500
POST COLUMN Reagent Cret	R160925A	CINV 160408A / #8529 CINV 160616A	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R160927A	CINV: 8543	1L	2L
ASCORBIC ACID SOLUTION	R160927B	CINV-141126A / #8323	6g / 2mL	100
Eluent (Cr^{6+})	R160928A	CINV-160624D / CINV-160609A	66g / 13mL	2000
DIGESTION SOLUTION	R160930A	CINV-160721A / #8396	60g / 40g	2000
5N HNO_3	↓ B	#8560	138mL	500
6N NaOH	R160990C	#8396	24g	100

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	9/10 [illegible]	9/19/16	9/24/16	8/12/19; 8/31/18; 8/31/18		pba
	10%	9/20/16	9/20/17	8/31/18		2
	–	L	9/20/16	3/12/18; 9/14/18		J
	[illegible]	9/20/16	10/20/16	9/11/19; 8/31/18		pba
5	0.[illegible] N	9/20/16	3/20/16	8/31/18		LSR
	–	9/20/16	9/20/17	9/11/19; 8/31/18		pba
	–	9/21/16	10/5/18	8/28/18; 9/1/18		2
	–	9/21/16	9/26/16	8/12/19; 8/31/18; 8/31/18		pba
	–	9/22/16	10/22/16	8/4/19; 6/25/19		pba
10	20%	9/22/16	~~7/14/17~~ 9/22/17 HSL	10/6/18		HSL
	–	9/23/16	10/7/16	8/28/18; 9/1/18		2
	–	9/23/16	10/23/16	9/11/19; 8/31/18		pba
	5N	9/24/16	9/24/15	9/8/18		KEB
	–	9/25/16	9/30/16	8/12/19; 8/31/18; 8/31/18		J
15	1:1	9/27/16	9/27/17	7/25/18		PG
	–	9/27/16	10/11/16	8/28/18; 9/14/18		2
	–	9/28/16	9/28/17	9/11/19; 8/31/18		pba
	–	9/30/16	10/30/16	8/4/19; 6/25/19		2
	5N	J	9/30/17	9/28/18		J
20	6N	9/30/16	9/30/17	6/25/19		pba

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr6+)	R161003A	CINV-160624D / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161003B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Buffer (Cr6+)	R161003C	CINV-160912A / CINV-160609A	39.6g / 78 mL	1200
Eluent (Cr6+)	R161005A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161005B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161006A	CINV-~~160624D~~ 160912A / CINV-160609A	66g / 13 mL	2000
Eluent (Cr6+)	R161007A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161007B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
Eluent (Cr6+)	R161010A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161010B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	~~1000~~ 1000
DIGESTION SOLUTION (Cr6+)	R161010C	CINV-160721A / #8396	60g / 40g	2000
MgCl2 SOLUTION	R161010D	CINV-160219C	40g	100
Eluent (Cr6+)	R161011A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Stock Eluent (Anions)	R161011B	CINV-160721A / CINV-150601A	95.39g / 23.524g	2000
Eluent (Cr6+)	R161012A	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161012B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R161012C	CINV-160912A / CINV-160609A	66g / 13 mL	2000
Buffer (Cr6+)	R161013A	CINV-160912A / CINV-160912B / CINV-160921B	66g / 130 mL	2000
STLC Fluid	R161013B	8455 / R160728A	160g / 250 mL	3000
TCLP 1 Fluid	R161013C	8264 / R160725A	11.4 mL / 128.6 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/3/16	10/3/17	9/11/19; 8/31/18		
	–	10/3/16	10/8/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/3/16	11/3/16	10/3/19; 8/31/18		pba
	–	10/5/16	10/5/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
5	–	10/5/16	10/10/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/6/16	10/6/17	~~8/11/19~~ 10/3/19; 8/31/18		pba
	–	10/7/16	10/7/17	10/3/19; 8/31/18		pba
	–	10/7/16	10/12/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/10/16	10/10/17	10/3/19; 8/31/18		pba
10	–	10/10/16	10/15/16	8/12/19 pba ~~8/12/19~~; 8/31/18; 8/31/18		pba
	–	10/10/16	11/10/16	8/4/19; 6/25/19		pba
	–	1	10/10/17	3/10/19		2
	–	10/11/16	10/11/17	10/3/19; 8/31/18		1
	–	10/11/16	10/10/17	8/4/19; 6/9/18		pba
15	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/12/16	10/17/16	8/12/19; 8/31/18; 8/31/18		pba
	–	10/12/16	10/12/17	10/3/19; 8/31/18		pba
	–	10/13/16	10/13/17	10/3/19; 10/3/18		pba
	–	10/10/16	10/10/17	6/21/19, 7/28/17	Late entry	pba
20	–	10/10/16	10/10/17	6/21/19, 7/25/17	Late entry	MG
						MG

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr6+)	R161014A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161014B	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161017A	CINV-160912B / CINV-160921B	66g / 13 mL	2000 ~~8000~~ mL
4N NaOH	R161017B	8396	160g	1000
SRC Fluid	R161017C	8652 / R161017B	160g / 800mL	3500
1,5-Diphenylcarbazide solution	R161017D	CINV-150106G / #8328	0.25g / 50 mL	50mL
Post Column Rgt (Cr6+)	R161018A	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161019A	CINV-160912B / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161020A	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
2% CuSO4	R161019B	CINV-140211D	2g	100
R1 Buffer	C	R160814A / CINV150127A / CINV140224A, CINV160407A	2.5mL, 85g / 0.1g, 14mL	1000
Coloring Rgt	D	CINV150323A / CINV160407A / CINV150224C	0.7g / 4g / 7mL	100
Eluent (Cr6+)	R161021A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
2 ~~R16~~ DIGESTION SOLUTION	R161022A			
Eluent (Cr6+)	R161024A	CINV-160912B / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161024B	CINV-160408A / #85291 / CINV-160616A	0.5g / 28mL / 100mL	1000
~~1:1 HNO3~~	~~R161024C~~	~~CINV. 8648~~	~~1L~~	~~2L~~
1:1 HNO3	R161024C	CINV. 8648	1L	2L
ELUENT (Cr6+)	R161025A	CINV-160902B / CINV-160921B	66g / 13 mL	2000
POST-COLUMN RGT (Cr6+)	1 B	CINV-160408A / #8529 / CINV-160616A	0.5g / 28mL / 100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	10/14/16	10/14/17	10/13/19; 10/13/18		
	–	10/14/16	10/19/16	8/12/19; 8/31/18, 8/31/18		pba
	–	10/17/16	10/17/17	10/13/19; 10/13/18		pba
	–	10/17/16	10/17/17	6/25/19		pba
5	–	10/17/16	10/17/17	10/17/17, 10/17/17		MG
	–	10/17/16	10/17/16	3/12/18; 10/10/17		MG
	–	10/18/16	10/23/16	8/12/19; 8/31/18; 8/31/18		2
	–	10/19/16	10/19/17	10/13/19; 10/13/18		pba
	–	10/20/16	10/25/16	8/12/19; 8/31/18; 8/31/18		pba
10	2%	10/19/16	10/19/16	5/20/17	LATE ENTRY	pba
				9/14/16, 5/22/18		REB
				~~5/22/17, 7/28/18~~		REB
				5/22/18, 4/6/19, 10/4/17		REB
	–	10/21/16	10/21/17	10/13/19; 10/13/18		pba
15						
	–	10/24/16	10/24/17	10/13/19; 10/13/18		pba
	–	10/24/16	10/29/16	8/12/19; 8/31/18; 8/31/18		pba
	1:1	10/24/16	10/24/17	10/24/18		pba
	–	10/25/16	10/25/17	10/13/19 - 10/13/18		2
20	–	1	10/30/16	8/31/19; 8/31/18; 8/31/18		1

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr^{6+})	R161026A	CINV-160912B/CINV-160921B	66g/13mL	2000
TCLP 1	R1626B	8264, R1607250	11.4mL, 128.6mL	2000
STLC	R1626C	8652, R161017B	160g, 250mL	3500
Post Column Rgt (Cr^{6+})	R161027A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
DIGESTION SOLUTION (Cr^{6+})	R161027B	CINV-160721A/#8396	120g/80g	4000
5N HNO_3	R161027C	#8527	138mL	500
1N NaOH	R161027D	8396	40g	1000
Eluent (Cr^{6+})	R161028A	CINV-160912C/CINV-160921B	66g/13mL	2000
TCLP Fluid 1	R161024D	R1607250/#8264	128.6mL, 11.4mL	2000
TCLP Fluid #1	R161030A	R161027D/#8264	128.6mL/11.4mL	2000
Eluent (Cr^{6+})	R161031A	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161031B	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Mg(ClO4) Solution	R161101A	CINV-160219C	40g	100
Phosphate buffer solution	B	CINV-M0226A0/CINV-150503A	8.7g/16.8g	100
Eluent (Cr^{6+})	R161101C	CINV-160912C/CINV-160921B	66g/13mL	2000
Post Column Rgt (Cr^{6+})	R161101D	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000
Eluent (Cr^{6+})	R161103A	CINV-160912C/CINV-160921B	66g/13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R161103B	CINV-160721A/#8396	30g/20g	1000
5N HNO_3	C	#8562	138mL	500
Post Column Rgt (Cr^{6+})	R161104A	CINV-160408A/#8651/CINV-160616A	0.5g/28mL/100mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	10/26/16	10/26/19	10/13/19 ; 10/13/18		pbc
	-	10/26/16	10/26/17	6/21/19 , 7/25/17		MG
	-	10/26/16	10/26/17	10/17/17 , 10/17/17		1
	-	10/27/16	11/1/16	8/12/19 ; 10/27/18 8/31/18		pbc
5	-	10/27/16	~~10~~ 11/27/16	8/4/19 ; 6/25/19		2
	5N	1	10/27/17	10/25/17		1
	-	10/27/16	10/27/17	6/25/19		MG 2
	-	10/28/16	10/28/17	10/28/19 ; 10/13/18		pbc
	-	10/29/16	7/25/17	7/25/17 ; 5/31/18	pH = 4.93	MG
10	-	10/30/16	2 ~~7/25~~ 10/27/17	10/27/17 ; 5/31/18		2
	-	10/31/16	10/31/17	10/28/19 ; 10/13/18		RRA
	-	10/31/16	11/5/16	8/12/19 ; 10/27/18 ; 8/31/18		RRA
	-	11/1/16	11/1/17	3/10/19		2
	-	1	6/15/17	6/15/17 ; 8/7/18		1
15	-	11/1/16	11/1/17	10/28/19 ; 10/13/18		pbc
	-	11/1/16	11/6/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc
	-	11/3/16	11/3/17	10/28/19 ; 10/13/18		pbc
	-	11/3/16	12/3/16	8/4/19 ; 6/25/19		2
	5N	11/3/16	11/3/17	11/3/18		2
20	-	11/4/16	11/9/16	8/12/19 ; 10/27/18 ; 8/31/18		pbc

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
TCLP 1	R161107A	8264, R160725A	11.4mL, 128.6mL	1000
STLC	R161107B	8652, R161017B	160g, 250mL	3500
TCLP Fluid #1	R161104B	R161027D, #8264	257.2mL; 22.8mL	4000
Eluent (Cr^{6+})	R161107C	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161108A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
0.02N H_2SO_4	R161109A	R160831B	200mL	1000
Eluent (Cr^{6+})	R161109B	CINV-160912C / CINV-160921B	66g / 13mL	2000
Buffer (Cr^{6+})	R161110A	CINV-160912C / CINV-160921B	16.5g / 32.5mL	500
Post Column Rgt (Cr^{6+})	R161111A	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
20% $NaHSO_4$	~~R161112A~~ R161111B	#8664	800g	4L
DIGESTION SOLUTION (Cr^{6+})	R161111C	CINV-160721A / #8396	60g / 40g	2000
Eluent (Cr^{6+})	R161115A	CINV-160912C / CINV-160921B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R161115B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
ELUENT (Cr^{6+})	R161116A	CINV-160912C / CINV-160921B	66g / 13mL	2000
POST-COLUMN RGT (Cr^{6+})	L B	CINV-160408A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
~~DIGESTION SOLUTION (Cr^{6+})~~	~~R161117A~~			
Eluent (Cr^{6+})	R161118A	CINV-160912D / CINV-160921B	66g / 13mL	2000
ASCORBIC ACID	R161119A	QNV-141126A / #8691	3g / 1mL	50mL
11N H_2SO_4	R161118B	#8651	31mL	100mL
~~Ammonium molybdate-sbk tartrate~~	~~L C~~			

ASSET LABORATORIES

CALIFORNIA
11000 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

102 of 201

290

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
–	11/07/16	11/07/17	6/21/19, 7/25/17		MG
–	11/07/16	11/07/17	10/17/17, 10/17/17		1
–	11/4/16	10/27/17	10/27/17; 8/31/18	pH = 4.91	2
–	11/7/16	11/7/17	10/28/19; 10/13/18		[illegible]
–	11/8/16	11/13/16	8/12/19; 10/27/18; 8/31/18		[illegible]
0.02 N	11/9/16	5/9/~~16~~ 17 LSR	8/31/17		LSR
–	11/9/16	11/9/17	10/28/19; 10/13/18		[illegible]
–	11/10/16	12/10/16	10/28/19; 10/13/18		[illegible]
–	11/11/16	11/16/16	8/12/19; 10/27/18; 8/31/18		[illegible]
20%	~~11/13~~ 11/11/16	11/11/17	11/11/19		HSG
–	11/11/16	12/11/16	8/4/19; 6/25/19		2
–	11/15/16	11/15/17	10/28/19; 10/13/18		NBA
–	11/15/16	11/20/16	8/12/19; 10/27/18; 8/31/18		NBA
–	11/16/16	11/16/17	10/28/19; 10/13/18		2
–	1	11/21/16	8/12/19; 10/27/18; 8/31/18		1
					[illegible]
–	11/18/16	11/18/17	11/18/19; 10/13/18		NBA
–	11/19/16	12/3/16	8/26/18; 11/15/18 ~~10/27/18~~		2
1 N	11/18/16	11/18/17	10/27/18		2
	1				1 [illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr6+)	R161122A	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R161128A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161128B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
Buffer (Cr6+)	R161128C	CINV-160912D / CINV-160921B	16.5g / 32.5 mL	500
IN NaOH	R161128D	8396	40g	1000
TCLP 1	R161128E	6264 / R160725A	11.4mL / 128.6mL	2000
STLC	R161128F	8652, R161017B	160g, 250mL	3500
Digestion Solution (Cr6+)	R161128G	CINV-160721A / #8396	30g / 20g	1000
MgCl2 Solution	R161129A	CINV-160219C	40 g	100
5N HNO3	R161129B	#8562	138 mL	500
Eluent (Cr6+)	R161130A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R161130B	CINV-161012A / #8651 / CINV-160616A	0.5g / 28mL / 100mL	1000
Buffer (Cr6+)	R161130C	CINV-160912D / CINV-160921B	66g / 130 mL	2000
Digestion Solution (Cr6+)	R161130D	CINV-160721A / #8396	30g / 20g	1000
2% CuSO4	R161129C	CINV-140211D	2g	100
R1 Buffer	R161129D	R160814A / CINV150127A, CINV160224A, CINV160607A	2.5mL, 85g, 0.1g, 14 mL	1000
Coloring Rgt	R161129E	CINV150323A / CINV160405A / CINV150924C	0.2g / 4g / 7 mL	100
Eluent (Cr6+)	R161205A	CINV-160912D / CINV-160921B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	~~R16113~~ R161206A	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
Digestion Soln (Cr6+)	R161206B	CINV-160721A / #8396	120g / 80 g	4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	11/22/16	11/27/16	11/22/19 · 10/27/18 · 8/31/18		rba
	-	11/28/16	11/28/17	11/18/19, 10/13/18		rba
	-	11/28/16	12/3/16	11/22/19, 10/27/18, 8/31/18		rba
	-	11/28/16	12/28/16	11/18/19, 10/13/18		rba
5	-	11/28/16	~~11/29/16~~ MG 11/29/17 ~~12/28/17~~	6/25/19		MG
	-	11/28/16	11/28/17	5/31/16, 7/25/17		!
	-	11/28/16	11/28/17	10/17/17, 10/17/17		!
	-	11/28/16	12/28/16	8/4/19, 6/25/19		
	-	11/29/16	11/29/17	3/10/19		rba
10	5N	11/29/16	11/29/17	11/3/18		rba
	-	11/30/16	11/30/17	11/18/19, 10/31/18		rba
	-	11/30/16	12/5/16	11/22/19, 10/27/18, 8/31/18		rba
	-	11/30/16	12/30/16	11/18/19, 10/31/18		rba
	-	11/30/16	12/30/16	8/4/19, 6/25/19		rba
15	2%	11/29/16	12/29/16	5/2017	LATE ENTRY	REB
	-	!	!	9/14/14, 5/22/18 5/20/17, 7/28/18	!	REB
				5/22/18, 4/6/19, 10/4/17		REB
		12/6/16	12/11/16	11/22/19, 10/27/18, 8/31/18		
	-	12/5/16	12/5/17	11/18/19, ~~10/31/18~~ 10/13/18		rba
20	-	12/6/16	1/6/17	8/4/19, 6/25/19		rba

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Eluent (Cr6+)	R161207A	CINV-160912D / CINV-160926B	66g / 13ml	2000
Post Column Rgt (Cr6+)	R161207B	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100 mL	1000
20% NaHSO4	R161208A	#8668 ~~CINV-161028A~~	800 g	4L
Eluent (Cr6+)	R161209A	CINV-160912D / ~~CINV-161028A~~ CINV-160926B	66g / 13 mL	2000
Eluent (Cr6+)	R161212A	CINV-161028A / ~~CINV-160912D~~ CINV-160926B / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161212B	CINV-161012A / #8651 / CINV-160616A	0.5 / 28 mL / 100mL	1000
0.02 N H2SO4	R161212C	R160831B	200 mL	1000
Eluent (Cr6+)	R161213A	CINV-161028A / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R161213B	CINV-161012A / #8651 / CINV-160616A / ~~CINV-~~ #8650	0.5g / 28mL / 100mL	1000
1:1 HNO3	R161215C	CINV. 8668	1L	2L
1:1 H2SO4	R161214A	CINV. 8651	1L	2L
0.1 N H2SO4	R161216A	LIMS 8651	3mL	1000
0.02 N H2SO4	B	R161216A	200 mL	1000
Post Column Rgt (Cr6+)	R161216C	CINV-161012A / #8651 / CINV-or #8650	0.5g / 28 mL / 100 mL	1000
5N HNO3	R161216D	#8664	138 mL	500
Digestion Soln	R161216E	CINV-160721A / CINV 161026A	60g / 40g	2000
MgCl2 Soln	R161216F	CINV-160219C	40 g	100
Phosphate Buffer	R161216G	CINV-140220AD / CINV-[illegible]	8.7g / 68g	100
Eluent (Cr6+)	R161216H	CINV-161028A / CINV-161026B	66g / 13 mL	2000
Eluent (Cr6+)	R161219A	CINV-161028A / CINV-161026B	66g / 13 mL	2000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	12/7/16	12/7/17	11/22/19, 10/27/18, 8/31/18		
	–	12/7/16	12/12/16	11/18/19, ~~10/31/18~~ 10/13/18		
	20%	12/08/16	12/08/17	11/11/19		
	–	12/9/16	12/9/17	~~11/22/19~~ 11/18/19, 12/9/19, ~~10/31/18~~ 10/13/18		
5	–	12/12/16	12/12/17	~~11/18/19~~; 10/13/18, 12/9/19, 12/12/18		
	–	12/12/16	12/17/16	11/22/19, 10/27/18, 8/31/18		
	0.02 N	12/12/16	6/12/17	8/31/17		
	5N	12/13/16	12/13/17	12/9/19, 12/12/18		
	–	12/13/16	12/18/16	11/22/19, 10/27/18, 8/31/18, 12/13/18		
10	1:1	12/13/16	12/13/17	10/24/18		
	1:1	12/14/16	12/14/17	10/27/18		PG
	0.1 N	12/16/16	12/16/17	10/27/18		PG
	0.02 N		6/16/17	12/16/17		LSR
	–	12/16/16	12/21/16	11/22/19, 10/27/18, 12/13/18		LSR
15	5N	12/16/16	12/16/17	12/15/18		
	–	12/16/16	1/16/17	8/4/19, 12/6/19		
	–	12/16/16	12/16/17	3/10/19		
	–	12/16/16		6/15/17, 8/17/18		
	–	12/16/16	12/16/17	12/9/19, 12/12/18		
20	–	12/19/16	12/19/17	~~12/4/18~~ 12/9/19, 12/12/18		

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
Post Column Rgt (Cr6+)	R161219B	CINV-161012A / #8651 / #8650	0.5 / 28 mL / 100 mL	1000
2% $CuSO_4$	R161219C	CINV-140211D	2g	100
R1 Buffer	D	R161219D / CINV-160525A CINV-140224A, CINV-160607C	2.5 mL, 85 g 0.1g, 14 mL	1000
R2 Coloring Rgt.	E	CINV-150323A, CINV-160405A CINV-150924C	0.2g, 4g, 17 mL	100
10% Ammonium Persulfate, 5% H_3PO_4	F	CINV-160916A, CINV-150924C	100g, 50 mL	1000
Eluent (Cr6+)	R161220A	CINV-161028A / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R161221A	CINV-161012A / #8651 / #8650	0.5 / 28 mL / 100 mL	1000
Buffer (Cr6+)	R161221B	CINV-161028A / CINV-161026B	33g / 65 mL	1000
Digestion Soln	R161223A	CINV-160721A / CINV-161026A	90g / 60 g	3000
Eluent (Cr6+)	R161228A	CINV-161028A / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R161228B	CINV-161012A / #8782 / #8650	0.5 / 28 mL / 100 mL	1000
5N HNO3	R161229A	#8665	138 mL	500
Eluent (Cr6+)	R161230A	CINV-161028A / CINV-161028B / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R170103A	CINV-161012A / #8782 / #8650	0.5g / 28 mL / 100 mL	1000
R1 Buffer	R170102A	R161219D / CINV-160525A CINV-140224A / CINV-160607C	2.5 mL, 85 g 0.1g, 14 mL	1000
R2 Coloring Rgt.	B	CINV-150323A, CINV-160405A CINV-150924C	0.2g, 4g, 17 mL	100
1:1 H_2SO_4	R161229B		300 ml	600 ml
Buffer (Cr6+)	R170103B	CINV-161028B / CINV-161026B	99 g / 195 mL	3000
Eluent (Cr6+)	R170105A	CINV-161028B / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr6+)	R170105B	CINV-161012A / #8782 / #8650	0.5 g / 28 mL / 100 mL	1000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	–	12/19/16	12/24/16	11/22/19; 10/27/18;	12/13/18	[illegible]
	2%	12/19/16	1/19/17	5/20/17		[illegible]
	–		1/19/17	1/19/17; 9/15/19 5/20/17 2/28/18		
	–		1/19/17	7/22/18; 04/02/19 10/9/17		
5	10% 5%		3/19/17	12/19/19 10/4/17	–	
	–	~~9/19/16~~ 12/20/16	12/20/17	12/9/19; 12/12/18		[illegible]
	–	12/21/16	12/20/16	11/22/19; 10/27/18; 12/13/18		[illegible]
	–	12/21/16	1/21/17	12/19/19; 12/12/18		[illegible]
	–	12/23/16	1/23/17	8/4/15; 12/6/19		[illegible]
10	–	12/28/16	12/28/17	12/9/19; 12/12/18		[illegible]
	–	12/28/16	1/2/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	5N	12/29/16	12/29/17	12/27/18		[illegible]
	–	12/30/16	12/30/17	12/9/19; 12/30/19; 12/12/18		[illegible]
	–	1/3/17	1/8/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	–	1/2/16	1/19/17	1/19/17; 9/15/19 5/20/17; 7/28/18		[illegible]
72	~~1:1~~ –	~~12/29/16~~ ~~6/29/17~~	~~6/29/17~~ 3/21/17	5/20/18; 04/02/19; 10/9/17		
	1:1	12-29-16	6/29/17			72
	–	1/3/17	2/3/17	12/28/18; 12/13/18		[illegible]
	–	1/5/17	1/5/18	12/28/18; 12/12/18		[illegible]
20	–	1/5/17	1/10/17	11/22/19; 12/28/18; 12/12/18		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
6N NaOH	~~R16~~ R170106A	CINV-161026A	24g	100
Eluent (Cr^{6+})	R170107A	CINV-161028B / CINV-161228A / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170109A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
Eluent (Cr^{6+})	R170110A	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170110B	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
1:1 HNO_3	R170111A	CINV-8737	1L	2L
Eluent (Cr^{6+})	R170111B	CINV-161028B / CINV-161228A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170112A	CINV-161012A / #8782 / #8650	0.5g / 28mL / 100mL	1000
DIGESTION SOLUTION	R170112B	CINV-160721A / 161026A	60g / 40g	2000
$MgCl_2$ Solution	↓ C	CINV-160219C	40g	100
Buffer (Cr^{6+})	R170112D	CINV-161028B / CINV-161026B	49.5g / 97.5mL	1500
Eluent (Cr^{6+})	R170113A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170113B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate 5% H_3PO_4	R170111C	CINV-160916A / ~~[illegible]~~ CINV-160817B	100g / 50mL	1000
20% H_3PO_4	↓ D	CINV ~~[illegible]~~ 160817B	100	500
Post Column Rgt (Cr^{6+})	R170114A	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
10% Ammonium persulfate, 5% H_3PO_4	R170114B	CINV-160916A / CINV-160817B	100g, 50mL	1000
Eluent (Cr^{6+})	R170116A	CINV-161028C / CINV-161026B	66g / 13mL	2000
DIGESTION SOLUTION (Cr^{6+})	R170116B	CINV-160721A / 161026A	30g / 20g	1000
10N NaOH	R170116C	CINV-161026A	4g	40ml

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	6N	1/6/17	1/6/18	12/6/19		[illegible]
	–	1/7/17	1/7/18	12/28/18; 12/13/18; 1/3/19		[illegible]
	–	1/9/17	1/10/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/10/17	1/10/18	12/28/18; 1/3/19		[illegible]
5	–	1/10/17	1/15/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	1:1	1/11/17	1/11/18	1/11/19		PG
	–	1/11/17	1/11/18	12/28/18; 1/3/19		[illegible]
	–	1/12/17	1/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/12/17	2/12/17	8/4/19; 12/6/19		[illegible]
10	–	1	1/12/18	3/10/19		[illegible]
	–	1/12/17	2/12/17	12/28/18; 1/3/19		[illegible]
	–	1/13/17	1/13/18	1/13/20; 12/12/18		
	–	1/13/17	1/18/17	11/22/19; 12/28/18	12/13/18	[illegible]
	10%; 5%	1/11/17	4/11/17	12/19/19; 8/17/18	LATE ENTRY MEB 01/13/1967	MEB
15	20%	1	1/11/18	8/17/18		1
	–	1/14/17	1/19/17	11/22/19; 12/28/18;	12/13/18	[illegible]
	10%, 5%	1/14/17	4/14/17	12/19/19; 8/17/18		MEB
	–	1/13/17	1/13/18	1/13/20; 12/12/18		[illegible]
	–	1/16/17	2/16/17	8/4/19; 12/6/19		2
20	10N	1-16-17	~~12-6-19~~ 2-16-17	12-6-19		[illegible]

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116P	#8666	138 mL	500
Eluent (Cr6+)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Cr6+)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr6+)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Cr6+)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Cr6+)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Cr6+)	R170123B	CINV-161028C / CINV-161026B	99g / 195 mL	3000
Post Column Rgt (Cr6+)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr6+)	R170125A	CINV-161028D / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Cr6+)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161022A	120g	500mL
10% Ammonium persulfate, 5% H_3PO_4	R170125B	CINV 170123A / CINV 168117B	100g, 50mL	1000
2% $CuSO_4$	R170125C	CINV-140211D	2g	100
R1 Rgt FTBR	D	R170125C / CINV 160525A CINV-140221A / CINV 160607L	2.5mL, 0.1g, 85% 1mL	1000
R2 Coloring Rgt.	E	CINV 158923A / CINV 160465A CINV 170125B	100mL, 2g / 4g / 17mL	100
DIGESTION SOLUTION (Cr6+)	R170126A			4000

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	SN	1/16/17	1/16/18	1/10/19		2
	–	1/17/19	1/17/18	1/13/20; 12/12/18		[illegible]
	–	1/7/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
5	–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	GN	1/18/17	1/18/18	12/16/18		HSG
	20%	1/20/17	1/20/18	11/11/19		HSG
	–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
	–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
10	–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
	–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
	–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
	–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
15	GN	1/25/17	1/25/18	12/6/19		HSG
	10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		KEB
	2%	1/25/17	2/25/17	5/20/17		KEB
	–	|	|	2/25/17 9/15/19 5/20/17, 7/28/18		|
	–	|	|	5/22/18, 4/6/19 8/17/18		|
20	–	1/26/17	2/26/17			2

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr^{6+})	R170127A	CINV-161028D / CINV-161026B	66 g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170127B	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170130A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Eluent (Cr^{6+})	R170131A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170131B	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
5N HNO_3	R170131C	#8748	138 mL	500 mL
1:1 HNO_3	R170131D	8737	1L	2L
Post Column Rgt (Cr^{6+})	R170201A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170202A	CINV-161028D / CINV-161026B	66g / 13 mL	2000
$MgCl_2$ solution	R170202B	CINV-160219C	40 g	100 mL
Phosphate buffer solution	↓ C	CINV-M0226AD / CINV-150803A	8.7g / 6.8 g	100 mL
Eluent (Cr^{6+})	R170206A	CINV-161028D / CINV-160607C	66g / 13 mL	2000
Post-Column Rgt (Cr^{6+})	↓ B	CINV-161012A / #8782 / #8650	0.5g / 28 mL / 100 mL	1000
Eluent (Cr^{6+})	R170207A	CINV-161028D / CINV-161228B	66g / 13 mL	2000
Post Column Rgt (Cr^{6+})	R170207B	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
0.02 N H_2SO_4	R170208A	~~R161~~ R161216A	200 mL	1000
TCDP FWD1	R170207C	R160725A / #8453	~~64~~ 128.6 mL, 11.4 mL	2000
15% Ammonium persulfate 5% H_3PO_4	R170208B	CINV170123A / CINV160817B	100 g, 50 mL	1000
20% H_3PO_4	↓ C	CINV 160817B	100	500
Ascorbic Acid Solution	R170209A	CINV-M1126A	3g	50 mL

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
-1	1/27/17	1/27/18	1/25/20; 12/12/18		[illegible]
–	1/27/17	2/1/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/30/17	1/30/18	1/25/20; 12/12/18		[illegible]
–	1/31/17	1/31/18	11/25/20; 12/12/18		[illegible]
–	1/31/17	2/5/17	11/22/19; 12/28/18; 12/13/18		[illegible]
5N	1/31/17	1/31/18	1/24/19		2
1:1	1/31/17	1/31/18	1/11/19		HSG
–	2/1/17	2/6/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	2/2/17	2/2/18	11/25/20; 12/12/18		[illegible]
–	2/2/17	2/2/18	3/10/19		2
–	1	6/15/17	6/15/17; 8/7/18		1
–	2/6/17	2/6/18	1/25/20; 7/28/18		2
–	1	2/11/17	11/22/19; 12/28/18; 12/13/18		1
–	2/7/17	2/7/18	11/25/20; 2/7/19		[illegible]
–	2/7/17	2/12/12	11/22/19; 12/28/18; 12/13/18		[illegible]
0.02 N	2/8/17	8/8/17	12/16/17		BR
–	02/07/17	2/07/17	7/25/17, 12/29/18	LATE ENTRY, H: 4.89	[illegible]
10%, 5%	02/08/17	5/08/17	1/25/20, 8/17/18		[illegible]
20%	1	2/08/18	8/17/18		1
–	2/9/17	2/23/17	8/26/18		2

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

Reagent Preparation

Reagent Name	Reagent Code	Inventory: Chemical Inventory Code	Preparation: Wt/Vol of Aliquot	Preparation: Final Vol (ml)
Eluent (Cr^{6+})	R170209B	CINV-1610280 / CINV-161228E / CINV-161228B	66g / ~~28~~ 13mL	200
Post Column Rgt (Cr^{6+})	R170209C	CINV-161012A / 8782/8650	0.5g / 28 mL	100 mL
Digestion Soln (Cr^{6+})	R170211A	CINV-160721A / CINV-161026A	60g / 40g	200
5N HNO_3	~~R161227A~~ R170211B	8749	27.6 mL	100
Post Column Rgt (Cr^{6+})	R170213A	CINV-161012A / 8782/8650	0.5g / 28mL	100 mL
Eluent (Cr^{6+})	R170214A	CINV-161228E / CINV-161228B	66g / 13mL	200
Post Column Rgt (Cr^{6+})	R170216A	CINV-161012A / 8782/8650	0.5g / 28mL	100 mL
5N HNO_3	R170217A	8750	138 mL	500
Digestion Soln (Cr^{6+})	R170217B	CINV-160721A / CINV-161026A	120g / 80g	4000
$MgCl_2$ soln	R170217C	CINV-160219C	40g	100 mL

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	2/9/17	2/9/18	11/25/20; 2/9/20; 2/7/19		[illegible]
	-	2/9/17	2/14/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	-	2/11/17	3/11/17	8/4/19; 12/6/19		[illegible]
		2/11/17	2/11/18	2/2/19		[illegible]
5	-	2/13/17	2/18/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	-	2/14/17	2/14/18	2/9/20; 2/7/19		[illegible]
	-	2/16/17	2/21/17	11/22/19; 12/28/18; 12/13/18		[illegible]
	-	2/17/17	2/17/18	2/13/19		[illegible]
	-	2/17/17	3/17/17	8/4/19; 12/6/19		[illegible]
10	-	2/17/17	2/17/18	3/10/19		[illegible]
						[illegible]
15						
20						

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

1. Act | 2. InAct

INDEX

8650	METHANOL
8649	NITRIC ACID
8648	NITRIC ACID
8647	HYDROCHLORIC
8646	HYDROCHLORIC
8645	HYDROCHLORIC
8644	HYDROCHLORIC
8643	HYDROCHLORIC
8642	HYDROCHLORIC
8633	Glass Fiber Filter
8604	SODIUM HYDRO
8602	STANNOUS CHL
8573	HEXANES
8571	FERROUS SULF
8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID

3507 Records

Bottle #: 8650 Chemical: METHANOL ☑ Active

Received:	10/11/2016	Expires:	
Synonyms:		Status:	Opened
Formula:		CAS #:	67-56-1
Location:	Inorganics	Formula Wt:	32.04
8 Vendor:	Emd	Lot #:	56182
		Catalog #	MX0488-1
		Conc/Purity:	99.9
		Amount:	4
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

Received:10/11/16,1/1
Opened:12/13/16

1. Act | 2. InAct

INDEX

8782	sulfuric acid
8781	HEXANES
8780	HEXANES
8779	HEXANES
8778	HEXANES
8777	DICHLOROMETH
8776	DICHLOROMETH
8775	DICHLOROMETH
8774	DICHLOROMETH
8773	DICHLOROMETH
8772	DICHLOROMETH
8771	DICHLOROMETH
8770	DICHLOROMETH
8769	DICHLOROMETH
8768	DICHLOROMETH
8767	DICHLOROMETH
8766	DICHLOROMETH
8765	DICHLOROMETH
8764	DICHLOROMETH
8763	DICHLOROMETH
8762	DICHLOROMETH
8761	Glass Fiber Filter
8760	Glass Fiber Filter
8759	Glass Fiber Filter
8758	Glass Fiber Filter
8757	SODIUM CHLOR

3508 Records

Bottle #: 8782 Chemical: sulfuric acid ☑ Active

Received:	12/28/2016
Synonyms:	
Formula:	h2so4
Location:	Inorganics
8 Vendor:	GR ACS
Merck Index:	

Add to Reagents database

Expires:	
Status:	New
CAS #:	7664-93-9
Formula Wt:	98.08
Lot #:	56280
Catalog #	
Conc/Purity:	95.0-98.0%
Amount:	2.5
Units:	L
Notes:	

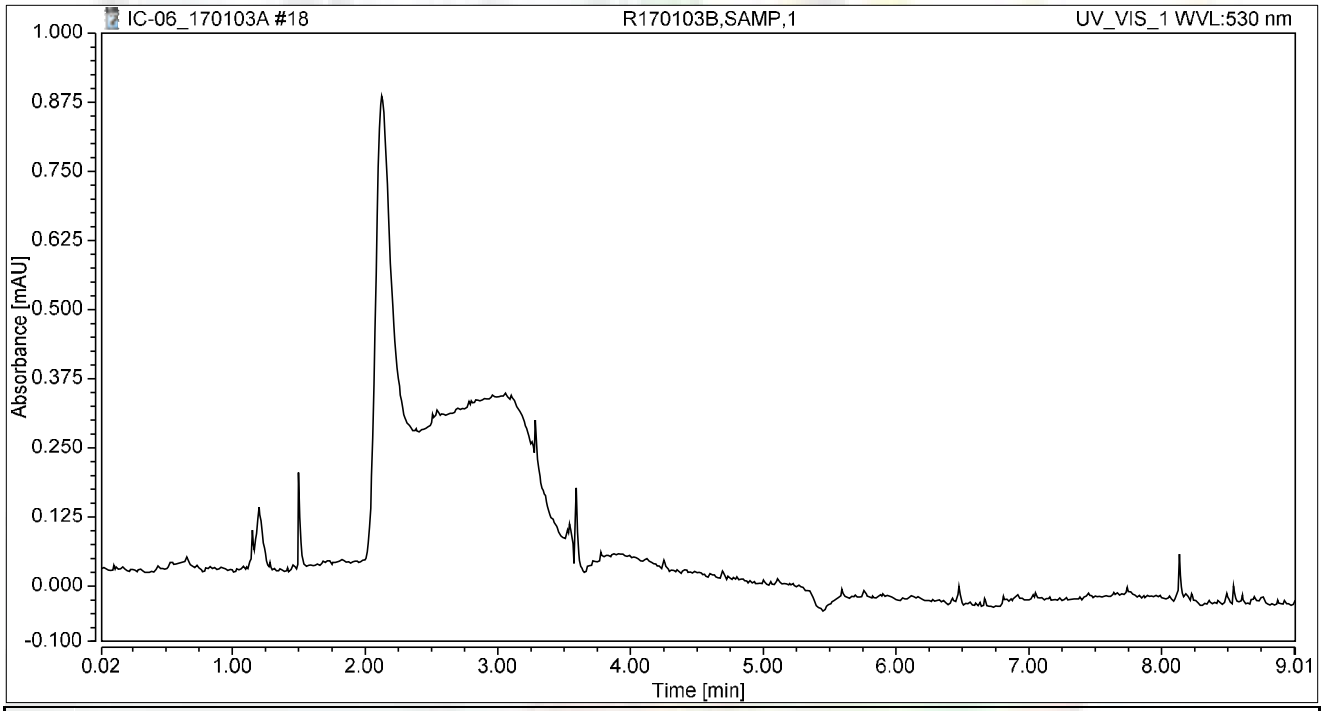
Received: 12/28/2016
Opened: 12/28/2016

Chromatogram and Results

Injection Details

Injection Name:	**R170103B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170103_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Jan/17 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

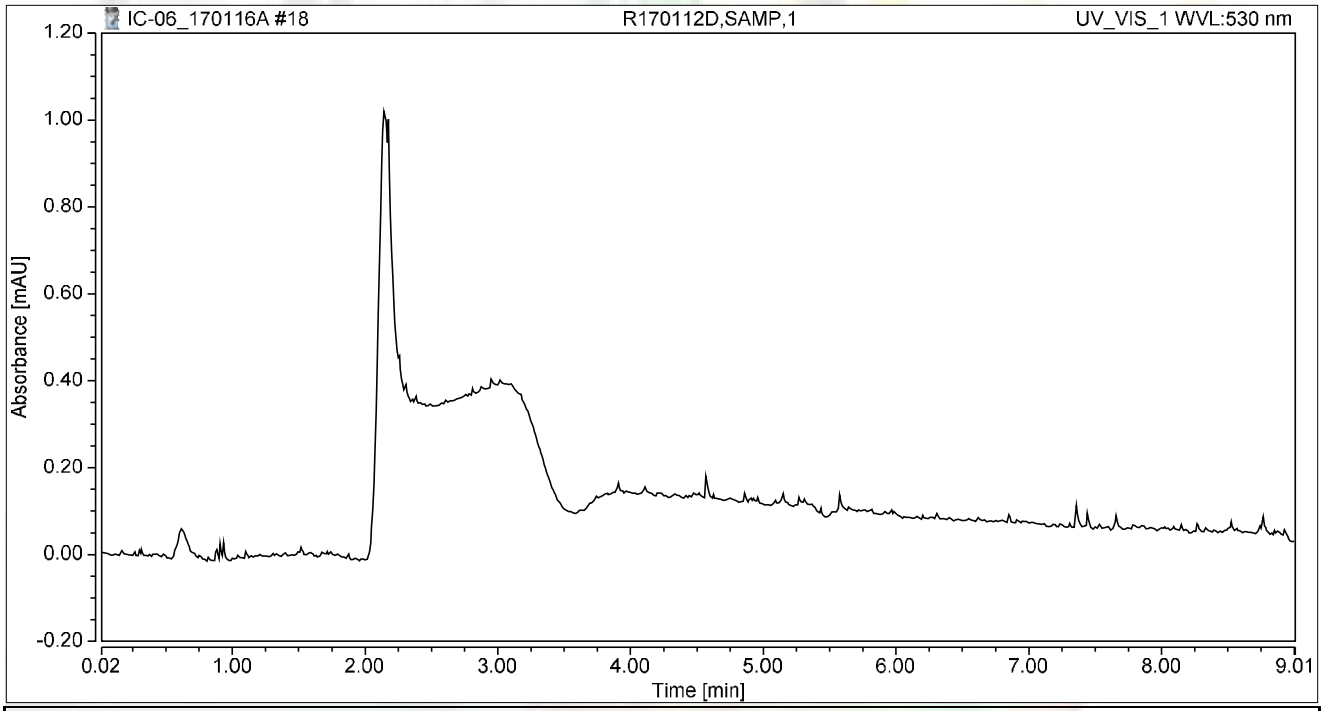
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170112D,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/Jan/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

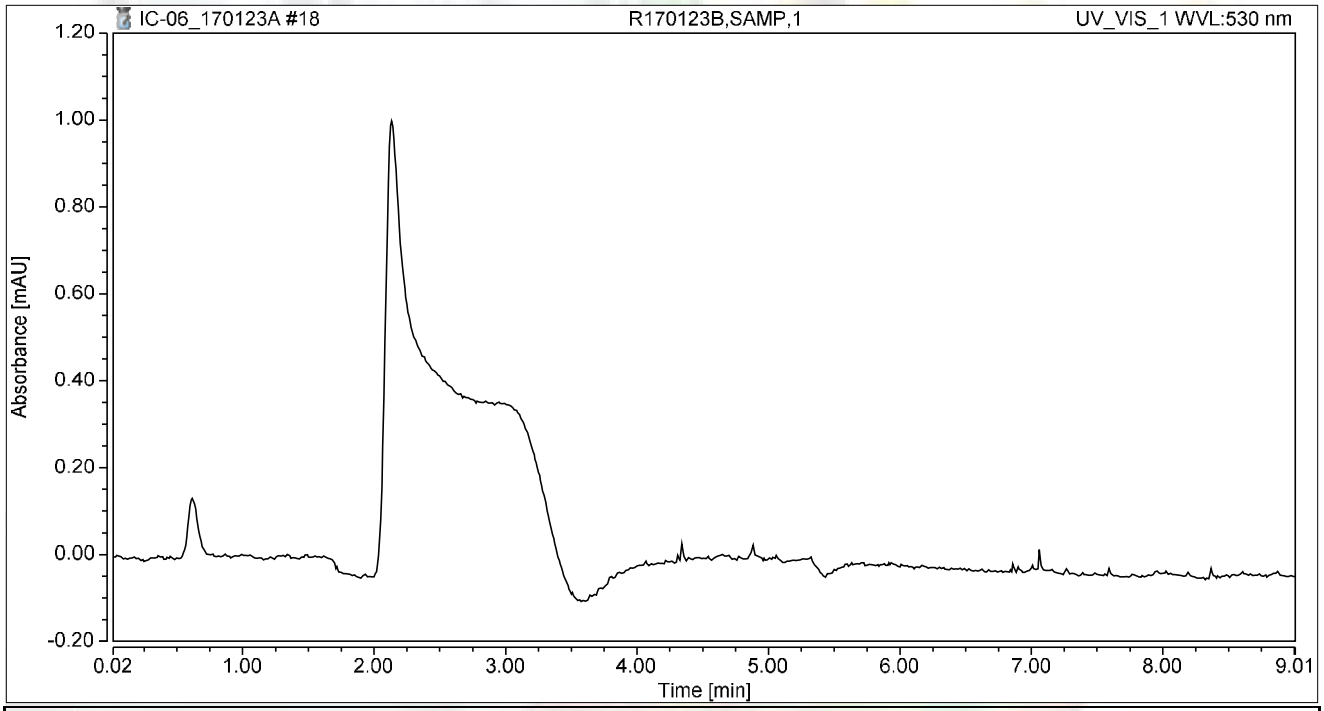
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**R170123B,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170114_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Jan/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113466, R113631 **Analyst:** REB

ASSET #: N023014 **Date Analyzed:** 2/12/17, 2/19/17

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/21/17 Date:

2nd Level Reviewer Nancy 2/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023014-001C** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.5129*20

= 30.258 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 30

RJB 02/21/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

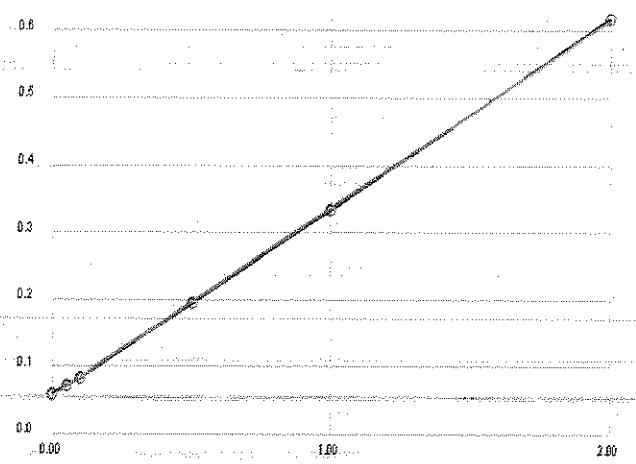
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2797x + 0.0564
Correlation	.999941



Calibrant	Energy	Set	Conc
1	0.0585	0.0000	0.0076
2	0.0716	0.0500	0.0544
3	0.0833	0.1000	0.0963
4	0.1958	0.5000	0.4984
5	0.3321	1.0000	0.9856
6	0.6180	2.0000	2.0077

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 02/21/17

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

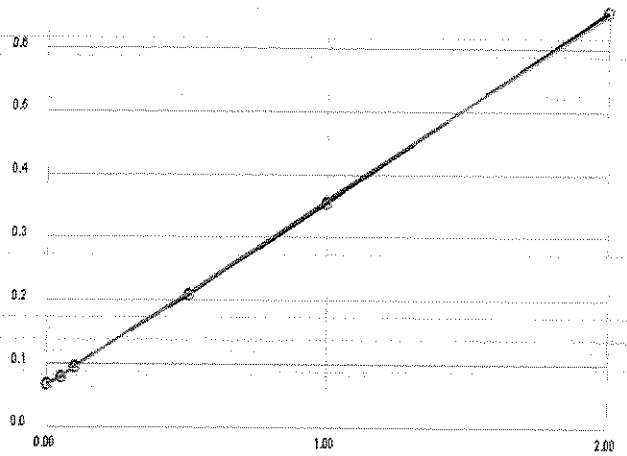
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.295x + 0.0646
Correlation	.999893

Calibrant	Energy	Set	Conc
1	0.0682	0.0000	0.0122
2	0.0797	0.0500	0.0511
3	0.0944	0.1000	0.1010
4	0.2102	0.5000	0.4934
5	0.3542	1.0000	0.9815
6	0.6579	2.0000	2.0108



Notes:

RB 02/21/17

317

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.516	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCV** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **ICB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2563989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113466**
Client ID: **CCB** Batch ID: **R113466** TestNo: **SM4500-NO3** Analysis Date: **2/12/2017** SeqNo: **2564012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-12-2017 19:18
Time end: 02-12-2017 22:13

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	21:32:31	0.0101		0.0592
2	<BLANK>	21:33:31	0.0090		0.0589
3	<CAL1>	21:34:26	0.0076	[0]	0.0585
4	<CAL2>	21:35:21	0.0544	[0.05]	0.0716
5	<CAL3>	21:36:23	0.0963	[0.1]	0.0833
6	<CAL4>	21:37:17	0.4984	[0.5]	0.1958
7	<CAL5>	21:38:12	0.9856	[1]	0.3321
8	<CAL6>	21:39:14	2.0077	[2]	0.6180
9	,BLANK,BLANK,1,	21:40:08	0.0265		0.0638
10	,ICV,ICV,1,	21:41:09	0.5077		0.1984
11	,ICB,ICB,1,	21:42:05	0.0155		0.0607
12	,MB-H2O,MBLK,1,	21:43:00	0.0108		0.0594
13	,LCS-H2O,LCS,1,	21:44:00	0.5284		0.2042
14	,N022931-002D,SAMP,5,	21:44:56	0.6650		0.2424
15	,N022931-002DDUP,DUP,5,	21:45:51	0.6879		0.2488
16	,N022931-002DMS,MS,5,	21:46:53	1.1322		0.3731
17	,N022931-002DMSD,MSD,5,	21:47:47	1.1086		0.3665
18	,N022987-001D,SAMP,1,	21:48:43	0.7308		0.2608
19	,N022985-001C,SAMP,1,	21:49:44	0.1549		0.0997
20	~~,N022985-002C~~,SAMP,1, N022985-003C	21:50:38	0.1928		0.1103
21	,BLANK,BLANK,1	21:51:34	0.0133		0.0601
22	,CCV-1,CCV,1,	21:52:35	0.4963		0.1952
23	,CCB-1,CCB,1,	21:53:31	0.0201		0.0620
24	,N022985-004C,SAMP,5,	21:54:31	0.0455		0.0691
25	,N022998-001C,SAMP,1,	21:55:26	1.2391		0.4030
26	,N022998-002C,SAMP,1,	21:56:22	0.3472		0.1535

RB 02/21/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N022998-003C,SAMP,1,	21:57:22	0.0451		0.0690
28	,N022998-004C,SAMP,1,	21:58:05	0.8895		0.3052
29	,N022999-001D,SAMP,1,	21:58:55	0.0298		0.0647
30	,N022999-002D,SAMP,5,	21:59:37	0.6225		0.2305
31	,N022999-003D,SAMP,1,	22:00:26	0.0155		0.0607
32	,N023014-001C,SAMP,20,	22:01:08	1.5129		0.4796
33	,BLANK,BLANK,1	22:01:52	0.0190		0.0617
34	,CCV-2,CCV,1,	22:02:40	0.5159		0.2007
35	,CCB-2,CCB,1,	22:03:23	0.0008		0.0566
36	,N023014-002C,SAMP,10, Not Reported	22:04:06	2.7726		0.8320
37	,N023014-003C,SAMP,2,	22:04:54	4.7066	[HL][OR]	1.3730
38	,N023014-004C,SAMP,10,	22:05:38	1.3092		0.4226
39	,N023014-005C,SAMP,1,	22:06:26	0.1585		0.1007
40	,N023014-006C,SAMP,5,	22:07:09	0.7729		0.2726
41	,N023014-007C,SAMP,1,	22:07:51	0.1309		0.0930
42	,N023014-008C,SAMP,1,	22:08:41	0.0105		0.0593
43	,BLANK,BLANK,1	22:09:24	-0.0103		0.0535
44	,CCV-3,CCV,1,	22:10:06	0.4727		0.1886
45	,CCV-3,CCV,1, not used	22:10:55	0.5066		0.1981
46	,CCB-3,CCB,1,	22:11:37	0.0051		0.0578

RJB 02/21/17

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-19-2017 23:28
Time end: 02-20-2017 02:09

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	01:32:10	0.0149		0.0690
2	<BLANK>	01:33:10	0.0139		0.0687
3	<CAL1>	01:34:05	0.0122	[0]	0.0682
4	<CAL2>	01:35:07	0.0511	[0.05]	0.0797
5	<CAL3>	01:36:02	0.1010	[0.1]	0.0944
6	<CAL4>	01:36:56	0.4934	[0.5]	0.2102
7	<CAL5>	01:37:58	0.9815	[1]	0.3542
8	<CAL6>	01:38:53	2.0108	[2]	0.6579
9	,BLANK,BLANK,1,	01:39:47	0.0769		0.0873
10	,ICV,ICV,1,	01:40:49	0.4992		0.2119
11	,ICB,ICB,1,	01:41:44	0.0145		0.0689
12	,MB-H2O,MBLK,1,	01:42:40	0.0111		0.0679
13	,LCS-H2O,LCS,1,	01:43:40	0.4958		0.2109
14	,N022985-004C,SAMP,1,	01:44:36	0.1850		0.1192
15	,N022985-004CDUP,DUP,1,	01:45:31	0.1816		0.1182
16	,N022985-004CMS,MS,1,	01:46:33	0.6910		0.2685
17	,N022985-004CMSD,MSD,1,	01:47:27	0.6754		0.2639
18	,N023014-002C,SAMP,50,	01:48:23	0.6422		0.2541
19	,N023014-003C,SAMP,20,	01:49:24	0.4701		0.2033
20	,N023014-004C,SAMP,10,	01:50:18	1.2198		0.4245
21	,BLANK,BLANK,1	01:51:14	0.0257		0.0722
22	,CCV-1,CCV,1,	01:52:15	0.5124		0.2158
23	,CCB-1,CCB,1,	01:53:11	0.0081		0.0670
24	,N023028-001D,SAMP,10,	01:53:59	1.1242		0.3963
25	,N023028-002D,SAMP,10,	01:54:42	0.5755		0.2344
26	,N023028-003D,SAMP,10,	01:55:30	1.0693		0.3801

RJB 02/21/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N023029-001C,SAMP,1,	01:56:14	1.0642		0.3786
28	,N023029-002C,SAMP,5,	01:56:56	0.9629		0.3487
29	,N023029-003C,SAMP,20,	01:57:45	0.8093		0.3034
30	,N023029-004C,SAMP,1,	01:58:29	1.8542		0.6117
31	,N023029-005C,SAMP,1,	01:59:11	1.5651		0.5264
32	,N023107-001D,SAMP,1,	02:00:00	0.4955		0.2108
33	,BLANK,BLANK,1	02:00:42	0.0128		0.0684
34	,CCV-2,CCV,1,	02:01:26	0.5277		0.2203
35	,CCB-2,CCB,1,	02:02:14	0.0033		0.0656
36	,N023107-002D,SAMP,1,	02:02:57	0.3474		0.1671
37	,N023107-003D,SAMP,1,	02:03:47	0.3185		0.1586
38	,N023107-004D,SAMP,5,	02:04:29	0.4890		0.2089
39	,BLANK,BLANK,1	02:05:12	0.0067		0.0666
40	,CCV-3,CCV,1,	02:06:00	0.5277		0.2203
41	,CCV-3,CCV,1, not used	02:06:43	0.5121		0.2157
42	,CCB-3,CCB,1,	02:07:25	0.0040		0.0658

RJB 02/21/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/12/17
Time Analyzed: 07:18 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N022931-001D		8.58						
2)	N022985-001C		7.91						
3)	N022985-003C		7.92						
4)	N022985-004C		7.49						
5)	N022987-001D		7.75						
6)	N022998-001C		7.38						
7)	N022998-002C		8.21						
8)	N022998-003C		6.17						
9)	N022998-004C		7.86						
10)	N022999-001D		7.86						
11)	N022999-002D		7.39						
12)	N022999-003D		7.99						
13)	N023014-001C		8.36						
14)	N023014-002C		6.95						
15)	N023014-003C		7.64						
16)	N023014-004C		6.22						
17)	N023014-005C		7.98						
18)	N023014-006C		7.76						
19)	N023014-007C		7.31						
20)	N023014-008C		7.62						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/21/17

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
2/11/16	Bromide, 1000 ppm	ISST160211 J	1000 ppm	Absolute Standards	010816	2/11/16	2/12/16	1/8/19	L
	Nitrate as N, 1000 ppm	J			061215			6/12/18	
	Phosphate as P, 1000 ppm	K			11115			11/1/18	
	Sulfate, 1000 ppm	L			012516			1/25/19	
2/16/16	EPA 1664 STD (MS/MSD)	ISST160216A	4000 µg/mL	ULTRA SCIENTIFIC	CP-0013	2/16/16	3/18/16	2/28/19	LSR
4/26/16	EPA 1664 STD (MS/MSD)	ISST160426A	4000 ppm each	Ultra Scientific	CP-0013	4/26/16	4/27/16	2/28/19	L
4/28/16	Hexadecane & Stearic Acid	ISST160428A	4000 ppm each	Accustandard	216011074	4/28/16	6/30/16	1/1/16	L
		B					7/5/16		
		C					7/21/16		
		D					7/25/16		
		E					7/28/16		
6/6/16	1000 ppm KHP (TOC P)	ISST160606A	1000 ppm	CPI	168197	6/6/16	06/14/16	12/12/2017	[illegible]
6/9/16	1000 ppm Carbon as TOC	ISST160609A	1000 ppm	High purity	160613b	6/9/16	06/14/16	12/03/2017	[illegible]
7/29/16	Hexadecane & Stearic Acid	ISST160729A	4000 ppm	Accu Standard	215121209	7/29/16	8/15/16	12/17/25	LSR
		B					9/9/16		
		C					9/22/16		
		D					10/3/16		
		E					8/2/16		
	EPA 1664 STD (MS/MSD)	F		Ultra Scientific	CP-0014		8/2/16	2/28/19	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	MG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915			Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415				
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	
10/3/16	EPA 1664 STD, (MS/MSD)	ISST16100304	4000 ppm	ULTRA SCIENTIFIC	CP-4210	10/3/16	10/10/16	9/30/19	LSR
10/4/16	Hexadecane & Stearic Acid	ISST161004A	4000 ppm	ACCU STANDARD	215121209	10/4/16	10/14/16	12/17/25	LSR
		B					11/1/16		
		C					11/18/16		
		D					11/29/16		
		E							
12/6/16	EPA 1664 STD	ISST161206A	4000 ppm	ULTRA SCIENTIFIC	CP-4210	12/6/16	9/20/19	9/30/19	LSR
12/8/16	Hexadecane & Stearic Acid	ISST161208A	4000 ppm	ACCU STANDARD	215121209	12/8/16		12/17/25	LSR
		B							
		C							
		D							

CHEMICAL INVENTORY LOG

Inventory Code CINV	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
~~SX07~~ 140122A	Sodium Sulfate, anhydrous	EMD	WF03H	99.02	1/22/14			STF	#6912
CINV 140206A	Zinc Acetate 2N	Ricca	1401B21	–	2/5/14		01/16	PS	#6914
CINV 140206 B	2N Zinc Acetate	Ricca	1401B21	–	2/5/14		01/16	PS	
CINV-140211 A	Mercury II oxide	Alfa Aesar	F22I27	99.6%	2/11/14			MC	
B	Pyridine, ACS, 99.0% Liquid	Alfa Aesar	D05Z888	99.0%	2/11/14			MC	
C	Ethanol, Alcohol Reagent	Alfa Aesar	I17Y018	94-96%	2/11/14			MC	
D	Copper II sulfate pentahydrate	Alfa Aesar	C28Y031	98-102%	2/11/14	5/20/14	5/20/17	MC	
E	Ammonium Chloride	Alfa Aesar	D29Z044	99.5%	2/11/14	2/19/14	2/19/17	MC/MI	
CINV-140211F	Silver Nitrate	Spectrum	1040834	≥99.0%	2/11/14			2	
CINV-140213 A	1° Turbidity Std. 0.02 NTU	Oakton	C365301	–	2/13/14	2/13/14	2/13/15	MC	
B	20		C365600						
C	100		C365829						
D	800		C365735						
CINV-140127A	Phosphoric Acid	EMD	53224335	≥85.0%	1/27/14	1/28/14	1/28/16	2	
CINV-140217A	Silica Gel (80-200 Mesh)	J.T. Baker	0000053205	–	2/17/14		6/26/20	PLN	#6962
CINV-140218A	Iron (III) nitrate monohydrate	Alfa Aesar	K132039	98.0-101%	2/18/14			MI	
B	Phenol, ACS, 99+%, stab. Crystalline		A28Z020	99+%					
C	Acetic acid, glacial		J10Z048	99.7%		3/24/14	3/24/16		#6975
D	Sodium hypochlorite		L10Z021	14.5%					
E	Potassium sodium-L tartrate tetrahydrate		C28Z028	99.0-102%					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV - 140218 F	Methyl Red sodium SALT	Alfa Aesar	J31Z031	-	2/18/14			mi	
G	Ethylenediamine tetraacetic acid disodium magnesium salt hydrate		K10175810	-					
H	Glycerol, ACS, 99.5% Viscous liquid		mi 2/18/14 K19Z027	99.5 +%					
I	Potassium cyanide		K22Z010	96.0% min.					
J	Sodium hydrogen phosphate, anhydrous, 99% min., Granular		J16Z014	99.0% min					
K	N-(1-Naphthyl) ethylenediamine dihydrochloride, ACS, powder		K04Z031	-		5/20/14	5/20/17		
L	Calmagite, indicator		10169022	-					
CINV-140218 M	Sodium Nitroferricyanide, Dihydrate	JT Baker	0000052646	-	2/18/14			mi	
N	Chloramine-T, trihydrate	MacRon	00000 562032	-					
CINV-140221A	Sodium Salicylate, 99%	Alfa Aesar	J03Z041	99%	2/21/14			mo	
CINV-140224A	Ethylenediamine tetraacetic acid disodium SALT dihydrate, ACS, 99-101%	Alfa Aesar	A18Z040	99-101%	2/24/14	5/20/14	5/20/17	mi	
B	Calcium carbonate		H01Z033	99%					
CINV-140226A	Dichloromethane	OmniSolv	51090	99.96%	02/25/14			mi	Lims bt# 6916
B									6917
C									6918
D									6919
E									6920
F									6921
G									6922
H									6923

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150320A	Buffer, pH 2	BDH	1408B19	-	3/20/15		8/2016	LSR	
↓ B	Buffer, pH 12	BDH	1409454	-	3/20/15		9/2015	LSR	
CINV-150323A	N-(1-Naphthyl) ethylenediamine	Alfa Aesar	N03A036	-	3/19/15	5/22/15	5/22/18	2	
↓	dihydrochloride							↓	
CINV-150325A	TETRAbutylammonium hydroxide	Macron			3/25/15	3/26/15	3/26/17	PEB	
↓ B	Heptafluorobutyric acid	Alfa Aesar	G07X060	99%	3/25/15	3/26/15	3/26/17	PEB	
CINV-150335C	1,5-diphenyl carbazide	J.T BAKER	000010030	-	3/25/15	3/25/15	3/25/18	PEB	
CINV-150401A	Sodium Chloride	J.T BAKER		99%	4/1/15	04/14/15	4/14/18	PEB	
CINV-150402A	Hexanes	EMD Chemicals	54308	98.5%	4/2/15	5/22/15	5/22/17	LSR	#7546
↓ B						6/25/15	6/25/17	LSR	#7547
C						7/24/15	7/24/15	LSR	#7548
↓ D						8/28/15	8/28/17	LSR	#7549
CINV-150416A	METHANOL	J.T BAKER	57548	99.8%	4/16/15	5/16/15	5/16/17	PEB	
↓ B	1,5-diphenyl carbazide	J.T. BAKER	000010030	-	4/16/15	7/20/15	7/20/18	PEB	
CINV-150430A	Conductivity Std, 99996	VWR	CC13489	-	4/30/15	6/10/15	2/20/16	LSR	
CINV-150501A	Ferrous Sulfate	Aqua Solutions	501214	-	5/1/15			LSR	
CINV-150506A	Ammonium Persulfate	JTBaker	162447	≥98.0%	5/6/15		7/8/16	2	
↓ B	↓	BDH	3495C517	-	↓	5/8/15	5/8/18	↓	
CINV-150511A	Ammonium Sulfate	J.T BAKER	86693	99%	5/11/15	5/20/15	5/20/18	PEB	
↓ B	↓	↓	↓	↓	↓			↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	126292	299%	2/19/16	3/7/16	3/7/19	[illegible]	
F						3/24/16	3/24/19		
G						4/7/16	4/7/19		
H									
CIW-160309A	Buffer, pH 7	BDH	1512854	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	3624-19	..	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322 A	Buffer pH 4	~~BDH~~ VWR	1512A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 100005 µS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD		-	3/22/16			LSR	8388
D								LSR	8389
E								LSR	8390
F								LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123372		4/5/16	4/6/16	4/6/19	[illegible]	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16			[illegible]	
B									
C									
D									
E	Ammonium hydroxide	BDH	7215070	—		04/06/16	04/06/18	[illegible]	
F				-					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160907I	Methyl Alcohol	Tedia	1811696	99.9%	9/7/16			MG	
↓ J	↓	↓	↓	↓	↓	11-12-16	11-12-18	↓	
CINV-160908A	Sodium Hypochlorite	Alfa Aesar	A025C041	-	9/8/16	9/8/16	9/8/18	LSR	
CINV-160909A	Conductivity Std, 10053 µS/cm	LSS	CC15087		9/9/16	10/18/16 LSR	7/5/17	LSR	
B									
C									
D									
E									
F									
CINV-160912A	Ammonium Sulfate	LABCHEM	F162-06		9/12/16	10/3/16	10/3/19	LSR	
B						10/13/16	10/13/19		
C						10/28/16	10/28/19		
D			F242-11			11/18/16	11/18/19		
CINV-160916A	Ammonium Persulfate	BDH	30560514	≥98.0%	9/16/16	9/19/16	10/19/19	L	
CINV-160921A	Sand	JT Baker	132732	-	9/21/16			LSR	
↓ B	Ammonium Hydroxide	BDH	1216050	-	9/21/16	10/13/16	10/31/18	LSR	
CINV-160929A	Conductivity Std, 1413 µS/cm	LSS	CC15036	-	9/29/16	10/5/16	6/8/17	LSR	
CINV-161010A	Buffer, pH 7	Thermo Scientific	UT2	-	10/10/16	11/3/16	7/2018	LSR	
CINV-161012A	1,5-Diphenylcarbohydrazide	JT Baker	142705	-	10/12/16	11/22/16	11/22/19	LSR	/KBA
↓ 161012B	Sulfuric Acid	EMD	56194	-	↓	10/27/16	10/27/18	LSR	#8651

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160607A	Turbidity Std, 20 NTU	AMCO Clear	C688405	-	6/7/16	6/8/16	6/2017	LSR	
B	100 NTU		C584931	-				LSR	
CINV-160607C	Ammonium Hydroxide	BDH	7215100	-	6/7/16	7/25/16	7/25/18	JAS	LIMS # 8459
CINV-160609A	Ammonium Hydroxide	BDH	7215100	-	6/9/16	8/31/16	8/31/18	JAS	LIMS # 8471
CINV-160609B	Buffer, pH 7	Labchem	F130-26	-	6/9/16	8/12/16	5/11/18	LSR	
C	Buffer, pH 10		F124-01	-		6/28/16	5/10/17	LSR	
CINV-160615A	Ammonium Hydroxide	Fisher	155222	-	6/15/16	7/11/16	7/11/18	JAS	LIMS # 8481
CINV-160616A	Methanol	Omnisolv	C2153		6/16/16	8/31/16	8/31/18	JAS	LIMS # 8490
CINV-160623A	Conductivity Std, 99663 µS/cm	LSS	CC14664	-	6/23/16	8/2/16	2/19/17	LSR	
CINV-160624A	Ammonium Sulfate	Lab Chem	F091-13	≥99.0%	6/24/16	7/18/16	7/18/19	L	
B			P162-06	≥99.0%		8/2/16	8/2/19		
C				≥99.0%		8/18/16	8/18/19		
D				≥99.0%		9/11/16	9/11/19		
CINV-160629A	Turbidity Std, 0.02 NTU	Cole Parmer	C686343	-	6/29/16	7/6/16	8/2017	LSR	
B	20		C686233						
C	100		C686659	-					
D	800		C686659	-					
CINV-160715A	Conductivity Std, 10.07 mS/cm	VWR	CC14776	-	7/15/16	8/10/16	3/17/17	LSR	
B	Buffer pH 4	VWR	16061011			8/19/16	5/2018		
CINV-160718A	Buffer pH 7	BDH	4604970	-	7/18/16	8/19/16	4/2018	PEB	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160718B	Ammonium Persulfate	BDH	3056C514	≥ 98.0%	7/18/16	7/18/16	7/18/19	MEB	
CINV-160721A	SODIUM CARBONATE	LSS	160324A	-	7/21/16	8/4/16	8/4/19	LSR	
CINV-160727A	HEXANES	EMD	56139	98%	7/27/16	7/28/16	7/28/18	LSR	8544
B						7/28/16	7/28/18		8545
C						8/15/16	8/15/18		8546
D						9/9/16	9/9/18		8547
CINV 160817A	Ammonium Persulfate	BDH	3056C514	≥ 98%	8/17/16			MEB	
B	Phosphoric Acid	EMD	55161546	85%		8/17/18	8/17/18		
CINV-160902A	Conductivity Std. 1413 µs	VWR	CC14947	-	9/2/16	9/23/16	5/9/17	LSR	
B	9977 µs		CC14972	—		9/12/16	5/17/17		
C	99835 µs		CC15000	-		9/26/16	5/26/17		
D	Buffer, pH 10		1607A96	-		9/26/16	12/2017		
CINV-160907A	HEXANES	EMD	56139	98.5%	9/7/16	9/26/16	9/26/18	LSR	8598
B						10/14/16	10/14/18		8599
C						10/20/16	10/20/18		8600
D						11/1/16	11/1/18		8601
CINV-160907E	Methyl Alcohol	Tedia	1511069 6	99.9%	9/7/16			MG	
F									
G						10-18-16	10-18-18		
H	—	—	—	—	—				

Advanced Technology Laboratories-Las Vegas
Logbook #2

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
5N HNO3	R170116B	#8661	138 mL	500
Eluent (Crut)	R170117A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170117B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
Eluent (Crut)	R170118A	CINV-161028C / CINV-161026B	66g / 13 mL	2000
Post Column Rgt (Crut)	R170118B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100 mL	1000
6N HCl	R170118C	#8743	250 mL	500 mL
20% NaHSO4	R170120A	#8668	800g	4L
Eluent (Crut)	R170120B	CINV-161028C / CINV-161026B	66g / 13mL	2000
Post Column Rgt (Crut)	R170120C	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100mL	1000
Eluent (Crut)	R170123A	CINV-161028C / CINV-161026B	66g / 13mL	2000
Buffer (Crut)	R170123B	CINV-161028C / CINV-161026B	99 g / 195 mL	3000
Post Column Rgt (Crut)	R170124A	CINV-161012A / 8782 / 8650	0.5g / 28 mL / 100 mL	1000
Eluent (Crut)	R170125A	CINV-161028D / CINV-161026B	66 g / 13mL	2000
Post Column Rgt (Crut)	R170125B	CINV-161012A / 8782 / 8650	0.5g / 28mL / 100mL	1000
6N NaOH	R170125A	CINV-161026A	120g	500mL
10% Ammonium persulfate, 5% H_3PO_4	R170125B	CINV 170123A / CINV 160817B	10g, 50mL	1000
2% $CuSO_4$	R170125C	CINV 140211D	2g	100
R1 Buffer	D	CINV 160723A / CINV 160726C	2.5mL, 0.1g, 853, 14mL	1000
R2 Coloring Rgt.	E	CINV 158923A / CINV 160657A / CINV 160723B	1070, 1g, 1.4g, 17mL	100
DIGESTION SOLUTION (Crut)	R170126A	CINV-160721A / CINV-161026A	120g / 80g	4000

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
SN	1/16/17	1/16/18	1/10/19		Z
–	1/17/17	1/17/18	1/13/20; 12/12/18		[illegible]
–	1/17/17	1/22/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/18/17	1/18/18	1/13/20; 12/12/18		[illegible]
–	1/18/17	1/23/17	11/22/19; 12/28/18; 12/13/18		[illegible]
GN	1/18/17	1/18/18	12/16/18		HSG
20%	1/20/17	1/20/18	11/11/19		HSG
–	1/20/17	1/20/18	1/13/20; 12/12/18		[illegible]
–	1/20/17	1/25/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/23/17	1/23/18	1/13/20; 12/12/18		[illegible]
–	1/23/17	2/23/17	1/13/20; 12/12/18		[illegible]
–	1/24/17	1/29/17	11/22/19; 12/28/18; 12/13/18		[illegible]
–	1/25/17	1/25/18	1/25/20; 12/12/18		[illegible]
–	1/25/17	1/30/17	11/22/19; 12/28/18; 12/13/18		[illegible]
GN	1/25/17	1/25/18	12/6/19		HSG
10%, 5%	1/25/17	4/25/17	1/25/20; 8/17/18		KEB
2%	1/25/17	2/25/17	5/20/17		KEB
–	|	|	2/25/17, 9/15/19 5/20/17, 7/28/18		|
–	|	|	5/22/18, 4/4/19 8/17/18		–
–	1/26/17	2/26/17	8/4/19; 12/6/19		Z

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61257 **Instrument ID:** ICPMS-02
ASSET #: N023014 **Analyst:** CEI
Method: **Date Analyzed:** 2/19/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.
%Rec of Mo in N022998-001B PS/MS/MSD & Mn in N022998-001B PS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/22/2017 Date:
2nd Level Reviewer 2/22/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023014-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 149.926 * 250 * (25/25)

Chromium , ug/L = 37481.5

Reporting results in two significant figures,

Chromium , ug/L = 37000

% RSD SUMMARY

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	20.47	15	<PQL	0.14	14.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.29	15	PASS	0.53	5.75	15	PASS
Std3-5/50 ppb	ICAL	1	5.066	2.55	15	PASS	5.08	3.5	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.068	15	PASS	10.15	1.7	15	PASS
Std5-20/200 ppb	ICAL	1	20.04	0.63	15	PASS	19.81	1.037	15	PASS
Std6-40/400 ppb	ICAL	1	40.099	1.058	15	PASS	39.54	1.05	15	PASS
Std7-100/1000 ppb	ICAL	1	101.95	0.34	15	PASS	100.3	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	198.99	1.11	15	PASS	199.95	1.25	15	PASS
ICV	ICV	1	10.22	0.23	15	PASS	102.049	0.74	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.97	1.77	20	PASS	0.52	6.59	20	PASS
ICSA1	ICSA	1	0.13	7.68	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.74	1.53	15	PASS	16.29	0.61	15	PASS
LLICV	CCV1	1	0.96	2.61	20	PASS	0.53	4.74	20	PASS
CCV1	CCV	1	20.058	1.28	15	PASS	20.045	0.93	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.75	1.57	15	PASS	20.16	0.97	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.055	1.27	15	PASS	20.24	1.61	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.28	0.88	15	PASS	20.36	1.18	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.94	2.51	20	PASS	0.53	2.92	20	PASS
ICSA2	ICSA	1	0.12	11.65	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.75	1.25	15	PASS	16.49	2.0089	15	PASS
MB-61257	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61257	LCS	1	10.028	0.32	15	PASS	101.37	1.057	15	PASS
N022998-001B	SAMP	1	18.2	0.45	15	PASS	13.46	1.63	15	PASS
N022998-001B	SAMP	5	3.87	1.44	15	PASS	2.89	1.71	15	PASS
N022998-001B	SAMP	25	0.79	4.0028	15	PASS	0.58	3.29	15	PASS
N022998-001B-PS	PS	1	26.4	2.86	15	PASS	88.49	1.48	15	PASS
N022998-001B-PS	PS	5	5.65	1.64	15	PASS	20.17	1.26	15	PASS
CCV5	CCV	1	19.67	1.53	15	PASS	20.14	0.98	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N022998-001B-MS	MS	1	26.16	1.45	15	PASS	92.71	0.61	15	PASS
N022998-001B-MS	MS	5	5.69	1.19	15	PASS	20.53	0.52	15	PASS
N022998-001B-MSD	MSD	1	26.14	1.052	15	PASS	93.11	0.14	15	PASS
N022998-001B-MSD	MSD	5	5.73	2.053	15	PASS	20.52	0.4	15	PASS
N022998-002B	SAMP	1	3.96	2.33	15	PASS	342.96	0.88	15	PASS
N022998-002B	SAMP	5	0.85	4.15	15	PASS	76.92	0.28	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	<0.000	N/A	15	<PQL	802.74	1.22	15	PASS
N022998-003B	SAMP	5	<0.000	N/A	15	<PQL	182.43	0.99	15	PASS
N022998-004B	SAMP	1	108.64	0.99	15	PASS	24.14	1.25	15	PASS
N022998-004B	SAMP	5	23.65	1.18	15	PASS	5.22	0.37	15	PASS
CCV6	CCV	1	20.028	0.6	15	PASS	20.18	0.43	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N023014-001B	SAMP	1	31342.31	0.95	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	5	6796.93	0.34	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	250	149.93	1.25	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	1	30172.12	0.76	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	5	6694.081	0.43	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	250	147.24	2.22	15	PASS	<0.000	N/A	15	<PQL
N023014-003B	SAMP	1	479.73	1.27	15	PASS	4.35	0.66	15	PASS
N023014-003B	SAMP	5	109.62	0.76	15	PASS	0.93	2.6	15	PASS
N023014-004B	SAMP	1	173.94	1.44	15	PASS	111.58	0.56	15	PASS
N023014-004B	SAMP	5	38.64	1.045	15	PASS	24.13	1.21	15	PASS
CCV7	CCV	1	20.74	1.92	15	PASS	20.2	2.6	15	PASS
CCB7	CCB	1	0.66	13.57	15	PASS	<0.000	N/A	15	<PQL
N023014-005B	SAMP	1	0.63	9.13	15	PASS	12.95	1.066	15	PASS
N023014-005B	SAMP	5	0.39	13.64	15	PASS	2.84	1.98	15	PASS
N023014-006B	SAMP	1	29.18	1.73	15	PASS	1.72	1.056	15	PASS
N023014-006B	SAMP	5	6.74	1.65	15	PASS	0.38	5.18	15	PASS
N023014-007B	SAMP	1	6.66	1.23	15	PASS	8.99	0.77	15	PASS
N023014-007B	SAMP	5	1.66	2.37	15	PASS	1.96	2.47	15	PASS
N023014-008B	SAMP	1	0.32	14.91	15	PASS	97.054	1.17	15	PASS
N023014-008B	SAMP	5	0.2	14.82	15	PASS	21.45	0.94	15	PASS
N023028-001B	SAMP	1	151.73	0.51	15	PASS	<0.000	N/A	15	<PQL
N023028-001B	SAMP	5	33.045	1.051	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	19.98	1.11	15	PASS	20.1	1.93	15	PASS
CCB8	CCB	1	0.17	13.71	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.13	3.31	20	PASS	0.54	10.16	20	PASS
ICSA3	ICSA	1	0.29	9.028	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.33	0.26	15	PASS	16.45	0.3	15	PASS
N023028-002B	SAMP	1	59.51	1.099	15	PASS	<0.000	N/A	15	<PQL
N023028-002B	SAMP	5	12.81	0.72	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	1	152.72	0.74	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	5	33.66	1.32	15	PASS	<0.000	N/A	15	<PQL
N023029-001B	SAMP	1	1.67	1.27	15	PASS	1.45	2.0014	15	PASS
N023029-001B	SAMP	5	0.39	1.4	15	PASS	0.2	9.29	15	PASS
N023029-002B	SAMP	1	508.63	0.77	15	PASS	0.58	10.14	15	PASS
N023029-002B	SAMP	5	112.12	1.25	15	PASS	0.085	15.4	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	164.62	1.19	15	PASS	0.96	1.0045	15	PASS
N023029-003B	SAMP	5	36.081	0.99	15	PASS	0.2	5.35	15	PASS
CCV9	CCV	1	20.14	1.64	15	PASS	20.28	1.58	15	PASS
CCB9	CCB	1	0.077	7.3	15	PASS	<0.000	N/A	15	<PQL
N023029-004B	SAMP	1	0.82	1.6	15	PASS	119.74	1.096	15	PASS
N023029-004B	SAMP	5	0.21	3.19	15	PASS	26	1.58	15	PASS
N023029-005B	SAMP	1	3.62	0.41	15	PASS	114.94	0.38	15	PASS
N023029-005B	SAMP	5	0.75	6.05	15	PASS	23.44	2.3	15	PASS
CCV10	CCV	1	19.91	0.65	15	PASS	20.25	1.7	15	PASS
CCB10	CCB	1	0.061	16.073	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.044	1.092	20	PASS	0.53	1.79	20	PASS
ICSA4	ICSA	1	0.22	4.077	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.34	1.39	15	PASS	16.57	1.13	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.8	15	PASS	0.11	29.1	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.77	15	PASS	0.45	33.3	15	<PQL
Std3-5/50 ppb	ICAL	1	5.076	3.25	15	PASS	4.82	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.066	0.73	15	PASS	10.023	3.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	1.47	15	PASS	19.99	0.48	15	PASS
Std6-40/400 ppb	ICAL	1	40.28	0.72	15	PASS	40.22	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	100.051	0.89	15	PASS	101.45	1.0022	15	PASS
Std8-200/2000 ppb	ICAL	1	199.93	0.59	15	PASS	199.24	0.51	15	PASS
ICV	ICV	1	10.11	0.95	15	PASS	9.77	2.24	15	PASS
ICB	ICB	1	0.02	31.72	15	<PQL	0.025	72.42	15	<PQL
LLICV	CCV1	1	0.12	13.87	20	PASS	0.5	11.16	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.035	103.21	15	<PQL
ICSAB1	ICSAB	1	19.91	2.18	15	PASS	17.31	1.83	15	PASS
LLICV	CCV1	1	0.12	7.0089	20	PASS	0.46	13.79	20	PASS
CCV1	CCV	1	19.98	0.14	15	PASS	18.74	2.86	15	PASS
CCB1	CCB	1	0.017	86.51	15	<PQL	0.015	113.87	15	<PQL
CCV2	CCV	1	19.75	0.43	15	PASS	19.048	1.086	15	PASS
CCB2	CCB	1	0.003	168.15	15	<PQL	0.019	45.75	15	<PQL
CCV3	CCV	1	20.1	0.92	15	PASS	19.013	3.24	15	PASS
CCB3	CCB	1	0.014	43.41	15	<PQL	0.021	28.41	15	<PQL
CCV4	CCV	1	19.58	0.81	15	PASS	19.36	0.76	15	PASS
CCB4	CCB	1	0.017	34.39	15	<PQL	0.019	83.45	15	<PQL
LLCCV1	CCV2	1	0.085	21.56	20	<PQL	0.5	16.024	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.018	73.29	15	<PQL
ICSAB2	ICSAB	1	19.56	1.083	15	PASS	17.53	0.18	15	PASS
MB-61257	MBLK	1	0.002	392.28	15	<PQL	0.011	77.62	15	<PQL
LCS-61257	LCS	1	10.0097	1.3	15	PASS	9.61	2.47	15	PASS
N022998-001B	SAMP	1	1.95	1.74	15	PASS	0.56	22.076	15	NR!
N022998-001B	SAMP	5	0.42	3.37	15	PASS	0.086	67.16	15	<PQL
N022998-001B	SAMP	25	0.088	19.5	15	<PQL	0.048	49.046	15	<PQL
N022998-001B-PS	PS	1	10.59	1.46	15	PASS	8.67	3.64	15	PASS
N022998-001B-PS	PS	5	2.34	5.13	15	PASS	1.74	6.65	15	PASS
CCV5	CCV	1	20.033	0.82	15	PASS	18.52	1.57	15	PASS
CCB5	CCB	1	0.015	60.54	15	<PQL	0.03	16.99	15	<PQL
N022998-001B-MS	MS	1	10.79	2.2	15	PASS	8.81	3.27	15	PASS
N022998-001B-MS	MS	5	2.31	1.95	15	PASS	1.88	5.53	15	PASS
N022998-001B-MSD	MSD	1	10.8	0.25	15	PASS	8.46	1.72	15	PASS
N022998-001B-MSD	MSD	5	2.3	0.85	15	PASS	1.66	0.52	15	PASS
N022998-002B	SAMP	1	1.4	5.21	15	PASS	1.15	20.6	15	NR!
N022998-002B	SAMP	5	0.3	4.84	15	PASS	0.2	15.68	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	3.58	1.92	15	PASS	0.032	49.73	15	<PQL
N022998-003B	SAMP	5	0.76	7.59	15	PASS	0.017	63.73	15	<PQL
N022998-004B	SAMP	1	9.78	2.59	15	PASS	0.92	10.16	15	PASS
N022998-004B	SAMP	5	2.11	1.32	15	PASS	0.23	26.16	15	<PQL
CCV6	CCV	1	20.059	0.77	15	PASS	19.45	1.31	15	PASS
CCB6	CCB	1	0.016	40.45	15	<PQL	0.021	80.62	15	<PQL
N023014-001B	SAMP	1	2.58	1.81	15	PASS	15.7	2.64	15	PASS
N023014-001B	SAMP	5	0.53	5.76	15	PASS	3.11	5.81	15	PASS
N023014-001B	SAMP	250	0.013	36.4	15	<PQL	0.061	40.056	15	<PQL
N023014-002B	SAMP	1	2.43	4.2	15	PASS	15.038	2.52	15	PASS
N023014-002B	SAMP	5	0.5	8.081	15	PASS	2.91	2.8	15	PASS
N023014-002B	SAMP	250	0.0093	92.14	15	<PQL	0.058	31.42	15	<PQL
N023014-003B	SAMP	1	2.083	4.7	15	PASS	6.075	5.91	15	PASS
N023014-003B	SAMP	5	0.44	0.87	15	PASS	1.33	14.71	15	PASS
N023014-004B	SAMP	1	0.6	6.9	15	PASS	7.59	2.77	15	PASS
N023014-004B	SAMP	5	0.13	18.93	15	NR!	1.51	7.057	15	PASS
CCV7	CCV	1	19.96	0.84	15	PASS	18.54	1.15	15	PASS
CCB7	CCB	1	0.012	34.94	15	<PQL	0.013	100.08	15	<PQL
N023014-005B	SAMP	1	5.88	3.2	15	PASS	2.16	9.49	15	PASS
N023014-005B	SAMP	5	1.27	4.1	15	PASS	0.48	8.46	15	PASS
N023014-006B	SAMP	1	1.61	0.49	15	PASS	3.64	4.64	15	PASS
N023014-006B	SAMP	5	0.33	7.96	15	PASS	0.86	10.72	15	PASS
N023014-007B	SAMP	1	13.52	1.84	15	PASS	0.2	14.95	15	PASS
N023014-007B	SAMP	5	2.9	3.77	15	PASS	0.069	30.99	15	<PQL
N023014-008B	SAMP	1	7.15	0.96	15	PASS	0.045	38.78	15	<PQL
N023014-008B	SAMP	5	1.62	3.9	15	PASS	0.012	125.17	15	<PQL
N023028-001B	SAMP	1	1.69	2.079	15	PASS	4.56	3.75	15	PASS
N023028-001B	SAMP	5	0.34	9.11	15	PASS	1.096	8.31	15	PASS
CCV8	CCV	1	19.64	1.4	15	PASS	18.77	2.33	15	PASS
CCB8	CCB	1	0.013	54.19	15	<PQL	0.012	164.84	15	<PQL
LLCCV2	CCV2	1	0.1	23.85	20	FAILED	0.47	7.6	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.011	29.047	15	<PQL
ICSAB3	ICSAB	1	19.52	0.36	15	PASS	16.79	3.33	15	PASS
N023028-002B	SAMP	1	1.41	4.66	15	PASS	4.069	2.67	15	PASS
N023028-002B	SAMP	5	0.3	2.71	15	PASS	0.84	8.72	15	PASS
N023028-003B	SAMP	1	2.64	2.95	15	PASS	5.4	3.0036	15	PASS
N023028-003B	SAMP	5	0.56	1.32	15	PASS	1.18	9.92	15	PASS
N023029-001B	SAMP	1	1.36	5.064	15	PASS	0.77	5.22	15	PASS
N023029-001B	SAMP	5	0.27	5.2	15	PASS	0.18	27.71	15	<PQL
N023029-002B	SAMP	1	1.27	3.071	15	PASS	3.64	9.83	15	PASS
N023029-002B	SAMP	5	0.29	9.31	15	PASS	0.74	9.095	15	PASS

%RSD of As in LLCCV2 failed > 20%> However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	2.15	2.2	15	PASS	12.32	2.027	15	PASS
N023029-003B	SAMP	5	0.43	2.46	15	PASS	2.52	5.83	15	PASS
CCV9	CCV	1	19.84	1	15	PASS	19.031	1.048	15	PASS
CCB9	CCB	1	0.012	49.24	15	<PQL	0.0053	59.8	15	<PQL
N023029-004B	SAMP	1	8.59	4.17	15	PASS	0.86	3.064	15	PASS
N023029-004B	SAMP	5	1.82	4.23	15	PASS	0.18	7.59	15	PASS
N023029-005B	SAMP	1	8.45	2.76	15	PASS	0.54	4.94	15	PASS
N023029-005B	SAMP	5	1.66	4.82	15	PASS	0.096	33.54	15	<PQL
CCV10	CCV	1	19.98	0.99	15	PASS	18.81	0.34	15	PASS
CCB10	CCB	1	0.018	19.83	15	<PQL	0.011	162.083	15	<PQL
LLCCV3	CCV2	1	0.12	8.13	20	PASS	0.5	25.64	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.013	89.38	15	<PQL
ICSAB4	ICSAB	1	19.41	0.77	15	PASS	16.67	3.18	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	7.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.37	15	PASS
Std3-5/50 ppb	ICAL	1	4.89	0.72	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	2.59	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	0.95	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.055	15	PASS
Std7-100/1000 ppb	ICAL	1	99.79	0.99	15	PASS
Std8-200/2000 ppb	ICAL	1	200	0.63	15	PASS
ICV	ICV	1	10.59	0.71	15	PASS
ICB	ICB	1	0.21	0.086	15	PASS
LLICV	CCV1	1	0.57	7.071	20	PASS
ICSA1	ICSA	1	0.091	5.95	15	PASS
ICSAB1	ICSAB	1	23.25	1.24	15	PASS
LLICV	CCV1	1	0.61	1.15	20	PASS
CCV1	CCV	1	19.91	0.79	15	PASS
CCB1	CCB	1	0.13	14.25	15	PASS
CCV2	CCV	1	19.82	0.82	15	PASS
CCB2	CCB	1	0.11	2.27	15	PASS
CCV3	CCV	1	19.83	0.92	15	PASS
CCB3	CCB	1	0.12	12.3	15	PASS
CCV4	CCV	1	19.64	1.39	15	PASS
CCB4	CCB	1	0.1	8.84	15	PASS
LLCCV1	CCV2	1	0.51	3.018	20	PASS
ICSA2	ICSA	1	0.051	22.61	15	<PQL
ICSAB2	ICSAB	1	23.32	0.79	15	PASS
MB-61257	MBLK	1	0.044	13.53	15	PASS
LCS-61257	LCS	1	10.075	1.13	15	PASS
N022998-001B	SAMP	1	213.39	0.7	15	PASS
N022998-001B	SAMP	5	39.15	0.76	15	PASS
N022998-001B	SAMP	25	7.6	1.35	15	PASS
N022998-001B-PS	PS	1	232.25	1.28	15	PASS
N022998-001B-PS	PS	5	42.36	0.7	15	PASS
CCV5	CCV	1	19.54	0.24	15	PASS
CCB5	CCB	1	0.22	0.38	15	PASS
N022998-001B-MS	MS	1	224.83	0.4	15	PASS
N022998-001B-MS	MS	5	42.29	0.33	15	PASS
N022998-001B-MSD	MSD	1	221.63	0.6	15	PASS
N022998-001B-MSD	MSD	5	42.2	1.41	15	PASS
N022998-002B	SAMP	1	27.17	1.1	15	PASS
N022998-002B	SAMP	5	5.15	2.048	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	68.99	0.75	15	PASS
N022998-003B	SAMP	5	13.049	0.98	15	PASS
N022998-004B	SAMP	1	82.74	0.78	15	PASS
N022998-004B	SAMP	5	15.62	1.89	15	PASS
CCV6	CCV	1	19.91	1.16	15	PASS
CCB6	CCB	1	0.14	8.88	15	PASS
N023014-001B	SAMP	1	52.2	1.74	15	PASS
N023014-001B	SAMP	5	9.9	1.88	15	PASS
N023014-001B	SAMP	250	0.27	7.76	15	PASS
N023014-002B	SAMP	1	50.74	0.32	15	PASS
N023014-002B	SAMP	5	9.72	1.32	15	PASS
N023014-002B	SAMP	250	0.27	5.91	15	PASS
N023014-003B	SAMP	1	33.89	0.95	15	PASS
N023014-003B	SAMP	5	6.52	0.7	15	PASS
N023014-004B	SAMP	1	32.38	1.75	15	PASS
N023014-004B	SAMP	5	6.21	1.85	15	PASS
CCV7	CCV	1	19.81	2.55	15	PASS
CCB7	CCB	1	0.12	3.36	15	PASS
N023014-005B	SAMP	1	66.039	0.76	15	PASS
N023014-005B	SAMP	5	12.36	2.28	15	PASS
N023014-006B	SAMP	1	26.23	1.56	15	PASS
N023014-006B	SAMP	5	5.045	2.18	15	PASS
N023014-007B	SAMP	1	84.15	1.03	15	PASS
N023014-007B	SAMP	5	15.88	1.55	15	PASS
N023014-008B	SAMP	1	50.94	0.78	15	PASS
N023014-008B	SAMP	5	9.63	1.88	15	PASS
N023028-001B	SAMP	1	3.88	2.23	15	PASS
N023028-001B	SAMP	5	0.75	1.17	15	PASS
CCV8	CCV	1	19.88	0.53	15	PASS
CCB8	CCB	1	0.11	3.69	15	PASS
LLCCV2	CCV2	1	0.55	4.31	20	PASS
ICSA3	ICSA	1	0.056	13.68	15	PASS
ICSAB3	ICSAB	1	23.3	0.55	15	PASS
N023028-002B	SAMP	1	6.12	2.2	15	PASS
N023028-002B	SAMP	5	1.15	5.57	15	PASS
N023028-003B	SAMP	1	22.39	1.1	15	PASS
N023028-003B	SAMP	5	4.26	1.15	15	PASS
N023029-001B	SAMP	1	19.65	1.02	15	PASS
N023029-001B	SAMP	5	3.77	1.3	15	PASS
N023029-002B	SAMP	1	13.78	0.38	15	PASS
N023029-002B	SAMP	5	2.68	2.68	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	75.34	0.81	15	PASS
N023029-003B	SAMP	5	14.23	1.67	15	PASS
CCV9	CCV	1	20.057	1.19	15	PASS
CCB9	CCB	1	0.12	8.9	15	PASS
N023029-004B	SAMP	1	45.28	1.12	15	PASS
N023029-004B	SAMP	5	8.6	1.38	15	PASS
N023029-005B	SAMP	1	46.46	0.82	15	PASS
N023029-005B	SAMP	5	8.66	1.19	15	PASS
CCV10	CCV	1	20.08	1.11	15	PASS
CCB10	CCB	1	0.12	7	15	PASS
LLCCV3	CCV2	1	0.53	5.22	20	PASS
ICSA4	ICSA	1	0.059	9.72	15	PASS
ICSAB4	ICSAB	1	22.98	2.0032	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N022985-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61257	Aqueous		25	☐	0	0	25	1.000		
MB-61257	Aqueous		25	☐	0	0	25	1.000		
N022998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023014-001B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-002B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-003B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-004B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-005B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-006B	Ground Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023014-007B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-008B	Ground Water	<2	25	☐	0	0	25	1.000		
N023028-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Feb 2017 01:42:57 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	116854.00	0.00	
24 Mg	777417.00	0.00	
25 Mg	106076.00	0.00	
26 Mg	123494.00	0.00	
59 Co	1235140.00	0.00	
115 In	2298460.00	0.00	
206 Pb	592965.00	0.00	
207 Pb	518468.00	0.00	
208 Pb	1274740.00	0.00	

RSD (%)

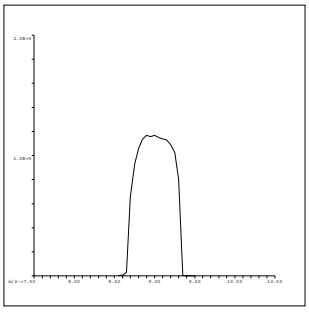
Element	Actual	Required	Flag
9 Be	1.12	5.00	
24 Mg	1.21	5.00	
25 Mg	1.16	5.00	
26 Mg	0.90	5.00	
59 Co	0.32	5.00	
115 In	0.29	5.00	
206 Pb	1.46	5.00	
207 Pb	0.91	5.00	
208 Pb	0.46	5.00	

Ion Ratio

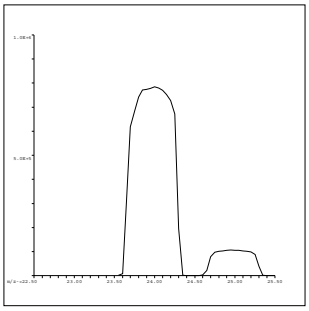
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

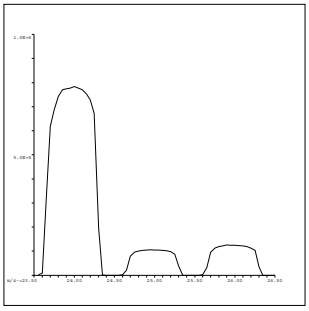
Element	Actual	Required	Flag



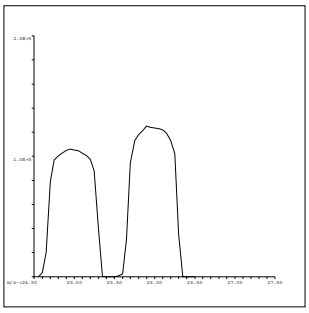
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



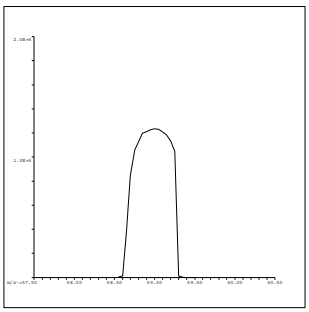
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



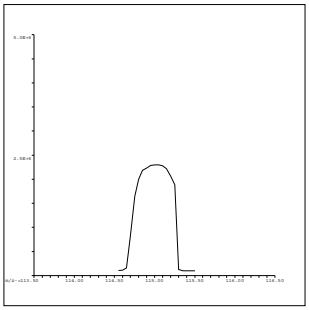
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



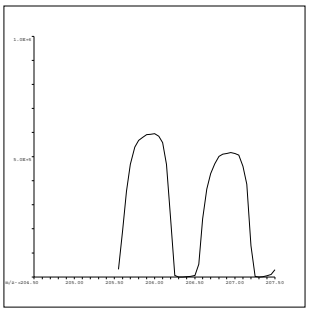
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



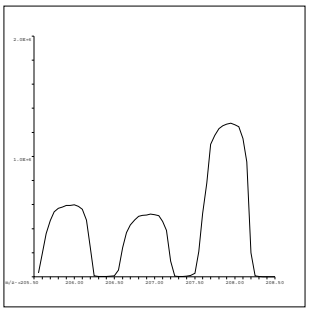
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



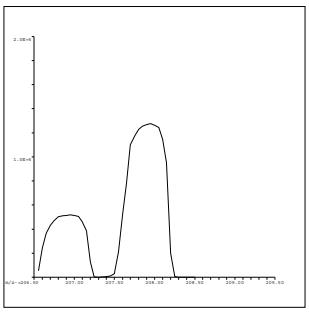
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170219A

Instrument ID: ICPMS-02

Analyte	Data File	A0219002.D	A0219003.D	A0219004.D	A0219005.D	A0219006.D	A0219007.D	A0219008.D	A0219009.D	A0219010.D	
	Acq. Date-Time	02/19/2017 02:06 PM	02/19/2017 02:11 PM	02/19/2017 02:17 PM	02/19/2017 02:22 PM	02/19/2017 02:28 PM	02/19/2017 02:33 PM	02/19/2017 02:39 PM	02/19/2017 02:45 PM	02/19/2017 02:50 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	113178.1		114588.6	113872.3	111751.9	110961.7	108566.7	102144.4	100053	
55 Mn [2]	CPS	382.4		3053.9	25931.1	50434.9	97459.1	189893.9	452690.9	883551.8	1.0000
52 Cr [2]	CPS	1701.2		6757.1	52587	102612.2	197861.8	385693.4	920291.5	1757874.5	0.9999
72 Ge (ISTD) [1]	CPS	110414		110306.7	108093.9	106640.2	108806.3	104974.8	98972.1	96626.3	
78 Se [1]	CPS	1.1		250	2637	5404.5	10995.3	21344.7	50753.6	97318.6	1.0000
72 Ge (ISTD) [2]	CPS	89091.8	90988.6	90684.9	89530.8	87586.8	87134.5	84230.7	81263.6	79698.1	
75 As [2]	CPS	13.8	134.2	528.9	5294.7	10259.3	20124.1	39431.1	94483.8	185164.1	1.0000
103 Rh (ISTD) [2]	CPS	3080409.8		3121173.6	3091363.3	3061200.8	3041671.3	2989323.7	2869890	2816893.8	
95 Mo [2]	CPS	24.4		3440.5	33780.9	66955	140715.2	268543.4	639336.3	1257668.7	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.108	0.10	10.00	0	101	90	110				
Manganese	102.049	0.50	100.0	0	102	90	110				
Molybdenum	10.590	0.50	10.00	0	106	90	110				
Selenium	9.772	0.50	10.00	0	97.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Manganese	0.525	0.50	0.5000	0	105	80	120				
Molybdenum	0.573	0.50	0.5000	0	115	80	120				
Selenium	0.502	0.50	0.5000	0	100	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.976	0.10	20.00	0	99.9	90	110				
Manganese	20.045	0.50	20.00	0	100	90	110				
Molybdenum	19.913	0.50	20.00	0	99.6	90	110				
Selenium	18.741	0.50	20.00	0	93.7	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.750	0.10	20.00	0	98.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.156	0.50	20.00	0	101	90	110				
Molybdenum	19.815	0.50	20.00	0	99.1	90	110				
Selenium	19.048	0.50	20.00	0	95.2	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.100	0.10	20.00	0	101	90	110				
Manganese	20.244	0.50	20.00	0	101	90	110				
Molybdenum	19.826	0.50	20.00	0	99.1	90	110				
Selenium	19.013	0.50	20.00	0	95.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.580	0.10	20.00	0	97.9	90	110				
Manganese	20.365	0.50	20.00	0	102	90	110				
Molybdenum	19.643	0.50	20.00	0	98.2	90	110				
Selenium	19.361	0.50	20.00	0	96.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	85.4	70	130				
Manganese	0.528	0.50	0.5000	0	106	70	130				
Molybdenum	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.497	0.50	0.5000	0	99.4	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.033	0.10	20.00	0	100	90	110				
Manganese	20.142	0.50	20.00	0	101	90	110				
Molybdenum	19.543	0.50	20.00	0	97.7	90	110				
Selenium	18.524	0.50	20.00	0	92.6	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.059	0.10	20.00	0	100	90	110				
Manganese	20.184	0.50	20.00	0	101	90	110				
Molybdenum	19.914	0.50	20.00	0	99.6	90	110				
Selenium	19.455	0.50	20.00	0	97.3	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.958	0.10	20.00	0	99.8	90	110				
Manganese	20.196	0.50	20.00	0	101	90	110				
Molybdenum	19.809	0.50	20.00	0	99.0	90	110				
Selenium	18.541	0.50	20.00	0	92.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.636	0.10	20.00	0	98.2	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				
Molybdenum	19.884	0.50	20.00	0	99.4	90	110				
Selenium	18.769	0.50	20.00	0	93.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.538	0.50	0.5000	0	108	70	130				
Molybdenum	0.547	0.50	0.5000	0	109	70	130				
Selenium	0.474	0.50	0.5000	0	94.7	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.844	0.10	20.00	0	99.2	90	110				
Manganese	20.275	0.50	20.00	0	101	90	110				
Molybdenum	20.057	0.50	20.00	0	100	90	110				
Selenium	19.031	0.50	20.00	0	95.2	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.248	0.50	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	18.809	0.50	20.00	0	94.0	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.123	0.10	0.1000	0	123	70	130				
Manganese	0.531	0.50	0.5000	0	106	70	130				
Molybdenum	0.528	0.50	0.5000	0	106	70	130				
Selenium	0.498	0.50	0.5000	0	99.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.224	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.968	1.0	1.000	0	96.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.058	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.746	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.055	1.0	20.00	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.280	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.943	1.0	1.000	0	94.3	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.667	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.028	1.0	20.00	0	100	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.736	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.985	1.0	20.00	0	99.9	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.131	1.0	1.000	0	113	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.136	1.0	20.00	0	101	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.044	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.214	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.126	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.112	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.116	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.102	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.221	0.50									
Selenium	0.030	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.143	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.111	0.50									
Selenium	ND	0.50									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB10	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.120	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.664	1.0									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.169	1.0									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.077	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB10	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	CCB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.061	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.035	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.913	0.10	20.00	0	99.6	80	120				
Manganese	16.293	0.50	20.00	0	81.5	80	120				
Molybdenum	23.248	0.50	20.00	0	116	80	120				
Selenium	17.309	0.50	20.00	0	86.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.051	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.556	0.10	20.00	0	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.492	0.50	20.00	0	82.5	80	120				
Molybdenum	23.324	0.50	20.00	0	117	80	120				
Selenium	17.529	0.50	20.00	0	87.6	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.056	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.519	0.10	20.00	0	97.6	80	120				
Manganese	16.455	0.50	20.00	0	82.3	80	120				
Molybdenum	23.302	0.50	20.00	0	117	80	120				
Selenium	16.788	0.50	20.00	0	83.9	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.059	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSA	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSAB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573578

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.414	0.10	20.00	0	97.1	80	120				
Manganese	16.568	0.50	20.00	0	82.8	80	120				
Molybdenum	22.979	0.50	20.00	0	115	80	120				
Selenium	16.673	0.50	20.00	0	83.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.133	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.735	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.119	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.750	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.286	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.326	1.0	20.00	0	96.6	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.223	1.0									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.339	1.0	20.00	0	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	113178.1	113178.1	100	PASS	70-125	89091.8	89091.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	116237.5	113178.1	102.7	PASS	70-125	90988.6	89091.8	102.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	114588.6	113178.1	101.25	PASS	70-125	90684.9	89091.8	101.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	113872.3	113178.1	100.61	PASS	70-125	89530.8	89091.8	100.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	111751.9	113178.1	98.74	PASS	70-125	87586.8	89091.8	98.31	PASS	70-125
Std5-20/200 ppb	ICAL	1	110961.7	113178.1	98.042	PASS	70-125	87134.5	89091.8	97.8	PASS	70-125
Std6-40/400 ppb	ICAL	1	108566.7	113178.1	95.93	PASS	70-125	84230.7	89091.8	94.54	PASS	70-125
Std7-100/1000 ppb	ICAL	1	102144.4	113178.1	90.25	PASS	70-125	81263.6	89091.8	91.21	PASS	70-125
Std8-200/2000 ppb	ICAL	1	100053	113178.1	88.4	PASS	70-125	79698.1	89091.8	89.46	PASS	70-125
ICV	ICV	1	111945.8	113178.1	98.91	PASS	70-125	91023.2	89091.8	102.17	PASS	70-125
ICB	ICB	1	97797.5	113178.1	86.41	PASS	70-125	80003	89091.8	89.8	PASS	70-125
LLICV	CCV1	1	109056.8	113178.1	96.36	PASS	70-125	89054.8	89091.8	99.96	PASS	70-125
ICSA1	ICSA	1	120040.2	113178.1	106.06	PASS	70-125	87052.1	89091.8	97.71	PASS	70-125
ICSAB1	ICSAB	1	128225.4	113178.1	113.3	PASS	70-125	89454	89091.8	100.41	PASS	70-125
LLICV	CCV1	1	129078.2	113178.1	114.05	PASS	70-125	103291.4	89091.8	115.94	PASS	70-125
CCV1	CCV	1	126930.5	113178.1	112.15	PASS	70-125	98656.9	89091.8	110.74	PASS	70-125
CCB1	CCB	1	118989.4	113178.1	105.13	PASS	70-125	95257.5	89091.8	106.92	PASS	70-125
CCV2	CCV	1	118396.4	113178.1	104.61	PASS	70-125	93631.3	89091.8	105.1	PASS	70-125
CCB2	CCB	1	113808.1	113178.1	100.56	PASS	70-125	91488.1	89091.8	102.69	PASS	70-125
CCV3	CCV	1	118098.2	113178.1	104.35	PASS	70-125	92681.3	89091.8	104.03	PASS	70-125
CCB3	CCB	1	113827.3	113178.1	100.57	PASS	70-125	90707.1	89091.8	101.81	PASS	70-125
CCV4	CCV	1	105409.2	113178.1	93.14	PASS	70-125	85941.5	89091.8	96.46	PASS	70-125
CCB4	CCB	1	102974.3	113178.1	90.98	PASS	70-125	83349.4	89091.8	93.55	PASS	70-125
LLCCV1	CCV2	1	113317.1	113178.1	100.12	PASS	70-125	92848.6	89091.8	104.22	PASS	70-125
ICSA2	ICSA	1	115538.8	113178.1	102.09	PASS	70-125	85119.4	89091.8	95.54	PASS	70-125
ICSAB2	ICSAB	1	127842.7	113178.1	112.96	PASS	70-125	92239	89091.8	103.53	PASS	70-125
MB-61257	MBLK	1	120318.5	113178.1	106.31	PASS	70-125	95132.1	89091.8	106.78	PASS	70-125
LCS-61257	LCS	1	131672.8	113178.1	116.34	PASS	70-125	102643.7	89091.8	115.21	PASS	70-125
N022998-001B	SAMP	1	83691.5	113178.1	73.95	PASS	70-125	50385.5	89091.8	56.55	NR!	70-125
N022998-001B	SAMP	5	122635.2	113178.1	108.36	PASS	70-125	82056.2	89091.8	92.1	PASS	70-125
N022998-001B	SAMP	25	133530.3	113178.1	117.98	PASS	70-125	97457.8	89091.8	109.39	PASS	70-125
N022998-001B-PS	PS	1	95871.9	113178.1	84.71	PASS	70-125	56166.6	89091.8	63.044	NR!	70-125
N022998-001B-PS	PS	5	126434.5	113178.1	111.71	PASS	70-125	85134.4	89091.8	95.56	PASS	70-125
CCV5	CCV	1	94457.5	113178.1	83.46	PASS	70-125	73740.2	89091.8	82.77	PASS	70-125
CCB5	CCB	1	130945.3	113178.1	115.7	PASS	70-125	101654.5	89091.8	114.1	PASS	70-125
N022998-001B-MS	MS	1	89326.7	113178.1	78.93	PASS	70-125	53145.1	89091.8	59.65	NR!	70-125
N022998-001B-MS	MS	5	124575.1	113178.1	110.07	PASS	70-125	84170.3	89091.8	94.48	PASS	70-125
N022998-001B-MSD	MSD	1	93192.3	113178.1	82.34	PASS	70-125	55462	89091.8	62.25	NR!	70-125
N022998-001B-MSD	MSD	5	122847.9	113178.1	108.54	PASS	70-125	83499.9	89091.8	93.72	PASS	70-125
N022998-002B	SAMP	1	115977.4	113178.1	102.47	PASS	70-125	72032.6	89091.8	80.85	PASS	70-125
N022998-002B	SAMP	5	128904.2	113178.1	113.9	PASS	70-125	91492.9	89091.8	102.7	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	99435.5	113178.1	87.86	PASS	70-125	60172.7	89091.8	67.54	NR!	70-125
N022998-003B	SAMP	5	125549.9	113178.1	110.93	PASS	70-125	87902.1	89091.8	98.66	PASS	70-125
N022998-004B	SAMP	1	94041.4	113178.1	83.092	PASS	70-125	56788.6	89091.8	63.74	NR!	70-125
N022998-004B	SAMP	5	124337.8	113178.1	109.86	PASS	70-125	85104.9	89091.8	95.52	PASS	70-125
CCV6	CCV	1	135134	113178.1	119.4	PASS	70-125	105186.4	89091.8	118.07	PASS	70-125
CCB6	CCB	1	127946.8	113178.1	113.05	PASS	70-125	100507.1	89091.8	112.81	PASS	70-125
N023014-001B	SAMP	1	113651.3	113178.1	100.42	PASS	70-125	75635.2	89091.8	84.9	PASS	70-125
N023014-001B	SAMP	5	121947	113178.1	107.75	PASS	70-125	89823.4	89091.8	100.82	PASS	70-125
N023014-001B	SAMP	250	129084.6	113178.1	114.05	PASS	70-125	101769.8	89091.8	114.23	PASS	70-125
N023014-002B	SAMP	1	112662.3	113178.1	99.54	PASS	70-125	75326.4	89091.8	84.55	PASS	70-125
N023014-002B	SAMP	5	118949.2	113178.1	105.1	PASS	70-125	88265	89091.8	99.072	PASS	70-125
N023014-002B	SAMP	250	125956	113178.1	111.29	PASS	70-125	99332.4	89091.8	111.49	PASS	70-125
N023014-003B	SAMP	1	99583.6	113178.1	87.99	PASS	70-125	65100.7	89091.8	73.071	PASS	70-125
N023014-003B	SAMP	5	121973.9	113178.1	107.77	PASS	70-125	88082.8	89091.8	98.87	PASS	70-125
N023014-004B	SAMP	1	120735.8	113178.1	106.68	PASS	70-125	81711.3	89091.8	91.72	PASS	70-125
N023014-004B	SAMP	5	127934.4	113178.1	113.04	PASS	70-125	94909.9	89091.8	106.53	PASS	70-125
CCV7	CCV	1	127357.1	113178.1	112.53	PASS	70-125	99182.7	89091.8	111.33	PASS	70-125
CCB7	CCB	1	121833.7	113178.1	107.65	PASS	70-125	95934.1	89091.8	107.68	PASS	70-125
N023014-005B	SAMP	1	81511.6	113178.1	72.021	PASS	70-125	50290.5	89091.8	56.45	NR!	70-125
N023014-005B	SAMP	5	119172	113178.1	105.3	PASS	70-125	81794.2	89091.8	91.81	PASS	70-125
N023014-006B	SAMP	1	106122.1	113178.1	93.77	PASS	70-125	63668.2	89091.8	71.46	PASS	70-125
N023014-006B	SAMP	5	126426.6	113178.1	111.71	PASS	70-125	88193.9	89091.8	98.99	PASS	70-125
N023014-007B	SAMP	1	90246.2	113178.1	79.74	PASS	70-125	56077.3	89091.8	62.94	NR!	70-125
N023014-007B	SAMP	5	122301.8	113178.1	108.06	PASS	70-125	84868.2	89091.8	95.26	PASS	70-125
N023014-008B	SAMP	1	105806.2	113178.1	93.49	PASS	70-125	69672.8	89091.8	78.2	PASS	70-125
N023014-008B	SAMP	5	126570	113178.1	111.83	PASS	70-125	89110.6	89091.8	100.02	PASS	70-125
N023028-001B	SAMP	1	125727.2	113178.1	111.09	PASS	70-125	86953.4	89091.8	97.6	PASS	70-125
N023028-001B	SAMP	5	129027.2	113178.1	114	PASS	70-125	95809.4	89091.8	107.54	PASS	70-125
CCV8	CCV	1	128876.5	113178.1	113.87	PASS	70-125	102061.1	89091.8	114.56	PASS	70-125
CCB8	CCB	1	121847	113178.1	107.66	PASS	70-125	96874.5	89091.8	108.74	PASS	70-125
LLCCV2	CCV2	1	135093.5	113178.1	119.36	PASS	70-125	105814.2	89091.8	118.77	PASS	70-125
ICSA3	ICSA	1	133390.4	113178.1	117.86	PASS	70-125	96164.7	89091.8	107.94	PASS	70-125
ICSAB3	ICSAB	1	120431.9	113178.1	106.41	PASS	70-125	84497.3	89091.8	94.84	PASS	70-125
N023028-002B	SAMP	1	107802.9	113178.1	95.25	PASS	70-125	78989.2	89091.8	88.66	PASS	70-125
N023028-002B	SAMP	5	119639.9	113178.1	105.71	PASS	70-125	92438.9	89091.8	103.76	PASS	70-125
N023028-003B	SAMP	1	113818.6	113178.1	100.57	PASS	70-125	80173.6	89091.8	89.99	PASS	70-125
N023028-003B	SAMP	5	119079.9	113178.1	105.21	PASS	70-125	90324.8	89091.8	101.38	PASS	70-125
N023029-001B	SAMP	1	105283.5	113178.1	93.025	PASS	70-125	68798.9	89091.8	77.22	PASS	70-125
N023029-001B	SAMP	5	121643.4	113178.1	107.48	PASS	70-125	88207.2	89091.8	99.007	PASS	70-125
N023029-002B	SAMP	1	110047.3	113178.1	97.23	PASS	70-125	73351.7	89091.8	82.33	PASS	70-125
N023029-002B	SAMP	5	124781.9	113178.1	110.25	PASS	70-125	90966.5	89091.8	102.1	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	117803	113178.1	104.09	PASS	70-125	79999.7	89091.8	89.79	PASS	70-125
N023029-003B	SAMP	5	125346.5	113178.1	110.75	PASS	70-125	94758.8	89091.8	106.36	PASS	70-125
CCV9	CCV	1	125149	113178.1	110.58	PASS	70-125	98921.4	89091.8	111.03	PASS	70-125
CCB9	CCB	1	118731.8	113178.1	104.91	PASS	70-125	95396.6	89091.8	107.08	PASS	70-125
N023029-004B	SAMP	1	118602.2	113178.1	104.79	PASS	70-125	86454.5	89091.8	97.04	PASS	70-125
N023029-004B	SAMP	5	120916.7	113178.1	106.84	PASS	70-125	94547.8	89091.8	106.12	PASS	70-125
N023029-005B	SAMP	1	113665.9	113178.1	100.43	PASS	70-125	81379.3	89091.8	91.34	PASS	70-125
N023029-005B	SAMP	5	121044.2	113178.1	106.95	PASS	70-125	93340.3	89091.8	104.77	PASS	70-125
CCV10	CCV	1	120403.9	113178.1	106.38	PASS	70-125	95316.2	89091.8	106.99	PASS	70-125
CCB10	CCB	1	114769.8	113178.1	101.41	PASS	70-125	91727.2	89091.8	102.96	PASS	70-125
LLCCV3	CCV2	1	126677.5	113178.1	111.93	PASS	70-125	101333.3	89091.8	113.74	PASS	70-125
ICSA4	ICSA	1	127664.1	113178.1	112.8	PASS	70-125	92473.7	89091.8	103.8	PASS	70-125
ICSAB4	ICSAB	1	121966.7	113178.1	107.77	PASS	70-125	84537.8	89091.8	94.89	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	110414	110414	100	PASS	70-125	3080409.8	3080409.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	110623.5	110414	100.19	PASS	70-125	3133695.9	3080409.8	101.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	110306.7	110414	99.9	PASS	70-125	3121173.6	3080409.8	101.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	108093.9	110414	97.9	PASS	70-125	3091363.3	3080409.8	100.36	PASS	70-125
Std4-10/100 ppb	ICAL	1	106640.2	110414	96.58	PASS	70-125	3061200.8	3080409.8	99.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	108806.3	110414	98.54	PASS	70-125	3041671.3	3080409.8	98.74	PASS	70-125
Std6-40/400 ppb	ICAL	1	104974.8	110414	95.074	PASS	70-125	2989323.7	3080409.8	97.043	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98972.1	110414	89.64	PASS	70-125	2869890	3080409.8	93.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	96626.3	110414	87.51	PASS	70-125	2816893.8	3080409.8	91.45	PASS	70-125
ICV	ICV	1	109770.5	110414	99.42	PASS	70-125	3182725.6	3080409.8	103.32	PASS	70-125
ICB	ICB	1	97530	110414	88.33	PASS	70-125	2856016.3	3080409.8	92.72	PASS	70-125
LLICV	CCV1	1	108245.1	110414	98.036	PASS	70-125	3153043.3	3080409.8	102.36	PASS	70-125
ICSA1	ICSA	1	101109.7	110414	91.57	PASS	70-125	2794445.7	3080409.8	90.72	PASS	70-125
ICSAB1	ICSAB	1	99923.9	110414	90.5	PASS	70-125	2810672.9	3080409.8	91.24	PASS	70-125
LLICV	CCV1	1	130055.7	110414	117.79	PASS	70-125	3495165.4	3080409.8	113.46	PASS	70-125
CCV1	CCV	1	124959	110414	113.17	PASS	70-125	3262670.8	3080409.8	105.92	PASS	70-125
CCB1	CCB	1	120040.3	110414	108.72	PASS	70-125	3125253.1	3080409.8	101.46	PASS	70-125
CCV2	CCV	1	120769.6	110414	109.38	PASS	70-125	3080994.5	3080409.8	100.02	PASS	70-125
CCB2	CCB	1	116954.4	110414	105.92	PASS	70-125	3064233.6	3080409.8	99.47	PASS	70-125
CCV3	CCV	1	118039.8	110414	106.91	PASS	70-125	3063413.8	3080409.8	99.45	PASS	70-125
CCB3	CCB	1	116273.6	110414	105.31	PASS	70-125	3034069.8	3080409.8	98.5	PASS	70-125
CCV4	CCV	1	104345.7	110414	94.5	PASS	70-125	2917095.9	3080409.8	94.7	PASS	70-125
CCB4	CCB	1	103875.2	110414	94.078	PASS	70-125	2886174.1	3080409.8	93.69	PASS	70-125
LLCCV1	CCV2	1	115487.4	110414	104.59	PASS	70-125	3193504.6	3080409.8	103.67	PASS	70-125
ICSA2	ICSA	1	100654.5	110414	91.16	PASS	70-125	2692887.7	3080409.8	87.42	PASS	70-125
ICSAB2	ICSAB	1	110007.7	110414	99.63	PASS	70-125	2842872.9	3080409.8	92.29	PASS	70-125
MB-61257	MBLK	1	116702.9	110414	105.7	PASS	70-125	3165068.8	3080409.8	102.75	PASS	70-125
LCS-61257	LCS	1	123953.6	110414	112.26	PASS	70-125	3401856.3	3080409.8	110.44	PASS	70-125
N022998-001B	SAMP	1	54232.2	110414	49.12	NR!	70-125	1440984.9	3080409.8	46.78	NR!	70-125
N022998-001B	SAMP	5	92539.5	110414	83.81	PASS	70-125	2455300.7	3080409.8	79.71	PASS	70-125
N022998-001B	SAMP	25	114693.3	110414	103.88	PASS	70-125	2956995.2	3080409.8	95.99	PASS	70-125
N022998-001B-PS	PS	1	59668.8	110414	54.041	NR!	70-125	1530700.5	3080409.8	49.69	NR!	70-125
N022998-001B-PS	PS	5	95765.6	110414	86.73	PASS	70-125	2538616.6	3080409.8	82.41	PASS	70-125
CCV5	CCV	1	89860.9	110414	81.39	PASS	70-125	2548747.2	3080409.8	82.74	PASS	70-125
CCB5	CCB	1	125081.2	110414	113.28	PASS	70-125	3339266.8	3080409.8	108.4	PASS	70-125
N022998-001B-MS	MS	1	56952.3	110414	51.58	NR!	70-125	1490092.9	3080409.8	48.37	NR!	70-125
N022998-001B-MS	MS	5	94731.1	110414	85.8	PASS	70-125	2508287.4	3080409.8	81.43	PASS	70-125
N022998-001B-MSD	MSD	1	57007.3	110414	51.63	NR!	70-125	1557953.4	3080409.8	50.58	NR!	70-125
N022998-001B-MSD	MSD	5	96158.2	110414	87.089	PASS	70-125	2495511.7	3080409.8	81.012	PASS	70-125
N022998-002B	SAMP	1	79566.5	110414	72.062	PASS	70-125	2094891.7	3080409.8	68.007	NR!	70-125
N022998-002B	SAMP	5	107207.5	110414	97.096	PASS	70-125	2772073.4	3080409.8	89.99	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	65055.9	110414	58.92	NR!	70-125	1734696.2	3080409.8	56.31	NR!	70-125
N022998-003B	SAMP	5	102338.5	110414	92.69	PASS	70-125	2652097.7	3080409.8	86.096	PASS	70-125
N022998-004B	SAMP	1	61089.4	110414	55.33	NR!	70-125	1590566	3080409.8	51.63	NR!	70-125
N022998-004B	SAMP	5	99598.1	110414	90.2	PASS	70-125	2543136.1	3080409.8	82.56	PASS	70-125
CCV6	CCV	1	132014.6	110414	119.56	PASS	70-125	3451492.3	3080409.8	112.05	PASS	70-125
CCB6	CCB	1	125895.3	110414	114.02	PASS	70-125	3333215.3	3080409.8	108.21	PASS	70-125
N023014-001B	SAMP	1	88717.1	110414	80.35	PASS	70-125	2253605.7	3080409.8	73.16	PASS	70-125
N023014-001B	SAMP	5	109229.2	110414	98.93	PASS	70-125	2795474.2	3080409.8	90.75	PASS	70-125
N023014-001B	SAMP	250	126690.5	110414	114.74	PASS	70-125	3283437.3	3080409.8	106.59	PASS	70-125
N023014-002B	SAMP	1	87552	110414	79.29	PASS	70-125	2247324.3	3080409.8	72.96	PASS	70-125
N023014-002B	SAMP	5	106822.8	110414	96.75	PASS	70-125	2755769.5	3080409.8	89.46	PASS	70-125
N023014-002B	SAMP	250	124949	110414	113.16	PASS	70-125	3203868.4	3080409.8	104.01	PASS	70-125
N023014-003B	SAMP	1	75489.2	110414	68.37	NR!	70-125	1909854	3080409.8	62	NR!	70-125
N023014-003B	SAMP	5	104813.9	110414	94.93	PASS	70-125	2682897.6	3080409.8	87.095	PASS	70-125
N023014-004B	SAMP	1	96370.5	110414	87.28	PASS	70-125	2427167	3080409.8	78.79	PASS	70-125
N023014-004B	SAMP	5	116382.3	110414	105.41	PASS	70-125	2894830	3080409.8	93.98	PASS	70-125
CCV7	CCV	1	127308.3	110414	115.3	PASS	70-125	3259577.7	3080409.8	105.82	PASS	70-125
CCB7	CCB	1	120980	110414	109.57	PASS	70-125	3154471.8	3080409.8	102.4	PASS	70-125
N023014-005B	SAMP	1	54768.4	110414	49.6	NR!	70-125	1391496.5	3080409.8	45.17	NR!	70-125
N023014-005B	SAMP	5	94334.2	110414	85.44	PASS	70-125	2414291.3	3080409.8	78.38	PASS	70-125
N023014-006B	SAMP	1	71992.9	110414	65.2	NR!	70-125	1883239.4	3080409.8	61.14	NR!	70-125
N023014-006B	SAMP	5	105256.9	110414	95.33	PASS	70-125	2659160.4	3080409.8	86.32	PASS	70-125
N023014-007B	SAMP	1	62073.3	110414	56.22	NR!	70-125	1558976.9	3080409.8	50.61	NR!	70-125
N023014-007B	SAMP	5	98779.2	110414	89.46	PASS	70-125	2537415.3	3080409.8	82.37	PASS	70-125
N023014-008B	SAMP	1	79070.5	110414	71.61	PASS	70-125	1923421.1	3080409.8	62.44	NR!	70-125
N023014-008B	SAMP	5	108137.3	110414	97.94	PASS	70-125	2715346.6	3080409.8	88.15	PASS	70-125
N023028-001B	SAMP	1	102608.3	110414	92.93	PASS	70-125	2592480.4	3080409.8	84.16	PASS	70-125
N023028-001B	SAMP	5	121131.7	110414	109.71	PASS	70-125	2972250.4	3080409.8	96.49	PASS	70-125
CCV8	CCV	1	128507.4	110414	116.39	PASS	70-125	3275355.3	3080409.8	106.33	PASS	70-125
CCB8	CCB	1	123467.1	110414	111.82	PASS	70-125	3195317.7	3080409.8	103.73	PASS	70-125
LLCCV2	CCV2	1	136373.8	110414	123.51	PASS	70-125	3515155.6	3080409.8	114.11	PASS	70-125
ICSA3	ICSA	1	117668	110414	106.57	PASS	70-125	2899354.2	3080409.8	94.12	PASS	70-125
ICSAB3	ICSAB	1	95685.2	110414	86.66	PASS	70-125	2616310.3	3080409.8	84.93	PASS	70-125
N023028-002B	SAMP	1	100173.1	110414	90.72	PASS	70-125	2376633.9	3080409.8	77.15	PASS	70-125
N023028-002B	SAMP	5	116210.2	110414	105.25	PASS	70-125	2882119	3080409.8	93.56	PASS	70-125
N023028-003B	SAMP	1	98596.8	110414	89.3	PASS	70-125	2412679	3080409.8	78.32	PASS	70-125
N023028-003B	SAMP	5	112973.9	110414	102.32	PASS	70-125	2825190.1	3080409.8	91.71	PASS	70-125
N023029-001B	SAMP	1	80948.6	110414	73.31	PASS	70-125	2030032.3	3080409.8	65.9	NR!	70-125
N023029-001B	SAMP	5	111184.1	110414	100.7	PASS	70-125	2703645.5	3080409.8	87.77	PASS	70-125
N023029-002B	SAMP	1	87330	110414	79.093	PASS	70-125	2123620.9	3080409.8	68.94	NR!	70-125
N023029-002B	SAMP	5	113187.7	110414	102.51	PASS	70-125	2751614.3	3080409.8	89.33	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	95657.3	110414	86.64	PASS	70-125	2374490.4	3080409.8	77.084	PASS	70-125
N023029-003B	SAMP	5	118315.8	110414	107.16	PASS	70-125	2878459.7	3080409.8	93.44	PASS	70-125
CCV9	CCV	1	126961.3	110414	114.99	PASS	70-125	3184420.6	3080409.8	103.38	PASS	70-125
CCB9	CCB	1	120860.1	110414	109.46	PASS	70-125	3107962	3080409.8	100.89	PASS	70-125
N023029-004B	SAMP	1	105005	110414	95.1	PASS	70-125	2621429	3080409.8	85.1	PASS	70-125
N023029-004B	SAMP	5	119095.4	110414	107.86	PASS	70-125	2939954.5	3080409.8	95.44	PASS	70-125
N023029-005B	SAMP	1	100713.2	110414	91.21	PASS	70-125	2534183.3	3080409.8	82.27	PASS	70-125
N023029-005B	SAMP	5	118321.3	110414	107.16	PASS	70-125	2925532.7	3080409.8	94.97	PASS	70-125
CCV10	CCV	1	122655.8	110414	111.09	PASS	70-125	3118022	3080409.8	101.22	PASS	70-125
CCB10	CCB	1	118692.2	110414	107.5	PASS	70-125	3051295.5	3080409.8	99.055	PASS	70-125
LLCCV3	CCV2	1	131425.1	110414	119.03	PASS	70-125	3334095.4	3080409.8	108.24	PASS	70-125
ICSA4	ICSA	1	114636.7	110414	103.82	PASS	70-125	2803239.2	3080409.8	91.002	PASS	70-125
ICSAB4	ICSAB	1	99274.2	110414	89.91	PASS	70-125	2647254	3080409.8	85.94	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023014
Test Method: EPA 6020
Analysis Date: 2/19/2017

Matrix: Groundwater
Batch No.: 61257

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022998-001B DT 25X	Arsenic	ug/L	2.199986	NA	2.106512	4.44%	10
N022998-001B DT 5X	Chromium	ug/L	19.37169	NA	18.20078	6.43%	10
N022998-001B DT 5X	Manganese	ug/L	14.44354	PASS	13.45814	7.32%	10
N022998-001B DT 25X	Molybdenum	ug/L	190.0634	PASS	195.7282	2.89%	10
N022998-001B DT 25X	Selenium	ug/L	1.197818	NA	0.431914	177.33%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.487	0.50	100.0	13.46	75.0	80	120				S

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.694	0.50	10.00	2.107	95.9	80	120				
Molybdenum	211.791	2.5	10.00	195.7	161	80	120				S
Selenium	8.691	2.5	10.00	0.4319	82.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023014
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N022998-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.403	1.0	10.00	18.20	82.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

RAW DATA

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

Nancy 2/21/2017

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N022985-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1101	A0219001	RINSE,RINSE,1	rinse	1.000				
2	C:\ICPMH\1\METHODS\DEFAULT.M	CalBlk	1101	A0219002	Cal Blank,IBLK,1	initial blank	Level 1				
3	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1102	A0219003	Std-0.1/1 ppb	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C	Level 2				
4	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1103	A0219004	Std-0.5/5 ppb	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C	Level 3				
5	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1104	A0219005	Std-5/50 ppb	5/50 ug/L, 1.25<50mL of 2MWST- 170107C	Level 4				
6	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1105	A0219006	Std-10/100 ppb	10/100 ug/L,2.5<50mL of 2MWST- 170107C	Level 5				
7	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1106	A0219007	Std-20/200 ppb	20/200 ug/L,5<50mL of 2MWST- 170107C	Level 6				
8	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1107	A0219008	Std-40/400 ppb	40/400 ug/L, 10<50mL of 2MWST- 170107C	Level 7				
9	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1206	A0219009	Std-100/1000 ppb	100/1000ug/L,10<20mL of 2MWST- 170107C	Level 8				
10	C:\ICPMH\1\METHODS\DEFAULT.M	CalStd	1207	A0219010	Std-200/2000 ppb	200/2000ug/L, 2MWST- 170107C	Level 9				
11	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1301	A0219011	ICV,ICV,1	2MWST- 170107F	1.000				
12	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1302	A0219012	ICB,ICB,1		1.000				
13	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219013	LLICV,CCV1,1	2MWST- 170107G	1.000				
14	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219014	ICSA1,ICSA,1	2MWST- 170107H	1.000				
15	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219015	ICSAB1,ICSAB,1	2MWST- 170107I	1.000				
16	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICV	1202	A0219016	LLICV,CCV1,1	2MWST- 170107G	1.000				
17	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3101	A0219017	MB-61298,MBLK,1		1.000				
18	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3102	A0219018	LCS-61298,LCS,1		1.000				
19	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3103	A0219019	N023063-001B,SAMP,1		1.000				
20	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3104	A0219020	N023063-001B,SAMP,5		1.000				
21	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3105	A0219021	N023063-001B-PS,PS,1		1.000				
22	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3106	A0219022	N023063-001B-MS,MS,1		1.000				
23	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3107	A0219023	N023063-001B-MSD,MSD,1		1.000				
24	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3108	A0219024	N022985-001B,SAMP,5		1.000				
25	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3109	A0219025	N022985-003B,SAMP,5		1.000				
26	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3110	A0219026	N022985-004B,SAMP,5		1.000				
27	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219027	CCV1,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
28	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219028	CCB1,CCB,1		1.000				
29	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3201	A0219029	MB-61302,MBLK,1		1.000				
30	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3202	A0219030	LCS-61302,LCS,1		1.000				
31	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3203	A0219031	N023107-001C,SAMP,1		1.000				
32	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3204	A0219032	N023107-001C,SAMP,5		1.000				
33	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3205	A0219033	N023107-001C-PS,PS,1		1.000				
34	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3206	A0219034	N023107-001C-MS,MS,1		1.000				
35	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3207	A0219035	N023107-001C-MSD,MSD,1		1.000				
36	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3208	A0219036	N023107-002C,SAMP,1		1.000				
37	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3209	A0219037	N023107-003C,SAMP,1		1.000				
38	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3210	A0219038	N023107-004C,SAMP,1		1.000				
39	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219039	CCV2,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
40	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219040	CCB2,CCB,1		1.000				
41	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3211	A0219041	N023137-001A,SAMP,1		1.000				
42	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3212	A0219042	N023137-002A,SAMP,1		1.000				
43	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3301	A0219043	N023137-003A,SAMP,1		1.000				
44	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3302	A0219044	N023137-004A,SAMP,1		1.000				
45	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3303	A0219045	N023137-005A,SAMP,1		1.000				
46	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3304	A0219046	N023137-006A,SAMP,1		1.000				
47	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3305	A0219047	N023063-001B,SAMP,25		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
48	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3306	A0219048	N023063-001B-PS,PS,5		1.000				
49	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3307	A0219049	N023063-001B-MS,MS,5		1.000				
50	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3308	A0219050	N023063-001B-MSD,MSD,5		1.000				
51	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219051	CCV3,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
52	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219052	CCB3,CCB,1		1.000				
53	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3309	A0219053	N022985-003B,SAMP,5		1.000				
54	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3310	A0219054	N023107-001C,SAMP,25		1.000				
55	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3311	A0219055	N023107-001C,SAMP,125		1.000				
56	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3312	A0219056	N023107-001C-PS,PS,25		1.000				
57	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3401	A0219057	N023107-001C-MS,MS,25		1.000				
58	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3402	A0219058	N023107-001C-MSD,MSD,25		1.000				
59	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3403	A0219059	N023107-002C,SAMP,10		1.000				
60	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3404	A0219060	N023107-003C,SAMP,10		1.000				
61	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3405	A0219061	N023107-004C,SAMP,5		1.000				
62	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3406	A0219062	N023137-001A,SAMP,2		1.000				
63	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219063	CCV4,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
64	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219064	CCB4,CCB,1		1.000				
65	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219065	LLCCV1,CCV2,1	2MWST- 170107G	1.000				
66	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219066	ICSA2,ICSA,1	2MWST- 170107H	1.000				
67	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219067	ICSAB2,ICSAB,1	2MWST- 170107I	1.000				
68	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3407	A0219068	N023137-002A,SAMP,5		1.000				
69	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3408	A0219069	N023137-003A,SAMP,5		1.000				
70	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	3409	A0219070	N023137-004A,SAMP,5		1.000				
71	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2101	A0219071	MB-61257,MBLK,1		1.000				
72	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2102	A0219072	LCS-61257,LCS,1		1.000				
73	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2103	A0219073	N022998-001B,SAMP,1		1.000				
74	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2104	A0219074	N022998-001B,SAMP,5		1.000				
75	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2105	A0219075	N022998-001B,SAMP,25		1.000				
76	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2106	A0219076	N022998-001B-PS,PS,1		1.000				
77	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2107	A0219077	N022998-001B-PS,PS,5		1.000				
78	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219078	CCV5,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
79	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219079	CCB5,CCB,1		1.000				
80	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2108	A0219080	N022998-001B-MS,MS,1		1.000				
81	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2109	A0219081	N022998-001B-MS,MS,5		1.000				
82	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2110	A0219082	N022998-001B-MSD,MSD,1		1.000				
83	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2111	A0219083	N022998-001B-MSD,MSD,5		1.000				
84	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2112	A0219084	N022998-002B,SAMP,1		1.000				
85	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2201	A0219085	N022998-002B,SAMP,5		1.000				
86	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2202	A0219086	N022998-003B,SAMP,1		1.000				
87	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2203	A0219087	N022998-003B,SAMP,5		1.000				
88	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2204	A0219088	N022998-004B,SAMP,1		1.000				
89	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2205	A0219089	N022998-004B,SAMP,5		1.000				
90	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219090	CCV6,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
91	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219091	CCB6,CCB,1		1.000				
92	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2206	A0219092	N023014-001B,SAMP,1		1.000				
93	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2207	A0219093	N023014-001B,SAMP,5		1.000				
94	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2208	A0219094	N023014-001B,SAMP,250		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2209	A0219095	N023014-002B,SAMP,1		1.000				
96	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2210	A0219096	N023014-002B,SAMP,5		1.000				
97	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2211	A0219097	N023014-002B,SAMP,250		1.000				
98	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2212	A0219098	N023014-003B,SAMP,1		1.000				
99	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2301	A0219099	N023014-003B,SAMP,5		1.000				
100	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2302	A0219100	N023014-004B,SAMP,1		1.000				
101	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2303	A0219101	N023014-004B,SAMP,5		1.000				
102	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219102	CCV7,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
103	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219103	CCB7,CCB,1		1.000				
104	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2304	A0219104	N023014-005B,SAMP,1		1.000				
105	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2305	A0219105	N023014-005B,SAMP,5		1.000				
106	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2306	A0219106	N023014-006B,SAMP,1		1.000				
107	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2307	A0219107	N023014-006B,SAMP,5		1.000				
108	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2308	A0219108	N023014-007B,SAMP,1		1.000				
109	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2309	A0219109	N023014-007B,SAMP,5		1.000				
110	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2310	A0219110	N023014-008B,SAMP,1		1.000				
111	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2311	A0219111	N023014-008B,SAMP,5		1.000				
112	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2312	A0219112	N023028-001B,SAMP,1		1.000				
113	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2401	A0219113	N023028-001B,SAMP,5		1.000				
114	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219114	CCV8,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
115	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219115	CCB8,CCB,1		1.000				
116	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219116	LLCCV2,CCV2,1	2MWST- 170107G	1.000				
117	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219117	ICSA3,ICSA,1	2MWST- 170107H	1.000				
118	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219118	ICSAB3,ICSAB,1	2MWST- 170107I	1.000				
119	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2402	A0219119	N023028-002B,SAMP,1		1.000				
120	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2403	A0219120	N023028-002B,SAMP,5		1.000				
121	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2404	A0219121	N023028-003B,SAMP,1		1.000				
122	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2405	A0219122	N023028-003B,SAMP,5		1.000				
123	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2406	A0219123	N023029-001B,SAMP,1		1.000				
124	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2407	A0219124	N023029-001B,SAMP,5		1.000				
125	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2408	A0219125	N023029-002B,SAMP,1		1.000				
126	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2409	A0219126	N023029-002B,SAMP,5		1.000				
127	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2410	A0219127	N023029-003B,SAMP,1		1.000				
128	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2411	A0219128	N023029-003B,SAMP,5		1.000				
129	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219129	CCV9,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
130	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219130	CCB9,CCB,1		1.000				
131	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2412	A0219131	N023029-004B,SAMP,1		1.000				
132	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2501	A0219132	N023029-004B,SAMP,5		1.000				
133	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2502	A0219133	N023029-005B,SAMP,1		1.000				
134	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	2503	A0219134	N023029-005B,SAMP,5		1.000				
135	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCV	1106	A0219135	CCV10,CCV,1	20/200 ug/L,5<50mL of 2MWST- 170107C	1.000				
136	C:\ICPMH\1\METHODS\DEFAULT.M	6-CCB	1101	A0219136	CCB10,CCB,1		1.000				
137	C:\ICPMH\1\METHODS\DEFAULT.M	6-ICB	1202	A0219137	LLCCV3,CCV2,1	2MWST- 170107G	1.000				
138	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1303	A0219138	ICSA4,ICSA,1	2MWST- 170107H	1.000				
139	C:\ICPMH\1\METHODS\DEFAULT.M	Sample	1304	A0219139	ICSAB4,ICSAB,1	2MWST- 170107I	1.000				

Quantitation Report

File Name	A0219002.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:06
Sample Name	Cal Blank,IBLK,1
Sample Type	CalBlk
Comment	initial blank
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	---	20.00	1.142E-05	Pulse	0.30	3
Na	23	45	2	0.000	ppb	---	100,319.33	8.870E-01	Pulse	0.30	3
Mg	26	45	2	0.000	ppb	---	94.45	8.369E-04	Pulse	0.30	3
Al	27	45	2	0.000	ppb	---	383.35	3.396E-03	Pulse	0.30	3
K	39	45	2	0.000	ppb	---	13,609.40	1.203E-01	Pulse	0.30	3
Ca	44	45	3	0.000	ppb	---	19,679.07	4.211E-03	Pulse	0.30	3
V	51	45	2	0.000	ppb	---	770.05	6.807E-03	Pulse	0.30	3
Cr	52	45	2	0.000	ppb	---	1,701.17	1.504E-02	Pulse	0.30	3
Mn	55	45	2	0.000	ppb	---	382.39	3.378E-03	Pulse	0.30	3
Fe	56	45	2	0.000	ppb	---	2,163.24	1.914E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	---	27.67	2.439E-04	Pulse	0.30	3
Ni	60	72	2	0.000	ppb	---	261.00	2.930E-03	Pulse	0.30	3
Cu	63	72	2	0.000	ppb	---	5,554.85	6.234E-02	Pulse	0.30	3
Zn	66	72	2	0.000	ppb	---	2,730.99	3.066E-02	Pulse	0.30	3
As	75	72	2	0.000	ppb	---	13.78	1.547E-04	Pulse	0.75	3
Se	78	72	1	0.000	ppb	---	1.11	9.973E-06	Pulse	0.30	3
Mo	95	103	2	0.000	ppb	---	24.44	7.897E-06	Pulse	0.30	3
Ag	107	103	3	0.000	ppb	---	3,653.80	4.352E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	---	52.46	5.912E-06	Pulse	0.30	3
Sb	121	115	3	0.000	ppb	---	2,519.20	2.843E-04	Pulse	0.30	3
Ba	137	159	3	0.000	ppb	---	164.82	1.315E-05	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	---	1,575.72	2.152E-04	Pulse	0.30	3
Pb	208	209	3	0.000	ppb	---	2,256.56	3.081E-04	Pulse	0.30	3
U	238	209	3	0.000	ppb	---	219.05	2.992E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,745,197.15	1.06	100.0	Analog	0.30	3
2	Sc	45	113,178.09	2.67	100.0	Pulse	0.30	3
3	Sc	45	4,673,438.68	0.48	100.0	Analog	0.30	3
1	Ge	72	110,413.98	1.14	100.0	Pulse	0.30	3

2	Ge	72	89,091.79	0.47	100.0	Pulse	0.30	3
2	Rh	103	3,080,409.78	1.47	100.0	Analog	0.30	3
3	Rh	103	8,395,890.78	0.41	100.0	Analog	0.30	3
3	In	115	8,862,188.68	0.65	100.0	Analog	0.30	3
3	Tb	159	12,541,647.73	1.07	100.0	Analog	0.30	3
3	Bi	209	7,325,168.78	0.44	100.0	Analog	0.30	3

Quantitation Report

FOR AS ONLY

File Name	A0219003.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:11
Sample Name	Std-0.1/1 ppb
Sample Type	CalStd
Comment	0.1/1 ug/L, 0.025<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.106	ppb	4.99	1,156.76	6.542E-04	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	96,141.90	8.275E-01	Pulse	0.30	3
Mg	26	45	2	1.232	ppb	32.15	262.23	2.250E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	301.11	2.595E-03	Pulse	0.30	3
K	39	45	2	1.987	ppb	59.15	14,878.39	1.281E-01	Pulse	0.30	3
Ca	44	45	3	6.198	ppb	7.90	34,202.31	7.209E-03	Pulse	0.30	3
V	51	45	2	0.103	ppb	14.78	1,563.48	1.346E-02	Pulse	0.30	3
Cr	52	45	2	0.093	ppb	20.47	2,702.45	2.328E-02	Pulse	0.30	3
Mn	55	45	2	0.136	ppb	14.46	1,089.80	9.380E-03	Pulse	0.30	3
Fe	56	45	2	0.358	ppb	8.96	5,283.22	4.542E-02	Pulse	0.30	3
Co	59	45	2	0.100	ppb	5.36	2,041.21	1.755E-02	Pulse	0.30	3
Ni	60	72	2	0.340	ppb	3.43	2,137.85	2.350E-02	Pulse	0.30	3
Cu	63	72	2	0.172	ppb	2.59	8,198.21	9.010E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,675.36	2.941E-02	Pulse	0.30	3
As	75	72	2	0.114	ppb	6.80	134.22	1.475E-03	Pulse	0.75	3
Se	78	72	1	0.113	ppb	29.10	64.45	5.826E-04	Pulse	0.30	3
Mo	95	103	2	0.093	ppb	7.19	672.27	2.146E-04	Pulse	0.30	3
Ag	107	103	3	0.028	ppb	13.13	5,746.21	6.819E-04	Pulse	0.30	3
Cd	111	115	3	0.103	ppb	3.66	1,757.23	1.979E-04	Pulse	0.30	3
Sb	121	115	3	0.097	ppb	3.14	7,639.92	8.605E-04	Pulse	0.30	3
Ba	137	159	3	0.179	ppb	0.38	3,991.29	3.164E-04	Pulse	0.30	3
Tl	205	209	3	0.100	ppb	1.14	14,921.41	2.026E-03	Pulse	0.30	3
Pb	208	209	3	0.109	ppb	1.06	21,974.48	2.983E-03	Pulse	0.30	3
U	238	209	3	0.103	ppb	1.84	19,908.93	2.703E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,768,527.68	1.24	101.3	Analog	0.30	3
2	Sc	45	116,237.50	2.46	102.7	Pulse	0.30	3
3	Sc	45	4,744,825.90	0.34	101.5	Analog	0.30	3
1	Ge	72	110,623.51	0.67	100.2	Pulse	0.30	3

2	Ge	72	90,988.56	1.03	102.1	Pulse	0.30	3
2	Rh	103	3,133,695.89	0.78	101.7	Analog	0.30	3
3	Rh	103	8,427,348.07	0.23	100.4	Analog	0.30	3
3	In	115	8,878,910.48	0.26	100.2	Analog	0.30	3
3	Tb	159	12,613,397.45	0.43	100.6	Analog	0.30	3
3	Bi	209	7,365,862.53	0.08	100.6	Analog	0.30	3

Quantitation Report

File Name	A0219004.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:17
Sample Name	Std-0.5/5 ppb
Sample Type	CalStd
Comment	0.5/5 ug/L, 0.125<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.494	ppb	4.61	5,254.36	3.014E-03	Pulse	0.30	3
Na	23	45	2	9.151	ppb	7.27	114,787.42	1.002E+00	Pulse	0.30	3
Mg	26	45	2	6.869	ppb	7.36	1,000.08	8.717E-03	Pulse	0.30	3
Al	27	45	2	0.073	ppb	203.15	406.60	3.546E-03	Pulse	0.30	3
K	39	45	2	5.609	ppb	9.44	16,298.60	1.423E-01	Pulse	0.30	3
Ca	44	45	3	24.364	ppb	2.49	74,258.27	1.599E-02	Pulse	0.30	3
V	51	45	2	0.525	ppb	4.67	4,653.09	4.063E-02	Pulse	0.30	3
Cr	52	45	2	0.498	ppb	2.29	6,757.05	5.898E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	5.75	3,053.86	2.667E-02	Pulse	0.30	3
Fe	56	45	2	2.531	ppb	22.77	23,573.75	2.050E-01	Pulse	0.30	3
Co	59	45	2	0.529	ppb	2.25	10,504.68	9.169E-02	Pulse	0.30	3
Ni	60	72	2	0.536	ppb	5.39	3,204.59	3.533E-02	Pulse	0.30	3
Cu	63	72	2	0.557	ppb	5.04	13,805.67	1.523E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,728.44	3.009E-02	Pulse	0.30	3
As	75	72	2	0.489	ppb	4.77	528.91	5.833E-03	Pulse	0.75	3
Se	78	72	1	0.446	ppb	33.30	250.01	2.267E-03	Pulse	0.30	3
Mo	95	103	2	0.490	ppb	7.37	3,440.52	1.102E-03	Pulse	0.30	3
Ag	107	103	3	0.394	ppb	5.64	33,077.96	3.957E-03	Pulse	0.30	3
Cd	111	115	3	0.525	ppb	0.78	8,646.27	9.824E-04	Pulse	0.30	3
Sb	121	115	3	0.507	ppb	1.50	29,127.89	3.310E-03	Pulse	0.30	3
Ba	137	159	3	0.601	ppb	2.94	12,899.76	1.029E-03	Pulse	0.30	3
Tl	205	209	3	0.522	ppb	0.71	71,015.11	9.665E-03	Pulse	0.30	3
Pb	208	209	3	0.533	ppb	1.24	98,242.79	1.337E-02	Pulse	0.30	3
U	238	209	3	0.512	ppb	0.88	98,017.13	1.334E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,743,461.77	0.40	99.9	Analog	0.30	3
2	Sc	45	114,588.58	2.69	101.2	Pulse	0.30	3
3	Sc	45	4,642,707.95	0.55	99.3	Analog	0.30	3
1	Ge	72	110,306.75	0.83	99.9	Pulse	0.30	3

2	Ge	72	90,684.86	0.61	101.8	Pulse	0.30	3
2	Rh	103	3,121,173.56	1.42	101.3	Analog	0.30	3
3	Rh	103	8,361,108.14	0.61	99.6	Analog	0.30	3
3	In	115	8,801,059.80	0.05	99.3	Analog	0.30	3
3	Tb	159	12,541,196.06	0.42	100.0	Analog	0.30	3
3	Bi	209	7,347,368.57	0.26	100.3	Analog	0.30	3

Quantitation Report

File Name	A0219005.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:22
Sample Name	Std-5/50 ppb
Sample Type	CalStd
Comment	5/50 ug/L, 1.25<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	5.002	ppb	2.04	51,903.06	3.042E-02	Pulse	0.30	3
Na	23	45	2	43.373	ppb	5.73	162,792.83	1.430E+00	Pulse	0.30	3
Mg	26	45	2	51.382	ppb	3.54	6,803.91	5.978E-02	Pulse	0.30	3
Al	27	45	2	5.296	ppb	11.02	1,632.88	1.432E-02	Pulse	0.30	3
K	39	45	2	52.614	ppb	5.97	37,156.80	3.265E-01	Pulse	0.30	3
Ca	44	45	3	58.655	ppb	0.20	148,393.64	3.258E-02	Pulse	0.30	3
V	51	45	2	5.098	ppb	2.50	38,149.39	3.352E-01	Pulse	0.30	3
Cr	52	45	2	5.066	ppb	2.55	52,586.99	4.620E-01	Pulse	0.30	3
Mn	55	45	2	5.080	ppb	3.50	25,931.08	2.277E-01	Pulse	0.30	3
Fe	56	45	2	5.488	ppb	2.40	48,046.83	4.221E-01	Pulse	0.30	3
Co	59	45	2	5.197	ppb	1.51	102,352.11	8.991E-01	Pulse	0.30	3
Ni	60	72	2	5.148	ppb	2.69	28,141.63	3.144E-01	Pulse	0.30	3
Cu	63	72	2	5.394	ppb	1.04	83,503.46	9.328E-01	Pulse	0.30	3
Zn	66	72	2	4.838	ppb	6.09	11,956.46	1.336E-01	Pulse	0.30	3
As	75	72	2	5.076	ppb	3.25	5,294.71	5.914E-02	Pulse	0.75	3
Se	78	72	1	4.824	ppb	0.66	2,637.01	2.439E-02	Pulse	0.30	3
Mo	95	103	2	4.892	ppb	0.72	33,780.94	1.093E-02	Pulse	0.30	3
Ag	107	103	3	5.049	ppb	0.61	374,991.74	4.553E-02	Pulse	0.30	3
Cd	111	115	3	5.254	ppb	0.34	85,529.48	9.779E-03	Pulse	0.30	3
Sb	121	115	3	5.076	ppb	0.34	267,285.31	3.056E-02	Pulse	0.30	3
Ba	137	159	3	5.306	ppb	0.67	111,359.10	8.978E-03	Pulse	0.30	3
Tl	205	209	3	5.224	ppb	0.93	691,072.37	9.473E-02	Pulse	0.30	3
Pb	208	209	3	5.272	ppb	0.81	945,262.70	1.296E-01	Pulse	0.30	3
U	238	209	3	5.099	ppb	0.10	966,535.00	1.325E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,706,751.38	1.40	97.8	Analog	0.30	3
2	Sc	45	113,872.25	2.65	100.6	Pulse	0.30	3
3	Sc	45	4,554,689.20	0.61	97.5	Analog	0.30	3
1	Ge	72	108,093.94	1.49	97.9	Pulse	0.30	3

2	Ge	72	89,530.76	1.78	100.5	Pulse	0.30	3
2	Rh	103	3,091,363.26	0.66	100.4	Analog	0.30	3
3	Rh	103	8,236,314.88	0.10	98.1	Analog	0.30	3
3	In	115	8,746,631.15	0.21	98.7	Analog	0.30	3
3	Tb	159	12,403,571.48	1.14	98.9	Analog	0.30	3
3	Bi	209	7,295,656.56	0.73	99.6	Analog	0.30	3

Quantitation Report

File Name	A0219006.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:28
Sample Name	Std-10/100 ppb
Sample Type	CalStd
Comment	10/100 ug/L,2.5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.911	ppb	0.83	101,127.25	6.025E-02	Pulse	0.30	3
Na	23	45	2	94.867	ppb	4.40	231,787.62	2.075E+00	Pulse	0.30	3
Mg	26	45	2	103.700	ppb	3.77	13,382.52	1.198E-01	Pulse	0.30	3
Al	27	45	2	10.009	ppb	1.59	2,687.89	2.405E-02	Pulse	0.30	3
K	39	45	2	104.299	ppb	6.61	59,122.46	5.291E-01	Pulse	0.30	3
Ca	44	45	3	111.943	ppb	5.79	259,019.59	5.835E-02	Pulse	0.30	3
V	51	45	2	10.188	ppb	1.67	74,070.37	6.630E-01	Pulse	0.30	3
Cr	52	45	2	10.240	ppb	2.07	102,612.20	9.185E-01	Pulse	0.30	3
Mn	55	45	2	10.146	ppb	1.70	50,434.92	4.514E-01	Pulse	0.30	3
Fe	56	45	2	10.591	ppb	1.56	89,028.62	7.968E-01	Pulse	0.30	3
Co	59	45	2	10.391	ppb	2.13	200,788.67	1.797E+00	Pulse	0.30	3
Ni	60	72	2	10.197	ppb	0.99	54,296.07	6.199E-01	Pulse	0.30	3
Cu	63	72	2	10.599	ppb	0.59	155,262.33	1.773E+00	Pulse	0.30	3
Zn	66	72	2	9.553	ppb	2.42	20,486.30	2.339E-01	Pulse	0.30	3
As	75	72	2	10.066	ppb	0.73	10,259.33	1.171E-01	Pulse	0.75	3
Se	78	72	1	10.023	ppb	3.87	5,404.46	5.068E-02	Pulse	0.30	3
Mo	95	103	2	9.795	ppb	2.59	66,955.02	2.187E-02	Pulse	0.30	3
Ag	107	103	3	10.287	ppb	0.83	749,564.07	9.232E-02	Pulse	0.30	3
Cd	111	115	3	10.448	ppb	0.75	167,578.50	1.944E-02	Pulse	0.30	3
Sb	121	115	3	10.232	ppb	0.18	528,575.58	6.131E-02	Pulse	0.30	3
Ba	137	159	3	10.493	ppb	0.87	218,706.32	1.774E-02	Pulse	0.30	3
Tl	205	209	3	10.214	ppb	2.26	1,344,401.20	1.850E-01	Mix	0.30	3
Pb	208	209	3	10.484	ppb	0.71	1,869,999.38	2.573E-01	Pulse	0.30	3
U	238	209	3	9.932	ppb	1.15	1,874,772.70	2.580E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,678,406.05	0.72	96.2	Analog	0.30	3
2	Sc	45	111,751.86	2.53	98.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,438,519.07	0.16	95.0	Analog	0.30	3
1	Ge	72	106,640.18	0.58	96.6	Pulse	0.30	3
2	Ge	72	87,586.79	1.50	98.3	Pulse	0.30	3
2	Rh	103	3,061,200.75	1.16	99.4	Analog	0.30	3
3	Rh	103	8,119,612.31	0.33	96.7	Analog	0.30	3
3	In	115	8,620,994.48	0.58	97.3	Analog	0.30	3
3	Tb	159	12,325,315.79	0.25	98.3	Analog	0.30	3
3	Bi	209	7,266,841.35	0.54	99.2	Analog	0.30	3

Quantitation Report

File Name	A0219007.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:33
Sample Name	Std-20/200 ppb
Sample Type	CalStd
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.956	ppb	0.72	188,867.47	1.213E-01	Pulse	0.30	3
Na	23	45	2	187.547	ppb	1.23	359,026.92	3.236E+00	Pulse	0.30	3
Mg	26	45	2	199.134	ppb	0.55	25,441.17	2.293E-01	Pulse	0.30	3
Al	27	45	2	20.139	ppb	4.43	4,987.31	4.495E-02	Pulse	0.30	3
K	39	45	2	195.527	ppb	1.54	98,387.08	8.867E-01	Pulse	0.30	3
Ca	44	45	3	210.829	ppb	0.72	443,034.42	1.062E-01	Pulse	0.30	3
V	51	45	2	19.920	ppb	0.17	143,119.81	1.290E+00	Pulse	0.30	3
Cr	52	45	2	20.040	ppb	0.63	197,861.83	1.783E+00	Pulse	0.30	3
Mn	55	45	2	19.815	ppb	1.04	97,459.06	8.783E-01	Pulse	0.30	3
Fe	56	45	2	20.903	ppb	0.16	172,446.18	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.365	ppb	1.03	390,871.54	3.523E+00	Pulse	0.30	3
Ni	60	72	2	20.104	ppb	1.08	106,246.33	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.970	ppb	1.32	300,251.16	3.446E+00	Pulse	0.30	3
Zn	66	72	2	19.975	ppb	2.21	39,703.02	4.557E-01	Pulse	0.30	3
As	75	72	2	19.865	ppb	1.47	20,124.06	2.310E-01	Pulse	0.75	3
Se	78	72	1	19.989	ppb	0.48	10,995.32	1.011E-01	Pulse	0.30	3
Mo	95	103	2	20.722	ppb	0.95	140,715.23	4.627E-02	Pulse	0.30	3
Ag	107	103	3	20.370	ppb	0.32	1,424,841.62	1.824E-01	Analog	0.30	3
Cd	111	115	3	20.828	ppb	1.15	325,994.18	3.874E-02	Pulse	0.30	3
Sb	121	115	3	21.128	ppb	0.98	1,062,798.84	1.263E-01	Pulse	0.30	3
Ba	137	159	3	20.966	ppb	0.72	429,918.99	3.544E-02	Pulse	0.30	3
Tl	205	209	3	20.358	ppb	1.51	2,663,575.62	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.718	ppb	0.19	3,673,493.75	5.082E-01	Analog	0.30	3
U	238	209	3	19.993	ppb	0.62	3,753,705.00	5.193E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,556,934.53	1.12	89.2	Analog	0.30	3
2	Sc	45	110,961.69	0.29	98.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,172,590.56	0.83	89.3	Analog	0.30	3
1	Ge	72	108,806.34	1.25	98.5	Pulse	0.30	3
2	Ge	72	87,134.46	1.19	97.8	Pulse	0.30	3
2	Rh	103	3,041,671.31	1.20	98.7	Analog	0.30	3
3	Rh	103	7,812,911.62	0.16	93.1	Analog	0.30	3
3	In	115	8,414,551.72	0.63	94.9	Analog	0.30	3
3	Tb	159	12,131,089.54	0.53	96.7	Analog	0.30	3
3	Bi	209	7,227,840.80	0.37	98.7	Analog	0.30	3

Quantitation Report

File Name	A0219008.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:39
Sample Name	Std-40/400 ppb
Sample Type	CalStd
Comment	40/400 ug/L, 10<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	40.080	ppb	1.49	366,934.23	2.436E-01	Pulse	0.30	3
Na	23	45	2	388.863	ppb	1.46	624,929.90	5.757E+00	Pulse	0.30	3
Mg	26	45	2	398.728	ppb	0.69	49,748.85	4.583E-01	Pulse	0.30	3
Al	27	45	2	40.207	ppb	1.76	9,373.60	8.635E-02	Pulse	0.30	3
K	39	45	2	394.097	ppb	0.96	180,754.29	1.665E+00	Pulse	0.30	3
Ca	44	45	3	416.120	ppb	0.32	826,132.86	2.055E-01	Pulse	0.30	3
V	51	45	2	40.027	ppb	0.74	280,619.67	2.585E+00	Pulse	0.30	3
Cr	52	45	2	40.099	ppb	1.06	385,693.43	3.553E+00	Pulse	0.30	3
Mn	55	45	2	39.540	ppb	1.05	189,893.86	1.749E+00	Pulse	0.30	3
Fe	56	45	2	41.030	ppb	0.72	329,162.04	3.032E+00	Pulse	0.30	3
Co	59	45	2	40.788	ppb	1.11	765,868.23	7.055E+00	Pulse	0.30	3
Ni	60	72	2	40.819	ppb	0.89	208,279.54	2.473E+00	Pulse	0.30	3
Cu	63	72	2	42.423	ppb	0.50	581,842.58	6.908E+00	Pulse	0.30	3
Zn	66	72	2	40.822	ppb	0.86	75,747.18	8.993E-01	Pulse	0.30	3
As	75	72	2	40.276	ppb	0.72	39,431.14	4.682E-01	Pulse	0.75	3
Se	78	72	1	40.222	ppb	0.61	21,344.72	2.033E-01	Pulse	0.30	3
Mo	95	103	2	40.241	ppb	1.05	268,543.38	8.984E-02	Pulse	0.30	3
Ag	107	103	3	40.169	ppb	0.34	2,753,228.93	3.592E-01	Analog	0.30	3
Cd	111	115	3	41.386	ppb	0.25	632,111.40	7.698E-02	Pulse	0.30	3
Sb	121	115	3	40.201	ppb	0.52	1,971,351.86	2.401E-01	Analog	0.30	3
Ba	137	159	3	41.442	ppb	0.55	836,640.11	7.004E-02	Pulse	0.30	3
Tl	205	209	3	40.269	ppb	0.68	5,164,125.58	7.288E-01	Analog	0.30	3
Pb	208	209	3	40.683	ppb	0.47	7,069,833.78	9.977E-01	Analog	0.30	3
U	238	209	3	39.598	ppb	1.10	7,288,076.41	1.029E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,287.14	1.58	86.3	Analog	0.30	3
2	Sc	45	108,566.74	1.25	95.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,020,657.51	0.38	86.0	Analog	0.30	3
1	Ge	72	104,974.79	0.85	95.1	Pulse	0.30	3
2	Ge	72	84,230.67	1.02	94.5	Pulse	0.30	3
2	Rh	103	2,989,323.74	0.82	97.0	Analog	0.30	3
3	Rh	103	7,664,703.08	0.34	91.3	Analog	0.30	3
3	In	115	8,211,515.63	0.16	92.7	Analog	0.30	3
3	Tb	159	11,945,550.24	0.97	95.2	Analog	0.30	3
3	Bi	209	7,085,985.45	0.58	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219009.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:45
Sample Name	Std-100/1000 ppb
Sample Type	CalStd
Comment	100/1000ug/L,10<20mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	100.637	ppb	0.75	887,847.32	6.117E-01	Pulse	0.30	3
Na	23	45	2	1020.661	ppb	0.63	1,396,207.20	1.367E+01	Analog	0.30	3
Mg	26	45	2	1007.907	ppb	0.30	118,189.64	1.157E+00	Pulse	0.30	3
Al	27	45	2	100.770	ppb	0.79	21,583.91	2.113E-01	Pulse	0.30	3
K	39	45	2	998.022	ppb	1.09	411,854.20	4.032E+00	Pulse	0.30	3
Ca	44	45	3	1002.291	ppb	0.73	1,906,490.67	4.890E-01	Analog	0.30	3
V	51	45	2	101.779	ppb	0.41	670,305.59	6.562E+00	Pulse	0.30	3
Cr	52	45	2	101.948	ppb	0.34	920,291.55	9.010E+00	Pulse	0.30	3
Mn	55	45	2	100.296	ppb	0.41	452,690.94	4.432E+00	Pulse	0.30	3
Fe	56	45	2	103.740	ppb	0.75	780,044.46	7.637E+00	Pulse	0.30	3
Co	59	45	2	101.133	ppb	0.76	1,786,688.57	1.749E+01	Analog	0.30	3
Ni	60	72	2	100.278	ppb	0.46	493,314.73	6.071E+00	Pulse	0.30	3
Cu	63	72	2	101.511	ppb	1.25	1,336,212.93	1.644E+01	Analog	0.30	3
Zn	66	72	2	100.449	ppb	0.24	176,191.27	2.168E+00	Pulse	0.30	3
As	75	72	2	100.051	ppb	0.89	94,483.76	1.163E+00	Pulse	0.75	3
Se	78	72	1	101.449	ppb	1.00	50,753.59	5.129E-01	Pulse	0.30	3
Mo	95	103	2	99.792	ppb	0.99	639,336.34	2.228E-01	Pulse	0.30	3
Ag	107	103	3	99.828	ppb	0.43	6,648,899.94	8.920E-01	Analog	0.30	3
Cd	111	115	3	100.721	ppb	1.55	1,508,598.60	1.873E-01	Analog	0.30	3
Sb	121	115	3	99.343	ppb	0.48	4,774,093.50	5.928E-01	Analog	0.30	3
Ba	137	159	3	100.793	ppb	0.88	1,992,278.97	1.703E-01	Analog	0.30	3
Tl	205	209	3	100.162	ppb	0.40	12,666,801.06	1.812E+00	Analog	0.30	3
Pb	208	209	3	100.586	ppb	0.08	17,237,632.39	2.466E+00	Analog	0.30	3
U	238	209	3	99.470	ppb	0.51	18,057,696.94	2.584E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,418.58	0.74	83.2	Analog	0.30	3
2	Sc	45	102,144.37	0.68	90.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,898,961.33	0.70	83.4	Analog	0.30	3
1	Ge	72	98,972.09	1.27	89.6	Pulse	0.30	3
2	Ge	72	81,263.63	0.80	91.2	Pulse	0.30	3
2	Rh	103	2,869,889.96	0.36	93.2	Analog	0.30	3
3	Rh	103	7,453,587.60	0.46	88.8	Analog	0.30	3
3	In	115	8,053,039.16	0.22	90.9	Analog	0.30	3
3	Tb	159	11,696,657.88	0.43	93.3	Analog	0.30	3
3	Bi	209	6,989,187.05	0.19	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219010.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:50
Sample Name	Std-200/2000 ppb
Sample Type	CalStd
Comment	200/2000ug/L, 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	199.674	ppb	1.05	1,726,287.14	1.214E+00	Analog	0.30	3
Na	23	45	2	1993.565	ppb	1.89	2,585,971.49	2.585E+01	Analog	0.30	3
Mg	26	45	2	1996.168	ppb	0.79	229,178.15	2.291E+00	Pulse	0.30	3
Al	27	45	2	199.552	ppb	2.36	41,520.23	4.151E-01	Pulse	0.30	3
K	39	45	2	2002.337	ppb	1.71	797,133.16	7.969E+00	Pulse	0.30	3
Ca	44	45	3	1993.734	ppb	0.40	3,698,899.18	9.685E-01	Analog	0.30	3
V	51	45	2	199.101	ppb	1.23	1,283,566.12	1.283E+01	Analog	0.30	3
Cr	52	45	2	198.988	ppb	1.11	1,757,874.53	1.757E+01	Analog	0.30	3
Mn	55	45	2	199.953	ppb	1.25	883,551.81	8.832E+00	Pulse	0.30	3
Fe	56	45	2	197.792	ppb	1.78	1,454,822.35	1.454E+01	Analog	0.30	3
Co	59	45	2	199.215	ppb	1.31	3,446,875.95	3.446E+01	Analog	0.30	3
Ni	60	72	2	199.673	ppb	0.56	963,160.41	1.208E+01	Pulse	0.30	3
Cu	63	72	2	198.623	ppb	0.67	2,559,392.17	3.211E+01	Analog	0.30	3
Zn	66	72	2	199.642	ppb	0.66	341,022.54	4.279E+00	Pulse	0.30	3
As	75	72	2	199.927	ppb	0.59	185,164.06	2.323E+00	Pulse	0.75	3
Se	78	72	1	199.236	ppb	0.51	97,318.62	1.007E+00	Pulse	0.30	3
Mo	95	103	2	199.996	ppb	0.63	1,257,668.74	4.465E-01	Pulse	0.30	3
Ag	107	103	3	198.298	ppb	0.89	12,915,944.29	1.772E+00	Analog	0.30	3
Cd	111	115	3	199.251	ppb	0.52	2,934,552.14	3.706E-01	Analog	0.30	3
Sb	121	115	3	200.162	ppb	0.31	9,456,260.00	1.194E+00	Analog	0.30	3
Ba	137	159	3	199.186	ppb	0.32	3,916,026.40	3.366E-01	Analog	0.30	3
Tl	205	209	3	199.813	ppb	0.39	24,772,062.13	3.615E+00	Analog	0.30	3
Pb	208	209	3	199.467	ppb	0.43	33,510,547.61	4.891E+00	Analog	0.30	3
U	238	209	3	200.347	ppb	0.10	35,657,352.05	5.204E+00	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,422,353.87	0.77	81.5	Analog	0.30	3
2	Sc	45	100,053.02	2.02	88.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,819,183.24	0.53	81.7	Analog	0.30	3
1	Ge	72	96,626.32	0.69	87.5	Pulse	0.30	3
2	Ge	72	79,698.13	0.41	89.5	Pulse	0.30	3
2	Rh	103	2,816,893.81	0.80	91.4	Analog	0.30	3
3	Rh	103	7,291,192.74	0.93	86.8	Analog	0.30	3
3	In	115	7,918,525.38	0.19	89.4	Analog	0.30	3
3	Tb	159	11,634,266.35	0.67	92.8	Analog	0.30	3
3	Bi	209	6,852,124.07	0.31	93.5	Analog	0.30	3

Quantitation Report

File Name	A0219011.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 14:57
Sample Name	ICV,ICV,1
Sample Type	6-ICV
Comment	2MWST- 170107F
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.047	ppb	1.59	97,746.88	6.108E-02	Pulse	0.30	3
Na	23	45	2	251.085	ppb	0.57	451,279.02	4.031E+00	Pulse	0.30	3
Mg	26	45	2	105.182	ppb	1.20	13,600.42	1.215E-01	Pulse	0.30	3
Al	27	45	2	201.532	ppb	1.18	46,923.90	4.192E-01	Pulse	0.30	3
K	39	45	2	99.250	ppb	1.97	57,012.36	5.093E-01	Pulse	0.30	3
Ca	44	45	3	113.695	ppb	0.63	255,296.31	5.920E-02	Pulse	0.30	3
V	51	45	2	10.250	ppb	0.28	74,665.91	6.670E-01	Pulse	0.30	3
Cr	52	45	2	10.224	ppb	0.23	102,660.67	9.171E-01	Pulse	0.30	3
Mn	55	45	2	102.049	ppb	0.74	504,817.82	4.509E+00	Pulse	0.30	3
Fe	56	45	2	107.655	ppb	0.34	887,086.50	7.924E+00	Pulse	0.30	3
Co	59	45	2	10.325	ppb	0.42	199,942.41	1.786E+00	Pulse	0.30	3
Ni	60	72	2	10.145	ppb	1.19	56,139.61	6.168E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	1.28	159,687.18	1.754E+00	Pulse	0.30	3
Zn	66	72	2	101.946	ppb	0.78	200,237.86	2.200E+00	Pulse	0.30	3
As	75	72	2	10.108	ppb	0.95	10,704.06	1.176E-01	Pulse	0.75	3
Se	78	72	1	9.772	ppb	2.24	5,423.37	4.941E-02	Pulse	0.30	3
Mo	95	103	2	10.590	ppb	0.71	75,268.19	2.365E-02	Pulse	0.30	3
Ag	107	103	3	10.581	ppb	0.47	792,058.08	9.494E-02	Pulse	0.30	3
Cd	111	115	3	10.608	ppb	0.76	176,516.74	1.974E-02	Pulse	0.30	3
Sb	121	115	3	11.186	ppb	0.42	599,268.44	6.700E-02	Pulse	0.30	3
Ba	137	159	3	104.140	ppb	0.34	2,301,932.41	1.760E-01	Analog	0.30	3
Tl	205	209	3	10.341	ppb	1.56	1,441,182.46	1.873E-01	Analog	0.30	3
Pb	208	209	3	10.734	ppb	0.77	2,027,332.29	2.635E-01	Pulse	0.30	3
U	238	209	3	10.556	ppb	0.60	2,110,009.71	2.742E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,600,423.18	0.96	91.7	Analog	0.30	3
2	Sc	45	111,945.78	0.95	98.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,312,414.24	0.46	92.3	Analog	0.30	3
1	Ge	72	109,770.52	0.71	99.4	Pulse	0.30	3
2	Ge	72	91,023.24	1.56	102.2	Pulse	0.30	3
2	Rh	103	3,182,725.61	0.83	103.3	Analog	0.30	3
3	Rh	103	8,342,891.33	0.09	99.4	Analog	0.30	3
3	In	115	8,943,942.46	0.57	100.9	Analog	0.30	3
3	Tb	159	13,080,388.83	0.53	104.3	Analog	0.30	3
3	Bi	209	7,695,111.21	0.90	105.1	Analog	0.30	3

Quantitation Report

File Name	A0219012.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:02
Sample Name	ICB,ICB,1
Sample Type	6-ICB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	45.55	27.78	1.956E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	61,635.09	6.306E-01	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	20.00	2.048E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	108.89	1.112E-03	Pulse	0.30	3
K	39	45	2	<0.000	ppb	---	11,588.92	1.185E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	10,590.51	2.797E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	366.69	3.750E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,196.71	1.225E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	212.42	2.174E-03	Pulse	0.30	3
Fe	56	45	2	0.024	ppb	88.42	2,041.35	2.090E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.82	1.924E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	108.82	1.361E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,195.92	1.497E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	475.28	5.945E-03	Pulse	0.30	3
As	75	72	2	0.020	ppb	31.72	31.11	3.897E-04	Pulse	0.75	3
Se	78	72	1	0.025	ppb	72.42	13.33	1.372E-04	Pulse	0.30	3
Mo	95	103	2	0.214	ppb	0.09	1,387.90	4.860E-04	Pulse	0.30	3
Ag	107	103	3	0.427	ppb	12.43	31,288.20	4.249E-03	Pulse	0.30	3
Cd	111	115	3	0.001	ppb	158.51	63.45	8.040E-06	Pulse	0.30	3
Sb	121	115	3	0.202	ppb	2.67	11,762.66	1.491E-03	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	30.63	221.78	1.922E-05	Pulse	0.30	3
Tl	205	209	3	0.135	ppb	2.69	18,149.63	2.658E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	47.04	2,319.77	3.398E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	8.21	962.75	1.410E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,421,136.21	0.60	81.4	Analog	0.30	3
2	Sc	45	97,797.48	2.88	86.4	Pulse	0.30	3
3	Sc	45	3,785,994.53	0.43	81.0	Analog	0.30	3
1	Ge	72	97,530.02	1.21	88.3	Pulse	0.30	3

2	Ge	72	80,002.96	1.67	89.8	Pulse	0.30	3
2	Rh	103	2,856,016.31	0.63	92.7	Analog	0.30	3
3	Rh	103	7,364,745.66	0.15	87.7	Analog	0.30	3
3	In	115	7,891,741.66	0.01	89.0	Analog	0.30	3
3	Tb	159	11,537,285.80	0.49	92.0	Analog	0.30	3
3	Bi	209	6,826,853.02	0.28	93.2	Analog	0.30	3

Quantitation Report

File Name	A0219013.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:08
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.474	ppb	1.52	4,551.93	2.890E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	71,184.50	6.531E-01	Pulse	0.30	3
Mg	26	45	2	3.921	ppb	6.30	582.26	5.335E-03	Pulse	0.30	3
Al	27	45	2	11.463	ppb	6.86	2,947.00	2.705E-02	Pulse	0.30	3
K	39	45	2	0.879	ppb	212.97	13,482.66	1.237E-01	Pulse	0.30	3
Ca	44	45	3	8.459	ppb	1.35	34,702.76	8.302E-03	Pulse	0.30	3
V	51	45	2	0.952	ppb	0.73	7,433.09	6.815E-02	Pulse	0.30	3
Cr	52	45	2	0.968	ppb	1.77	10,956.19	1.005E-01	Pulse	0.30	3
Mn	55	45	2	0.525	ppb	6.59	2,892.51	2.655E-02	Pulse	0.30	3
Fe	56	45	2	11.475	ppb	2.15	93,952.31	8.618E-01	Pulse	0.30	3
Co	59	45	2	0.501	ppb	3.06	9,466.36	8.683E-02	Pulse	0.30	3
Ni	60	72	2	0.993	ppb	5.61	5,609.90	6.303E-02	Pulse	0.30	3
Cu	63	72	2	0.817	ppb	0.76	17,289.34	1.941E-01	Pulse	0.30	3
Zn	66	72	2	9.173	ppb	2.92	20,109.15	2.259E-01	Pulse	0.30	3
As	75	72	2	0.119	ppb	13.87	136.45	1.533E-03	Pulse	0.75	3
Se	78	72	1	0.502	ppb	11.16	275.57	2.548E-03	Pulse	0.30	3
Mo	95	103	2	0.573	ppb	7.07	4,057.36	1.287E-03	Pulse	0.30	3
Ag	107	103	3	0.488	ppb	2.84	39,441.24	4.794E-03	Pulse	0.30	3
Cd	111	115	3	0.520	ppb	1.93	8,578.41	9.724E-04	Pulse	0.30	3
Sb	121	115	3	0.635	ppb	1.36	35,915.21	4.072E-03	Pulse	0.30	3
Ba	137	159	3	1.115	ppb	0.41	24,603.86	1.898E-03	Pulse	0.30	3
Tl	205	209	3	0.517	ppb	0.65	73,392.00	9.572E-03	Pulse	0.30	3
Pb	208	209	3	1.042	ppb	0.18	198,241.83	2.586E-02	Pulse	0.30	3
U	238	209	3	0.523	ppb	0.78	104,412.82	1.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,575,111.98	0.67	90.3	Analog	0.30	3
2	Sc	45	109,056.76	2.28	96.4	Pulse	0.30	3
3	Sc	45	4,179,866.99	0.06	89.4	Analog	0.30	3
1	Ge	72	108,245.10	1.20	98.0	Pulse	0.30	3

2	Ge	72	89,054.75	1.63	100.0	Pulse	0.30	3
2	Rh	103	3,153,043.32	0.38	102.4	Analog	0.30	3
3	Rh	103	8,226,623.07	0.26	98.0	Analog	0.30	3
3	In	115	8,821,021.13	0.67	99.5	Analog	0.30	3
3	Tb	159	12,963,602.72	0.07	103.4	Analog	0.30	3
3	Bi	209	7,667,175.02	0.20	104.7	Analog	0.30	3

Quantitation Report

File Name	A0219014.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:13
Sample Name	ICSA1,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	63.67	57.78	3.637E-05	Pulse	0.30	3
Na	23	45	2	94514.911	ppb	1.51	142,139,736.77	1.184E+03	Analog	0.30	3
Mg	26	45	2	92243.670	ppb	1.90	12,697,610.09	1.058E+02	Analog	0.30	3
Al	27	45	2	0.503	ppb	103.22	534.92	4.435E-03	Pulse	0.30	3
K	39	45	2	95501.469	ppb	1.73	44,933,462.66	3.745E+02	Analog	0.30	3
Ca	44	45	3	96156.983	ppb	0.65	222,664,918.91	4.651E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	508.92	4.251E-03	Pulse	0.30	3
Cr	52	45	2	0.133	ppb	7.68	3,214.59	2.679E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,994.01	-1.083E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-4,605.38	-3.844E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	377.99	39.86	3.340E-04	Pulse	0.30	3
Ni	60	72	2	0.355	ppb	7.26	2,123.86	2.438E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-854.99	-9.812E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-943.45	-1.085E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	5.92	6.745E-05	Pulse	0.75	3
Se	78	72	1	0.035	ppb	103.21	18.89	1.875E-04	Pulse	0.30	3
Mo	95	103	2	0.091	ppb	5.95	591.15	2.116E-04	Pulse	0.30	3
Ag	107	103	3	0.084	ppb	10.10	8,877.89	1.183E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-409.28	-5.030E-05	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.52	5,243.33	6.444E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,786.15	-1.721E-03	Pulse	0.30	3
Tl	205	209	3	0.035	ppb	1.84	4,964.41	8.463E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	225.47	3.834E-05	Pulse	0.30	3
U	238	209	3	0.002	ppb	26.54	496.96	8.470E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,588,395.85	0.74	91.0	Analog	0.30	3
2	Sc	45	120,040.22	3.29	106.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,787,550.66	1.37	102.4	Analog	0.30	3
1	Ge	72	101,109.65	0.59	91.6	Pulse	0.30	3
2	Ge	72	87,052.10	1.68	97.7	Pulse	0.30	3
2	Rh	103	2,794,445.65	1.24	90.7	Analog	0.30	3
3	Rh	103	7,507,253.50	0.32	89.4	Analog	0.30	3
3	In	115	8,135,506.25	0.28	91.8	Analog	0.30	3
3	Tb	159	12,076,023.71	0.23	96.3	Analog	0.30	3
3	Bi	209	5,865,942.62	0.46	80.1	Analog	0.30	3

Quantitation Report

File Name	A0219015.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:19
Sample Name	ICSAB1,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.505	ppb	1.28	200,097.03	1.186E-01	Pulse	0.30	3
Na	23	45	2	94129.359	ppb	0.82	151,239,929.97	1.180E+03	Analog	0.30	3
Mg	26	45	2	92238.408	ppb	0.76	13,566,239.52	1.058E+02	Analog	0.30	3
Al	27	45	2	20.098	ppb	3.21	5,749.92	4.486E-02	Pulse	0.30	3
K	39	45	2	93853.877	ppb	0.89	47,179,008.74	3.680E+02	Analog	0.30	3
Ca	44	45	3	95749.463	ppb	0.28	242,683,789.72	4.631E+01	Analog	0.30	3
V	51	45	2	20.674	ppb	1.39	171,575.36	1.338E+00	Pulse	0.30	3
Cr	52	45	2	19.735	ppb	1.53	225,128.85	1.756E+00	Pulse	0.30	3
Mn	55	45	2	16.293	ppb	0.61	92,671.89	7.228E-01	Pulse	0.30	3
Fe	56	45	2	20.789	ppb	2.06	198,234.92	1.546E+00	Pulse	0.30	3
Co	59	45	2	18.805	ppb	1.60	416,961.22	3.253E+00	Pulse	0.30	3
Ni	60	72	2	20.384	ppb	1.22	110,582.44	1.236E+00	Pulse	0.30	3
Cu	63	72	2	19.801	ppb	0.93	291,398.65	3.258E+00	Pulse	0.30	3
Zn	66	72	2	17.808	ppb	2.93	36,638.58	4.096E-01	Pulse	0.30	3
As	75	72	2	19.913	ppb	2.18	20,712.28	2.315E-01	Pulse	0.75	3
Se	78	72	1	17.309	ppb	1.83	8,744.30	8.751E-02	Pulse	0.30	3
Mo	95	103	2	23.248	ppb	1.24	145,899.61	5.190E-02	Pulse	0.30	3
Ag	107	103	3	18.880	ppb	0.63	1,322,297.26	1.691E-01	Analog	0.30	3
Cd	111	115	3	19.409	ppb	1.01	306,366.92	3.610E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.11	1,068,315.45	1.259E-01	Pulse	0.30	3
Ba	137	159	3	23.886	ppb	0.23	498,976.61	4.037E-02	Pulse	0.30	3
Tl	205	209	3	22.487	ppb	1.02	2,414,027.93	4.070E-01	Analog	0.30	3
Pb	208	209	3	22.379	ppb	0.36	3,255,779.57	5.490E-01	Analog	0.30	3
U	238	209	3	22.691	ppb	1.00	3,495,448.30	5.894E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,715.73	1.25	96.7	Analog	0.30	3
2	Sc	45	128,225.35	2.93	113.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,239,920.03	0.57	112.1	Analog	0.30	3
1	Ge	72	99,923.91	0.53	90.5	Pulse	0.30	3
2	Ge	72	89,453.99	1.88	100.4	Pulse	0.30	3
2	Rh	103	2,810,672.87	1.56	91.2	Analog	0.30	3
3	Rh	103	7,821,166.07	0.50	93.2	Analog	0.30	3
3	In	115	8,485,923.21	0.45	95.8	Analog	0.30	3
3	Tb	159	12,358,773.43	0.38	98.5	Analog	0.30	3
3	Bi	209	5,930,884.77	0.87	81.0	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219016.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:24
Sample Name	LLICV,CCV1,1
Sample Type	6-ICV
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.500	ppb	1.08	5,413.30	3.050E-03	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	89,440.10	6.930E-01	Pulse	0.30	3
Mg	26	45	2	4.463	ppb	5.62	768.94	5.957E-03	Pulse	0.30	3
Al	27	45	2	12.391	ppb	3.90	3,738.30	2.896E-02	Pulse	0.30	3
K	39	45	2	6.649	ppb	24.56	18,884.66	1.463E-01	Pulse	0.30	3
Ca	44	45	3	7.957	ppb	2.11	39,121.40	8.059E-03	Pulse	0.30	3
V	51	45	2	1.015	ppb	5.24	9,316.35	7.220E-02	Pulse	0.30	3
Cr	52	45	2	0.963	ppb	2.61	12,903.21	9.998E-02	Pulse	0.30	3
Mn	55	45	2	0.534	ppb	4.74	3,481.13	2.697E-02	Pulse	0.30	3
Fe	56	45	2	11.257	ppb	1.01	109,166.42	8.458E-01	Pulse	0.30	3
Co	59	45	2	0.508	ppb	1.31	11,364.26	8.805E-02	Pulse	0.30	3
Ni	60	72	2	0.988	ppb	4.30	6,473.53	6.270E-02	Pulse	0.30	3
Cu	63	72	2	0.883	ppb	2.07	21,149.82	2.048E-01	Pulse	0.30	3
Zn	66	72	2	8.916	ppb	1.80	22,761.42	2.204E-01	Pulse	0.30	3
As	75	72	2	0.121	ppb	7.01	161.33	1.561E-03	Pulse	0.75	3
Se	78	72	1	0.461	ppb	13.79	304.46	2.343E-03	Pulse	0.30	3
Mo	95	103	2	0.608	ppb	1.15	4,774.26	1.366E-03	Pulse	0.30	3
Ag	107	103	3	0.772	ppb	6.00	66,337.23	7.326E-03	Pulse	0.30	3
Cd	111	115	3	0.523	ppb	2.01	9,264.52	9.778E-04	Pulse	0.30	3
Sb	121	115	3	0.622	ppb	1.54	37,828.74	3.993E-03	Pulse	0.30	3
Ba	137	159	3	1.175	ppb	1.00	26,920.74	1.998E-03	Pulse	0.30	3
Tl	205	209	3	0.487	ppb	2.10	70,495.87	9.026E-03	Pulse	0.30	3
Pb	208	209	3	1.045	ppb	1.13	202,455.80	2.592E-02	Pulse	0.30	3
U	238	209	3	0.514	ppb	1.11	104,502.37	1.338E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,774,791.35	0.93	101.7	Analog	0.30	3
2	Sc	45	129,078.25	1.01	114.0	Pulse	0.30	3
3	Sc	45	4,854,170.66	0.80	103.9	Analog	0.30	3
1	Ge	72	130,055.68	0.85	117.8	Pulse	0.30	3

2	Ge	72	103,291.38	1.53	115.9	Pulse	0.30	3
2	Rh	103	3,495,165.36	1.22	113.5	Analog	0.30	3
3	Rh	103	9,052,348.48	0.61	107.8	Analog	0.30	3
3	In	115	9,474,611.61	0.22	106.9	Analog	0.30	3
3	Tb	159	13,474,382.99	0.24	107.4	Analog	0.30	3
3	Bi	209	7,811,111.90	0.85	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219017.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:30
Sample Name	MB-61298,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	1.073E-05	Pulse	0.30	3
Na	23	45	2	19.697	ppb	18.65	123,056.01	1.134E+00	Pulse	0.30	3
Mg	26	45	2	1.038	ppb	17.66	220.01	2.028E-03	Pulse	0.30	3
Al	27	45	2	29.029	ppb	5.49	6,869.47	6.329E-02	Pulse	0.30	3
K	39	45	2	12.865	ppb	5.85	18,536.46	1.707E-01	Pulse	0.30	3
Ca	44	45	3	1.754	ppb	6.39	20,624.32	5.059E-03	Pulse	0.30	3
V	51	45	2	0.021	ppb	12.12	885.62	8.152E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,195.52	1.102E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	192.14	1.773E-03	Pulse	0.30	3
Fe	56	45	2	0.379	ppb	5.97	5,097.33	4.696E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	117.23	36.52	3.358E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	125.39	1.463E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,775.30	2.074E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,610.68	1.882E-02	Pulse	0.30	3
As	75	72	2	0.003	ppb	254.35	16.00	1.864E-04	Pulse	0.75	3
Se	78	72	1	0.008	ppb	42.57	5.56	5.218E-05	Pulse	0.30	3
Mo	95	103	2	0.052	ppb	5.79	381.13	1.245E-04	Pulse	0.30	3
Ag	107	103	3	0.123	ppb	11.89	11,975.16	1.533E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	46.01	5.498E-06	Pulse	0.30	3
Sb	121	115	3	0.016	ppb	18.24	3,186.03	3.810E-04	Pulse	0.30	3
Ba	137	159	3	0.032	ppb	6.85	800.27	6.727E-05	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	2.88	2,704.81	3.838E-04	Pulse	0.30	3
Pb	208	209	3	0.002	ppb	57.55	2,455.32	3.484E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	14.74	354.10	5.024E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,555,822.60	0.65	89.1	Analog	0.30	3
2	Sc	45	108,605.67	2.25	96.0	Pulse	0.30	3
3	Sc	45	4,076,458.55	0.65	87.2	Analog	0.30	3
1	Ge	72	106,396.93	0.46	96.4	Pulse	0.30	3

2	Ge	72	85,615.43	1.37	96.1	Pulse	0.30	3
2	Rh	103	3,060,101.83	1.19	99.3	Analog	0.30	3
3	Rh	103	7,812,738.01	0.81	93.1	Analog	0.30	3
3	In	115	8,363,631.12	0.30	94.4	Analog	0.30	3
3	Tb	159	11,896,041.07	0.39	94.9	Analog	0.30	3
3	Bi	209	7,047,928.30	0.19	96.2	Analog	0.30	3

Quantitation Report

File Name	A0219018.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:35
Sample Name	LCS-61298,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	10.072	ppb	1.87	97,221.49	6.123E-02	Pulse	0.30	3
Na	23	45	2	247.105	ppb	1.78	449,216.62	3.981E+00	Pulse	0.30	3
Mg	26	45	2	104.437	ppb	1.68	13,613.73	1.206E-01	Pulse	0.30	3
Al	27	45	2	206.803	ppb	1.50	48,522.70	4.301E-01	Pulse	0.30	3
K	39	45	2	101.734	ppb	2.80	58,557.96	5.191E-01	Pulse	0.30	3
Ca	44	45	3	118.596	ppb	0.62	265,728.26	6.157E-02	Pulse	0.30	3
V	51	45	2	10.545	ppb	0.90	77,405.54	6.860E-01	Pulse	0.30	3
Cr	52	45	2	10.376	ppb	1.91	104,981.99	9.305E-01	Pulse	0.30	3
Mn	55	45	2	102.846	ppb	1.17	512,758.40	4.545E+00	Pulse	0.30	3
Fe	56	45	2	108.684	ppb	0.68	902,695.91	8.000E+00	Pulse	0.30	3
Co	59	45	2	10.370	ppb	1.47	202,391.47	1.794E+00	Pulse	0.30	3
Ni	60	72	2	10.189	ppb	1.96	57,129.59	6.195E-01	Pulse	0.30	3
Cu	63	72	2	10.486	ppb	0.79	161,823.10	1.754E+00	Pulse	0.30	3
Zn	66	72	2	102.146	ppb	0.34	203,309.74	2.204E+00	Pulse	0.30	3
As	75	72	2	10.202	ppb	2.09	10,946.89	1.187E-01	Pulse	0.75	3
Se	78	72	1	9.749	ppb	0.28	5,641.23	4.929E-02	Pulse	0.30	3
Mo	95	103	2	9.992	ppb	0.84	71,935.01	2.231E-02	Pulse	0.30	3
Ag	107	103	3	10.434	ppb	0.68	788,406.98	9.363E-02	Pulse	0.30	3
Cd	111	115	3	10.664	ppb	0.90	178,603.72	1.984E-02	Pulse	0.30	3
Sb	121	115	3	10.632	ppb	0.23	573,463.51	6.370E-02	Pulse	0.30	3
Ba	137	159	3	105.161	ppb	0.79	2,314,739.20	1.777E-01	Analog	0.30	3
Tl	205	209	3	10.399	ppb	0.20	1,434,072.34	1.884E-01	Analog	0.30	3
Pb	208	209	3	10.749	ppb	0.57	2,008,728.42	2.638E-01	Pulse	0.30	3
U	238	209	3	10.469	ppb	1.58	2,070,590.20	2.720E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,587,920.39	1.19	91.0	Analog	0.30	3
2	Sc	45	112,845.83	1.84	99.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,315,823.93	0.77	92.3	Analog	0.30	3
1	Ge	72	114,446.09	1.11	103.7	Pulse	0.30	3
2	Ge	72	92,235.57	1.29	103.5	Pulse	0.30	3
2	Rh	103	3,223,924.64	0.83	104.7	Analog	0.30	3
3	Rh	103	8,420,453.28	0.42	100.3	Analog	0.30	3
3	In	115	9,002,502.60	0.34	101.6	Analog	0.30	3
3	Tb	159	13,025,680.08	0.85	103.9	Analog	0.30	3
3	Bi	209	7,613,684.61	0.14	103.9	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219019.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:41
Sample Name	N023063-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	72.46	21.11	1.696E-05	Pulse	0.30	3
	Na	23	45	2	119335.052	ppb	0.96	145,217,538.95	1.495E+03	Analog	0.30	3
	Mg	26	45	2	14734.562	ppb	1.14	1,641,689.94	1.690E+01	Analog	0.30	3
	Al	27	45	2	7.981	ppb	6.27	1,929.82	1.986E-02	Pulse	0.30	3
	K	39	45	2	6300.621	ppb	1.54	2,410,068.02	2.482E+01	Analog	0.30	3
	Ca	44	45	3	89655.756	ppb	0.15	173,378,555.19	4.337E+01	Analog	0.30	3
	V	51	45	2	3.469	ppb	1.56	22,364.73	2.303E-01	Pulse	0.30	3
OLR	Cr	52	45	2	298.179	ppb	1.49	2,556,274.88	2.632E+01	Analog	0.30	3
	Mn	55	45	2	235.318	ppb	0.55	1,009,433.78	1.039E+01	Pulse	0.30	3
	Fe	56	45	2	42.254	ppb	1.02	303,186.61	3.122E+00	Pulse	0.30	3
	Co	59	45	2	0.413	ppb	4.20	6,955.36	7.159E-02	Pulse	0.30	3
	Ni	60	72	2	4.734	ppb	1.93	21,491.70	2.894E-01	Pulse	0.30	3
	Cu	63	72	2	10.779	ppb	0.60	133,807.74	1.802E+00	Pulse	0.30	3
	Zn	66	72	2	141.627	ppb	0.13	226,099.45	3.044E+00	Pulse	0.30	3
	As	75	72	2	2.136	ppb	0.55	1,854.77	2.497E-02	Pulse	0.75	3
	Se	78	72	1	0.580	ppb	8.56	275.57	2.941E-03	Pulse	0.30	3
	Mo	95	103	2	3.427	ppb	3.23	18,198.81	7.657E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,688.79	2.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.190	ppb	0.56	2,491.30	3.599E-04	Pulse	0.30	3
	Sb	121	115	3	0.133	ppb	3.55	7,446.50	1.076E-03	Pulse	0.30	3
	Ba	137	159	3	38.330	ppb	0.31	676,824.92	6.478E-02	Pulse	0.30	3
	Tl	205	209	3	0.234	ppb	3.65	24,078.22	4.449E-03	Pulse	0.30	3
	Pb	208	209	3	0.900	ppb	0.37	121,080.95	2.237E-02	Pulse	0.30	3
	U	238	209	3	29.016	ppb	0.75	4,079,960.88	7.537E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,243,737.79	0.54	71.3	Analog	0.30	3
2	Sc	45	97,124.59	1.59	85.8	Pulse	0.30	3
3	Sc	45	3,997,911.95	0.59	85.5	Analog	0.30	3
1	Ge	72	93,645.93	1.16	84.8	Pulse	0.30	3
2	Ge	72	74,267.09	0.85	83.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,232.38	0.86	77.1	Analog	0.30	3
3	Rh	103	6,096,434.91	0.60	72.6	Analog	0.30	3
3	In	115	6,922,919.41	0.28	78.1	Analog	0.30	3
3	Tb	159	10,447,985.05	0.61	83.3	Analog	0.30	3
3	Bi	209	5,413,417.63	0.81	73.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE
For Cr only

File Name	A0219020.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:46
Sample Name	N023063-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	133.05	27.78	2.092E-05	Pulse	0.30	3
Na	23	45	2	26244.694	ppb	0.99	31,109,554.54	3.295E+02	Analog	0.30	3
Mg	26	45	2	3285.349	ppb	0.49	355,871.80	3.770E+00	Pulse	0.30	3
Al	27	45	2	9.515	ppb	6.39	2,173.64	2.303E-02	Pulse	0.30	3
K	39	45	2	1414.595	ppb	0.60	534,790.36	5.665E+00	Pulse	0.30	3
Ca	44	45	3	20661.639	ppb	0.34	36,647,578.90	9.998E+00	Analog	0.30	3
V	51	45	2	0.749	ppb	5.92	5,197.71	5.506E-02	Pulse	0.30	3
Cr	52	45	2	66.219	ppb	0.27	552,973.40	5.857E+00	Pulse	0.30	3
Mn	55	45	2	50.978	ppb	0.98	212,804.66	2.254E+00	Pulse	0.30	3
Fe	56	45	2	9.368	ppb	0.93	66,747.88	7.071E-01	Pulse	0.30	3
Co	59	45	2	0.092	ppb	1.54	1,523.02	1.613E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	5.39	4,679.86	6.153E-02	Pulse	0.30	3
Cu	63	72	2	2.130	ppb	2.16	30,896.23	4.061E-01	Pulse	0.30	3
Zn	66	72	2	32.622	ppb	0.91	55,147.09	7.248E-01	Pulse	0.30	3
As	75	72	2	0.457	ppb	1.58	415.83	5.466E-03	Pulse	0.75	3
Se	78	72	1	0.112	ppb	35.07	55.56	5.752E-04	Pulse	0.30	3
Mo	95	103	2	0.670	ppb	5.66	3,803.97	1.504E-03	Pulse	0.30	3
Ag	107	103	3	0.236	ppb	12.97	16,696.51	2.546E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6,938.20	-9.506E-04	Pulse	0.30	3
Sb	121	115	3	0.018	ppb	3.61	2,863.74	3.924E-04	Pulse	0.30	3
Ba	137	159	3	7.581	ppb	0.66	138,535.45	1.282E-02	Pulse	0.30	3
Tl	205	209	3	0.041	ppb	1.35	5,906.98	9.621E-04	Pulse	0.30	3
Pb	208	209	3	0.092	ppb	4.46	15,765.04	2.568E-03	Pulse	0.30	3
U	238	209	3	5.862	ppb	0.42	934,996.06	1.523E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,333,837.07	1.10	76.4	Analog	0.30	3
2	Sc	45	94,404.05	0.91	83.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,665,683.59	0.15	78.4	Analog	0.30	3
1	Ge	72	96,524.58	0.90	87.4	Pulse	0.30	3
2	Ge	72	76,086.76	1.09	85.4	Pulse	0.30	3
2	Rh	103	2,529,294.95	0.39	82.1	Analog	0.30	3
3	Rh	103	6,559,199.76	0.22	78.1	Analog	0.30	3
3	In	115	7,298,471.43	0.51	82.4	Analog	0.30	3
3	Tb	159	10,804,231.51	0.43	86.1	Analog	0.30	3
3	Bi	209	6,139,748.80	0.48	83.8	Analog	0.30	3

Quantitation Report

File Name	A0219021.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:52
Sample Name	N023063-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.554	ppb	0.77	80,819.45	5.808E-02	Pulse	0.30	3
	Na	23	45	2	111953.545	ppb	1.16	149,884,218.88	1.403E+03	Analog	0.30	3
	Mg	26	45	2	13722.815	ppb	1.27	1,682,217.49	1.574E+01	Analog	0.30	3
	Al	27	45	2	200.769	ppb	2.04	44,618.36	4.176E-01	Pulse	0.30	3
	K	39	45	2	5977.490	ppb	1.49	2,516,146.05	2.355E+01	Analog	0.30	3
	Ca	44	45	3	85525.104	ppb	0.79	183,273,297.27	4.137E+01	Analog	0.30	3
	V	51	45	2	13.229	ppb	2.64	91,758.11	8.589E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.411	ppb	1.77	2,691,775.16	2.520E+01	Analog	0.30	3
	Mn	55	45	2	306.020	ppb	1.52	1,443,921.97	1.352E+01	Analog	0.30	3
	Fe	56	45	2	136.671	ppb	0.83	1,074,339.24	1.006E+01	Pulse	0.30	3
	Co	59	45	2	9.273	ppb	0.69	171,378.14	1.604E+00	Pulse	0.30	3
	Ni	60	72	2	13.487	ppb	0.93	66,213.15	8.190E-01	Pulse	0.30	3
	Cu	63	72	2	19.131	ppb	0.73	254,591.41	3.149E+00	Pulse	0.30	3
	Zn	66	72	2	214.407	ppb	0.12	371,316.90	4.593E+00	Pulse	0.30	3
	As	75	72	2	11.515	ppb	0.92	10,829.39	1.340E-01	Pulse	0.75	3
	Se	78	72	1	8.818	ppb	4.23	4,483.03	4.458E-02	Pulse	0.30	3
	Mo	95	103	2	14.551	ppb	0.40	84,038.87	3.249E-02	Pulse	0.30	3
	Ag	107	103	3	8.124	ppb	3.31	498,176.43	7.299E-02	Pulse	0.30	3
	Cd	111	115	3	9.733	ppb	0.34	139,815.46	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.475	ppb	0.15	484,583.42	6.276E-02	Pulse	0.30	3
	Ba	137	159	3	134.855	ppb	0.08	2,657,147.67	2.279E-01	Analog	0.30	3
	Tl	205	209	3	10.368	ppb	0.59	1,132,023.11	1.878E-01	Pulse	0.30	3
	Pb	208	209	3	11.798	ppb	0.50	1,745,406.14	2.895E-01	Pulse	0.30	3
	U	238	209	3	38.151	ppb	0.70	5,973,837.90	9.910E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,391,476.73	0.56	79.7	Analog	0.30	3
2	Sc	45	106,849.84	1.67	94.4	Pulse	0.30	3
3	Sc	45	4,430,292.92	0.70	94.8	Analog	0.30	3
1	Ge	72	100,536.08	0.61	91.1	Pulse	0.30	3
2	Ge	72	80,840.61	1.00	90.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,586,662.25	0.42	84.0	Analog	0.30	3
3	Rh	103	6,824,063.58	0.52	81.3	Analog	0.30	3
3	In	115	7,720,723.92	0.39	87.1	Analog	0.30	3
3	Tb	159	11,660,006.63	0.47	93.0	Analog	0.30	3
3	Bi	209	6,028,229.56	0.53	82.3	Analog	0.30	3

Quantitation Report

File Name	A0219022.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 15:57
Sample Name	N023063-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.524	ppb	0.70	78,863.97	5.790E-02	Pulse	0.30	3
	Na	23	45	2	112300.467	ppb	1.13	149,683,931.10	1.407E+03	Analog	0.30	3
	Mg	26	45	2	13897.562	ppb	0.83	1,695,983.40	1.594E+01	Analog	0.30	3
	Al	27	45	2	197.521	ppb	1.59	43,705.28	4.109E-01	Pulse	0.30	3
	K	39	45	2	6012.822	ppb	1.53	2,519,717.58	2.369E+01	Analog	0.30	3
	Ca	44	45	3	85546.221	ppb	0.60	182,729,417.28	4.138E+01	Analog	0.30	3
OLR	V	51	45	2	13.061	ppb	1.32	90,205.23	8.480E-01	Pulse	0.30	3
	Cr	52	45	2	285.955	ppb	0.90	2,685,276.71	2.524E+01	Analog	0.30	3
	Mn	55	45	2	304.080	ppb	1.16	1,428,654.82	1.343E+01	Analog	0.30	3
	Fe	56	45	2	134.081	ppb	1.16	1,049,316.14	9.865E+00	Pulse	0.30	3
	Co	59	45	2	9.263	ppb	0.89	170,443.78	1.602E+00	Pulse	0.30	3
	Ni	60	72	2	13.566	ppb	1.01	65,692.38	8.238E-01	Pulse	0.30	3
	Cu	63	72	2	19.302	ppb	1.89	253,339.99	3.177E+00	Pulse	0.30	3
	Zn	66	72	2	216.825	ppb	1.55	370,378.58	4.645E+00	Pulse	0.30	3
	As	75	72	2	11.479	ppb	1.63	10,649.22	1.335E-01	Pulse	0.75	3
	Se	78	72	1	8.757	ppb	3.89	4,426.35	4.428E-02	Pulse	0.30	3
	Mo	95	103	2	14.568	ppb	0.25	82,484.41	3.253E-02	Pulse	0.30	3
	Ag	107	103	3	8.782	ppb	1.95	523,929.88	7.887E-02	Pulse	0.30	3
	Cd	111	115	3	9.724	ppb	0.28	136,361.82	1.809E-02	Pulse	0.30	3
	Sb	121	115	3	10.466	ppb	0.34	472,637.06	6.271E-02	Pulse	0.30	3
	Ba	137	159	3	135.709	ppb	0.46	2,579,725.65	2.293E-01	Analog	0.30	3
	Tl	205	209	3	10.400	ppb	0.34	1,090,818.25	1.884E-01	Pulse	0.30	3
	Pb	208	209	3	11.787	ppb	0.70	1,675,159.70	2.893E-01	Pulse	0.30	3
	U	238	209	3	38.194	ppb	1.14	5,745,089.90	9.921E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,362,001.97	0.21	78.0	Analog	0.30	3
2	Sc	45	106,381.26	1.93	94.0	Pulse	0.30	3
3	Sc	45	4,416,126.70	1.30	94.5	Analog	0.30	3
1	Ge	72	99,965.82	0.37	90.5	Pulse	0.30	3
2	Ge	72	79,748.22	0.58	89.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,535,812.13	1.28	82.3	Analog	0.30	3
3	Rh	103	6,642,396.57	0.51	79.1	Analog	0.30	3
3	In	115	7,536,916.86	0.52	85.0	Analog	0.30	3
3	Tb	159	11,248,909.28	0.31	89.7	Analog	0.30	3
3	Bi	209	5,790,867.90	0.98	79.1	Analog	0.30	3

Quantitation Report

File Name	A0219023.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:03
Sample Name	N023063-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.589	ppb	0.34	81,452.64	5.830E-02	Pulse	0.30	3
	Na	23	45	2	113466.483	ppb	0.51	152,317,006.62	1.422E+03	Analog	0.30	3
	Mg	26	45	2	14033.261	ppb	0.32	1,724,719.51	1.610E+01	Analog	0.30	3
	Al	27	45	2	200.738	ppb	0.15	44,733.13	4.176E-01	Pulse	0.30	3
	K	39	45	2	6049.140	ppb	0.73	2,552,873.92	2.383E+01	Analog	0.30	3
	Ca	44	45	3	85075.813	ppb	0.37	186,297,139.45	4.115E+01	Analog	0.30	3
	V	51	45	2	13.148	ppb	1.10	91,455.14	8.537E-01	Pulse	0.30	3
OLR	Cr	52	45	2	285.514	ppb	1.56	2,699,901.94	2.521E+01	Analog	0.30	3
	Mn	55	45	2	304.543	ppb	0.91	1,440,825.03	1.345E+01	Analog	0.30	3
	Fe	56	45	2	134.937	ppb	0.47	1,063,525.42	9.928E+00	Pulse	0.30	3
	Co	59	45	2	9.280	ppb	0.36	171,976.90	1.605E+00	Pulse	0.30	3
	Ni	60	72	2	13.548	ppb	1.68	66,255.25	8.227E-01	Pulse	0.30	3
	Cu	63	72	2	19.286	ppb	1.79	255,645.14	3.174E+00	Pulse	0.30	3
	Zn	66	72	2	215.674	ppb	1.34	372,087.97	4.620E+00	Pulse	0.30	3
	As	75	72	2	11.447	ppb	4.24	10,723.83	1.332E-01	Pulse	0.75	3
	Se	78	72	1	8.553	ppb	2.23	4,413.02	4.324E-02	Pulse	0.30	3
	Mo	95	103	2	14.423	ppb	0.45	82,502.20	3.220E-02	Pulse	0.30	3
	Ag	107	103	3	8.762	ppb	2.05	529,657.94	7.869E-02	Pulse	0.30	3
	Cd	111	115	3	9.732	ppb	0.66	137,478.48	1.811E-02	Pulse	0.30	3
	Sb	121	115	3	10.473	ppb	0.43	476,440.35	6.275E-02	Pulse	0.30	3
	Ba	137	159	3	135.784	ppb	0.64	2,593,140.41	2.295E-01	Analog	0.30	3
	Tl	205	209	3	10.406	ppb	1.35	1,094,527.37	1.885E-01	Pulse	0.30	3
	Pb	208	209	3	11.776	ppb	1.16	1,678,513.57	2.890E-01	Pulse	0.30	3
	U	238	209	3	37.991	ppb	0.53	5,731,162.13	9.868E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,397,135.98	0.91	80.1	Analog	0.30	3
2	Sc	45	107,131.63	1.69	94.7	Pulse	0.30	3
3	Sc	45	4,527,114.27	0.94	96.9	Analog	0.30	3
1	Ge	72	102,058.20	0.80	92.4	Pulse	0.30	3
2	Ge	72	80,552.19	2.24	90.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,561,765.50	1.00	83.2	Analog	0.30	3
3	Rh	103	6,730,290.87	0.55	80.2	Analog	0.30	3
3	In	115	7,592,865.26	0.74	85.7	Analog	0.30	3
3	Tb	159	11,301,174.55	0.32	90.1	Analog	0.30	3
3	Bi	209	5,808,018.59	1.28	79.3	Analog	0.30	3

Quantitation Report

File Name	A0219024.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:08
Sample Name	N022985-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.572E-06	Pulse	0.30	3
Na	23	45	2	457979.498	ppb	0.85	576,827,164.74	5.736E+03	Analog	0.30	3
Mg	26	45	2	1362.852	ppb	1.49	157,291.74	1.564E+00	Pulse	0.30	3
Al	27	45	2	2.040	ppb	29.29	764.37	7.605E-03	Pulse	0.30	3
K	39	45	2	3553.337	ppb	1.64	1,412,530.41	1.405E+01	Analog	0.30	3
Ca	44	45	3	20807.842	ppb	0.35	39,755,575.52	1.007E+01	Analog	0.30	3
V	51	45	2	1.300	ppb	0.57	9,105.15	9.054E-02	Pulse	0.30	3
Cr	52	45	2	3.685	ppb	3.19	34,197.62	3.402E-01	Pulse	0.30	3
Mn	55	45	2	1.056	ppb	4.38	5,026.14	5.000E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-35,713.31	-3.552E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-568.01	-5.649E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-372.54	-5.036E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,275.24	-1.660E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-493.51	-6.693E-03	Pulse	0.30	3
As	75	72	2	1.125	ppb	8.34	978.24	1.323E-02	Pulse	0.75	3
Se	78	72	1	0.027	ppb	27.55	13.33	1.477E-04	Pulse	0.30	3
Mo	95	103	2	16.704	ppb	0.71	85,794.05	3.730E-02	Pulse	0.30	3
Ag	107	103	3	0.702	ppb	12.53	40,746.82	6.708E-03	Pulse	0.30	3
Cd	111	115	3	0.009	ppb	16.14	154.77	2.269E-05	Pulse	0.30	3
Sb	121	115	3	0.010	ppb	47.32	2,324.72	3.410E-04	Pulse	0.30	3
Ba	137	159	3	3.963	ppb	1.17	67,268.55	6.710E-03	Pulse	0.30	3
Tl	205	209	3	0.086	ppb	3.62	8,827.45	1.772E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,539.08	-5.093E-04	Pulse	0.30	3
U	238	209	3	0.355	ppb	1.24	46,072.01	9.245E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,296,868.20	0.58	74.3	Analog	0.30	3
2	Sc	45	100,570.83	2.14	88.9	Pulse	0.30	3
3	Sc	45	3,948,631.33	0.82	84.5	Analog	0.30	3
1	Ge	72	90,403.15	0.71	81.9	Pulse	0.30	3
2	Ge	72	73,970.37	1.85	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,300,423.96	1.36	74.7	Analog	0.30	3
3	Rh	103	6,077,618.87	0.74	72.4	Analog	0.30	3
3	In	115	6,821,156.88	1.33	77.0	Analog	0.30	3
3	Tb	159	10,025,475.89	1.07	79.9	Analog	0.30	3
3	Bi	209	4,983,637.77	1.21	68.0	Analog	0.30	3

Quantitation Report

File Name	A0219025.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:14
Sample Name	N022985-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.788E-06	Pulse	0.30	3
Na	23	45	2	650264.599	ppb	0.63	861,405,676.05	8.144E+03	Analog	0.30	3
Mg	26	45	2	1930.978	ppb	0.41	234,410.05	2.216E+00	Pulse	0.30	3
Al	27	45	2	0.965	ppb	17.43	569.99	5.386E-03	Pulse	0.30	3
K	39	45	2	5594.851	ppb	1.25	2,332,496.87	2.205E+01	Analog	0.30	3
Ca	44	45	3	26012.402	ppb	0.65	52,118,278.67	1.259E+01	Analog	0.30	3
V	51	45	2	0.200	ppb	6.25	2,082.45	1.970E-02	Pulse	0.30	3
Cr	52	45	2	8.909	ppb	0.67	84,733.97	8.011E-01	Pulse	0.30	3
Mn	55	45	2	5.228	ppb	1.27	24,770.91	2.342E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-61,726.51	-5.836E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-635.42	-6.010E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-555.09	-7.431E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,656.34	-2.498E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,121.63	-2.841E-02	Pulse	0.30	3
As	75	72	2	0.257	ppb	18.74	235.30	3.147E-03	Pulse	0.75	3
Se	78	72	1	0.018	ppb	120.83	8.89	9.958E-05	Pulse	0.30	3
Mo	95	103	2	10.684	ppb	1.35	54,354.12	2.386E-02	Pulse	0.30	3
Ag	107	103	3	0.062	ppb	18.39	5,982.68	9.919E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.24	1.660E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,680.16	2.496E-04	Pulse	0.30	3
Ba	137	159	3	3.835	ppb	0.36	63,959.49	6.493E-03	Pulse	0.30	3
Tl	205	209	3	0.120	ppb	0.32	11,400.42	2.391E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,882.49	-1.024E-03	Pulse	0.30	3
U	238	209	3	0.736	ppb	0.58	91,283.64	1.914E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,275,817.58	1.48	73.1	Analog	0.30	3
2	Sc	45	105,778.68	1.94	93.5	Pulse	0.30	3
3	Sc	45	4,141,110.95	0.86	88.6	Analog	0.30	3
1	Ge	72	89,574.25	0.61	81.1	Pulse	0.30	3
2	Ge	72	74,694.61	1.02	83.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,278,216.82	1.99	74.0	Analog	0.30	3
3	Rh	103	6,036,206.86	1.14	71.9	Analog	0.30	3
3	In	115	6,728,897.19	0.56	75.9	Analog	0.30	3
3	Tb	159	9,850,671.24	0.90	78.5	Analog	0.30	3
3	Bi	209	4,768,408.47	0.57	65.1	Analog	0.30	3

Quantitation Report

File Name	A0219026.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:19
Sample Name	N022985-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.588E-06	Pulse	0.30	3
Na	23	45	2	693680.135	ppb	1.52	960,718,385.69	8.688E+03	Analog	0.30	3
Mg	26	45	2	2046.112	ppb	0.81	259,665.25	2.348E+00	Pulse	0.30	3
Al	27	45	2	0.086	ppb	82.42	395.24	3.574E-03	Pulse	0.30	3
K	39	45	2	5903.083	ppb	2.08	2,572,105.45	2.326E+01	Analog	0.30	3
Ca	44	45	3	26912.427	ppb	0.71	56,945,571.93	1.302E+01	Analog	0.30	3
V	51	45	2	0.212	ppb	11.26	2,261.37	2.046E-02	Pulse	0.30	3
Cr	52	45	2	9.155	ppb	1.27	90,986.03	8.228E-01	Pulse	0.30	3
Mn	55	45	2	5.542	ppb	1.17	27,432.24	2.481E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-70,625.55	-6.387E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-781.76	-7.072E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-612.53	-7.797E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,667.89	-2.759E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,298.66	-1.654E-02	Pulse	0.30	3
As	75	72	2	0.256	ppb	8.90	245.45	3.124E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	86.35	8.89	9.696E-05	Pulse	0.30	3
Mo	95	103	2	11.156	ppb	1.27	58,369.54	2.491E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	852.67	1.386E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	19.13	2.785E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,551.26	2.262E-04	Pulse	0.30	3
Ba	137	159	3	3.926	ppb	0.35	66,583.01	6.647E-03	Pulse	0.30	3
Tl	205	209	3	0.110	ppb	2.99	10,578.67	2.205E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-7,380.96	-1.539E-03	Pulse	0.30	3
U	238	209	3	0.766	ppb	0.05	95,583.77	1.992E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,317,028.61	0.66	75.5	Analog	0.30	3
2	Sc	45	110,587.59	1.86	97.7	Pulse	0.30	3
3	Sc	45	4,373,659.62	1.11	93.6	Analog	0.30	3
1	Ge	72	91,494.99	0.87	82.9	Pulse	0.30	3
2	Ge	72	78,544.68	1.27	88.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,342,690.16	1.95	76.1	Analog	0.30	3
3	Rh	103	6,163,141.09	0.81	73.4	Analog	0.30	3
3	In	115	6,857,616.19	0.69	77.4	Analog	0.30	3
3	Tb	159	10,017,579.16	0.58	79.9	Analog	0.30	3
3	Bi	209	4,797,225.73	0.32	65.5	Analog	0.30	3

Quantitation Report

File Name	A0219027.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:25
Sample Name	CCV1,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.794	ppb	0.20	214,411.91	1.203E-01	Pulse	0.30	3
Na	23	45	2	318.930	ppb	4.16	619,389.44	4.881E+00	Pulse	0.30	3
Mg	26	45	2	201.806	ppb	2.83	29,484.36	2.323E-01	Pulse	0.30	3
Al	27	45	2	21.683	ppb	2.25	6,108.42	4.813E-02	Pulse	0.30	3
K	39	45	2	216.515	ppb	2.19	122,970.40	9.690E-01	Pulse	0.30	3
Ca	44	45	3	210.826	ppb	0.65	512,292.58	1.062E-01	Pulse	0.30	3
V	51	45	2	20.162	ppb	0.51	165,689.26	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.058	ppb	1.28	226,524.80	1.785E+00	Pulse	0.30	3
Mn	55	45	2	20.045	ppb	0.93	112,765.74	8.885E-01	Pulse	0.30	3
Fe	56	45	2	20.737	ppb	1.41	195,694.05	1.542E+00	Pulse	0.30	3
Co	59	45	2	20.213	ppb	0.80	443,749.72	3.496E+00	Pulse	0.30	3
Ni	60	72	2	20.095	ppb	0.32	120,245.88	1.219E+00	Pulse	0.30	3
Cu	63	72	2	20.807	ppb	0.46	337,381.30	3.420E+00	Pulse	0.30	3
Zn	66	72	2	19.410	ppb	0.76	43,774.08	4.437E-01	Pulse	0.30	3
As	75	72	2	19.976	ppb	0.14	22,915.75	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.741	ppb	2.86	11,840.33	9.475E-02	Pulse	0.30	3
Mo	95	103	2	19.913	ppb	0.79	145,067.89	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.833	ppb	0.71	1,500,405.28	1.776E-01	Analog	0.30	3
Cd	111	115	3	20.785	ppb	0.09	344,649.51	3.866E-02	Pulse	0.30	3
Sb	121	115	3	20.367	ppb	0.73	1,085,414.36	1.218E-01	Pulse	0.30	3
Ba	137	159	3	21.573	ppb	0.70	451,551.30	3.647E-02	Pulse	0.30	3
Tl	205	209	3	20.297	ppb	0.38	2,615,596.45	3.674E-01	Analog	0.30	3
Pb	208	209	3	20.632	ppb	0.80	3,602,895.23	5.061E-01	Analog	0.30	3
U	238	209	3	19.553	ppb	0.55	3,615,642.16	5.079E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,781,878.98	0.52	102.1	Analog	0.30	3
2	Sc	45	126,930.47	1.33	112.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,824,747.46	0.44	103.2	Analog	0.30	3
1	Ge	72	124,959.01	0.64	113.2	Pulse	0.30	3
2	Ge	72	98,656.86	1.16	110.7	Pulse	0.30	3
2	Rh	103	3,262,670.78	1.03	105.9	Analog	0.30	3
3	Rh	103	8,449,640.15	0.41	100.6	Analog	0.30	3
3	In	115	8,914,087.45	0.55	100.6	Analog	0.30	3
3	Tb	159	12,383,373.29	0.80	98.7	Analog	0.30	3
3	Bi	209	7,118,676.84	0.29	97.2	Analog	0.30	3

Quantitation Report

File Name	A0219028.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:30
Sample Name	CCB1,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	232.31	23.34	1.357E-05	Pulse	0.30	3
Na	23	45	2	76.375	ppb	6.16	219,270.91	1.843E+00	Pulse	0.30	3
Mg	26	45	2	0.043	ppb	374.73	105.56	8.867E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	371.13	3.120E-03	Pulse	0.30	3
K	39	45	2	9.246	ppb	7.56	18,621.12	1.565E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,071.65	3.703E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	610.04	5.126E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,338.77	1.124E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	297.25	2.494E-03	Pulse	0.30	3
Fe	56	45	2	0.025	ppb	25.45	2,492.79	2.095E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.32	2.125E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	70.87	7.432E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	755.19	7.943E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	485.86	5.099E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	86.51	33.33	3.494E-04	Pulse	0.75	3
Se	78	72	1	0.015	ppb	113.87	10.00	8.379E-05	Pulse	0.30	3
Mo	95	103	2	0.126	ppb	14.25	904.51	2.892E-04	Pulse	0.30	3
Ag	107	103	3	0.442	ppb	13.09	35,985.06	4.381E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	4.87	5.649E-07	Pulse	0.30	3
Sb	121	115	3	0.057	ppb	7.88	5,378.91	6.246E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	12.11	292.92	2.424E-05	Pulse	0.30	3
Tl	205	209	3	0.017	ppb	10.57	3,687.29	5.317E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,251.16	1.804E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	8.46	837.32	1.207E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,715,630.93	0.95	98.3	Analog	0.30	3
2	Sc	45	118,989.40	1.73	105.1	Pulse	0.30	3
3	Sc	45	4,610,525.35	0.18	98.7	Analog	0.30	3
1	Ge	72	120,040.27	0.87	108.7	Pulse	0.30	3

2	Ge	72	95,257.46	1.62	106.9	Pulse	0.30	3
2	Rh	103	3,125,253.11	1.04	101.5	Analog	0.30	3
3	Rh	103	8,215,051.89	0.63	97.8	Analog	0.30	3
3	In	115	8,612,108.42	0.12	97.2	Analog	0.30	3
3	Tb	159	12,082,911.63	0.24	96.3	Analog	0.30	3
3	Bi	209	6,936,292.88	0.33	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219029.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:36
Sample Name	MB-61302,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.319E-06	Pulse	0.30	3
Na	23	45	2	40.078	ppb	9.63	161,116.14	1.389E+00	Pulse	0.30	3
Mg	26	45	2	<0.000	ppb	---	43.33	3.739E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.24	2.690E-03	Pulse	0.30	3
K	39	45	2	6.391	ppb	17.33	16,860.29	1.453E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	12,600.86	2.807E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	648.94	5.591E-03	Pulse	0.30	3
Cr	52	45	2	0.027	ppb	73.28	2,018.94	1.741E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	204.96	1.765E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	1,958.21	1.687E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	18.72	1.616E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	126.54	1.368E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	628.89	6.781E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	388.29	4.184E-03	Pulse	0.30	3
As	75	72	2	0.000	ppb	850.97	14.67	1.583E-04	Pulse	0.75	3
Se	78	72	1	0.006	ppb	155.20	4.44	3.880E-05	Pulse	0.30	3
Mo	95	103	2	0.037	ppb	18.89	275.57	8.988E-05	Pulse	0.30	3
Ag	107	103	3	0.055	ppb	6.91	7,458.67	9.254E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	8.73	1.031E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,234.72	2.633E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	113.91	9.579E-06	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	6.73	2,755.93	4.011E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,123.81	1.636E-04	Pulse	0.30	3
U	238	209	3	<0.000	ppb	---	189.87	2.763E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,680,580.88	0.79	96.3	Analog	0.30	3
2	Sc	45	116,037.80	1.28	102.5	Pulse	0.30	3
3	Sc	45	4,490,004.55	0.78	96.1	Analog	0.30	3
1	Ge	72	115,032.52	0.97	104.2	Pulse	0.30	3

2	Ge	72	92,775.19	0.89	104.1	Pulse	0.30	3
2	Rh	103	3,066,529.19	0.52	99.5	Analog	0.30	3
3	Rh	103	8,060,372.03	0.43	96.0	Analog	0.30	3
3	In	115	8,487,645.79	0.45	95.8	Analog	0.30	3
3	Tb	159	11,890,521.21	0.84	94.8	Analog	0.30	3
3	Bi	209	6,870,824.97	0.20	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219030.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:41
Sample Name	LCS-61302,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.545	ppb	0.99	102,183.49	5.803E-02	Pulse	0.30	3
Na	23	45	2	345.165	ppb	2.18	675,847.30	5.209E+00	Pulse	0.30	3
Mg	26	45	2	102.616	ppb	1.25	15,382.01	1.186E-01	Pulse	0.30	3
Al	27	45	2	199.844	ppb	2.08	53,931.47	4.157E-01	Pulse	0.30	3
K	39	45	2	107.012	ppb	1.78	70,027.18	5.397E-01	Pulse	0.30	3
Ca	44	45	3	113.251	ppb	0.80	286,810.63	5.899E-02	Pulse	0.30	3
V	51	45	2	9.730	ppb	1.10	82,193.49	6.335E-01	Pulse	0.30	3
Cr	52	45	2	9.612	ppb	2.63	111,961.16	8.631E-01	Pulse	0.30	3
Mn	55	45	2	98.037	ppb	1.25	562,076.25	4.332E+00	Pulse	0.30	3
Fe	56	45	2	104.861	ppb	1.58	1,001,474.76	7.719E+00	Pulse	0.30	3
Co	59	45	2	9.573	ppb	1.43	214,838.88	1.656E+00	Pulse	0.30	3
Ni	60	72	2	9.728	ppb	0.93	60,065.12	5.916E-01	Pulse	0.30	3
Cu	63	72	2	9.874	ppb	0.89	168,116.97	1.656E+00	Pulse	0.30	3
Zn	66	72	2	93.352	ppb	1.32	204,798.70	2.017E+00	Pulse	0.30	3
As	75	72	2	9.494	ppb	0.61	11,217.73	1.105E-01	Pulse	0.75	3
Se	78	72	1	8.769	ppb	4.05	5,710.14	4.434E-02	Pulse	0.30	3
Mo	95	103	2	9.993	ppb	1.77	74,722.37	2.231E-02	Pulse	0.30	3
Ag	107	103	3	8.079	ppb	4.37	634,211.77	7.259E-02	Pulse	0.30	3
Cd	111	115	3	10.126	ppb	0.96	174,718.74	1.884E-02	Pulse	0.30	3
Sb	121	115	3	10.195	ppb	0.20	566,636.18	6.110E-02	Pulse	0.30	3
Ba	137	159	3	105.811	ppb	0.39	2,319,960.46	1.788E-01	Analog	0.30	3
Tl	205	209	3	9.948	ppb	0.39	1,317,630.80	1.802E-01	Analog	0.30	3
Pb	208	209	3	10.685	ppb	1.00	1,917,698.50	2.623E-01	Pulse	0.30	3
U	238	209	3	9.942	ppb	0.74	1,888,554.18	2.583E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,760,907.80	0.34	100.9	Analog	0.30	3
2	Sc	45	129,767.40	2.19	114.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,862,335.55	0.11	104.0	Analog	0.30	3
1	Ge	72	128,774.75	0.47	116.6	Pulse	0.30	3
2	Ge	72	101,536.96	1.08	114.0	Pulse	0.30	3
2	Rh	103	3,348,327.48	1.12	108.7	Analog	0.30	3
3	Rh	103	8,735,848.20	0.45	104.0	Analog	0.30	3
3	In	115	9,274,588.33	0.28	104.7	Analog	0.30	3
3	Tb	159	12,974,559.39	0.68	103.5	Analog	0.30	3
3	Bi	209	7,312,113.57	0.71	99.8	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219031.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:47
Sample Name	N023107-001C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.039	ppb	13.97	396.69	2.493E-04	Pulse	0.30	3
	Na	23	45	2	19509.394	ppb	0.43	29,323,846.78	2.452E+02	Analog	0.30	3
	Mg	26	45	2	1020.629	ppb	1.57	140,117.67	1.172E+00	Pulse	0.30	3
OLR	Al	27	45	2	1930.746	ppb	1.16	476,771.45	3.987E+00	Pulse	0.30	3
	K	39	45	2	5555.566	ppb	1.51	2,618,610.69	2.190E+01	Analog	0.30	3
	Ca	44	45	3	12269.086	ppb	0.17	27,607,721.81	5.938E+00	Analog	0.30	3
	V	51	45	2	6.890	ppb	2.07	53,876.06	4.506E-01	Pulse	0.30	3
	Cr	52	45	2	6.662	ppb	0.90	72,091.39	6.029E-01	Pulse	0.30	3
	Mn	55	45	2	67.064	ppb	0.49	354,525.94	2.965E+00	Pulse	0.30	3
	Fe	56	45	2	3836.785	ppb	0.88	33,694,932.37	2.818E+02	Analog	0.30	3
	Co	59	45	2	1.285	ppb	2.05	26,605.26	2.225E-01	Pulse	0.30	3
	Ni	60	72	2	17.740	ppb	1.26	99,209.57	1.076E+00	Pulse	0.30	3
	Cu	63	72	2	69.457	ppb	0.79	1,038,811.00	1.127E+01	Pulse	0.30	3
OLR	Zn	66	72	2	485.900	ppb	0.47	955,897.47	1.037E+01	Pulse	0.30	3
	As	75	72	2	3.496	ppb	2.55	3,759.63	4.078E-02	Pulse	0.75	3
	Se	78	72	1	0.237	ppb	24.74	142.23	1.210E-03	Pulse	0.30	3
	Mo	95	103	2	5.465	ppb	1.13	35,994.93	1.221E-02	Pulse	0.30	3
	Ag	107	103	3	0.154	ppb	1.49	14,081.43	1.813E-03	Pulse	0.30	3
	Cd	111	115	3	0.185	ppb	4.66	2,940.21	3.506E-04	Pulse	0.30	3
	Sb	121	115	3	5.724	ppb	1.35	288,724.07	3.443E-02	Pulse	0.30	3
	Ba	137	159	3	1516.844	ppb	0.45	30,732,428.14	2.563E+00	Analog	0.30	3
	Tl	205	209	3	0.090	ppb	2.17	12,278.87	1.851E-03	Pulse	0.30	3
	Pb	208	209	3	14.087	ppb	0.23	2,293,048.38	3.457E-01	Pulse	0.30	3
	U	238	209	3	0.201	ppb	0.80	34,771.32	5.242E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,590,652.23	0.78	91.1	Analog	0.30	3
2	Sc	45	119,594.12	1.65	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,649,080.94	0.21	99.5	Analog	0.30	3
1	Ge	72	117,594.49	0.57	106.5	Pulse	0.30	3
2	Ge	72	92,176.99	1.32	103.5	Pulse	0.30	3
2	Rh	103	2,948,743.60	0.94	95.7	Analog	0.30	3
3	Rh	103	7,768,478.01	0.36	92.5	Analog	0.30	3
3	In	115	8,386,824.54	0.50	94.6	Analog	0.30	3
3	Tb	159	11,990,509.13	0.68	95.6	Analog	0.30	3
3	Bi	209	6,633,490.11	0.43	90.6	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219032.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:53
Sample Name	N023107-001C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

OLR

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.010	ppb	42.34	107.78	6.956E-05	Pulse	0.30	3
Na	23	45	2	4165.341	ppb	2.30	6,070,498.45	5.305E+01	Analog	0.30	3
Mg	26	45	2	213.888	ppb	2.28	28,173.24	2.462E-01	Pulse	0.30	3
Al	27	45	2	405.326	ppb	0.84	96,099.63	8.397E-01	Pulse	0.30	3
K	39	45	2	1224.082	ppb	1.77	562,842.33	4.918E+00	Pulse	0.30	3
Ca	44	45	3	2634.168	ppb	0.90	5,557,049.43	1.278E+00	Analog	0.30	3
V	51	45	2	1.430	ppb	3.74	11,322.10	9.893E-02	Pulse	0.30	3
Cr	52	45	2	1.363	ppb	1.84	15,482.08	1.353E-01	Pulse	0.30	3
Mn	55	45	2	14.384	ppb	2.29	73,061.72	6.385E-01	Pulse	0.30	3
Fe	56	45	2	816.210	ppb	2.07	6,860,874.45	5.995E+01	Analog	0.30	3
Co	59	45	2	0.277	ppb	3.90	5,508.44	4.814E-02	Pulse	0.30	3
Ni	60	72	2	3.616	ppb	1.14	20,320.91	2.218E-01	Pulse	0.30	3
Cu	63	72	2	14.453	ppb	0.55	219,424.58	2.395E+00	Pulse	0.30	3
Zn	66	72	2	107.192	ppb	0.82	211,834.94	2.312E+00	Pulse	0.30	3
As	75	72	2	0.786	ppb	5.24	851.52	9.291E-03	Pulse	0.75	3
Se	78	72	1	0.053	ppb	60.49	32.23	2.792E-04	Pulse	0.30	3
Mo	95	103	2	1.090	ppb	4.57	7,280.89	2.442E-03	Pulse	0.30	3
Ag	107	103	3	0.535	ppb	11.07	40,449.58	5.215E-03	Pulse	0.30	3
Cd	111	115	3	0.039	ppb	20.27	656.11	7.910E-05	Pulse	0.30	3
Sb	121	115	3	1.195	ppb	1.25	61,496.57	7.413E-03	Pulse	0.30	3
Ba	137	159	3	317.691	ppb	0.40	6,290,837.98	5.368E-01	Analog	0.30	3
Tl	205	209	3	0.016	ppb	7.94	3,397.20	5.060E-04	Pulse	0.30	3
Pb	208	209	3	2.917	ppb	1.30	482,203.38	7.183E-02	Pulse	0.30	3
U	238	209	3	0.041	ppb	0.40	7,271.41	1.083E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,998.40	0.74	88.8	Analog	0.30	3
2	Sc	45	114,462.10	1.89	101.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,347,583.06	0.96	93.0	Analog	0.30	3
1	Ge	72	115,189.93	0.64	104.3	Pulse	0.30	3
2	Ge	72	91,635.93	0.44	102.9	Pulse	0.30	3
2	Rh	103	2,981,445.96	1.15	96.8	Analog	0.30	3
3	Rh	103	7,758,476.90	0.81	92.4	Analog	0.30	3
3	In	115	8,296,337.59	0.45	93.6	Analog	0.30	3
3	Tb	159	11,718,333.16	0.62	93.4	Analog	0.30	3
3	Bi	209	6,713,791.22	1.18	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219033.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 16:58
Sample Name	N023107-001C-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.289	ppb	0.68	90,811.23	5.647E-02	Pulse	0.30	3
	Na	23	45	2	19048.672	ppb	1.92	29,410,389.28	2.394E+02	Analog	0.30	3
	Mg	26	45	2	1078.775	ppb	0.67	152,113.24	1.238E+00	Pulse	0.30	3
OLR	Al	27	45	2	2034.795	ppb	0.52	516,099.36	4.202E+00	Pulse	0.30	3
	K	39	45	2	5491.315	ppb	1.56	2,658,857.60	2.164E+01	Analog	0.30	3
	Ca	44	45	3	12122.607	ppb	0.87	27,821,909.59	5.867E+00	Analog	0.30	3
	V	51	45	2	16.224	ppb	0.98	129,190.69	1.052E+00	Pulse	0.30	3
	Cr	52	45	2	15.485	ppb	0.80	169,670.44	1.381E+00	Pulse	0.30	3
	Mn	55	45	2	158.326	ppb	1.26	859,115.83	6.994E+00	Pulse	0.30	3
	Fe	56	45	2	3754.480	ppb	1.03	33,867,388.91	2.757E+02	Analog	0.30	3
	Co	59	45	2	10.237	ppb	0.79	217,512.58	1.771E+00	Pulse	0.30	3
	Ni	60	72	2	26.785	ppb	0.25	152,787.10	1.624E+00	Pulse	0.30	3
	Cu	63	72	2	77.997	ppb	1.05	1,190,125.76	1.265E+01	Pulse	0.30	3
OLR	Zn	66	72	2	560.945	ppb	0.86	1,126,107.91	1.197E+01	Pulse	0.30	3
	As	75	72	2	12.898	ppb	1.40	14,117.82	1.500E-01	Pulse	0.75	3
	Se	78	72	1	8.344	ppb	5.36	5,102.16	4.219E-02	Pulse	0.30	3
	Mo	95	103	2	15.320	ppb	0.92	103,483.70	3.421E-02	Pulse	0.30	3
	Ag	107	103	3	7.465	ppb	5.66	532,645.82	6.711E-02	Pulse	0.30	3
	Cd	111	115	3	9.943	ppb	0.82	158,428.47	1.850E-02	Pulse	0.30	3
	Sb	121	115	3	15.533	ppb	0.91	795,839.07	9.293E-02	Pulse	0.30	3
	Ba	137	159	3	1499.852	ppb	0.91	31,052,399.50	2.534E+00	Analog	0.30	3
	Tl	205	209	3	10.039	ppb	0.71	1,226,949.89	1.818E-01	Pulse	0.30	3
	Pb	208	209	3	23.364	ppb	0.69	3,866,944.69	5.731E-01	Analog	0.30	3
	U	238	209	3	10.249	ppb	0.31	1,796,441.04	2.662E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,608,139.56	1.00	92.1	Analog	0.30	3
2	Sc	45	122,833.82	0.76	108.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,742,074.86	1.34	101.5	Analog	0.30	3
1	Ge	72	120,931.97	0.15	109.5	Pulse	0.30	3
2	Ge	72	94,099.68	1.12	105.6	Pulse	0.30	3
2	Rh	103	3,025,029.26	1.71	98.2	Analog	0.30	3
3	Rh	103	7,937,392.73	0.35	94.5	Analog	0.30	3
3	In	115	8,564,090.04	0.85	96.6	Analog	0.30	3
3	Tb	159	12,252,784.96	0.61	97.7	Analog	0.30	3
3	Bi	209	6,747,435.39	0.45	92.1	Analog	0.30	3

Quantitation Report

File Name	A0219034.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:04
Sample Name	N023107-001C-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.582	ppb	0.16	92,901.29	5.825E-02	Pulse	0.30	3
	Na	23	45	2	18341.761	ppb	0.20	28,395,759.30	2.306E+02	Analog	0.30	3
	Mg	26	45	2	1044.347	ppb	0.61	147,639.20	1.199E+00	Pulse	0.30	3
OLR	Al	27	45	2	1986.939	ppb	0.94	505,225.00	4.103E+00	Pulse	0.30	3
	K	39	45	2	5362.788	ppb	0.61	2,603,387.31	2.114E+01	Analog	0.30	3
	Ca	44	45	3	11687.298	ppb	0.42	27,056,808.21	5.657E+00	Analog	0.30	3
	V	51	45	2	16.310	ppb	0.80	130,200.37	1.057E+00	Pulse	0.30	3
	Cr	52	45	2	15.565	ppb	0.64	170,966.40	1.388E+00	Pulse	0.30	3
	Mn	55	45	2	159.125	ppb	0.14	865,673.98	7.030E+00	Pulse	0.30	3
	Fe	56	45	2	3635.805	ppb	0.60	32,879,687.06	2.670E+02	Analog	0.30	3
	Co	59	45	2	10.423	ppb	0.75	222,017.81	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.424	ppb	0.68	150,655.89	1.602E+00	Pulse	0.30	3
	Cu	63	72	2	76.588	ppb	0.71	1,168,237.27	1.242E+01	Pulse	0.30	3
OLR	Zn	66	72	2	548.298	ppb	0.45	1,100,286.48	1.170E+01	Pulse	0.30	3
	As	75	72	2	12.765	ppb	1.00	13,966.62	1.485E-01	Pulse	0.75	3
	Se	78	72	1	8.580	ppb	3.26	5,241.10	4.338E-02	Pulse	0.30	3
	Mo	95	103	2	15.703	ppb	0.29	105,860.69	3.506E-02	Pulse	0.30	3
	Ag	107	103	3	8.498	ppb	2.36	608,852.96	7.633E-02	Pulse	0.30	3
	Cd	111	115	3	10.094	ppb	1.17	161,921.78	1.878E-02	Pulse	0.30	3
	Sb	121	115	3	15.516	ppb	0.39	800,431.39	9.283E-02	Pulse	0.30	3
	Ba	137	159	3	1511.671	ppb	0.21	31,071,170.28	2.554E+00	Analog	0.30	3
	Tl	205	209	3	10.293	ppb	0.29	1,249,439.76	1.864E-01	Pulse	0.30	3
	Pb	208	209	3	23.334	ppb	0.68	3,836,010.73	5.724E-01	Analog	0.30	3
	U	238	209	3	10.225	ppb	1.12	1,780,229.79	2.656E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,766.60	0.62	91.4	Analog	0.30	3
2	Sc	45	123,149.68	1.24	108.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,782,904.58	0.47	102.3	Analog	0.30	3
1	Ge	72	120,825.62	1.00	109.4	Pulse	0.30	3
2	Ge	72	94,057.39	1.15	105.6	Pulse	0.30	3
2	Rh	103	3,019,309.61	1.44	98.0	Analog	0.30	3
3	Rh	103	7,975,857.24	0.58	95.0	Analog	0.30	3
3	In	115	8,622,350.72	0.36	97.3	Analog	0.30	3
3	Tb	159	12,164,031.48	0.83	97.0	Analog	0.30	3
3	Bi	209	6,702,085.87	0.91	91.5	Analog	0.30	3

Quantitation Report

File Name	A0219035.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:09
Sample Name	N023107-001C-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	9.644	ppb	0.69	94,079.85	5.863E-02	Pulse	0.30	3
	Na	23	45	2	18324.680	ppb	0.54	28,860,210.68	2.304E+02	Analog	0.30	3
	Mg	26	45	2	1050.555	ppb	0.65	151,085.21	1.206E+00	Pulse	0.30	3
OLR	Al	27	45	2	1997.576	ppb	0.32	516,755.85	4.125E+00	Pulse	0.30	3
	K	39	45	2	5337.619	ppb	1.72	2,636,247.35	2.104E+01	Analog	0.30	3
	Ca	44	45	3	11786.686	ppb	0.44	27,420,781.82	5.705E+00	Analog	0.30	3
	V	51	45	2	16.322	ppb	0.82	132,554.51	1.058E+00	Pulse	0.30	3
	Cr	52	45	2	15.490	ppb	0.85	173,090.00	1.382E+00	Pulse	0.30	3
	Mn	55	45	2	158.765	ppb	0.14	878,675.24	7.014E+00	Pulse	0.30	3
	Fe	56	45	2	3648.059	ppb	0.14	33,563,158.28	2.679E+02	Analog	0.30	3
	Co	59	45	2	10.422	ppb	0.30	225,843.85	1.803E+00	Pulse	0.30	3
	Ni	60	72	2	26.063	ppb	0.54	152,317.68	1.580E+00	Pulse	0.30	3
	Cu	63	72	2	75.601	ppb	0.87	1,182,063.53	1.226E+01	Pulse	0.30	3
OLR	Zn	66	72	2	541.622	ppb	1.39	1,113,963.91	1.156E+01	Pulse	0.30	3
	As	75	72	2	12.585	ppb	0.77	14,112.51	1.464E-01	Pulse	0.75	3
	Se	78	72	1	8.768	ppb	0.33	5,365.57	4.433E-02	Pulse	0.30	3
	Mo	95	103	2	15.671	ppb	0.52	107,365.89	3.499E-02	Pulse	0.30	3
	Ag	107	103	3	8.521	ppb	2.91	613,080.41	7.654E-02	Pulse	0.30	3
	Cd	111	115	3	10.142	ppb	0.60	163,126.14	1.887E-02	Pulse	0.30	3
	Sb	121	115	3	15.603	ppb	0.74	807,060.82	9.335E-02	Pulse	0.30	3
	Ba	137	159	3	1517.472	ppb	0.30	31,407,455.10	2.564E+00	Analog	0.30	3
	Tl	205	209	3	10.308	ppb	0.18	1,255,185.22	1.867E-01	Pulse	0.30	3
	Pb	208	209	3	23.292	ppb	0.53	3,840,975.20	5.714E-01	Analog	0.30	3
	U	238	209	3	10.154	ppb	1.09	1,773,199.23	2.638E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,632.24	0.40	91.9	Analog	0.30	3
2	Sc	45	125,280.62	1.07	110.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,806,488.54	0.44	102.8	Analog	0.30	3
1	Ge	72	121,023.80	0.37	109.6	Pulse	0.30	3
2	Ge	72	96,408.68	1.59	108.2	Pulse	0.30	3
2	Rh	103	3,068,662.07	1.51	99.6	Analog	0.30	3
3	Rh	103	8,009,303.22	0.20	95.4	Analog	0.30	3
3	In	115	8,645,523.06	0.58	97.6	Analog	0.30	3
3	Tb	159	12,248,633.70	0.38	97.7	Analog	0.30	3
3	Bi	209	6,722,614.97	0.29	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219036.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:15
Sample Name	N023107-002C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.022	ppb	23.65	234.46	1.453E-04	Pulse	0.30	3
	Na	23	45	2	13216.677	ppb	0.46	21,009,201.91	1.664E+02	Analog	0.30	3
OLR	Mg	26	45	2	434.833	ppb	0.50	63,086.34	4.997E-01	Pulse	0.30	3
	Al	27	45	2	878.927	ppb	0.97	229,381.36	1.817E+00	Pulse	0.30	3
	K	39	45	2	3532.848	ppb	1.49	1,763,540.69	1.397E+01	Analog	0.30	3
	Ca	44	45	3	3351.739	ppb	0.28	7,817,937.04	1.625E+00	Analog	0.30	3
	V	51	45	2	13.877	ppb	0.71	113,706.51	9.006E-01	Pulse	0.30	3
	Cr	52	45	2	5.068	ppb	1.77	58,345.91	4.622E-01	Pulse	0.30	3
	Mn	55	45	2	50.738	ppb	0.26	283,273.71	2.244E+00	Pulse	0.30	3
	Fe	56	45	2	2370.001	ppb	0.84	21,974,477.51	1.741E+02	Analog	0.30	3
	Co	59	45	2	0.771	ppb	2.02	16,860.31	1.336E-01	Pulse	0.30	3
	Ni	60	72	2	15.946	ppb	0.59	93,782.54	9.678E-01	Pulse	0.30	3
	Cu	63	72	2	55.620	ppb	0.37	875,759.93	9.038E+00	Pulse	0.30	3
OLR	Zn	66	72	2	395.772	ppb	0.48	819,062.82	8.453E+00	Pulse	0.30	3
	As	75	72	2	2.275	ppb	0.57	2,576.50	2.659E-02	Pulse	0.75	3
	Se	78	72	1	0.118	ppb	14.33	75.56	6.070E-04	Pulse	0.30	3
	Mo	95	103	2	2.707	ppb	1.09	18,849.55	6.051E-03	Pulse	0.30	3
	Ag	107	103	3	0.170	ppb	0.31	16,048.51	1.957E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-331.12	-3.775E-05	Pulse	0.30	3
	Sb	121	115	3	27.422	ppb	1.74	1,437,461.96	1.638E-01	Analog	0.30	3
	Ba	137	159	3	423.884	ppb	0.74	8,836,352.66	7.163E-01	Analog	0.30	3
	Tl	205	209	3	0.082	ppb	4.70	11,420.39	1.698E-03	Pulse	0.30	3
	Pb	208	209	3	10.369	ppb	0.81	1,711,882.78	2.545E-01	Pulse	0.30	3
	U	238	209	3	0.090	ppb	1.67	15,877.07	2.360E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,615,750.94	1.61	92.6	Analog	0.30	3
2	Sc	45	126,255.55	1.39	111.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,810,082.05	0.77	102.9	Analog	0.30	3
1	Ge	72	124,560.53	1.35	112.8	Pulse	0.30	3
2	Ge	72	96,904.32	1.00	108.8	Pulse	0.30	3
2	Rh	103	3,114,711.34	1.29	101.1	Analog	0.30	3
3	Rh	103	8,200,317.52	0.33	97.7	Analog	0.30	3
3	In	115	8,774,015.03	1.20	99.0	Analog	0.30	3
3	Tb	159	12,336,499.54	0.35	98.4	Analog	0.30	3
3	Bi	209	6,726,190.18	1.11	91.8	Analog	0.30	3

Quantitation Report

File Name	A0219037.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:20
Sample Name	N023107-003C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.024	ppb	23.25	250.01	1.559E-04	Pulse	0.30	3
	Na	23	45	2	11520.563	ppb	0.61	18,258,328.48	1.452E+02	Analog	0.30	3
	Mg	26	45	2	560.740	ppb	0.40	81,016.85	6.441E-01	Pulse	0.30	3
OLR	Al	27	45	2	807.278	ppb	1.04	209,924.41	1.669E+00	Pulse	0.30	3
	K	39	45	2	2913.126	ppb	0.58	1,451,393.00	1.154E+01	Analog	0.30	3
	Ca	44	45	3	4681.658	ppb	0.94	10,781,309.15	2.269E+00	Analog	0.30	3
	V	51	45	2	9.638	ppb	1.01	78,938.35	6.276E-01	Pulse	0.30	3
	Cr	52	45	2	3.893	ppb	1.03	45,093.97	3.585E-01	Pulse	0.30	3
	Mn	55	45	2	43.407	ppb	1.47	241,479.98	1.920E+00	Pulse	0.30	3
	Fe	56	45	2	2717.071	ppb	0.83	25,098,937.07	1.995E+02	Analog	0.30	3
	Co	59	45	2	0.843	ppb	1.59	18,375.01	1.461E-01	Pulse	0.30	3
	Ni	60	72	2	5.749	ppb	0.61	33,898.97	3.508E-01	Pulse	0.30	3
	Cu	63	72	2	45.954	ppb	0.81	722,606.77	7.478E+00	Pulse	0.30	3
OLR	Zn	66	72	2	295.378	ppb	0.30	610,394.58	6.316E+00	Pulse	0.30	3
	As	75	72	2	4.161	ppb	1.80	4,686.73	4.850E-02	Pulse	0.75	3
	Se	78	72	1	0.110	ppb	39.51	71.11	5.658E-04	Pulse	0.30	3
	Mo	95	103	2	1.839	ppb	1.78	12,722.27	4.114E-03	Pulse	0.30	3
	Ag	107	103	3	0.058	ppb	6.22	7,757.39	9.573E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-657.07	-7.561E-05	Pulse	0.30	3
	Sb	121	115	3	2.417	ppb	0.37	127,772.73	1.470E-02	Pulse	0.30	3
	Ba	137	159	3	453.564	ppb	0.67	9,285,531.34	7.664E-01	Analog	0.30	3
	Tl	205	209	3	0.056	ppb	4.43	8,178.13	1.233E-03	Pulse	0.30	3
	Pb	208	209	3	5.996	ppb	0.89	976,865.92	1.473E-01	Pulse	0.30	3
	U	238	209	3	0.066	ppb	3.21	11,608.55	1.751E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,604,197.95	0.61	91.9	Analog	0.30	3
2	Sc	45	125,781.66	0.86	111.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,752,729.44	0.83	101.7	Analog	0.30	3
1	Ge	72	125,544.32	0.74	113.7	Pulse	0.30	3
2	Ge	72	96,639.84	1.09	108.5	Pulse	0.30	3
2	Rh	103	3,092,595.41	0.82	100.4	Analog	0.30	3
3	Rh	103	8,103,391.55	0.20	96.5	Analog	0.30	3
3	In	115	8,689,928.45	0.19	98.1	Analog	0.30	3
3	Tb	159	12,115,474.40	0.46	96.6	Analog	0.30	3
3	Bi	209	6,632,214.07	1.13	90.5	Analog	0.30	3

Quantitation Report

File Name	A0219038.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:26
Sample Name	N023107-004C,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.001	ppb	147.66	27.78	1.693E-05	Pulse	0.30	3
	Na	23	45	2	2459.087	ppb	0.78	4,007,503.79	3.168E+01	Analog	0.30	3
	Mg	26	45	2	219.266	ppb	2.85	31,922.19	2.524E-01	Pulse	0.30	3
	Al	27	45	2	93.057	ppb	5.05	24,712.23	1.954E-01	Pulse	0.30	3
	K	39	45	2	805.312	ppb	0.78	414,496.63	3.277E+00	Pulse	0.30	3
	Ca	44	45	3	3593.764	ppb	0.67	8,275,001.27	1.742E+00	Analog	0.30	3
	V	51	45	2	0.711	ppb	2.94	6,653.83	5.260E-02	Pulse	0.30	3
	Cr	52	45	2	5.572	ppb	1.05	64,087.09	5.066E-01	Pulse	0.30	3
	Mn	55	45	2	17.283	ppb	1.09	96,953.24	7.665E-01	Pulse	0.30	3
	Fe	56	45	2	302.554	ppb	1.47	2,812,531.84	2.224E+01	Analog	0.30	3
	Co	59	45	2	0.164	ppb	0.69	3,615.90	2.858E-02	Pulse	0.30	3
	Ni	60	72	2	7.140	ppb	0.51	43,216.82	4.350E-01	Pulse	0.30	3
	Cu	63	72	2	9.123	ppb	1.22	152,438.10	1.534E+00	Pulse	0.30	3
OLR	Zn	66	72	2	224.355	ppb	0.86	477,357.87	4.805E+00	Pulse	0.30	3
	As	75	72	2	1.010	ppb	1.34	1,180.86	1.189E-02	Pulse	0.75	3
	Se	78	72	1	0.114	ppb	22.60	76.67	5.873E-04	Pulse	0.30	3
	Mo	95	103	2	0.591	ppb	5.46	4,263.00	1.327E-03	Pulse	0.30	3
	Ag	107	103	3	0.021	ppb	10.06	5,183.96	6.198E-04	Pulse	0.30	3
	Cd	111	115	3	0.100	ppb	2.07	1,699.83	1.925E-04	Pulse	0.30	3
	Sb	121	115	3	2.160	ppb	0.81	116,247.37	1.317E-02	Pulse	0.30	3
	Ba	137	159	3	86.379	ppb	0.44	1,788,487.21	1.460E-01	Analog	0.30	3
	Tl	205	209	3	0.041	ppb	4.47	6,435.02	9.496E-04	Pulse	0.30	3
	Pb	208	209	3	1.129	ppb	1.23	189,710.15	2.799E-02	Pulse	0.30	3
	U	238	209	3	0.010	ppb	8.19	1,981.64	2.925E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,638,775.80	0.59	93.9	Analog	0.30	3
2	Sc	45	126,495.34	1.03	111.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,749,382.19	0.73	101.6	Analog	0.30	3
1	Ge	72	130,472.11	0.35	118.2	Pulse	0.30	3
2	Ge	72	99,355.46	1.37	111.5	Pulse	0.30	3
2	Rh	103	3,212,644.95	1.08	104.3	Analog	0.30	3
3	Rh	103	8,363,344.67	0.30	99.6	Analog	0.30	3
3	In	115	8,829,257.25	0.36	99.6	Analog	0.30	3
3	Tb	159	12,252,364.96	0.71	97.7	Analog	0.30	3
3	Bi	209	6,777,691.63	1.04	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219039.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:31
Sample Name	CCV2,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.688	ppb	0.65	188,122.84	1.197E-01	Pulse	0.30	3
Na	23	45	2	202.417	ppb	3.55	404,971.81	3.422E+00	Pulse	0.30	3
Mg	26	45	2	196.725	ppb	1.08	26,814.38	2.265E-01	Pulse	0.30	3
Al	27	45	2	21.614	ppb	4.20	5,678.54	4.799E-02	Pulse	0.30	3
K	39	45	2	209.229	ppb	3.80	111,284.40	9.404E-01	Pulse	0.30	3
Ca	44	45	3	211.944	ppb	0.52	467,149.56	1.067E-01	Pulse	0.30	3
V	51	45	2	20.053	ppb	1.72	153,686.83	1.298E+00	Pulse	0.30	3
Cr	52	45	2	19.746	ppb	1.57	207,995.73	1.757E+00	Pulse	0.30	3
Mn	55	45	2	20.156	ppb	0.97	105,756.72	8.934E-01	Pulse	0.30	3
Fe	56	45	2	20.830	ppb	2.82	183,293.49	1.549E+00	Pulse	0.30	3
Co	59	45	2	19.990	ppb	1.42	409,281.74	3.458E+00	Pulse	0.30	3
Ni	60	72	2	19.379	ppb	0.73	110,063.84	1.176E+00	Pulse	0.30	3
Cu	63	72	2	20.252	ppb	0.43	311,810.56	3.330E+00	Pulse	0.30	3
Zn	66	72	2	19.198	ppb	0.57	41,122.99	4.392E-01	Pulse	0.30	3
As	75	72	2	19.750	ppb	0.43	21,501.82	2.296E-01	Pulse	0.75	3
Se	78	72	1	19.048	ppb	1.09	11,630.23	9.630E-02	Pulse	0.30	3
Mo	95	103	2	19.815	ppb	0.82	136,309.08	4.424E-02	Pulse	0.30	3
Ag	107	103	3	20.027	ppb	0.30	1,443,869.29	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.709	ppb	0.26	328,451.00	3.852E-02	Pulse	0.30	3
Sb	121	115	3	20.505	ppb	0.66	1,045,211.65	1.226E-01	Pulse	0.30	3
Ba	137	159	3	21.759	ppb	0.36	434,082.71	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.250	ppb	0.66	2,515,616.78	3.666E-01	Analog	0.30	3
Pb	208	209	3	20.649	ppb	0.70	3,476,109.05	5.065E-01	Analog	0.30	3
U	238	209	3	19.562	ppb	0.55	3,487,010.81	5.081E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,571,817.70	0.54	90.1	Analog	0.30	3
2	Sc	45	118,396.37	2.30	104.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,377,428.10	0.83	93.7	Analog	0.30	3
1	Ge	72	120,769.56	0.80	109.4	Pulse	0.30	3
2	Ge	72	93,631.35	0.89	105.1	Pulse	0.30	3
2	Rh	103	3,080,994.47	0.73	100.0	Analog	0.30	3
3	Rh	103	8,052,352.52	0.29	95.9	Analog	0.30	3
3	In	115	8,526,113.91	0.39	96.2	Analog	0.30	3
3	Tb	159	11,802,323.99	0.93	94.1	Analog	0.30	3
3	Bi	209	6,862,468.09	0.51	93.7	Analog	0.30	3

Quantitation Report

File Name	A0219040.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:37
Sample Name	CCB2,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	103.27	25.56	1.659E-05	Pulse	0.30	3
Na	23	45	2	<0.000	ppb	---	99,480.76	8.744E-01	Pulse	0.30	3
Mg	26	45	2	0.230	ppb	62.68	125.56	1.101E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	312.23	2.742E-03	Pulse	0.30	3
K	39	45	2	2.282	ppb	37.02	14,702.60	1.292E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,965.21	3.745E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	5.600E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,138.87	1.001E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	270.08	2.369E-03	Pulse	0.30	3
Fe	56	45	2	0.085	ppb	8.29	2,888.56	2.538E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	53.54	34.33	3.014E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	68.75	7.512E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,174.80	1.285E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	365.07	3.990E-03	Pulse	0.30	3
As	75	72	2	0.003	ppb	168.15	17.33	1.896E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	45.75	12.22	1.044E-04	Pulse	0.30	3
Mo	95	103	2	0.112	ppb	2.27	791.17	2.582E-04	Pulse	0.30	3
Ag	107	103	3	0.520	ppb	11.33	40,375.60	5.080E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	48.44	5.769E-06	Pulse	0.30	3
Sb	121	115	3	0.058	ppb	0.68	5,296.69	6.316E-04	Pulse	0.30	3
Ba	137	159	3	0.024	ppb	7.66	641.51	5.438E-05	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	18.67	2,256.95	3.315E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,554.34	2.283E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	12.59	754.02	1.107E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,804.95	0.76	88.1	Analog	0.30	3
2	Sc	45	113,808.15	1.91	100.6	Pulse	0.30	3
3	Sc	45	4,263,224.59	0.78	91.2	Analog	0.30	3
1	Ge	72	116,954.37	0.46	105.9	Pulse	0.30	3

2	Ge	72	91,488.13	0.72	102.7	Pulse	0.30	3
2	Rh	103	3,064,233.63	1.39	99.5	Analog	0.30	3
3	Rh	103	7,948,730.64	0.20	94.7	Analog	0.30	3
3	In	115	8,385,445.21	0.54	94.6	Analog	0.30	3
3	Tb	159	11,795,585.38	0.26	94.1	Analog	0.30	3
3	Bi	209	6,810,085.11	0.43	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219041.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:42
Sample Name	N023137-001A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	16.77	83.33	5.396E-05	Pulse	0.30	3
	Na	23	45	2	2140.859	ppb	1.36	3,269,645.47	2.770E+01	Analog	0.30	3
	Mg	26	45	2	1031.467	ppb	0.96	139,789.97	1.184E+00	Pulse	0.30	3
OLR	Al	27	45	2	203.316	ppb	1.56	49,920.40	4.229E-01	Pulse	0.30	3
	K	39	45	2	1030.442	ppb	0.55	491,044.05	4.159E+00	Pulse	0.30	3
	Ca	44	45	3	12325.137	ppb	0.61	25,989,299.34	5.965E+00	Analog	0.30	3
	V	51	45	2	2.210	ppb	1.52	17,611.12	1.492E-01	Pulse	0.30	3
	Cr	52	45	2	0.832	ppb	16.71	10,450.75	8.844E-02	Pulse	0.30	3
	Mn	55	45	2	9.308	ppb	1.04	48,925.26	4.144E-01	Pulse	0.30	3
	Fe	56	45	2	231.349	ppb	0.73	2,007,891.11	1.701E+01	Analog	0.30	3
	Co	59	45	2	0.193	ppb	0.68	3,975.32	3.367E-02	Pulse	0.30	3
	Ni	60	72	2	1.904	ppb	1.84	10,900.98	1.181E-01	Pulse	0.30	3
	Cu	63	72	2	13.180	ppb	1.10	202,030.88	2.189E+00	Pulse	0.30	3
	Zn	66	72	2	70.984	ppb	1.65	142,219.93	1.541E+00	Pulse	0.30	3
	As	75	72	2	0.576	ppb	1.85	632.05	6.849E-03	Pulse	0.75	3
	Se	78	72	1	0.124	ppb	29.72	76.67	6.354E-04	Pulse	0.30	3
	Mo	95	103	2	1.269	ppb	2.95	8,620.49	2.840E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-198.76	-2.546E-05	Pulse	0.30	3
	Cd	111	115	3	0.008	ppb	11.72	171.91	2.049E-05	Pulse	0.30	3
	Sb	121	115	3	1.680	ppb	0.54	86,419.33	1.030E-02	Pulse	0.30	3
	Ba	137	159	3	27.941	ppb	0.28	560,873.04	4.723E-02	Pulse	0.30	3
	Tl	205	209	3	0.027	ppb	0.30	4,605.34	6.978E-04	Pulse	0.30	3
	Pb	208	209	3	1.331	ppb	0.79	217,454.83	3.295E-02	Pulse	0.30	3
	U	238	209	3	0.135	ppb	0.46	23,332.70	3.535E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,543,337.27	1.22	88.4	Analog	0.30	3
2	Sc	45	118,062.44	1.13	104.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,356,688.27	0.25	93.2	Analog	0.30	3
1	Ge	72	120,818.38	0.92	109.4	Pulse	0.30	3
2	Ge	72	92,293.73	1.37	103.6	Pulse	0.30	3
2	Rh	103	3,035,606.24	1.04	98.5	Analog	0.30	3
3	Rh	103	7,803,226.76	0.81	92.9	Analog	0.30	3
3	In	115	8,387,919.35	0.51	94.6	Analog	0.30	3
3	Tb	159	11,876,189.96	0.43	94.7	Analog	0.30	3
3	Bi	209	6,600,061.15	0.51	90.1	Analog	0.30	3

Quantitation Report

File Name	A0219042.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:48
Sample Name	N023137-002A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.008	ppb	23.84	87.78	5.835E-05	Pulse	0.30	3
	Na	23	45	2	2325.162	ppb	0.19	3,422,747.62	3.000E+01	Analog	0.30	3
	Mg	26	45	2	1061.363	ppb	0.11	138,987.75	1.218E+00	Pulse	0.30	3
OLR	Al	27	45	2	276.598	ppb	2.17	65,477.68	5.741E-01	Pulse	0.30	3
	K	39	45	2	1230.861	ppb	0.34	564,074.57	4.945E+00	Pulse	0.30	3
	Ca	44	45	3	12176.880	ppb	0.47	24,920,603.79	5.894E+00	Analog	0.30	3
	V	51	45	2	2.350	ppb	0.04	18,043.96	1.582E-01	Pulse	0.30	3
	Cr	52	45	2	0.907	ppb	1.34	10,845.89	9.509E-02	Pulse	0.30	3
	Mn	55	45	2	11.098	ppb	2.19	56,278.80	4.934E-01	Pulse	0.30	3
	Fe	56	45	2	321.610	ppb	4.04	2,696,120.65	2.364E+01	Analog	0.30	3
	Co	59	45	2	0.235	ppb	4.21	4,657.67	4.082E-02	Pulse	0.30	3
	Ni	60	72	2	2.081	ppb	2.15	11,641.72	1.289E-01	Pulse	0.30	3
	Cu	63	72	2	13.651	ppb	0.40	204,605.15	2.265E+00	Pulse	0.30	3
	Zn	66	72	2	78.119	ppb	0.90	152,915.04	1.693E+00	Pulse	0.30	3
	As	75	72	2	0.603	ppb	2.19	647.16	7.166E-03	Pulse	0.75	3
	Se	78	72	1	0.183	ppb	20.91	108.90	9.367E-04	Pulse	0.30	3
	Mo	95	103	2	1.372	ppb	1.38	9,103.01	3.070E-03	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-224.71	-2.947E-05	Pulse	0.30	3
	Cd	111	115	3	0.019	ppb	17.93	333.11	4.046E-05	Pulse	0.30	3
	Sb	121	115	3	2.259	ppb	0.65	113,282.82	1.376E-02	Pulse	0.30	3
	Ba	137	159	3	27.493	ppb	0.36	543,249.24	4.647E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	0.74	4,969.93	7.687E-04	Pulse	0.30	3
	Pb	208	209	3	4.845	ppb	0.97	769,881.55	1.191E-01	Pulse	0.30	3
	U	238	209	3	0.135	ppb	1.28	22,886.48	3.540E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,566.68	0.47	86.2	Analog	0.30	3
2	Sc	45	114,071.78	0.82	100.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,228,342.37	0.21	90.5	Analog	0.30	3
1	Ge	72	116,403.82	0.95	105.4	Pulse	0.30	3
2	Ge	72	90,330.70	1.59	101.4	Pulse	0.30	3
2	Rh	103	2,964,536.42	1.45	96.2	Analog	0.30	3
3	Rh	103	7,628,910.24	0.50	90.9	Analog	0.30	3
3	In	115	8,232,197.23	0.19	92.9	Analog	0.30	3
3	Tb	159	11,690,427.33	0.29	93.2	Analog	0.30	3
3	Bi	209	6,464,892.68	0.75	88.3	Analog	0.30	3

Quantitation Report

File Name	A0219043.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:53
Sample Name	N023137-003A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.015	ppb	9.23	152.23	1.013E-04	Pulse	0.30	3
	Na	23	45	2	3814.152	ppb	0.83	5,510,344.22	4.865E+01	Analog	0.30	3
	Mg	26	45	2	1071.745	ppb	1.27	139,342.66	1.230E+00	Pulse	0.30	3
OLR	Al	27	45	2	504.586	ppb	2.62	118,275.23	1.044E+00	Pulse	0.30	3
	K	39	45	2	1301.836	ppb	2.00	591,520.67	5.223E+00	Pulse	0.30	3
	Ca	44	45	3	8138.466	ppb	0.49	16,715,639.89	3.940E+00	Analog	0.30	3
	V	51	45	2	2.393	ppb	0.88	18,227.79	1.609E-01	Pulse	0.30	3
	Cr	52	45	2	2.776	ppb	7.39	29,424.73	2.600E-01	Pulse	0.30	3
	Mn	55	45	2	27.924	ppb	0.88	140,030.17	1.236E+00	Pulse	0.30	3
	Fe	56	45	2	622.859	ppb	0.64	5,183,063.01	4.576E+01	Analog	0.30	3
	Co	59	45	2	0.741	ppb	0.27	14,536.50	1.283E-01	Pulse	0.30	3
	Ni	60	72	2	6.938	ppb	6.71	37,551.86	4.228E-01	Pulse	0.30	3
	Cu	63	72	2	32.256	ppb	1.49	467,768.37	5.267E+00	Pulse	0.30	3
OLR	Zn	66	72	2	496.990	ppb	0.92	941,971.90	1.061E+01	Pulse	0.30	3
	As	75	72	2	0.526	ppb	0.98	556.49	6.265E-03	Pulse	0.75	3
	Se	78	72	1	0.160	ppb	13.17	95.56	8.197E-04	Pulse	0.30	3
	Mo	95	103	2	5.575	ppb	3.31	36,965.65	1.245E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	102.21	1.327E-05	Pulse	0.30	3
	Cd	111	115	3	0.188	ppb	6.05	2,932.91	3.557E-04	Pulse	0.30	3
	Sb	121	115	3	6.796	ppb	1.27	336,612.84	4.082E-02	Pulse	0.30	3
	Ba	137	159	3	34.150	ppb	0.69	675,315.19	5.772E-02	Pulse	0.30	3
	Tl	205	209	3	0.034	ppb	7.21	5,483.49	8.381E-04	Pulse	0.30	3
	Pb	208	209	3	40.885	ppb	0.64	6,561,138.40	1.003E+00	Analog	0.30	3
	U	238	209	3	0.164	ppb	1.28	28,124.79	4.298E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,504,104.00	1.23	86.2	Analog	0.30	3
2	Sc	45	113,270.80	1.53	100.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,242,008.31	0.66	90.8	Analog	0.30	3
1	Ge	72	116,556.28	0.59	105.6	Pulse	0.30	3
2	Ge	72	88,817.98	1.37	99.7	Pulse	0.30	3
2	Rh	103	2,969,177.97	1.05	96.4	Analog	0.30	3
3	Rh	103	7,705,187.32	0.10	91.8	Analog	0.30	3
3	In	115	8,246,465.29	0.61	93.1	Analog	0.30	3
3	Tb	159	11,700,553.02	0.56	93.3	Analog	0.30	3
3	Bi	209	6,544,132.12	1.52	89.3	Analog	0.30	3

Quantitation Report

File Name	A0219044.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 17:59
Sample Name	N023137-004A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.012	ppb	22.75	125.56	8.213E-05	Pulse	0.30	3
	Na	23	45	2	5293.788	ppb	1.15	7,690,138.01	6.718E+01	Analog	0.30	3
	Mg	26	45	2	893.580	ppb	0.34	117,449.31	1.026E+00	Pulse	0.30	3
OLR	Al	27	45	2	510.840	ppb	1.89	121,063.67	1.057E+00	Pulse	0.30	3
	K	39	45	2	1655.259	ppb	0.50	756,518.91	6.608E+00	Pulse	0.30	3
	Ca	44	45	3	9419.663	ppb	0.50	19,575,420.54	4.560E+00	Analog	0.30	3
	V	51	45	2	2.260	ppb	0.55	17,440.95	1.523E-01	Pulse	0.30	3
	Cr	52	45	2	6.699	ppb	13.39	69,494.63	6.061E-01	Pulse	0.30	3
	Mn	55	45	2	41.588	ppb	0.46	210,605.03	1.840E+00	Pulse	0.30	3
	Fe	56	45	2	691.059	ppb	0.98	5,811,147.29	5.076E+01	Analog	0.30	3
	Co	59	45	2	0.696	ppb	2.17	13,815.41	1.207E-01	Pulse	0.30	3
	Ni	60	72	2	15.443	ppb	0.90	84,573.69	9.374E-01	Pulse	0.30	3
	Cu	63	72	2	28.295	ppb	0.46	417,523.48	4.628E+00	Pulse	0.30	3
OLR	Zn	66	72	2	244.149	ppb	0.56	471,455.45	5.226E+00	Pulse	0.30	3
	As	75	72	2	0.490	ppb	3.00	527.22	5.845E-03	Pulse	0.75	3
	Se	78	72	1	0.107	ppb	24.16	65.56	5.509E-04	Pulse	0.30	3
	Mo	95	103	2	7.371	ppb	9.59	49,085.64	1.646E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,372.49	1.771E-04	Pulse	0.30	3
	Cd	111	115	3	0.854	ppb	1.14	13,203.25	1.594E-03	Pulse	0.30	3
	Sb	121	115	3	3.349	ppb	1.82	167,800.22	2.026E-02	Pulse	0.30	3
	Ba	137	159	3	31.650	ppb	0.33	633,301.42	5.349E-02	Pulse	0.30	3
	Tl	205	209	3	0.032	ppb	2.81	5,208.92	8.019E-04	Pulse	0.30	3
	Pb	208	209	3	19.565	ppb	0.77	3,117,926.63	4.800E-01	Analog	0.30	3
	U	238	209	3	0.190	ppb	0.87	32,238.95	4.963E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,527,362.24	1.14	87.5	Analog	0.30	3
2	Sc	45	114,484.55	1.86	101.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,292,714.10	0.15	91.9	Analog	0.30	3
1	Ge	72	118,959.58	0.34	107.7	Pulse	0.30	3
2	Ge	72	90,216.94	1.49	101.3	Pulse	0.30	3
2	Rh	103	2,983,216.66	0.93	96.8	Analog	0.30	3
3	Rh	103	7,750,173.63	0.28	92.3	Analog	0.30	3
3	In	115	8,281,794.92	0.34	93.5	Analog	0.30	3
3	Tb	159	11,838,723.02	0.23	94.4	Analog	0.30	3
3	Bi	209	6,496,317.26	0.61	88.7	Analog	0.30	3

Quantitation Report

File Name	A0219045.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:05
Sample Name	N023138-005A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.056	ppb	4.67	424.47	3.512E-04	Pulse	0.30	3
Na	23	45	2	1249167.705	ppb	0.15	1,589,730,447.42	1.564E+04	Analog	0.30	3
Mg	26	45	2	16891.856	ppb	0.28	1,969,282.80	1.938E+01	Analog	0.30	3
Al	27	45	2	96.154	ppb	2.12	20,503.14	2.018E-01	Pulse	0.30	3
K	39	45	2	12639.038	ppb	0.43	5,046,823.60	4.966E+01	Analog	0.30	3
Ca	44	45	3	28957.208	ppb	0.61	59,827,153.00	1.401E+01	Analog	0.30	3
V	51	45	2	20.905	ppb	0.54	137,523.62	1.353E+00	Pulse	0.30	3
Cr	52	45	2	44.618	ppb	0.34	401,574.23	3.952E+00	Pulse	0.30	3
Mn	55	45	2	22.429	ppb	0.31	100,979.56	9.937E-01	Pulse	0.30	3
Fe	56	45	2	1415.366	ppb	0.04	10,563,458.08	1.040E+02	Analog	0.30	3
Co	59	45	2	0.931	ppb	0.84	16,378.58	1.612E-01	Pulse	0.30	3
Ni	60	72	2	13.858	ppb	2.27	58,703.37	8.415E-01	Pulse	0.30	3
Cu	63	72	2	10.418	ppb	0.70	121,646.30	1.744E+00	Pulse	0.30	3
Zn	66	72	2	305.351	ppb	0.92	455,445.83	6.528E+00	Pulse	0.30	3
As	75	72	2	4.212	ppb	2.74	3,425.18	4.909E-02	Pulse	0.75	3
Se	78	72	1	1.843	ppb	3.52	803.39	9.326E-03	Pulse	0.30	3
Mo	95	103	2	177.054	ppb	1.60	799,142.29	3.952E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	107.74	2.071E-05	Pulse	0.30	3
Cd	111	115	3	11.398	ppb	1.75	124,981.84	2.121E-02	Pulse	0.30	3
Sb	121	115	3	1.496	ppb	0.79	54,263.43	9.206E-03	Pulse	0.30	3
Ba	137	159	3	27.106	ppb	0.35	398,160.53	4.582E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	9.00	1,855.75	4.586E-04	Pulse	0.30	3
Pb	208	209	3	2.549	ppb	0.06	254,204.43	6.280E-02	Pulse	0.30	3
U	238	209	3	7.041	ppb	0.25	740,320.99	1.829E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,209,611.49	2.69	69.3	Analog	0.30	3
2	Sc	45	101,618.97	1.64	89.8	Pulse	0.30	3
3	Sc	45	4,270,436.12	1.40	91.4	Analog	0.30	3
1	Ge	72	86,143.73	0.12	78.0	Pulse	0.30	3
2	Ge	72	69,770.60	1.94	78.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,021,752.90	0.95	65.6	Analog	0.30	3
3	Rh	103	5,223,832.15	0.62	62.2	Analog	0.30	3
3	In	115	5,894,451.98	1.21	66.5	Analog	0.30	3
3	Tb	159	8,690,531.12	1.01	69.3	Analog	0.30	3
3	Bi	209	4,047,551.85	0.82	55.3	Analog	0.30	3

Quantitation Report

File Name	A0219046.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:10
Sample Name	N023138-006A,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.026	ppb	13.69	224.46	1.713E-04	Pulse	0.30	3
Na	23	45	2	967508.186	ppb	1.01	1,314,156,104.86	1.212E+04	Analog	0.30	3
Mg	26	45	2	33681.629	ppb	0.41	4,190,723.75	3.864E+01	Analog	0.30	3
Al	27	45	2	59.904	ppb	3.64	13,778.68	1.270E-01	Pulse	0.30	3
K	39	45	2	16795.017	ppb	0.45	7,152,981.07	6.595E+01	Analog	0.30	3
Ca	44	45	3	40200.898	ppb	0.62	91,195,145.31	1.945E+01	Analog	0.30	3
V	51	45	2	25.412	ppb	0.18	178,253.86	1.644E+00	Pulse	0.30	3
Cr	52	45	2	76.531	ppb	0.14	733,960.82	6.767E+00	Pulse	0.30	3
Mn	55	45	2	14.984	ppb	0.42	72,126.00	6.650E-01	Pulse	0.30	3
Fe	56	45	2	324.346	ppb	0.38	2,585,126.89	2.384E+01	Analog	0.30	3
Co	59	45	2	1.010	ppb	1.63	18,974.47	1.750E-01	Pulse	0.30	3
Ni	60	72	2	44.222	ppb	0.93	197,983.37	2.679E+00	Pulse	0.30	3
Cu	63	72	2	19.111	ppb	1.49	232,506.37	3.146E+00	Pulse	0.30	3
Zn	66	72	2	57.061	ppb	1.62	92,000.86	1.245E+00	Pulse	0.30	3
As	75	72	2	2.851	ppb	5.86	2,457.88	3.328E-02	Pulse	0.75	3
Se	78	72	1	2.534	ppb	1.67	1,124.53	1.282E-02	Pulse	0.30	3
Mo	95	103	2	76.239	ppb	0.89	371,318.77	1.702E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,028.39	-5.336E-04	Pulse	0.30	3
Cd	111	115	3	0.233	ppb	2.61	2,787.64	4.385E-04	Pulse	0.30	3
Sb	121	115	3	1.836	ppb	2.42	71,436.97	1.124E-02	Pulse	0.30	3
Ba	137	159	3	59.087	ppb	0.67	926,771.28	9.986E-02	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	4.01	2,927.09	6.454E-04	Pulse	0.30	3
Pb	208	209	3	3.113	ppb	1.01	347,543.26	7.663E-02	Pulse	0.30	3
U	238	209	3	8.001	ppb	0.47	942,755.87	2.079E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,310,892.69	0.97	75.1	Analog	0.30	3
2	Sc	45	108,457.21	2.09	95.8	Pulse	0.30	3
3	Sc	45	4,689,279.03	0.94	100.3	Analog	0.30	3
1	Ge	72	87,711.78	1.15	79.4	Pulse	0.30	3
2	Ge	72	73,916.58	2.52	83.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,181,590.72	1.43	70.8	Analog	0.30	3
3	Rh	103	5,674,024.57	0.76	67.6	Analog	0.30	3
3	In	115	6,357,284.42	0.33	71.7	Analog	0.30	3
3	Tb	159	9,281,162.50	0.29	74.0	Analog	0.30	3
3	Bi	209	4,535,772.40	1.21	61.9	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219047.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:16
Sample Name	N023063-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	6.148E-06	Pulse	0.30	3
Na	23	45	2	5708.222	ppb	0.48	9,561,103.75	7.237E+01	Analog	0.30	3
Mg	26	45	2	689.866	ppb	1.23	104,658.45	7.922E-01	Pulse	0.30	3
Al	27	45	2	2.609	ppb	4.15	1,159.66	8.780E-03	Pulse	0.30	3
K	39	45	2	311.179	ppb	1.77	177,015.95	1.340E+00	Pulse	0.30	3
Ca	44	45	3	4420.396	ppb	0.65	11,137,574.00	2.142E+00	Analog	0.30	3
V	51	45	2	0.107	ppb	5.25	1,807.97	1.369E-02	Pulse	0.30	3
Cr	52	45	2	13.388	ppb	0.55	158,034.97	1.196E+00	Pulse	0.30	3
Mn	55	45	2	10.263	ppb	0.36	60,321.63	4.566E-01	Pulse	0.30	3
Fe	56	45	2	1.986	ppb	2.56	21,797.83	1.650E-01	Pulse	0.30	3
Co	59	45	2	0.017	ppb	10.60	409.31	3.100E-03	Pulse	0.30	3
Ni	60	72	2	0.191	ppb	4.52	1,486.34	1.450E-02	Pulse	0.30	3
Cu	63	72	2	0.248	ppb	3.01	10,501.80	1.024E-01	Pulse	0.30	3
Zn	66	72	2	5.867	ppb	0.59	15,945.27	1.555E-01	Pulse	0.30	3
As	75	72	2	0.110	ppb	20.25	147.24	1.434E-03	Pulse	0.75	3
Se	78	72	1	0.020	ppb	52.50	14.45	1.102E-04	Pulse	0.30	3
Mo	95	103	2	0.527	ppb	6.70	3,853.97	1.185E-03	Pulse	0.30	3
Ag	107	103	3	0.268	ppb	10.63	24,588.92	2.833E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-2,106.24	-2.283E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,671.27	1.811E-04	Pulse	0.30	3
Ba	137	159	3	1.605	ppb	2.24	34,409.27	2.726E-03	Pulse	0.30	3
Tl	205	209	3	<0.000	ppb	---	1,475.69	2.083E-04	Pulse	0.30	3
Pb	208	209	3	0.014	ppb	7.44	4,616.49	6.519E-04	Pulse	0.30	3
U	238	209	3	1.112	ppb	1.17	204,832.84	2.892E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,804,909.07	0.29	103.4	Analog	0.30	3
2	Sc	45	132,118.68	1.49	116.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,199,109.37	0.10	111.2	Analog	0.30	3
1	Ge	72	130,956.33	0.48	118.6	Pulse	0.30	3
2	Ge	72	102,536.21	0.98	115.1	Pulse	0.30	3
2	Rh	103	3,251,181.06	0.50	105.5	Analog	0.30	3
3	Rh	103	8,682,149.11	0.43	103.4	Analog	0.30	3
3	In	115	9,227,482.59	0.18	104.1	Analog	0.30	3
3	Tb	159	12,625,817.87	0.56	100.7	Analog	0.30	3
3	Bi	209	7,082,786.35	0.49	96.7	Analog	0.30	3

Quantitation Report

File Name	A0219048.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:21
Sample Name	N023063-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.281	ppb	0.92	23,637.17	1.387E-02	Pulse	0.30	3
Na	23	45	2	26989.871	ppb	0.90	43,512,365.46	3.389E+02	Analog	0.30	3
Mg	26	45	2	3360.457	ppb	1.38	495,072.28	3.856E+00	Pulse	0.30	3
Al	27	45	2	48.211	ppb	1.31	13,207.49	1.029E-01	Pulse	0.30	3
K	39	45	2	1492.643	ppb	0.88	766,689.65	5.971E+00	Pulse	0.30	3
Ca	44	45	3	21300.812	ppb	0.25	51,802,739.78	1.031E+01	Analog	0.30	3
V	51	45	2	3.003	ppb	1.34	25,713.09	2.002E-01	Pulse	0.30	3
Cr	52	45	2	67.797	ppb	1.12	769,961.01	5.997E+00	Pulse	0.30	3
Mn	55	45	2	72.104	ppb	1.21	409,214.33	3.187E+00	Pulse	0.30	3
Fe	56	45	2	32.915	ppb	1.11	312,797.48	2.436E+00	Pulse	0.30	3
Co	59	45	2	2.166	ppb	1.40	48,136.86	3.749E-01	Pulse	0.30	3
Ni	60	72	2	3.198	ppb	1.65	19,310.18	1.965E-01	Pulse	0.30	3
Cu	63	72	2	4.337	ppb	0.52	74,907.56	7.621E-01	Pulse	0.30	3
Zn	66	72	2	53.308	ppb	1.13	114,500.56	1.165E+00	Pulse	0.30	3
As	75	72	2	2.698	ppb	2.12	3,096.19	3.150E-02	Pulse	0.75	3
Se	78	72	1	2.098	ppb	7.55	1,342.34	1.062E-02	Pulse	0.30	3
Mo	95	103	2	3.158	ppb	2.69	21,616.36	7.058E-03	Pulse	0.30	3
Ag	107	103	3	2.077	ppb	2.07	151,581.83	1.898E-02	Pulse	0.30	3
Cd	111	115	3	1.671	ppb	3.40	27,249.96	3.114E-03	Pulse	0.30	3
Sb	121	115	3	2.356	ppb	0.91	125,442.53	1.434E-02	Pulse	0.30	3
Ba	137	159	3	32.017	ppb	0.32	666,361.45	5.411E-02	Pulse	0.30	3
Tl	205	209	3	1.971	ppb	0.81	238,940.10	3.587E-02	Pulse	0.30	3
Pb	208	209	3	2.458	ppb	0.51	403,519.01	6.058E-02	Pulse	0.30	3
U	238	209	3	7.952	ppb	0.73	1,375,971.89	2.066E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,703,603.19	0.88	97.6	Analog	0.30	3
2	Sc	45	128,413.65	1.71	113.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,026,150.48	0.11	107.5	Analog	0.30	3
1	Ge	72	126,424.97	0.81	114.5	Pulse	0.30	3
2	Ge	72	98,291.66	1.38	110.3	Pulse	0.30	3
2	Rh	103	3,063,135.86	1.14	99.4	Analog	0.30	3
3	Rh	103	7,985,617.45	0.44	95.1	Analog	0.30	3
3	In	115	8,749,614.19	0.75	98.7	Analog	0.30	3
3	Tb	159	12,314,079.54	0.15	98.2	Analog	0.30	3
3	Bi	209	6,661,101.29	0.66	90.9	Analog	0.30	3

Quantitation Report

File Name	A0219049.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:27
Sample Name	N023063-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.166	ppb	1.72	21,546.55	1.318E-02	Pulse	0.30	3
Na	23	45	2	26329.855	ppb	1.50	40,441,022.18	3.306E+02	Analog	0.30	3
Mg	26	45	2	3296.903	ppb	1.07	462,759.27	3.783E+00	Pulse	0.30	3
Al	27	45	2	45.120	ppb	1.30	11,802.92	9.649E-02	Pulse	0.30	3
K	39	45	2	1442.579	ppb	1.51	706,379.04	5.775E+00	Pulse	0.30	3
Ca	44	45	3	20825.805	ppb	0.72	47,776,417.62	1.008E+01	Analog	0.30	3
V	51	45	2	2.951	ppb	2.17	24,081.60	1.969E-01	Pulse	0.30	3
Cr	52	45	2	65.769	ppb	0.59	711,694.05	5.818E+00	Pulse	0.30	3
Mn	55	45	2	69.862	ppb	0.77	377,764.82	3.088E+00	Pulse	0.30	3
Fe	56	45	2	30.412	ppb	0.96	275,518.24	2.252E+00	Pulse	0.30	3
Co	59	45	2	2.103	ppb	1.07	44,525.03	3.640E-01	Pulse	0.30	3
Ni	60	72	2	3.128	ppb	3.47	17,906.75	1.922E-01	Pulse	0.30	3
Cu	63	72	2	4.262	ppb	0.26	69,887.00	7.500E-01	Pulse	0.30	3
Zn	66	72	2	52.750	ppb	0.64	107,444.21	1.153E+00	Pulse	0.30	3
As	75	72	2	2.601	ppb	1.37	2,830.90	3.038E-02	Pulse	0.75	3
Se	78	72	1	2.178	ppb	2.38	1,304.55	1.102E-02	Pulse	0.30	3
Mo	95	103	2	2.997	ppb	0.98	19,683.92	6.698E-03	Pulse	0.30	3
Ag	107	103	3	2.213	ppb	0.89	155,750.70	2.020E-02	Pulse	0.30	3
Cd	111	115	3	1.638	ppb	2.50	25,718.91	3.052E-03	Pulse	0.30	3
Sb	121	115	3	2.296	ppb	0.62	117,803.75	1.398E-02	Pulse	0.30	3
Ba	137	159	3	31.186	ppb	0.44	629,049.96	5.271E-02	Pulse	0.30	3
Tl	205	209	3	1.931	ppb	0.50	230,108.87	3.515E-02	Pulse	0.30	3
Pb	208	209	3	2.382	ppb	0.68	384,232.81	5.870E-02	Pulse	0.30	3
U	238	209	3	7.993	ppb	1.00	1,359,171.22	2.076E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,634,842.82	0.94	93.7	Analog	0.30	3
2	Sc	45	122,337.19	1.35	108.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,741,296.70	0.53	101.5	Analog	0.30	3
1	Ge	72	118,415.47	1.30	107.2	Pulse	0.30	3
2	Ge	72	93,176.49	1.07	104.6	Pulse	0.30	3
2	Rh	103	2,938,845.96	0.42	95.4	Analog	0.30	3
3	Rh	103	7,711,396.83	0.26	91.8	Analog	0.30	3
3	In	115	8,427,379.32	0.47	95.1	Analog	0.30	3
3	Tb	159	11,934,342.18	0.27	95.2	Analog	0.30	3
3	Bi	209	6,546,038.93	0.73	89.4	Analog	0.30	3

Quantitation Report

File Name	A0219050.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:32
Sample Name	N023063-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.199	ppb	3.00	21,336.26	1.338E-02	Pulse	0.30	3
Na	23	45	2	26518.754	ppb	1.71	38,984,946.09	3.330E+02	Analog	0.30	3
Mg	26	45	2	3310.413	ppb	1.71	444,721.18	3.798E+00	Pulse	0.30	3
Al	27	45	2	45.587	ppb	2.98	11,414.45	9.745E-02	Pulse	0.30	3
K	39	45	2	1449.175	ppb	1.81	679,124.37	5.801E+00	Pulse	0.30	3
Ca	44	45	3	20828.837	ppb	0.67	46,611,339.31	1.008E+01	Analog	0.30	3
V	51	45	2	2.934	ppb	2.73	22,917.69	1.958E-01	Pulse	0.30	3
Cr	52	45	2	66.572	ppb	2.01	689,391.21	5.889E+00	Pulse	0.30	3
Mn	55	45	2	70.550	ppb	1.73	365,107.04	3.119E+00	Pulse	0.30	3
Fe	56	45	2	30.540	ppb	1.81	264,795.46	2.262E+00	Pulse	0.30	3
Co	59	45	2	2.154	ppb	2.54	43,643.65	3.728E-01	Pulse	0.30	3
Ni	60	72	2	3.052	ppb	1.86	17,053.99	1.876E-01	Pulse	0.30	3
Cu	63	72	2	4.232	ppb	0.88	67,747.38	7.453E-01	Pulse	0.30	3
Zn	66	72	2	52.426	ppb	1.07	104,194.73	1.146E+00	Pulse	0.30	3
As	75	72	2	2.602	ppb	1.98	2,762.50	3.039E-02	Pulse	0.75	3
Se	78	72	1	2.056	ppb	3.99	1,196.77	1.040E-02	Pulse	0.30	3
Mo	95	103	2	2.973	ppb	1.01	19,036.46	6.645E-03	Pulse	0.30	3
Ag	107	103	3	2.223	ppb	0.41	153,291.09	2.029E-02	Pulse	0.30	3
Cd	111	115	3	1.625	ppb	1.49	25,088.02	3.028E-03	Pulse	0.30	3
Sb	121	115	3	2.301	ppb	0.22	116,065.48	1.401E-02	Pulse	0.30	3
Ba	137	159	3	30.925	ppb	0.31	616,549.03	5.227E-02	Pulse	0.30	3
Tl	205	209	3	1.958	ppb	0.70	230,298.26	3.563E-02	Pulse	0.30	3
Pb	208	209	3	2.368	ppb	0.15	377,242.18	5.837E-02	Pulse	0.30	3
U	238	209	3	8.011	ppb	1.08	1,344,917.69	2.081E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,594,920.51	0.63	91.4	Analog	0.30	3
2	Sc	45	117,109.54	2.39	103.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,625,024.06	0.77	99.0	Analog	0.30	3
1	Ge	72	115,052.61	0.27	104.2	Pulse	0.30	3
2	Ge	72	90,901.38	1.17	102.0	Pulse	0.30	3
2	Rh	103	2,864,484.02	1.02	93.0	Analog	0.30	3
3	Rh	103	7,555,751.48	0.38	90.0	Analog	0.30	3
3	In	115	8,286,054.28	0.53	93.5	Analog	0.30	3
3	Tb	159	11,795,585.10	0.24	94.1	Analog	0.30	3
3	Bi	209	6,462,586.08	0.81	88.2	Analog	0.30	3

Quantitation Report

File Name	A0219051.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:38
Sample Name	CCV3,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	20.016	ppb	1.10	197,173.35	1.217E-01	Pulse	0.30	3
Na	23	45	2	242.775	ppb	2.39	463,721.19	3.927E+00	Pulse	0.30	3
Mg	26	45	2	204.624	ppb	1.24	27,823.92	2.356E-01	Pulse	0.30	3
Al	27	45	2	21.970	ppb	4.88	5,751.76	4.872E-02	Pulse	0.30	3
K	39	45	2	213.197	ppb	2.57	112,873.17	9.560E-01	Pulse	0.30	3
Ca	44	45	3	213.254	ppb	0.38	482,215.89	1.074E-01	Pulse	0.30	3
V	51	45	2	20.179	ppb	0.75	154,285.74	1.307E+00	Pulse	0.30	3
Cr	52	45	2	20.055	ppb	1.27	210,719.40	1.784E+00	Pulse	0.30	3
Mn	55	45	2	20.244	ppb	1.61	105,949.57	8.973E-01	Pulse	0.30	3
Fe	56	45	2	21.023	ppb	1.20	184,557.81	1.563E+00	Pulse	0.30	3
Co	59	45	2	20.153	ppb	1.55	411,624.80	3.486E+00	Pulse	0.30	3
Ni	60	72	2	19.687	ppb	0.69	110,679.01	1.194E+00	Pulse	0.30	3
Cu	63	72	2	20.576	ppb	0.22	313,505.32	3.383E+00	Pulse	0.30	3
Zn	66	72	2	19.239	ppb	1.74	40,787.37	4.401E-01	Pulse	0.30	3
As	75	72	2	20.100	ppb	0.92	21,661.63	2.337E-01	Pulse	0.75	3
Se	78	72	1	19.013	ppb	3.24	11,345.59	9.612E-02	Pulse	0.30	3
Mo	95	103	2	19.826	ppb	0.92	135,591.17	4.427E-02	Pulse	0.30	3
Ag	107	103	3	20.030	ppb	0.93	1,447,282.24	1.793E-01	Analog	0.30	3
Cd	111	115	3	20.560	ppb	0.29	328,974.72	3.825E-02	Pulse	0.30	3
Sb	121	115	3	20.439	ppb	0.61	1,051,069.26	1.222E-01	Pulse	0.30	3
Ba	137	159	3	21.679	ppb	0.98	437,635.61	3.665E-02	Pulse	0.30	3
Tl	205	209	3	20.032	ppb	0.44	2,514,394.91	3.626E-01	Analog	0.30	3
Pb	208	209	3	20.608	ppb	0.53	3,505,124.52	5.055E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	1.39	3,519,035.81	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,620,595.30	1.40	92.9	Analog	0.30	3
2	Sc	45	118,098.24	1.43	104.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,491,826.08	0.49	96.1	Analog	0.30	3
1	Ge	72	118,039.76	0.35	106.9	Pulse	0.30	3
2	Ge	72	92,681.27	0.44	104.0	Pulse	0.30	3
2	Rh	103	3,063,413.84	1.77	99.4	Analog	0.30	3
3	Rh	103	8,070,367.03	0.48	96.1	Analog	0.30	3
3	In	115	8,601,687.02	0.48	97.1	Analog	0.30	3
3	Tb	159	11,942,777.32	0.46	95.2	Analog	0.30	3
3	Bi	209	6,933,543.37	1.13	94.7	Analog	0.30	3

Quantitation Report

File Name	A0219052.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:43
Sample Name	CCB3,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	7.558E-06	Pulse	0.30	3
Na	23	45	2	39.871	ppb	7.59	157,761.97	1.386E+00	Pulse	0.30	3
Mg	26	45	2	0.223	ppb	57.68	124.45	1.093E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	342.23	3.007E-03	Pulse	0.30	3
K	39	45	2	5.993	ppb	26.87	16,359.83	1.438E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,610.08	3.972E-03	Pulse	0.30	3
V	51	45	2	0.014	ppb	47.90	880.06	7.735E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,203.26	1.057E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	341.42	3.001E-03	Pulse	0.30	3
Fe	56	45	2	0.087	ppb	10.68	2,904.27	2.551E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	25.38	2.238E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	80.93	8.920E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	647.80	7.145E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	403.80	4.456E-03	Pulse	0.30	3
As	75	72	2	0.014	ppb	43.41	28.89	3.188E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	28.41	13.33	1.148E-04	Pulse	0.30	3
Mo	95	103	2	0.116	ppb	12.30	810.06	2.668E-04	Pulse	0.30	3
Ag	107	103	3	0.461	ppb	13.67	36,427.07	4.554E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	12.94	1.524E-06	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	0.77	5,272.21	6.198E-04	Pulse	0.30	3
Ba	137	159	3	0.010	ppb	30.76	363.28	3.058E-05	Pulse	0.30	3
Tl	205	209	3	0.024	ppb	3.79	4,423.08	6.420E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,396.08	2.026E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	10.09	837.87	1.216E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,906.95	1.65	92.1	Analog	0.30	3
2	Sc	45	113,827.28	1.27	100.6	Pulse	0.30	3
3	Sc	45	4,434,656.18	1.06	94.9	Analog	0.30	3
1	Ge	72	116,273.62	1.47	105.3	Pulse	0.30	3

2	Ge	72	90,707.11	1.49	101.8	Pulse	0.30	3
2	Rh	103	3,034,069.78	0.76	98.5	Analog	0.30	3
3	Rh	103	8,004,709.95	1.11	95.3	Analog	0.30	3
3	In	115	8,505,968.91	0.95	96.0	Analog	0.30	3
3	Tb	159	11,879,937.46	0.21	94.7	Analog	0.30	3
3	Bi	209	6,889,766.98	0.46	94.1	Analog	0.30	3

Quantitation Report

File Name	A0219053.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:49
Sample Name	~~N023085-003B,SAMP,5~~ N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	12.22	1.022E-05	Pulse	0.30	3
Na	23	45	2	652061.549	ppb	0.66	834,622,698.67	8.167E+03	Analog	0.30	3
Mg	26	45	2	1929.157	ppb	0.97	226,252.91	2.214E+00	Pulse	0.30	3
Al	27	45	2	1.144	ppb	21.53	588.58	5.756E-03	Pulse	0.30	3
K	39	45	2	5623.916	ppb	0.49	2,265,294.67	2.216E+01	Analog	0.30	3
Ca	44	45	3	25853.868	ppb	0.37	50,285,383.14	1.251E+01	Analog	0.30	3
V	51	45	2	0.213	ppb	12.17	2,093.56	2.051E-02	Pulse	0.30	3
Cr	52	45	2	8.994	ppb	1.18	82,654.50	8.086E-01	Pulse	0.30	3
Mn	55	45	2	5.397	ppb	1.18	24,704.70	2.417E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-58,693.54	-5.743E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-616.23	-6.030E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-531.04	-7.192E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-18,003.98	-2.441E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,082.59	-2.823E-02	Pulse	0.30	3
As	75	72	2	0.249	ppb	5.68	225.10	3.054E-03	Pulse	0.75	3
Se	78	72	1	0.031	ppb	78.67	14.45	1.650E-04	Pulse	0.30	3
Mo	95	103	2	10.608	ppb	1.31	52,947.23	2.369E-02	Pulse	0.30	3
Ag	107	103	3	0.025	ppb	14.63	3,889.30	6.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	7.53	1.133E-06	Pulse	0.30	3
Sb	121	115	3	0.003	ppb	92.67	2,016.89	3.020E-04	Pulse	0.30	3
Ba	137	159	3	3.765	ppb	1.19	62,624.15	6.375E-03	Pulse	0.30	3
Tl	205	209	3	0.093	ppb	1.08	9,029.79	1.893E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-4,263.79	-8.937E-04	Pulse	0.30	3
U	238	209	3	0.725	ppb	0.62	90,023.62	1.887E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,162.89	0.63	68.8	Analog	0.30	3
2	Sc	45	102,208.66	2.10	90.3	Pulse	0.30	3
3	Sc	45	4,020,075.81	0.81	86.0	Analog	0.30	3
1	Ge	72	87,457.81	0.32	79.2	Pulse	0.30	3
2	Ge	72	73,765.98	1.98	82.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,234,960.77	1.43	72.6	Analog	0.30	3
3	Rh	103	5,936,385.75	0.50	70.7	Analog	0.30	3
3	In	115	6,677,499.61	0.27	75.3	Analog	0.30	3
3	Tb	159	9,824,263.19	0.81	78.3	Analog	0.30	3
3	Bi	209	4,771,202.70	0.59	65.1	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

For Al & Zn only

File Name	A0219054.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 18:54
Sample Name	N023107-001C,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	186.09	23.33	1.434E-05	Pulse	0.30	3
Na	23	45	2	975.767	ppb	1.86	1,526,601.59	1.311E+01	Analog	0.30	3
Mg	26	45	2	46.366	ppb	2.39	6,292.55	5.403E-02	Pulse	0.30	3
Al	27	45	2	85.151	ppb	0.90	20,862.05	1.791E-01	Pulse	0.30	3
K	39	45	2	264.682	ppb	1.17	134,862.32	1.158E+00	Pulse	0.30	3
Ca	44	45	3	557.040	ppb	1.03	1,234,254.63	2.736E-01	Analog	0.30	3
V	51	45	2	0.292	ppb	9.01	2,987.07	2.564E-02	Pulse	0.30	3
Cr	52	45	2	0.244	ppb	3.70	4,265.42	3.661E-02	Pulse	0.30	3
Mn	55	45	2	2.915	ppb	2.36	15,385.32	1.321E-01	Pulse	0.30	3
Fe	56	45	2	172.368	ppb	0.69	1,476,678.61	1.268E+01	Analog	0.30	3
Co	59	45	2	0.058	ppb	7.69	1,187.36	1.020E-02	Pulse	0.30	3
Ni	60	72	2	0.748	ppb	0.85	4,462.69	4.820E-02	Pulse	0.30	3
Cu	63	72	2	2.837	ppb	1.03	48,156.06	5.202E-01	Pulse	0.30	3
Zn	66	72	2	22.197	ppb	0.73	46,566.35	5.030E-01	Pulse	0.30	3
As	75	72	2	0.146	ppb	2.43	171.54	1.853E-03	Pulse	0.75	3
Se	78	72	1	0.022	ppb	104.64	14.44	1.224E-04	Pulse	0.30	3
Mo	95	103	2	0.283	ppb	6.82	1,949.10	6.388E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,807.05	3.489E-04	Pulse	0.30	3
Cd	111	115	3	0.006	ppb	30.79	142.85	1.672E-05	Pulse	0.30	3
Sb	121	115	3	0.220	ppb	0.99	13,641.99	1.597E-03	Pulse	0.30	3
Ba	137	159	3	65.952	ppb	0.36	1,322,201.72	1.115E-01	Analog	0.30	3
Tl	205	209	3	0.007	ppb	4.98	2,352.51	3.410E-04	Pulse	0.30	3
Pb	208	209	3	0.603	ppb	1.33	104,171.98	1.510E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	6.54	1,566.39	2.270E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,628,151.17	0.94	93.3	Analog	0.30	3
2	Sc	45	116,496.95	1.53	102.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,510,662.47	0.08	96.5	Analog	0.30	3
1	Ge	72	117,971.02	0.25	106.8	Pulse	0.30	3
2	Ge	72	92,577.69	1.45	103.9	Pulse	0.30	3
2	Rh	103	3,050,894.36	0.36	99.0	Analog	0.30	3
3	Rh	103	8,045,042.94	0.66	95.8	Analog	0.30	3
3	In	115	8,542,516.40	0.31	96.4	Analog	0.30	3
3	Tb	159	11,863,153.71	0.72	94.6	Analog	0.30	3
3	Bi	209	6,899,652.68	0.27	94.2	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219055.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:00
Sample Name	N023107-001C,SAMP,125
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.34	8.265E-06	Pulse	0.30	3
Na	23	45	2	225.063	ppb	3.54	428,600.05	3.705E+00	Pulse	0.30	3
Mg	26	45	2	8.737	ppb	7.91	1,255.66	1.086E-02	Pulse	0.30	3
Al	27	45	2	16.058	ppb	5.68	4,223.92	3.653E-02	Pulse	0.30	3
K	39	45	2	58.347	ppb	4.04	40,367.76	3.490E-01	Pulse	0.30	3
Ca	44	45	3	116.689	ppb	0.13	268,532.65	6.065E-02	Pulse	0.30	3
V	51	45	2	0.060	ppb	19.94	1,237.89	1.069E-02	Pulse	0.30	3
Cr	52	45	2	0.022	ppb	66.04	1,964.12	1.699E-02	Pulse	0.30	3
Mn	55	45	2	0.570	ppb	3.27	3,300.01	2.853E-02	Pulse	0.30	3
Fe	56	45	2	35.820	ppb	1.57	306,519.07	2.649E+00	Pulse	0.30	3
Co	59	45	2	0.011	ppb	10.06	250.45	2.162E-03	Pulse	0.30	3
Ni	60	72	2	0.134	ppb	7.84	1,008.10	1.103E-02	Pulse	0.30	3
Cu	63	72	2	0.302	ppb	1.89	10,146.51	1.110E-01	Pulse	0.30	3
Zn	66	72	2	3.492	ppb	2.43	9,592.54	1.050E-01	Pulse	0.30	3
As	75	72	2	0.032	ppb	29.77	48.00	5.243E-04	Pulse	0.75	3
Se	78	72	1	0.009	ppb	60.35	6.67	5.770E-05	Pulse	0.30	3
Mo	95	103	2	0.070	ppb	9.67	497.81	1.641E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,634.08	3.306E-04	Pulse	0.30	3
Cd	111	115	3	0.000	ppb	388.10	56.49	6.606E-06	Pulse	0.30	3
Sb	121	115	3	0.021	ppb	15.93	3,473.87	4.071E-04	Pulse	0.30	3
Ba	137	159	3	13.851	ppb	0.68	277,066.27	2.342E-02	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	19.80	1,807.96	2.630E-04	Pulse	0.30	3
Pb	208	209	3	0.129	ppb	2.10	23,929.11	3.482E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	370.25	5.384E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,607,193.61	1.77	92.1	Analog	0.30	3
2	Sc	45	115,718.35	2.44	102.2	Pulse	0.30	3
3	Sc	45	4,427,632.02	0.20	94.7	Analog	0.30	3
1	Ge	72	115,540.58	0.31	104.6	Pulse	0.30	3
2	Ge	72	91,389.82	1.34	102.6	Pulse	0.30	3
2	Rh	103	3,032,968.98	0.59	98.5	Analog	0.30	3
3	Rh	103	7,967,603.49	0.29	94.9	Analog	0.30	3
3	In	115	8,534,750.54	0.72	96.3	Analog	0.30	3
3	Tb	159	11,831,440.52	0.33	94.3	Analog	0.30	3
3	Bi	209	6,873,907.61	0.92	93.8	Analog	0.30	3

Quantitation Report

File Name	A0219056.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:06
Sample Name	N023107-001C-PS,PS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.398	ppb	2.99	3,805.03	2.433E-03	Pulse	0.30	3
Na	23	45	2	916.537	ppb	1.30	1,396,367.57	1.236E+01	Analog	0.30	3
Mg	26	45	2	47.515	ppb	3.54	6,250.29	5.534E-02	Pulse	0.30	3
Al	27	45	2	89.443	ppb	1.25	21,227.36	1.879E-01	Pulse	0.30	3
K	39	45	2	258.506	ppb	2.34	127,998.60	1.134E+00	Pulse	0.30	3
Ca	44	45	3	551.348	ppb	1.38	1,165,371.41	2.709E-01	Mix	0.30	3
V	51	45	2	0.704	ppb	3.00	5,887.97	5.215E-02	Pulse	0.30	3
Cr	52	45	2	0.633	ppb	5.94	8,002.66	7.090E-02	Pulse	0.30	3
Mn	55	45	2	6.983	ppb	2.05	35,195.71	3.117E-01	Pulse	0.30	3
Fe	56	45	2	169.921	ppb	2.09	1,411,057.04	1.250E+01	Analog	0.30	3
Co	59	45	2	0.464	ppb	1.12	9,088.13	8.045E-02	Pulse	0.30	3
Ni	60	72	2	1.165	ppb	3.33	6,571.47	7.340E-02	Pulse	0.30	3
Cu	63	72	2	3.217	ppb	1.33	52,064.22	5.814E-01	Pulse	0.30	3
Zn	66	72	2	25.515	ppb	0.89	51,359.10	5.736E-01	Pulse	0.30	3
As	75	72	2	0.605	ppb	4.52	643.56	7.186E-03	Pulse	0.75	3
Se	78	72	1	0.405	ppb	28.67	234.46	2.057E-03	Pulse	0.30	3
Mo	95	103	2	0.624	ppb	5.39	4,197.40	1.401E-03	Pulse	0.30	3
Ag	107	103	3	0.262	ppb	7.80	21,668.76	2.779E-03	Pulse	0.30	3
Cd	111	115	3	0.435	ppb	1.27	6,829.22	8.143E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.99	33,958.86	4.049E-03	Pulse	0.30	3
Ba	137	159	3	64.967	ppb	0.42	1,288,939.85	1.098E-01	Analog	0.30	3
Tl	205	209	3	0.364	ppb	0.64	45,978.96	6.792E-03	Pulse	0.30	3
Pb	208	209	3	1.014	ppb	0.48	170,348.08	2.516E-02	Pulse	0.30	3
U	238	209	3	0.431	ppb	1.23	75,915.63	1.121E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,564,069.65	0.25	89.6	Analog	0.30	3
2	Sc	45	112,953.92	2.52	99.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,302,224.69	0.41	92.1	Analog	0.30	3
1	Ge	72	114,134.49	0.83	103.4	Pulse	0.30	3
2	Ge	72	89,537.58	0.98	100.5	Pulse	0.30	3
2	Rh	103	2,996,179.57	1.06	97.3	Analog	0.30	3
3	Rh	103	7,797,470.51	0.47	92.9	Analog	0.30	3
3	In	115	8,387,038.90	0.42	94.6	Analog	0.30	3
3	Tb	159	11,739,695.10	0.68	93.6	Analog	0.30	3
3	Bi	209	6,769,743.58	0.93	92.4	Analog	0.30	3

Quantitation Report

File Name	A0219057.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:11
Sample Name	N023107-001C-MS,MS,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.409	ppb	1.33	3,843.92	2.500E-03	Pulse	0.30	3
Na	23	45	2	876.147	ppb	3.27	1,301,436.10	1.186E+01	Analog	0.30	3
Mg	26	45	2	46.935	ppb	1.40	6,002.46	5.468E-02	Pulse	0.30	3
Al	27	45	2	86.444	ppb	1.98	19,948.85	1.817E-01	Pulse	0.30	3
K	39	45	2	248.520	ppb	1.32	120,145.40	1.094E+00	Pulse	0.30	3
Ca	44	45	3	541.118	ppb	0.45	1,130,444.94	2.659E-01	Pulse	0.30	3
V	51	45	2	0.737	ppb	1.25	5,961.33	5.429E-02	Pulse	0.30	3
Cr	52	45	2	0.665	ppb	4.67	8,085.01	7.368E-02	Pulse	0.30	3
Mn	55	45	2	6.980	ppb	2.74	34,198.28	3.116E-01	Pulse	0.30	3
Fe	56	45	2	164.134	ppb	1.20	1,325,189.79	1.207E+01	Analog	0.30	3
Co	59	45	2	0.467	ppb	1.41	8,887.08	8.095E-02	Pulse	0.30	3
Ni	60	72	2	1.119	ppb	2.09	6,211.53	7.065E-02	Pulse	0.30	3
Cu	63	72	2	3.074	ppb	0.71	49,098.06	5.584E-01	Pulse	0.30	3
Zn	66	72	2	24.545	ppb	1.30	48,620.42	5.530E-01	Pulse	0.30	3
As	75	72	2	0.559	ppb	1.53	584.45	6.647E-03	Pulse	0.75	3
Se	78	72	1	0.417	ppb	12.58	236.68	2.119E-03	Pulse	0.30	3
Mo	95	103	2	0.621	ppb	3.46	4,107.37	1.394E-03	Pulse	0.30	3
Ag	107	103	3	0.401	ppb	1.39	31,330.80	4.020E-03	Pulse	0.30	3
Cd	111	115	3	0.449	ppb	0.67	7,014.94	8.409E-04	Pulse	0.30	3
Sb	121	115	3	0.631	ppb	1.77	33,757.13	4.047E-03	Pulse	0.30	3
Ba	137	159	3	66.793	ppb	0.52	1,323,261.04	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.373	ppb	0.79	47,439.33	6.959E-03	Pulse	0.30	3
Pb	208	209	3	0.998	ppb	0.72	168,877.92	2.477E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	0.57	74,024.68	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,537,233.40	1.11	88.1	Analog	0.30	3
2	Sc	45	109,797.71	2.51	97.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,250,996.29	0.82	91.0	Analog	0.30	3
1	Ge	72	111,672.69	1.17	101.1	Pulse	0.30	3
2	Ge	72	87,920.96	0.87	98.7	Pulse	0.30	3
2	Rh	103	2,946,767.04	1.02	95.7	Analog	0.30	3
3	Rh	103	7,793,361.00	0.74	92.8	Analog	0.30	3
3	In	115	8,342,307.15	0.36	94.1	Analog	0.30	3
3	Tb	159	11,723,287.88	0.66	93.5	Analog	0.30	3
3	Bi	209	6,817,213.58	0.46	93.1	Analog	0.30	3

Quantitation Report

File Name	A0219058.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:17
Sample Name	N023107-001C-MSD,MSD,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.430	ppb	1.09	3,970.64	2.624E-03	Pulse	0.30	3
Na	23	45	2	867.953	ppb	1.34	1,276,517.47	1.176E+01	Analog	0.30	3
Mg	26	45	2	47.220	ppb	3.87	5,972.46	5.501E-02	Pulse	0.30	3
Al	27	45	2	86.837	ppb	1.05	19,823.96	1.826E-01	Pulse	0.30	3
K	39	45	2	245.166	ppb	0.03	117,414.04	1.081E+00	Pulse	0.30	3
Ca	44	45	3	535.668	ppb	0.80	1,100,425.19	2.633E-01	Pulse	0.30	3
V	51	45	2	0.721	ppb	5.03	5,783.48	5.324E-02	Pulse	0.30	3
Cr	52	45	2	0.654	ppb	3.16	7,893.84	7.271E-02	Pulse	0.30	3
Mn	55	45	2	7.042	ppb	1.25	34,131.45	3.143E-01	Pulse	0.30	3
Fe	56	45	2	163.871	ppb	0.29	1,308,765.18	1.205E+01	Analog	0.30	3
Co	59	45	2	0.477	ppb	0.95	8,981.61	8.271E-02	Pulse	0.30	3
Ni	60	72	2	1.086	ppb	2.90	6,023.73	6.861E-02	Pulse	0.30	3
Cu	63	72	2	3.034	ppb	0.94	48,462.64	5.520E-01	Pulse	0.30	3
Zn	66	72	2	24.081	ppb	0.72	47,686.88	5.431E-01	Pulse	0.30	3
As	75	72	2	0.557	ppb	3.36	581.78	6.627E-03	Pulse	0.75	3
Se	78	72	1	0.378	ppb	10.15	212.23	1.922E-03	Pulse	0.30	3
Mo	95	103	2	0.603	ppb	3.21	3,971.78	1.355E-03	Pulse	0.30	3
Ag	107	103	3	0.409	ppb	2.01	31,405.66	4.085E-03	Pulse	0.30	3
Cd	111	115	3	0.439	ppb	3.70	6,784.98	8.229E-04	Pulse	0.30	3
Sb	121	115	3	0.633	ppb	2.21	33,498.79	4.062E-03	Pulse	0.30	3
Ba	137	159	3	66.785	ppb	0.22	1,307,194.38	1.129E-01	Pulse	0.30	3
Tl	205	209	3	0.370	ppb	0.75	46,649.90	6.907E-03	Pulse	0.30	3
Pb	208	209	3	0.995	ppb	0.17	166,832.36	2.470E-02	Pulse	0.30	3
U	238	209	3	0.417	ppb	1.30	73,368.74	1.086E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,513,027.32	1.20	86.7	Analog	0.30	3
2	Sc	45	108,589.21	0.98	95.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,179,501.99	0.24	89.4	Analog	0.30	3
1	Ge	72	110,371.18	0.51	100.0	Pulse	0.30	3
2	Ge	72	87,803.72	0.73	98.6	Pulse	0.30	3
2	Rh	103	2,930,998.78	0.90	95.1	Analog	0.30	3
3	Rh	103	7,688,174.47	0.62	91.6	Analog	0.30	3
3	In	115	8,246,383.21	0.86	93.1	Analog	0.30	3
3	Tb	159	11,582,076.08	0.35	92.3	Analog	0.30	3
3	Bi	209	6,754,241.63	0.15	92.2	Analog	0.30	3

Quantitation Report

File Name	A0219059.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:22
Sample Name	N023107-002C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	44.38	25.55	1.709E-05	Pulse	0.30	3
Na	23	45	2	1547.301	ppb	0.74	2,165,468.08	2.026E+01	Analog	0.30	3
Mg	26	45	2	47.984	ppb	2.19	5,971.31	5.588E-02	Pulse	0.30	3
Al	27	45	2	94.894	ppb	3.78	21,278.73	1.992E-01	Pulse	0.30	3
K	39	45	2	403.419	ppb	0.93	181,833.77	1.702E+00	Pulse	0.30	3
Ca	44	45	3	369.776	ppb	0.76	761,033.97	1.831E-01	Pulse	0.30	3
V	51	45	2	1.523	ppb	0.92	11,209.82	1.049E-01	Pulse	0.30	3
Cr	52	45	2	0.518	ppb	3.99	6,493.39	6.078E-02	Pulse	0.30	3
Mn	55	45	2	5.609	ppb	3.06	26,824.48	2.510E-01	Pulse	0.30	3
Fe	56	45	2	266.180	ppb	0.92	2,090,908.89	1.957E+01	Analog	0.30	3
Co	59	45	2	0.085	ppb	2.67	1,590.56	1.489E-02	Pulse	0.30	3
Ni	60	72	2	1.711	ppb	5.36	9,264.85	1.064E-01	Pulse	0.30	3
Cu	63	72	2	5.839	ppb	1.85	87,447.11	1.005E+00	Pulse	0.30	3
Zn	66	72	2	45.212	ppb	1.24	86,429.53	9.928E-01	Pulse	0.30	3
As	75	72	2	0.241	ppb	12.03	257.76	2.959E-03	Pulse	0.75	3
Se	78	72	1	0.004	ppb	148.01	3.33	3.114E-05	Pulse	0.30	3
Mo	95	103	2	0.279	ppb	3.64	1,835.74	6.298E-04	Pulse	0.30	3
Ag	107	103	3	0.092	ppb	5.38	9,542.78	1.254E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.93	-9.716E-07	Pulse	0.30	3
Sb	121	115	3	2.972	ppb	0.43	147,102.87	1.801E-02	Pulse	0.30	3
Ba	137	159	3	46.028	ppb	0.13	899,615.76	7.779E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	6.15	2,353.63	3.495E-04	Pulse	0.30	3
Pb	208	209	3	1.062	ppb	0.80	177,368.49	2.634E-02	Pulse	0.30	3
U	238	209	3	0.008	ppb	8.01	1,634.60	2.428E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,494,959.24	0.69	85.7	Analog	0.30	3
2	Sc	45	106,870.80	1.55	94.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,157,441.22	0.55	89.0	Analog	0.30	3
1	Ge	72	107,780.82	1.08	97.6	Pulse	0.30	3
2	Ge	72	87,061.96	1.30	97.7	Pulse	0.30	3
2	Rh	103	2,915,295.51	0.79	94.6	Analog	0.30	3
3	Rh	103	7,613,773.98	0.93	90.7	Analog	0.30	3
3	In	115	8,166,288.26	0.31	92.1	Analog	0.30	3
3	Tb	159	11,564,675.10	0.28	92.2	Analog	0.30	3
3	Bi	209	6,734,192.12	0.34	91.9	Analog	0.30	3

Quantitation Report

File Name	A0219060.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:28
Sample Name	N023107-003C,SAMP,10
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	85.33	25.56	1.753E-05	Pulse	0.30	3
Na	23	45	2	1296.569	ppb	1.85	1,821,523.72	1.712E+01	Analog	0.30	3
Mg	26	45	2	59.985	ppb	4.00	7,408.62	6.965E-02	Pulse	0.30	3
Al	27	45	2	82.052	ppb	4.53	18,362.35	1.727E-01	Pulse	0.30	3
K	39	45	2	321.812	ppb	1.91	146,980.33	1.382E+00	Pulse	0.30	3
Ca	44	45	3	512.800	ppb	0.71	1,026,229.29	2.522E-01	Pulse	0.30	3
V	51	45	2	1.024	ppb	3.41	7,744.35	7.276E-02	Pulse	0.30	3
Cr	52	45	2	0.367	ppb	6.01	5,039.77	4.739E-02	Pulse	0.30	3
Mn	55	45	2	4.646	ppb	1.26	22,186.02	2.085E-01	Pulse	0.30	3
Fe	56	45	2	295.629	ppb	1.41	2,311,348.96	2.173E+01	Analog	0.30	3
Co	59	45	2	0.095	ppb	0.72	1,770.75	1.664E-02	Pulse	0.30	3
Ni	60	72	2	0.594	ppb	5.48	3,330.01	3.889E-02	Pulse	0.30	3
Cu	63	72	2	4.567	ppb	0.91	68,412.15	7.993E-01	Pulse	0.30	3
Zn	66	72	2	33.356	ppb	0.37	63,372.88	7.405E-01	Pulse	0.30	3
As	75	72	2	0.461	ppb	11.15	471.11	5.508E-03	Pulse	0.75	3
Se	78	72	1	0.017	ppb	74.90	10.00	9.431E-05	Pulse	0.30	3
Mo	95	103	2	0.183	ppb	3.79	1,198.99	4.158E-04	Pulse	0.30	3
Ag	107	103	3	0.014	ppb	13.97	4,234.28	5.596E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-9.88	-1.218E-06	Pulse	0.30	3
Sb	121	115	3	0.217	ppb	1.95	12,893.57	1.580E-03	Pulse	0.30	3
Ba	137	159	3	47.940	ppb	0.52	932,906.31	8.102E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	12.98	1,629.05	2.424E-04	Pulse	0.30	3
Pb	208	209	3	0.601	ppb	0.34	101,143.62	1.505E-02	Pulse	0.30	3
U	238	209	3	0.006	ppb	5.46	1,225.11	1.823E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,456,254.06	0.89	83.4	Analog	0.30	3
2	Sc	45	106,399.75	2.16	94.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,068,579.42	0.29	87.1	Analog	0.30	3
1	Ge	72	106,071.14	0.61	96.1	Pulse	0.30	3
2	Ge	72	85,588.82	1.38	96.1	Pulse	0.30	3
2	Rh	103	2,883,816.14	1.75	93.6	Analog	0.30	3
3	Rh	103	7,566,477.32	0.21	90.1	Analog	0.30	3
3	In	115	8,162,124.28	0.21	92.1	Analog	0.30	3
3	Tb	159	11,514,592.05	0.33	91.8	Analog	0.30	3
3	Bi	209	6,720,685.73	0.55	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219061.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:33
Sample Name	N023107-004C,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.535E-06	Pulse	0.30	3
Na	23	45	2	548.615	ppb	1.81	826,975.87	7.757E+00	Pulse	0.30	3
Mg	26	45	2	46.754	ppb	3.12	5,810.13	5.447E-02	Pulse	0.30	3
Al	27	45	2	18.083	ppb	5.65	4,336.85	4.070E-02	Pulse	0.30	3
K	39	45	2	167.829	ppb	1.77	82,956.84	7.781E-01	Pulse	0.30	3
Ca	44	45	3	748.298	ppb	0.53	1,491,085.86	3.661E-01	Analog	0.30	3
V	51	45	2	0.156	ppb	7.94	1,796.85	1.686E-02	Pulse	0.30	3
Cr	52	45	2	1.102	ppb	2.01	11,970.21	1.123E-01	Pulse	0.30	3
Mn	55	45	2	3.556	ppb	0.68	17,105.60	1.604E-01	Pulse	0.30	3
Fe	56	45	2	66.463	ppb	1.77	522,321.19	4.900E+00	Pulse	0.30	3
Co	59	45	2	0.032	ppb	10.40	612.20	5.739E-03	Pulse	0.30	3
Ni	60	72	2	1.459	ppb	1.23	7,936.82	9.121E-02	Pulse	0.30	3
Cu	63	72	2	1.620	ppb	3.18	28,158.28	3.237E-01	Pulse	0.30	3
Zn	66	72	2	47.917	ppb	1.03	91,374.59	1.050E+00	Pulse	0.30	3
As	75	72	2	0.204	ppb	2.56	219.54	2.524E-03	Pulse	0.75	3
Se	78	72	1	0.035	ppb	17.55	20.00	1.855E-04	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	3.91	802.28	2.761E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,569.51	3.355E-04	Pulse	0.30	3
Cd	111	115	3	0.024	ppb	10.03	412.75	5.028E-05	Pulse	0.30	3
Sb	121	115	3	0.423	ppb	2.21	23,067.65	2.809E-03	Pulse	0.30	3
Ba	137	159	3	18.003	ppb	0.38	353,460.30	3.043E-02	Pulse	0.30	3
Tl	205	209	3	0.000	ppb	407.59	1,495.70	2.197E-04	Pulse	0.30	3
Pb	208	209	3	0.239	ppb	1.90	41,924.61	6.157E-03	Pulse	0.30	3
U	238	209	3	0.001	ppb	4.32	429.52	6.308E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,461,534.94	1.84	83.7	Analog	0.30	3
2	Sc	45	106,634.31	2.51	94.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,072,457.82	0.25	87.1	Analog	0.30	3
1	Ge	72	107,797.73	0.40	97.6	Pulse	0.30	3
2	Ge	72	87,008.55	1.85	97.7	Pulse	0.30	3
2	Rh	103	2,905,985.69	1.37	94.3	Analog	0.30	3
3	Rh	103	7,659,656.07	0.66	91.2	Analog	0.30	3
3	In	115	8,210,849.46	0.31	92.7	Analog	0.30	3
3	Tb	159	11,613,964.97	1.00	92.6	Analog	0.30	3
3	Bi	209	6,809,217.75	0.47	93.0	Analog	0.30	3

Quantitation Report

File Name	A0219062.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:39
Sample Name	N023137-001A,SAMP,2
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	175.00	27.78	1.945E-05	Pulse	0.30	3
Na	23	45	2	1169.758	ppb	0.99	1,625,196.87	1.554E+01	Analog	0.30	3
Mg	26	45	2	536.909	ppb	0.97	64,518.49	6.168E-01	Pulse	0.30	3
Al	27	45	2	106.848	ppb	3.53	23,417.02	2.238E-01	Pulse	0.30	3
K	39	45	2	534.528	ppb	1.13	231,750.99	2.215E+00	Pulse	0.30	3
Ca	44	45	3	6320.894	ppb	0.78	12,214,375.38	3.061E+00	Analog	0.30	3
V	51	45	2	1.131	ppb	1.58	8,333.58	7.966E-02	Pulse	0.30	3
Cr	52	45	2	0.351	ppb	5.35	4,811.20	4.597E-02	Pulse	0.30	3
Mn	55	45	2	4.785	ppb	2.13	22,454.13	2.147E-01	Pulse	0.30	3
Fe	56	45	2	124.763	ppb	0.80	960,516.66	9.181E+00	Pulse	0.30	3
Co	59	45	2	0.096	ppb	6.22	1,763.03	1.685E-02	Pulse	0.30	3
Ni	60	72	2	0.917	ppb	5.19	4,945.27	5.843E-02	Pulse	0.30	3
Cu	63	72	2	6.568	ppb	1.37	95,030.53	1.122E+00	Pulse	0.30	3
Zn	66	72	2	36.450	ppb	0.53	68,284.71	8.063E-01	Pulse	0.30	3
As	75	72	2	0.295	ppb	3.55	302.93	3.578E-03	Pulse	0.75	3
Se	78	72	1	0.073	ppb	38.73	40.00	3.774E-04	Pulse	0.30	3
Mo	95	103	2	0.613	ppb	2.20	3,937.40	1.376E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	821.02	1.101E-04	Pulse	0.30	3
Cd	111	115	3	0.002	ppb	200.86	70.41	8.729E-06	Pulse	0.30	3
Sb	121	115	3	0.820	ppb	0.87	41,693.99	5.176E-03	Pulse	0.30	3
Ba	137	159	3	13.942	ppb	0.77	270,848.83	2.357E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	8.51	1,693.50	2.574E-04	Pulse	0.30	3
Pb	208	209	3	0.662	ppb	1.02	108,763.59	1.653E-02	Pulse	0.30	3
U	238	209	3	0.068	ppb	2.12	11,826.77	1.798E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,424,963.21	0.59	81.7	Analog	0.30	3
2	Sc	45	104,617.50	1.69	92.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,989,872.20	0.41	85.4	Analog	0.30	3
1	Ge	72	105,853.88	0.75	95.9	Pulse	0.30	3
2	Ge	72	84,693.28	1.92	95.1	Pulse	0.30	3
2	Rh	103	2,860,790.58	0.88	92.9	Analog	0.30	3
3	Rh	103	7,460,905.24	0.61	88.9	Analog	0.30	3
3	In	115	8,056,073.23	0.43	90.9	Analog	0.30	3
3	Tb	159	11,490,496.77	0.49	91.6	Analog	0.30	3
3	Bi	209	6,578,641.57	0.64	89.8	Analog	0.30	3

Quantitation Report

File Name	A0219063.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:44
Sample Name	CCV4,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.432	ppb	0.55	172,200.15	1.181E-01	Pulse	0.30	3
Na	23	45	2	221.479	ppb	1.25	385,824.10	3.661E+00	Pulse	0.30	3
Mg	26	45	2	202.731	ppb	0.75	24,602.12	2.334E-01	Pulse	0.30	3
Al	27	45	2	21.467	ppb	3.06	5,026.27	4.769E-02	Pulse	0.30	3
K	39	45	2	210.370	ppb	0.55	99,594.71	9.449E-01	Pulse	0.30	3
Ca	44	45	3	211.707	ppb	0.67	425,018.51	1.066E-01	Pulse	0.30	3
V	51	45	2	20.411	ppb	0.26	139,290.18	1.321E+00	Pulse	0.30	3
Cr	52	45	2	20.280	ppb	0.88	190,182.55	1.804E+00	Pulse	0.30	3
Mn	55	45	2	20.365	ppb	1.18	95,132.01	9.026E-01	Pulse	0.30	3
Fe	56	45	2	21.400	ppb	1.00	167,644.48	1.591E+00	Pulse	0.30	3
Co	59	45	2	20.730	ppb	0.80	377,938.99	3.586E+00	Pulse	0.30	3
Ni	60	72	2	19.670	ppb	1.71	102,533.42	1.193E+00	Pulse	0.30	3
Cu	63	72	2	20.360	ppb	1.19	287,674.97	3.348E+00	Pulse	0.30	3
Zn	66	72	2	18.808	ppb	2.06	37,027.76	4.309E-01	Pulse	0.30	3
As	75	72	2	19.580	ppb	0.81	19,566.06	2.277E-01	Pulse	0.75	3
Se	78	72	1	19.361	ppb	0.76	10,213.64	9.788E-02	Pulse	0.30	3
Mo	95	103	2	19.643	ppb	1.39	127,931.47	4.386E-02	Pulse	0.30	3
Ag	107	103	3	19.929	ppb	0.33	1,356,935.43	1.784E-01	Analog	0.30	3
Cd	111	115	3	20.613	ppb	0.70	310,944.71	3.834E-02	Pulse	0.30	3
Sb	121	115	3	20.597	ppb	0.42	998,592.16	1.231E-01	Pulse	0.30	3
Ba	137	159	3	21.303	ppb	0.42	415,987.87	3.601E-02	Pulse	0.30	3
Tl	205	209	3	20.175	ppb	0.95	2,474,987.41	3.652E-01	Analog	0.30	3
Pb	208	209	3	20.705	ppb	0.76	3,442,029.74	5.079E-01	Analog	0.30	3
U	238	209	3	19.628	ppb	0.54	3,455,074.41	5.098E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,457,734.49	0.49	83.5	Analog	0.30	3
2	Sc	45	105,409.21	1.35	93.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,986,958.79	0.91	85.3	Analog	0.30	3
1	Ge	72	104,345.70	0.30	94.5	Pulse	0.30	3
2	Ge	72	85,941.48	1.22	96.5	Pulse	0.30	3
2	Rh	103	2,917,095.86	0.28	94.7	Analog	0.30	3
3	Rh	103	7,604,613.15	0.04	90.6	Analog	0.30	3
3	In	115	8,109,390.88	0.29	91.5	Analog	0.30	3
3	Tb	159	11,551,906.63	0.43	92.1	Analog	0.30	3
3	Bi	209	6,776,784.55	0.48	92.5	Analog	0.30	3

Quantitation Report

File Name	A0219064.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:50
Sample Name	CCB4,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	9.488E-06	Pulse	0.30	3
Na	23	45	2	21.873	ppb	11.36	119,500.41	1.161E+00	Pulse	0.30	3
Mg	26	45	2	0.445	ppb	59.64	138.90	1.347E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	300.00	2.916E-03	Pulse	0.30	3
K	39	45	2	3.626	ppb	41.09	13,841.83	1.345E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	15,657.49	4.014E-03	Pulse	0.30	3
V	51	45	2	0.007	ppb	115.37	750.05	7.278E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,053.29	1.023E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.45	2.562E-03	Pulse	0.30	3
Fe	56	45	2	0.093	ppb	17.89	2,673.57	2.598E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	22.08	2.131E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	54.29	6.517E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	697.70	8.373E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	371.70	4.455E-03	Pulse	0.30	3
As	75	72	2	0.017	ppb	34.39	29.78	3.580E-04	Pulse	0.75	3
Se	78	72	1	0.019	ppb	83.45	11.11	1.069E-04	Pulse	0.30	3
Mo	95	103	2	0.102	ppb	8.84	680.05	2.356E-04	Pulse	0.30	3
Ag	107	103	3	0.443	ppb	15.11	33,183.86	4.394E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	20.92	2.598E-06	Pulse	0.30	3
Sb	121	115	3	0.051	ppb	1.04	4,730.92	5.865E-04	Pulse	0.30	3
Ba	137	159	3	0.014	ppb	8.05	429.12	3.730E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	53.34	1,679.06	2.491E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,174.81	1.743E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	12.44	849.98	1.261E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,403,258.64	0.25	80.4	Analog	0.30	3
2	Sc	45	102,974.34	2.05	91.0	Pulse	0.30	3
3	Sc	45	3,901,056.02	0.49	83.5	Analog	0.30	3
1	Ge	72	103,875.21	0.72	94.1	Pulse	0.30	3

2	Ge	72	83,349.43	1.52	93.6	Pulse	0.30	3
2	Rh	103	2,886,174.09	0.63	93.7	Analog	0.30	3
3	Rh	103	7,552,502.67	0.17	90.0	Analog	0.30	3
3	In	115	8,066,673.38	0.49	91.0	Analog	0.30	3
3	Tb	159	11,504,500.94	0.12	91.7	Analog	0.30	3
3	Bi	209	6,739,121.01	0.31	92.0	Analog	0.30	3

Quantitation Report

File Name	A0219065.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 19:55
Sample Name	LLCCV1,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.487	ppb	2.21	4,553.02	2.972E-03	Pulse	0.30	3
Na	23	45	2	2.810	ppb	49.26	104,484.03	9.222E-01	Pulse	0.30	3
Mg	26	45	2	3.578	ppb	10.23	560.03	4.942E-03	Pulse	0.30	3
Al	27	45	2	11.715	ppb	5.70	3,122.60	2.757E-02	Pulse	0.30	3
K	39	45	2	2.648	ppb	16.93	14,804.86	1.307E-01	Pulse	0.30	3
Ca	44	45	3	8.215	ppb	1.09	34,857.46	8.184E-03	Pulse	0.30	3
V	51	45	2	0.992	ppb	0.50	8,013.38	7.071E-02	Pulse	0.30	3
Cr	52	45	2	0.943	ppb	2.51	11,136.29	9.828E-02	Pulse	0.30	3
Mn	55	45	2	0.528	ppb	2.92	3,022.71	2.667E-02	Pulse	0.30	3
Fe	56	45	2	11.290	ppb	0.23	96,114.67	8.482E-01	Pulse	0.30	3
Co	59	45	2	0.511	ppb	2.03	10,037.76	8.857E-02	Pulse	0.30	3
Ni	60	72	2	0.968	ppb	3.47	5,706.57	6.148E-02	Pulse	0.30	3
Cu	63	72	2	0.749	ppb	3.20	17,006.06	1.832E-01	Pulse	0.30	3
Zn	66	72	2	8.823	ppb	0.60	20,278.20	2.184E-01	Pulse	0.30	3
As	75	72	2	0.085	ppb	21.56	106.22	1.147E-03	Pulse	0.75	3
Se	78	72	1	0.497	ppb	16.02	291.13	2.523E-03	Pulse	0.30	3
Mo	95	103	2	0.514	ppb	3.02	3,687.26	1.155E-03	Pulse	0.30	3
Ag	107	103	3	0.457	ppb	1.09	37,249.17	4.521E-03	Pulse	0.30	3
Cd	111	115	3	0.513	ppb	0.88	8,522.73	9.602E-04	Pulse	0.30	3
Sb	121	115	3	0.524	ppb	1.37	30,261.13	3.409E-03	Pulse	0.30	3
Ba	137	159	3	1.173	ppb	1.58	25,420.23	1.996E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.56	65,447.48	8.741E-03	Pulse	0.30	3
Pb	208	209	3	1.035	ppb	1.25	192,243.67	2.568E-02	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.42	100,320.81	1.340E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,531,860.01	0.61	87.8	Analog	0.30	3
2	Sc	45	113,317.15	1.20	100.1	Pulse	0.30	3
3	Sc	45	4,259,075.73	0.46	91.1	Analog	0.30	3
1	Ge	72	115,487.39	1.07	104.6	Pulse	0.30	3

2	Ge	72	92,848.63	2.00	104.2	Pulse	0.30	3
2	Rh	103	3,193,504.64	0.34	103.7	Analog	0.30	3
3	Rh	103	8,239,404.67	0.50	98.1	Analog	0.30	3
3	In	115	8,876,788.72	0.82	100.2	Analog	0.30	3
3	Tb	159	12,738,041.48	0.20	101.6	Analog	0.30	3
3	Bi	209	7,487,344.75	0.95	102.2	Analog	0.30	3

Quantitation Report

File Name	A0219066.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:01
Sample Name	ICSA2,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	185.02	26.67	1.761E-05	Pulse	0.30	3
Na	23	45	2	93642.739	ppb	1.64	135,547,466.87	1.174E+03	Analog	0.30	3
Mg	26	45	2	91761.974	ppb	1.44	12,159,026.21	1.053E+02	Analog	0.30	3
Al	27	45	2	0.331	ppb	155.88	471.95	4.079E-03	Pulse	0.30	3
K	39	45	2	97154.993	ppb	0.89	44,005,661.57	3.809E+02	Analog	0.30	3
Ca	44	45	3	96250.448	ppb	0.57	213,957,810.15	4.656E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	558.92	4.844E-03	Pulse	0.30	3
Cr	52	45	2	0.119	ppb	11.65	2,952.69	2.556E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-11,797.48	-1.022E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,979.48	-3.454E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	24.22	2.125E-04	Pulse	0.30	3
Ni	60	72	2	0.350	ppb	8.46	2,049.66	2.410E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,716.99	-2.016E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,111.92	-1.305E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.91	-5.664E-05	Pulse	0.75	3
Se	78	72	1	0.018	ppb	73.29	10.00	9.887E-05	Pulse	0.30	3
Mo	95	103	2	0.051	ppb	22.61	327.80	1.220E-04	Pulse	0.30	3
Ag	107	103	3	0.081	ppb	4.60	8,394.51	1.160E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-447.20	-5.631E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,629.05	2.051E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-19,079.95	-1.637E-03	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	26.17	1,856.87	3.272E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-425.19	-7.496E-05	Pulse	0.30	3
U	238	209	3	0.001	ppb	22.79	319.41	5.630E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,515,147.11	1.17	86.8	Analog	0.30	3
2	Sc	45	115,538.84	3.10	102.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,595,748.79	1.15	98.3	Analog	0.30	3
1	Ge	72	100,654.47	1.10	91.2	Pulse	0.30	3
2	Ge	72	85,119.42	2.01	95.5	Pulse	0.30	3
2	Rh	103	2,692,887.69	2.13	87.4	Analog	0.30	3
3	Rh	103	7,240,122.95	0.53	86.2	Analog	0.30	3
3	In	115	7,940,775.25	0.23	89.6	Analog	0.30	3
3	Tb	159	11,657,066.35	0.42	92.9	Analog	0.30	3
3	Bi	209	5,675,417.62	0.44	77.5	Analog	0.30	3

Quantitation Report

File Name	A0219067.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 20:06
Sample Name	ICSAB2,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.549	ppb	1.49	191,380.81	1.188E-01	Pulse	0.30	3
Na	23	45	2	93131.371	ppb	1.49	149,184,135.56	1.167E+03	Analog	0.30	3
Mg	26	45	2	91663.474	ppb	1.49	13,440,731.61	1.052E+02	Analog	0.30	3
Al	27	45	2	21.091	ppb	3.75	5,997.04	4.691E-02	Pulse	0.30	3
K	39	45	2	95563.026	ppb	1.49	47,891,720.95	3.747E+02	Analog	0.30	3
Ca	44	45	3	96048.568	ppb	0.38	231,565,823.22	4.646E+01	Analog	0.30	3
V	51	45	2	20.711	ppb	1.58	171,374.93	1.341E+00	Pulse	0.30	3
Cr	52	45	2	19.750	ppb	1.25	224,653.34	1.758E+00	Pulse	0.30	3
Mn	55	45	2	16.492	ppb	2.01	93,504.42	7.316E-01	Pulse	0.30	3
Fe	56	45	2	20.589	ppb	2.16	195,668.78	1.531E+00	Pulse	0.30	3
Co	59	45	2	18.900	ppb	1.02	417,900.90	3.269E+00	Pulse	0.30	3
Ni	60	72	2	19.686	ppb	1.19	110,150.90	1.194E+00	Pulse	0.30	3
Cu	63	72	2	19.188	ppb	0.34	291,341.42	3.159E+00	Pulse	0.30	3
Zn	66	72	2	17.740	ppb	0.73	37,648.99	4.082E-01	Pulse	0.30	3
As	75	72	2	19.556	ppb	1.08	20,972.05	2.274E-01	Pulse	0.75	3
Se	78	72	1	17.529	ppb	0.18	9,748.86	8.862E-02	Pulse	0.30	3
Mo	95	103	2	23.324	ppb	0.79	148,049.34	5.207E-02	Pulse	0.30	3
Ag	107	103	3	19.211	ppb	0.88	1,308,136.69	1.720E-01	Mix	0.30	3
Cd	111	115	3	19.357	ppb	0.80	301,171.07	3.601E-02	Pulse	0.30	3
Sb	121	115	3	21.059	ppb	0.57	1,052,995.69	1.259E-01	Pulse	0.30	3
Ba	137	159	3	24.096	ppb	0.48	492,776.51	4.073E-02	Pulse	0.30	3
Tl	205	209	3	22.093	ppb	0.79	2,341,947.14	3.999E-01	Analog	0.30	3
Pb	208	209	3	22.271	ppb	0.84	3,199,201.83	5.463E-01	Analog	0.30	3
U	238	209	3	22.767	ppb	0.27	3,463,210.38	5.914E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,610,545.96	0.89	92.3	Analog	0.30	3
2	Sc	45	127,842.65	2.32	113.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,984,177.63	0.76	106.6	Analog	0.30	3
1	Ge	72	110,007.65	0.86	99.6	Pulse	0.30	3
2	Ge	72	92,238.97	1.69	103.5	Pulse	0.30	3
2	Rh	103	2,842,872.88	1.80	92.3	Analog	0.30	3
3	Rh	103	7,604,470.79	0.63	90.6	Analog	0.30	3
3	In	115	8,364,111.15	0.29	94.4	Analog	0.30	3
3	Tb	159	12,098,636.62	0.22	96.5	Analog	0.30	3
3	Bi	209	5,856,107.06	0.35	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219068.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:11
Sample Name	N023137-002A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	25.38	35.55	1.898E-05	Pulse	0.30	3
Na	23	45	2	930.445	ppb	3.76	1,538,874.16	1.254E+01	Analog	0.30	3
Mg	26	45	2	236.547	ppb	1.03	33,415.17	2.722E-01	Pulse	0.30	3
Al	27	45	2	59.148	ppb	5.75	15,391.02	1.254E-01	Pulse	0.30	3
K	39	45	2	268.668	ppb	1.16	144,046.71	1.173E+00	Pulse	0.30	3
Ca	44	45	3	2519.195	ppb	0.37	6,272,579.42	1.223E+00	Analog	0.30	3
V	51	45	2	0.472	ppb	5.27	4,566.39	3.719E-02	Pulse	0.30	3
Cr	52	45	2	0.316	ppb	6.42	5,267.05	4.291E-02	Pulse	0.30	3
Mn	55	45	2	2.321	ppb	4.21	12,993.17	1.059E-01	Pulse	0.30	3
Fe	56	45	2	67.183	ppb	1.53	607,980.89	4.953E+00	Pulse	0.30	3
Co	59	45	2	0.049	ppb	7.74	1,061.76	8.648E-03	Pulse	0.30	3
Ni	60	72	2	0.433	ppb	4.75	2,737.14	2.916E-02	Pulse	0.30	3
Cu	63	72	2	2.719	ppb	1.28	47,051.89	5.011E-01	Pulse	0.30	3
Zn	66	72	2	16.185	ppb	1.48	35,210.82	3.751E-01	Pulse	0.30	3
As	75	72	2	0.136	ppb	14.55	163.02	1.735E-03	Pulse	0.75	3
Se	78	72	1	0.063	ppb	40.23	34.44	3.276E-04	Pulse	0.30	3
Mo	95	103	2	0.655	ppb	2.16	4,551.95	1.469E-03	Pulse	0.30	3
Ag	107	103	3	0.133	ppb	10.13	13,814.35	1.622E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-6.41	-7.101E-07	Pulse	0.30	3
Sb	121	115	3	0.440	ppb	1.91	26,490.99	2.911E-03	Pulse	0.30	3
Ba	137	159	3	5.598	ppb	0.78	120,109.00	9.473E-03	Pulse	0.30	3
Tl	205	209	3	0.129	ppb	11.79	18,216.40	2.546E-03	Pulse	0.30	3
Pb	208	209	3	0.969	ppb	0.91	172,239.80	2.406E-02	Pulse	0.30	3
U	238	209	3	0.029	ppb	1.68	5,632.35	7.868E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,871,949.06	0.84	107.3	Analog	0.30	3
2	Sc	45	122,772.72	1.61	108.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,130,306.45	0.12	109.8	Analog	0.30	3
1	Ge	72	104,809.73	1.21	94.9	Pulse	0.30	3
2	Ge	72	93,882.83	1.73	105.4	Pulse	0.30	3
2	Rh	103	3,098,226.90	0.53	100.6	Analog	0.30	3
3	Rh	103	8,517,910.08	0.43	101.5	Analog	0.30	3
3	In	115	9,099,579.88	0.42	102.7	Analog	0.30	3
3	Tb	159	12,679,645.23	0.66	101.1	Analog	0.30	3
3	Bi	209	7,158,279.76	0.50	97.7	Analog	0.30	3

Quantitation Report

File Name	A0219069.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:16
Sample Name	N023137-003A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	19.66	38.89	2.148E-05	Pulse	0.30	3
Na	23	45	2	1099.762	ppb	1.93	1,832,702.21	1.466E+01	Analog	0.30	3
Mg	26	45	2	229.137	ppb	2.55	32,967.61	2.637E-01	Pulse	0.30	3
Al	27	45	2	103.911	ppb	1.40	27,236.80	2.178E-01	Pulse	0.30	3
K	39	45	2	277.469	ppb	1.48	151,018.65	1.208E+00	Pulse	0.30	3
Ca	44	45	3	1709.619	ppb	0.66	4,067,600.25	8.311E-01	Analog	0.30	3
V	51	45	2	0.459	ppb	5.02	4,547.48	3.638E-02	Pulse	0.30	3
Cr	52	45	2	0.531	ppb	2.75	7,736.85	6.188E-02	Pulse	0.30	3
Mn	55	45	2	5.706	ppb	1.16	31,925.70	2.553E-01	Pulse	0.30	3
Fe	56	45	2	131.242	ppb	1.78	1,207,380.33	9.656E+00	Pulse	0.30	3
Co	59	45	2	0.157	ppb	5.11	3,426.98	2.742E-02	Pulse	0.30	3
Ni	60	72	2	1.509	ppb	9.46	8,995.39	9.423E-02	Pulse	0.30	3
Cu	63	72	2	6.632	ppb	0.96	108,066.32	1.132E+00	Pulse	0.30	3
Zn	66	72	2	107.974	ppb	1.88	222,157.90	2.328E+00	Pulse	0.30	3
As	75	72	2	0.115	ppb	15.65	142.12	1.490E-03	Pulse	0.75	3
Se	78	72	1	0.030	ppb	60.17	18.89	1.608E-04	Pulse	0.30	3
Mo	95	103	2	1.175	ppb	7.64	8,292.17	2.631E-03	Pulse	0.30	3
Ag	107	103	3	0.021	ppb	15.97	5,202.76	6.236E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	5.97	561.36	6.326E-05	Pulse	0.30	3
Sb	121	115	3	1.358	ppb	0.74	74,423.12	8.386E-03	Pulse	0.30	3
Ba	137	159	3	6.955	ppb	0.61	145,517.85	1.176E-02	Pulse	0.30	3
Tl	205	209	3	0.040	ppb	3.73	6,689.56	9.408E-04	Pulse	0.30	3
Pb	208	209	3	8.445	ppb	0.31	1,474,229.26	2.074E-01	Pulse	0.30	3
U	238	209	3	0.032	ppb	4.71	6,038.00	8.492E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,809,627.96	0.66	103.7	Analog	0.30	3
2	Sc	45	125,046.77	1.77	110.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,894,445.59	0.77	104.7	Analog	0.30	3
1	Ge	72	117,317.12	0.62	106.3	Pulse	0.30	3
2	Ge	72	95,433.17	1.77	107.1	Pulse	0.30	3
2	Rh	103	3,151,227.69	0.71	102.3	Analog	0.30	3
3	Rh	103	8,345,096.54	0.51	99.4	Analog	0.30	3
3	In	115	8,875,222.70	0.63	100.1	Analog	0.30	3
3	Tb	159	12,369,176.34	0.58	98.6	Analog	0.30	3
3	Bi	209	7,109,823.44	0.27	97.1	Analog	0.30	3

Quantitation Report

File Name	A0219070.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:22
Sample Name	N023137-004A,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	27.18	74.45	4.178E-05	Pulse	0.30	3
Na	23	45	2	1393.202	ppb	1.76	2,210,406.60	1.833E+01	Analog	0.30	3
Mg	26	45	2	194.401	ppb	0.37	26,992.41	2.239E-01	Pulse	0.30	3
Al	27	45	2	106.548	ppb	1.45	26,912.47	2.232E-01	Pulse	0.30	3
K	39	45	2	361.676	ppb	2.19	185,406.17	1.538E+00	Pulse	0.30	3
Ca	44	45	3	1985.203	ppb	0.25	4,576,194.62	9.644E-01	Analog	0.30	3
V	51	45	2	0.453	ppb	6.42	4,339.66	3.601E-02	Pulse	0.30	3
Cr	52	45	2	1.168	ppb	2.46	14,238.04	1.181E-01	Pulse	0.30	3
Mn	55	45	2	8.684	ppb	3.02	46,623.13	3.868E-01	Pulse	0.30	3
Fe	56	45	2	146.935	ppb	1.07	1,303,186.82	1.081E+01	Analog	0.30	3
Co	59	45	2	0.142	ppb	2.11	2,987.08	2.476E-02	Pulse	0.30	3
Ni	60	72	2	3.210	ppb	2.76	18,506.81	1.972E-01	Pulse	0.30	3
Cu	63	72	2	5.805	ppb	0.41	93,798.94	9.990E-01	Pulse	0.30	3
Zn	66	72	2	52.644	ppb	2.39	108,034.27	1.151E+00	Pulse	0.30	3
As	75	72	2	0.111	ppb	25.79	135.48	1.446E-03	Pulse	0.75	3
Se	78	72	1	0.052	ppb	22.93	31.11	2.720E-04	Pulse	0.30	3
Mo	95	103	2	1.578	ppb	16.24	10,937.91	3.530E-03	Pulse	0.30	3
Ag	107	103	3	0.043	ppb	9.54	6,699.83	8.196E-04	Pulse	0.30	3
Cd	111	115	3	0.171	ppb	6.36	2,844.31	3.240E-04	Pulse	0.30	3
Sb	121	115	3	0.643	ppb	1.12	36,169.15	4.120E-03	Pulse	0.30	3
Ba	137	159	3	6.928	ppb	1.11	143,591.39	1.172E-02	Pulse	0.30	3
Tl	205	209	3	0.027	ppb	4.25	4,856.57	6.951E-04	Pulse	0.30	3
Pb	208	209	3	4.013	ppb	0.34	689,564.21	9.870E-02	Pulse	0.30	3
U	238	209	3	0.036	ppb	1.85	6,714.83	9.611E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,780,964.46	0.45	102.0	Analog	0.30	3
2	Sc	45	120,584.36	2.02	106.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,745,192.53	0.21	101.5	Analog	0.30	3
1	Ge	72	114,331.02	0.28	103.5	Pulse	0.30	3
2	Ge	72	93,897.27	1.98	105.4	Pulse	0.30	3
2	Rh	103	3,101,081.66	2.31	100.7	Analog	0.30	3
3	Rh	103	8,175,388.42	0.44	97.4	Analog	0.30	3
3	In	115	8,778,581.01	0.29	99.1	Analog	0.30	3
3	Tb	159	12,253,007.87	0.62	97.7	Analog	0.30	3
3	Bi	209	6,986,674.55	0.54	95.4	Analog	0.30	3

Quantitation Report

File Name	A0219071.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:27
Sample Name	MB-61257,MBLK,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	7.466E-06	Pulse	0.30	3
Na	23	45	2	176.444	ppb	4.54	372,419.93	3.097E+00	Pulse	0.30	3
Mg	26	45	2	1.666	ppb	26.34	330.02	2.749E-03	Pulse	0.30	3
Al	27	45	2	0.254	ppb	71.97	471.11	3.920E-03	Pulse	0.30	3
K	39	45	2	26.330	ppb	7.09	26,880.29	2.235E-01	Pulse	0.30	3
Ca	44	45	3	6.656	ppb	4.83	35,457.61	7.430E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	650.05	5.412E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,398.61	1.163E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	266.16	2.212E-03	Pulse	0.30	3
Fe	56	45	2	0.156	ppb	40.05	3,680.60	3.061E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	8.49	7.049E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	69.56	7.288E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	738.93	7.774E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,724.47	2.863E-02	Pulse	0.30	3
As	75	72	2	0.002	ppb	392.28	16.89	1.785E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	77.62	7.78	6.678E-05	Pulse	0.30	3
Mo	95	103	2	0.044	ppb	13.53	338.91	1.071E-04	Pulse	0.30	3
Ag	107	103	3	0.037	ppb	17.23	6,388.29	7.638E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19.49	-2.194E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	815.61	9.181E-05	Pulse	0.30	3
Ba	137	159	3	0.021	ppb	3.94	600.57	4.852E-05	Pulse	0.30	3
Tl	205	209	3	0.012	ppb	9.04	3,103.80	4.370E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,094.07	1.541E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	9.47	309.21	4.355E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,787,561.23	0.77	102.4	Analog	0.30	3
2	Sc	45	120,318.49	1.96	106.3	Pulse	0.30	3
3	Sc	45	4,772,175.80	0.32	102.1	Analog	0.30	3
1	Ge	72	116,702.90	0.61	105.7	Pulse	0.30	3
2	Ge	72	95,132.14	1.99	106.8	Pulse	0.30	3
2	Rh	103	3,165,068.77	1.24	102.7	Analog	0.30	3
3	Rh	103	8,366,029.60	0.81	99.6	Analog	0.30	3
3	In	115	8,883,523.63	0.07	100.2	Analog	0.30	3
3	Tb	159	12,377,543.84	0.53	98.7	Analog	0.30	3
3	Bi	209	7,100,382.26	0.76	96.9	Analog	0.30	3

Quantitation Report

File Name	A0219072.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:33
Sample Name	LCS-61257,LCS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	9.825	ppb	1.05	113,926.08	5.973E-02	Pulse	0.30	3
Na	23	45	2	390.901	ppb	1.76	761,262.06	5.782E+00	Pulse	0.30	3
Mg	26	45	2	105.924	ppb	0.86	16,109.42	1.224E-01	Pulse	0.30	3
Al	27	45	2	212.526	ppb	1.09	58,186.15	4.419E-01	Pulse	0.30	3
K	39	45	2	111.811	ppb	1.70	73,537.71	5.586E-01	Pulse	0.30	3
Ca	44	45	3	121.515	ppb	0.95	324,681.52	6.298E-02	Pulse	0.30	3
V	51	45	2	10.157	ppb	0.57	87,037.06	6.610E-01	Pulse	0.30	3
Cr	52	45	2	10.028	ppb	0.32	118,476.02	8.998E-01	Pulse	0.30	3
Mn	55	45	2	101.371	ppb	1.06	589,760.74	4.479E+00	Pulse	0.30	3
Fe	56	45	2	105.565	ppb	0.83	1,023,159.97	7.771E+00	Pulse	0.30	3
Co	59	45	2	9.886	ppb	1.34	225,160.93	1.710E+00	Pulse	0.30	3
Ni	60	72	2	10.039	ppb	1.11	62,649.06	6.104E-01	Pulse	0.30	3
Cu	63	72	2	10.359	ppb	1.51	177,964.70	1.734E+00	Pulse	0.30	3
Zn	66	72	2	101.569	ppb	1.01	224,987.69	2.192E+00	Pulse	0.30	3
As	75	72	2	10.010	ppb	1.30	11,954.71	1.165E-01	Pulse	0.75	3
Se	78	72	1	9.607	ppb	2.47	6,022.50	4.858E-02	Pulse	0.30	3
Mo	95	103	2	10.075	ppb	1.13	76,540.83	2.250E-02	Pulse	0.30	3
Ag	107	103	3	10.233	ppb	0.69	827,163.15	9.183E-02	Pulse	0.30	3
Cd	111	115	3	10.614	ppb	0.56	189,218.44	1.975E-02	Pulse	0.30	3
Sb	121	115	3	10.430	ppb	0.38	598,820.48	6.249E-02	Pulse	0.30	3
Ba	137	159	3	107.586	ppb	0.82	2,434,614.80	1.818E-01	Analog	0.30	3
Tl	205	209	3	10.169	ppb	1.46	1,418,836.44	1.842E-01	Analog	0.30	3
Pb	208	209	3	10.669	ppb	0.35	2,017,230.29	2.619E-01	Pulse	0.30	3
U	238	209	3	10.376	ppb	1.04	2,076,159.41	2.695E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,907,310.09	0.92	109.3	Analog	0.30	3
2	Sc	45	131,672.75	1.33	116.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,155,212.91	0.62	110.3	Analog	0.30	3
1	Ge	72	123,953.64	1.23	112.3	Pulse	0.30	3
2	Ge	72	102,643.72	1.18	115.2	Pulse	0.30	3
2	Rh	103	3,401,856.34	0.85	110.4	Analog	0.30	3
3	Rh	103	9,007,882.85	0.58	107.3	Analog	0.30	3
3	In	115	9,582,152.96	0.34	108.1	Analog	0.30	3
3	Tb	159	13,391,451.19	0.58	106.8	Analog	0.30	3
3	Bi	209	7,702,850.30	0.62	105.2	Analog	0.30	3

Quantitation Report

SAMPLE REFERENCE

File Name	A0219073.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:38
Sample Name	N022998-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	46.05	13.33	4.535E-05	Pulse	0.30	3
Na	23	45	2	3697597.968	ppb	0.98	3,875,718,235.58	4.631E+04	Analog	0.30	3
Mg	26	45	2	2695.905	ppb	0.80	258,916.51	3.094E+00	Pulse	0.30	3
Al	27	45	2	4.512	ppb	2.54	1,063.20	1.270E-02	Pulse	0.30	3
K	39	45	2	30711.190	ppb	1.11	10,085,954.92	1.205E+02	Analog	0.30	3
Ca	44	45	3	90436.756	ppb	0.24	134,780,581.32	4.375E+01	Analog	0.30	3
V	51	45	2	2.630	ppb	0.59	14,746.05	1.762E-01	Pulse	0.30	3
Cr	52	45	2	18.201	ppb	0.45	135,647.01	1.621E+00	Pulse	0.30	3
Mn	55	45	2	13.458	ppb	1.63	50,018.76	5.976E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-316,264.24	-3.779E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,782.49	-4.519E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,577.46	-7.100E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-88,947.75	-1.765E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,030.75	-1.991E-01	Pulse	0.30	3
As	75	72	2	1.949	ppb	1.74	1,149.06	2.280E-02	Pulse	0.75	3
Se	78	72	1	0.562	ppb	22.08	154.45	2.849E-03	Pulse	0.30	3
Mo	95	103	2	213.393	ppb	0.70	686,490.88	4.764E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,616.82	-7.321E-04	Pulse	0.30	3
Cd	111	115	3	0.115	ppb	12.19	918.93	2.191E-04	Pulse	0.30	3
Sb	121	115	3	0.087	ppb	6.92	3,371.61	8.037E-04	Pulse	0.30	3
Ba	137	159	3	28.734	ppb	0.26	304,301.58	4.857E-02	Pulse	0.30	3
Tl	205	209	3	0.699	ppb	2.06	35,155.86	1.285E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-28,354.29	-1.037E-02	Pulse	0.30	3
U	238	209	3	0.099	ppb	2.44	7,140.56	2.611E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	288,829.26	8.68	16.5	Analog	0.30	3
2	Sc	45	83,691.45	1.69	73.9	Pulse	0.30	3
3	Sc	45	3,081,007.63	0.80	65.9	Analog	0.30	3
1	Ge	72	54,232.19	1.03	49.1	Pulse	0.30	3
2	Ge	72	50,385.49	2.16	56.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,440,984.91	1.87	46.8	Analog	0.30	3
3	Rh	103	3,579,234.63	0.41	42.6	Analog	0.30	3
3	In	115	4,195,173.17	0.52	47.3	Analog	0.30	3
3	Tb	159	6,265,773.45	0.32	50.0	Analog	0.30	3
3	Bi	209	2,735,025.69	0.87	37.3	Analog	0.30	3

Quantitation Report

DILUTION TEST

SAMPLE REFERENCE

For As, Mo & Se only

File Name	A0219074.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:44
Sample Name	N022998-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.099E-06	Pulse	0.30	3
Na	23	45	2	774247.183	ppb	1.37	1,188,861,164.51	9.697E+03	Analog	0.30	3
Mg	26	45	2	578.956	ppb	1.50	81,531.25	6.650E-01	Pulse	0.30	3
Al	27	45	2	1.820	ppb	13.23	877.48	7.151E-03	Pulse	0.30	3
K	39	45	2	6127.292	ppb	0.84	2,959,662.73	2.414E+01	Analog	0.30	3
Ca	44	45	3	18850.082	ppb	0.34	44,435,614.89	9.121E+00	Analog	0.30	3
V	51	45	2	0.505	ppb	3.52	4,823.15	3.935E-02	Pulse	0.30	3
Cr	52	45	2	3.874	ppb	1.44	43,760.12	3.569E-01	Pulse	0.30	3
Mn	55	45	2	2.889	ppb	1.71	16,056.69	1.309E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-91,682.20	-7.478E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,156.71	-9.433E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-989.15	-1.205E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-26,775.49	-3.263E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,344.10	-2.857E-02	Pulse	0.30	3
As	75	72	2	0.421	ppb	3.37	414.43	5.050E-03	Pulse	0.75	3
Se	78	72	1	0.086	ppb	67.16	41.11	4.467E-04	Pulse	0.30	3
Mo	95	103	2	39.146	ppb	0.76	214,589.09	8.739E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,151.48	-3.308E-04	Pulse	0.30	3
Cd	111	115	3	0.030	ppb	9.91	450.96	6.207E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,529.03	2.104E-04	Pulse	0.30	3
Ba	137	159	3	5.801	ppb	1.38	104,803.29	9.816E-03	Pulse	0.30	3
Tl	205	209	3	0.157	ppb	2.47	15,477.55	3.057E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,292.16	-1.243E-03	Pulse	0.30	3
U	238	209	3	0.018	ppb	2.75	2,473.16	4.884E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,459,666.82	1.03	83.6	Analog	0.30	3
2	Sc	45	122,635.24	2.78	108.4	Pulse	0.30	3
3	Sc	45	4,871,647.70	0.64	104.2	Analog	0.30	3
1	Ge	72	92,539.54	1.31	83.8	Pulse	0.30	3
2	Ge	72	82,056.17	1.44	92.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,455,300.67	1.44	79.7	Analog	0.30	3
3	Rh	103	6,503,768.72	0.13	77.5	Analog	0.30	3
3	In	115	7,266,894.53	0.52	82.0	Analog	0.30	3
3	Tb	159	10,676,794.98	0.31	85.1	Analog	0.30	3
3	Bi	209	5,063,566.90	0.39	69.1	Analog	0.30	3

Quantitation Report

DILUTION TEST

File Name	A0219075.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:50
Sample Name	N022998-001B,SAMP,25
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.028E-06	Pulse	0.30	3
Na	23	45	2	159527.210	ppb	1.41	266,832,760.47	1.999E+03	Analog	0.30	3
Mg	26	45	2	120.599	ppb	2.01	18,580.89	1.392E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	413.73	3.100E-03	Pulse	0.30	3
K	39	45	2	1311.672	ppb	0.57	702,543.25	5.262E+00	Pulse	0.30	3
Ca	44	45	3	3883.325	ppb	0.50	10,041,024.29	1.882E+00	Analog	0.30	3
V	51	45	2	0.080	ppb	6.76	1,594.59	1.194E-02	Pulse	0.30	3
Cr	52	45	2	0.791	ppb	4.00	11,324.96	8.485E-02	Pulse	0.30	3
Mn	55	45	2	0.584	ppb	3.29	3,894.13	2.917E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-17,898.47	-1.341E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-246.03	-1.843E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-146.57	-1.504E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,345.64	-5.485E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-112.95	-1.154E-03	Pulse	0.30	3
As	75	72	2	0.088	ppb	19.50	114.61	1.177E-03	Pulse	0.75	3
Se	78	72	1	0.048	ppb	49.05	28.89	2.522E-04	Pulse	0.30	3
Mo	95	103	2	7.603	ppb	1.35	50,208.46	1.698E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	253.43	3.184E-05	Pulse	0.30	3
Cd	111	115	3	0.005	ppb	28.28	130.01	1.489E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	854.50	9.788E-05	Pulse	0.30	3
Ba	137	159	3	1.248	ppb	1.64	26,271.14	2.123E-03	Pulse	0.30	3
Tl	205	209	3	0.051	ppb	3.76	7,248.76	1.133E-03	Pulse	0.30	3
Pb	208	209	3	0.001	ppb	256.78	2,052.42	3.208E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	21.97	751.23	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,836,246.38	0.47	105.2	Analog	0.30	3
2	Sc	45	133,530.28	1.96	118.0	Pulse	0.30	3
3	Sc	45	5,334,135.20	0.44	114.1	Analog	0.30	3
1	Ge	72	114,693.32	0.73	103.9	Pulse	0.30	3
2	Ge	72	97,457.75	1.11	109.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,956,995.23	0.66	96.0	Analog	0.30	3
3	Rh	103	7,962,917.45	0.23	94.8	Analog	0.30	3
3	In	115	8,729,524.15	0.25	98.5	Analog	0.30	3
3	Tb	159	12,377,439.12	0.54	98.7	Analog	0.30	3
3	Bi	209	6,399,614.00	0.63	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219076.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 21:56
Sample Name	N022998-001B-PS,PS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	37.781	ppb	3.01	50,677.04	2.297E-01	Pulse	0.30	3
Na	23	45	2	OR	ppb	---	OR	1.545E+04	Error	0.30	3
Mg	26	45	2	2799.004	ppb	0.51	307,929.80	3.212E+00	Pulse	0.30	3
Al	27	45	2	195.250	ppb	0.66	38,946.30	4.062E-01	Pulse	0.30	3
K	39	45	2	30498.973	ppb	0.77	11,473,246.77	1.197E+02	Analog	0.30	3
Ca	44	45	3	91287.726	ppb	0.68	144,552,743.40	4.416E+01	Analog	0.30	3
V	51	45	2	11.868	ppb	1.11	73,945.12	7.712E-01	Pulse	0.30	3
Cr	52	45	2	26.403	ppb	2.86	224,809.05	2.345E+00	Pulse	0.30	3
Mn	55	45	2	88.487	ppb	1.48	374,878.44	3.911E+00	Pulse	0.30	3
Fe	56	45	2	62.045	ppb	52.77	439,832.46	4.575E+00	Pulse	0.30	3
Co	59	45	2	6.838	ppb	3.62	113,425.74	1.183E+00	Pulse	0.30	3
Ni	60	72	2	8.507	ppb	9.40	29,109.60	5.177E-01	Pulse	0.30	3
Cu	63	72	2	4.602	ppb	145.06	45,931.99	8.049E-01	Pulse	0.30	3
Zn	66	72	2	67.408	ppb	8.25	82,363.07	1.465E+00	Pulse	0.30	3
As	75	72	2	10.588	ppb	1.46	6,917.54	1.232E-01	Pulse	0.75	3
Se	78	72	1	8.675	ppb	3.64	2,618.09	4.386E-02	Pulse	0.30	3
Mo	95	103	2	232.246	ppb	1.28	793,646.47	5.184E-01	Pulse	0.30	3
Ag	107	103	3	8.373	ppb	0.78	273,121.32	7.522E-02	Pulse	0.30	3
Cd	111	115	3	8.022	ppb	0.95	63,785.27	1.493E-02	Pulse	0.30	3
Sb	121	115	3	9.329	ppb	0.85	238,993.14	5.593E-02	Pulse	0.30	3
Ba	137	159	3	126.860	ppb	1.34	1,359,493.07	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.277	ppb	0.48	515,017.80	1.861E-01	Pulse	0.30	3
Pb	208	209	3	10.675	ppb	0.24	724,955.07	2.620E-01	Pulse	0.30	3
U	238	209	3	14.125	ppb	0.03	1,015,183.61	3.669E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	220,799.58	3.23	12.7	Analog	0.30	3
2	Sc	45	95,871.88	0.90	84.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,273,742.24	0.96	70.0	Analog	0.30	3
1	Ge	72	59,668.80	2.10	54.0	Pulse	0.30	3
2	Ge	72	56,166.57	1.80	63.0	Pulse	0.30	3
2	Rh	103	1,530,700.50	0.85	49.7	Analog	0.30	3
3	Rh	103	3,630,986.79	0.64	43.2	Analog	0.30	3
3	In	115	4,273,432.94	0.79	48.2	Analog	0.30	3
3	Tb	159	6,341,989.56	0.77	50.6	Analog	0.30	3
3	Bi	209	2,766,838.78	0.33	37.8	Analog	0.30	3

Quantitation Report

File Name	A0219077.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:01
Sample Name	N022998-001B-PS,PS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.009	ppb	1.63	18,066.84	1.222E-02	Pulse	0.30	3
Na	23	45	2	802284.904	ppb	0.81	1,270,323,154.40	1.005E+04	Analog	0.30	3
Mg	26	45	2	609.762	ppb	1.41	88,535.24	7.003E-01	Pulse	0.30	3
Al	27	45	2	40.746	ppb	1.53	11,056.38	8.746E-02	Pulse	0.30	3
K	39	45	2	6305.995	ppb	0.83	3,140,025.30	2.484E+01	Analog	0.30	3
Ca	44	45	3	19108.719	ppb	0.52	46,457,370.42	9.246E+00	Analog	0.30	3
V	51	45	2	2.425	ppb	1.90	20,605.75	1.630E-01	Pulse	0.30	3
Cr	52	45	2	5.650	ppb	1.64	64,921.53	5.135E-01	Pulse	0.30	3
Mn	55	45	2	20.169	ppb	1.26	113,015.20	8.939E-01	Pulse	0.30	3
Fe	56	45	2	6.605	ppb	2.44	63,729.63	5.042E-01	Pulse	0.30	3
Co	59	45	2	1.583	ppb	1.39	34,639.40	2.740E-01	Pulse	0.30	3
Ni	60	72	2	1.592	ppb	2.72	8,452.27	9.926E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,128.63	-2.497E-02	Pulse	0.30	3
Zn	66	72	2	13.393	ppb	1.50	26,870.52	3.157E-01	Pulse	0.30	3
As	75	72	2	2.339	ppb	5.13	2,327.05	2.733E-02	Pulse	0.75	3
Se	78	72	1	1.738	ppb	6.65	842.28	8.796E-03	Pulse	0.30	3
Mo	95	103	2	42.358	ppb	0.70	240,076.12	9.456E-02	Pulse	0.30	3
Ag	107	103	3	1.828	ppb	1.02	111,489.65	1.676E-02	Pulse	0.30	3
Cd	111	115	3	1.856	ppb	0.33	25,794.93	3.458E-03	Pulse	0.30	3
Sb	121	115	3	2.017	ppb	0.62	91,874.06	1.232E-02	Pulse	0.30	3
Ba	137	159	3	26.510	ppb	0.83	490,006.64	4.481E-02	Pulse	0.30	3
Tl	205	209	3	2.199	ppb	0.74	207,595.04	4.001E-02	Pulse	0.30	3
Pb	208	209	3	2.130	ppb	0.27	272,579.00	5.253E-02	Pulse	0.30	3
U	238	209	3	2.705	ppb	0.07	364,769.79	7.030E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,478,020.90	0.76	84.7	Analog	0.30	3
2	Sc	45	126,434.49	2.10	111.7	Pulse	0.30	3
3	Sc	45	5,024,496.49	0.79	107.5	Analog	0.30	3
1	Ge	72	95,765.63	0.94	86.7	Pulse	0.30	3
2	Ge	72	85,134.40	1.19	95.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,538,616.56	1.45	82.4	Analog	0.30	3
3	Rh	103	6,651,488.65	0.07	79.2	Analog	0.30	3
3	In	115	7,459,483.66	0.64	84.2	Analog	0.30	3
3	Tb	159	10,936,340.67	1.06	87.2	Analog	0.30	3
3	Bi	209	5,188,888.32	0.59	70.8	Analog	0.30	3

Quantitation Report

File Name	A0219078.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:08
Sample Name	CCV5,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.562	ppb	1.32	142,832.93	1.189E-01	Pulse	0.30	3
Na	23	45	2	208.000	ppb	4.06	329,692.29	3.492E+00	Pulse	0.30	3
Mg	26	45	2	197.519	ppb	0.95	21,479.97	2.274E-01	Pulse	0.30	3
Al	27	45	2	21.651	ppb	3.19	4,542.00	4.807E-02	Pulse	0.30	3
K	39	45	2	209.983	ppb	1.61	89,094.01	9.434E-01	Pulse	0.30	3
Ca	44	45	3	212.966	ppb	0.39	389,090.76	1.072E-01	Pulse	0.30	3
V	51	45	2	19.882	ppb	1.55	121,579.72	1.287E+00	Pulse	0.30	3
Cr	52	45	2	19.667	ppb	1.53	165,295.09	1.750E+00	Pulse	0.30	3
Mn	55	45	2	20.142	ppb	0.98	84,324.18	8.927E-01	Pulse	0.30	3
Fe	56	45	2	20.807	ppb	0.37	146,127.93	1.547E+00	Pulse	0.30	3
Co	59	45	2	20.157	ppb	1.09	329,288.40	3.487E+00	Pulse	0.30	3
Ni	60	72	2	19.869	ppb	0.93	88,869.51	1.205E+00	Pulse	0.30	3
Cu	63	72	2	20.638	ppb	0.82	250,151.18	3.393E+00	Pulse	0.30	3
Zn	66	72	2	19.149	ppb	1.03	32,306.24	4.381E-01	Pulse	0.30	3
As	75	72	2	20.033	ppb	0.82	17,177.18	2.329E-01	Pulse	0.75	3
Se	78	72	1	18.524	ppb	1.57	8,415.89	9.365E-02	Pulse	0.30	3
Mo	95	103	2	19.543	ppb	0.24	111,215.74	4.363E-02	Pulse	0.30	3
Ag	107	103	3	20.571	ppb	0.78	1,265,736.30	1.842E-01	Pulse	0.30	3
Cd	111	115	3	20.512	ppb	0.37	282,465.89	3.816E-02	Pulse	0.30	3
Sb	121	115	3	20.267	ppb	1.04	896,979.73	1.212E-01	Pulse	0.30	3
Ba	137	159	3	21.756	ppb	0.11	382,973.18	3.678E-02	Pulse	0.30	3
Tl	205	209	3	20.195	ppb	1.04	2,220,975.25	3.656E-01	Analog	0.30	3
Pb	208	209	3	20.515	ppb	1.11	3,057,276.85	5.033E-01	Analog	0.30	3
U	238	209	3	19.541	ppb	0.89	3,083,701.09	5.076E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,150.95	0.70	68.8	Analog	0.30	3
2	Sc	45	94,457.47	1.97	83.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	3,629,070.40	0.08	77.7	Analog	0.30	3
1	Ge	72	89,860.86	0.55	81.4	Pulse	0.30	3
2	Ge	72	73,740.21	1.16	82.8	Pulse	0.30	3
2	Rh	103	2,548,747.22	1.34	82.7	Analog	0.30	3
3	Rh	103	6,872,907.47	0.69	81.9	Analog	0.30	3
3	In	115	7,402,853.78	0.69	83.5	Analog	0.30	3
3	Tb	159	10,413,839.57	0.80	83.0	Analog	0.30	3
3	Bi	209	6,075,389.42	1.07	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219079.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:13
Sample Name	CCB5,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	277.88	25.55	1.345E-05	Pulse	0.30	3
Na	23	45	2	613.226	ppb	2.73	1,121,387.42	8.566E+00	Analog	0.30	3
Mg	26	45	2	0.151	ppb	57.00	132.23	1.011E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	410.02	3.126E-03	Pulse	0.30	3
K	39	45	2	21.119	ppb	12.50	26,574.28	2.031E-01	Pulse	0.30	3
Ca	44	45	3	0.581	ppb	4.53	23,109.16	4.492E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.866E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,713.48	1.309E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.09	2.331E-03	Pulse	0.30	3
Fe	56	45	2	0.141	ppb	8.91	3,861.46	2.950E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	292.01	37.75	2.893E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	45.53	4.473E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	950.57	9.354E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	592.19	5.824E-03	Pulse	0.30	3
As	75	72	2	0.015	ppb	60.54	33.33	3.275E-04	Pulse	0.75	3
Se	78	72	1	0.030	ppb	16.99	20.00	1.598E-04	Pulse	0.30	3
Mo	95	103	2	0.221	ppb	0.38	1,670.16	5.002E-04	Pulse	0.30	3
Ag	107	103	3	0.445	ppb	11.88	38,956.98	4.406E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-202.28	-2.162E-05	Pulse	0.30	3
Sb	121	115	3	0.050	ppb	3.22	5,445.60	5.821E-04	Pulse	0.30	3
Ba	137	159	3	0.001	ppb	162.04	200.75	1.546E-05	Pulse	0.30	3
Tl	205	209	3	0.071	ppb	1.97	11,203.56	1.505E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	793.77	1.066E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	9.35	951.46	1.279E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,900,416.10	1.02	108.9	Analog	0.30	3
2	Sc	45	130,945.25	1.86	115.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,144,440.82	0.55	110.1	Analog	0.30	3
1	Ge	72	125,081.18	0.74	113.3	Pulse	0.30	3
2	Ge	72	101,654.46	1.11	114.1	Pulse	0.30	3
2	Rh	103	3,339,266.76	0.72	108.4	Analog	0.30	3
3	Rh	103	8,841,507.23	0.10	105.3	Analog	0.30	3
3	In	115	9,354,702.88	0.26	105.6	Analog	0.30	3
3	Tb	159	12,988,170.64	0.35	103.6	Analog	0.30	3
3	Bi	209	7,441,913.50	0.44	101.6	Analog	0.30	3

Quantitation Report

File Name	A0219080.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:18
Sample Name	N022998-001B-MS,MS,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	32.871	ppb	9.86	51,790.29	1.998E-01	Pulse	0.30	3
Na	23	45	2	3719489.471	ppb	0.33	4,160,691,244.67	4.658E+04	Analog	0.30	3
Mg	26	45	2	2787.224	ppb	0.48	285,674.63	3.198E+00	Pulse	0.30	3
Al	27	45	2	192.895	ppb	1.92	35,865.13	4.014E-01	Pulse	0.30	3
K	39	45	2	30574.873	ppb	0.38	10,716,738.04	1.200E+02	Analog	0.30	3
Ca	44	45	3	89691.565	ppb	0.56	141,013,395.68	4.338E+01	Analog	0.30	3
V	51	45	2	11.847	ppb	1.03	68,759.89	7.699E-01	Pulse	0.30	3
Cr	52	45	2	26.159	ppb	1.45	207,462.30	2.323E+00	Pulse	0.30	3
Mn	55	45	2	92.710	ppb	0.61	365,961.65	4.097E+00	Pulse	0.30	3
Fe	56	45	2	26.151	ppb	3.03	173,241.40	1.939E+00	Pulse	0.30	3
Co	59	45	2	6.880	ppb	1.07	106,304.91	1.190E+00	Pulse	0.30	3
Ni	60	72	2	7.500	ppb	0.99	24,274.42	4.567E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-22,395.86	-4.213E-01	Pulse	0.30	3
Zn	66	72	2	62.324	ppb	1.26	72,111.45	1.357E+00	Pulse	0.30	3
As	75	72	2	10.786	ppb	2.20	6,667.26	1.255E-01	Pulse	0.75	3
Se	78	72	1	8.807	ppb	3.27	2,535.87	4.453E-02	Pulse	0.30	3
Mo	95	103	2	224.832	ppb	0.40	747,850.72	5.019E-01	Pulse	0.30	3
Ag	107	103	3	8.528	ppb	0.92	280,548.21	7.661E-02	Pulse	0.30	3
Cd	111	115	3	8.086	ppb	0.69	64,854.89	1.505E-02	Pulse	0.30	3
Sb	121	115	3	9.371	ppb	0.75	242,174.20	5.618E-02	Pulse	0.30	3
Ba	137	159	3	126.901	ppb	0.57	1,377,953.22	2.144E-01	Analog	0.30	3
Tl	205	209	3	10.072	ppb	0.97	510,064.75	1.824E-01	Pulse	0.30	3
Pb	208	209	3	10.800	ppb	0.29	741,116.49	2.651E-01	Pulse	0.30	3
U	238	209	3	14.295	ppb	0.37	1,038,129.88	3.713E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	260,580.16	8.19	14.9	Analog	0.30	3
2	Sc	45	89,326.71	2.57	78.9	Pulse	0.30	3
3	Sc	45	3,250,309.43	0.53	69.5	Analog	0.30	3
1	Ge	72	56,952.33	0.27	51.6	Pulse	0.30	3
2	Ge	72	53,145.13	2.10	59.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,490,092.95	2.90	48.4	Analog	0.30	3
3	Rh	103	3,662,244.08	0.40	43.6	Analog	0.30	3
3	In	115	4,310,495.47	0.06	48.6	Analog	0.30	3
3	Tb	159	6,425,756.09	0.30	51.2	Analog	0.30	3
3	Bi	209	2,795,731.76	0.32	38.2	Analog	0.30	3

Quantitation Report

File Name	A0219081.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:24
Sample Name	N022998-001B-MS,MS,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.144	ppb	1.21	18,594.09	1.304E-02	Pulse	0.30	3
Na	23	45	2	790325.731	ppb	0.24	1,233,039,368.29	9.898E+03	Analog	0.30	3
Mg	26	45	2	606.750	ppb	1.35	86,801.18	6.969E-01	Pulse	0.30	3
Al	27	45	2	40.531	ppb	1.20	10,841.95	8.702E-02	Pulse	0.30	3
K	39	45	2	6260.233	ppb	0.64	3,071,948.98	2.466E+01	Analog	0.30	3
Ca	44	45	3	19164.713	ppb	0.60	45,569,450.99	9.273E+00	Analog	0.30	3
V	51	45	2	2.490	ppb	1.92	20,828.26	1.672E-01	Pulse	0.30	3
Cr	52	45	2	5.688	ppb	1.19	64,376.56	5.168E-01	Pulse	0.30	3
Mn	55	45	2	20.529	ppb	0.52	113,336.93	9.098E-01	Pulse	0.30	3
Fe	56	45	2	7.583	ppb	0.65	71,746.99	5.760E-01	Pulse	0.30	3
Co	59	45	2	1.638	ppb	2.14	35,315.54	2.836E-01	Pulse	0.30	3
Ni	60	72	2	1.635	ppb	4.01	8,577.32	1.019E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,449.36	-1.719E-02	Pulse	0.30	3
Zn	66	72	2	13.708	ppb	1.86	27,129.78	3.224E-01	Pulse	0.30	3
As	75	72	2	2.310	ppb	1.95	2,271.49	2.699E-02	Pulse	0.75	3
Se	78	72	1	1.875	ppb	5.53	898.96	9.489E-03	Pulse	0.30	3
Mo	95	103	2	42.292	ppb	0.33	236,827.16	9.442E-02	Pulse	0.30	3
Ag	107	103	3	1.859	ppb	0.38	112,081.06	1.704E-02	Pulse	0.30	3
Cd	111	115	3	1.894	ppb	1.14	26,157.43	3.529E-03	Pulse	0.30	3
Sb	121	115	3	2.049	ppb	1.20	92,697.60	1.251E-02	Pulse	0.30	3
Ba	137	159	3	27.006	ppb	0.27	492,720.57	4.565E-02	Pulse	0.30	3
Tl	205	209	3	2.190	ppb	0.91	205,471.30	3.984E-02	Pulse	0.30	3
Pb	208	209	3	2.175	ppb	0.25	276,652.63	5.364E-02	Pulse	0.30	3
U	238	209	3	2.746	ppb	1.23	368,049.73	7.137E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,425,448.15	0.72	81.7	Analog	0.30	3
2	Sc	45	124,575.07	1.87	110.1	Pulse	0.30	3
3	Sc	45	4,914,124.82	0.93	105.2	Analog	0.30	3
1	Ge	72	94,731.11	0.24	85.8	Pulse	0.30	3
2	Ge	72	84,170.32	1.49	94.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,508,287.39	2.09	81.4	Analog	0.30	3
3	Rh	103	6,576,598.72	0.23	78.3	Analog	0.30	3
3	In	115	7,412,709.91	0.92	83.6	Analog	0.30	3
3	Tb	159	10,794,039.70	0.43	86.1	Analog	0.30	3
3	Bi	209	5,157,807.98	1.28	70.4	Analog	0.30	3

Quantitation Report

File Name	A0219082.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:29
Sample Name	N022998-001B-MSD,MSD,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	33.829	ppb	3.86	52,299.32	2.056E-01	Pulse	0.30	3
Na	23	45	2	3773588.878	ppb	0.04	4,404,035,987.71	4.726E+04	Analog	0.30	3
Mg	26	45	2	2821.225	ppb	1.27	301,644.78	3.237E+00	Pulse	0.30	3
Al	27	45	2	206.732	ppb	0.76	40,062.88	4.299E-01	Pulse	0.30	3
K	39	45	2	30963.830	ppb	0.22	11,321,703.16	1.215E+02	Analog	0.30	3
Ca	44	45	3	89626.566	ppb	0.14	144,714,362.29	4.335E+01	Analog	0.30	3
V	51	45	2	11.953	ppb	0.16	72,380.90	7.767E-01	Pulse	0.30	3
Cr	52	45	2	26.143	ppb	1.05	216,326.08	2.322E+00	Pulse	0.30	3
Mn	55	45	2	93.113	ppb	0.14	383,455.54	4.115E+00	Pulse	0.30	3
Fe	56	45	2	25.067	ppb	1.22	173,313.37	1.860E+00	Pulse	0.30	3
Co	59	45	2	6.862	ppb	0.96	110,616.03	1.187E+00	Pulse	0.30	3
Ni	60	72	2	7.652	ppb	3.46	25,825.00	4.659E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-25,082.67	-4.521E-01	Pulse	0.30	3
Zn	66	72	2	61.712	ppb	1.49	74,521.66	1.344E+00	Pulse	0.30	3
As	75	72	2	10.795	ppb	0.25	6,966.03	1.256E-01	Pulse	0.75	3
Se	78	72	1	8.462	ppb	1.72	2,439.18	4.279E-02	Pulse	0.30	3
Mo	95	103	2	221.626	ppb	0.60	770,814.81	4.947E-01	Pulse	0.30	3
Ag	107	103	3	8.522	ppb	0.33	286,669.20	7.655E-02	Pulse	0.30	3
Cd	111	115	3	8.054	ppb	1.24	65,865.14	1.499E-02	Pulse	0.30	3
Sb	121	115	3	9.384	ppb	0.36	247,262.02	5.626E-02	Pulse	0.30	3
Ba	137	159	3	127.696	ppb	1.03	1,407,359.16	2.158E-01	Analog	0.30	3
Tl	205	209	3	10.262	ppb	0.47	524,690.71	1.859E-01	Pulse	0.30	3
Pb	208	209	3	10.815	ppb	0.30	749,328.85	2.655E-01	Pulse	0.30	3
U	238	209	3	14.357	ppb	0.33	1,052,739.37	3.729E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	254,535.39	3.36	14.6	Analog	0.30	3
2	Sc	45	93,192.26	2.21	82.3	Pulse	0.30	3
3	Sc	45	3,338,014.12	0.45	71.4	Analog	0.30	3
1	Ge	72	57,007.28	0.87	51.6	Pulse	0.30	3
2	Ge	72	55,461.99	2.81	62.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,557,953.42	1.73	50.6	Analog	0.30	3
3	Rh	103	3,744,731.99	0.39	44.6	Analog	0.30	3
3	In	115	4,395,016.12	0.10	49.6	Analog	0.30	3
3	Tb	159	6,522,106.85	0.43	52.0	Analog	0.30	3
3	Bi	209	2,822,763.29	0.26	38.5	Analog	0.30	3

Quantitation Report

File Name	A0219083.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:35
Sample Name	N022998-001B-MSD,MSD,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	2.078	ppb	1.57	18,072.42	1.264E-02	Pulse	0.30	3
Na	23	45	2	786553.236	ppb	0.33	1,210,172,017.52	9.851E+03	Analog	0.30	3
Mg	26	45	2	604.957	ppb	0.61	85,355.35	6.948E-01	Pulse	0.30	3
Al	27	45	2	41.642	ppb	2.57	10,973.30	8.931E-02	Pulse	0.30	3
K	39	45	2	6298.357	ppb	0.23	3,047,621.76	2.481E+01	Analog	0.30	3
Ca	44	45	3	19125.171	ppb	0.34	45,484,985.99	9.254E+00	Analog	0.30	3
V	51	45	2	2.509	ppb	0.99	20,691.45	1.684E-01	Pulse	0.30	3
Cr	52	45	2	5.733	ppb	2.05	63,984.34	5.209E-01	Pulse	0.30	3
Mn	55	45	2	20.519	ppb	0.40	111,722.89	9.094E-01	Pulse	0.30	3
Fe	56	45	2	7.982	ppb	2.13	74,354.17	6.053E-01	Pulse	0.30	3
Co	59	45	2	1.673	ppb	1.71	35,583.36	2.897E-01	Pulse	0.30	3
Ni	60	72	2	1.723	ppb	2.84	8,949.94	1.072E-01	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	929.71	1.117E-02	Pulse	0.30	3
Zn	66	72	2	13.527	ppb	1.26	26,596.96	3.185E-01	Pulse	0.30	3
As	75	72	2	2.300	ppb	0.85	2,244.38	2.688E-02	Pulse	0.75	3
Se	78	72	1	1.660	ppb	0.52	807.83	8.401E-03	Pulse	0.30	3
Mo	95	103	2	42.196	ppb	1.41	235,053.65	9.420E-02	Pulse	0.30	3
Ag	107	103	3	1.858	ppb	0.41	113,277.21	1.703E-02	Pulse	0.30	3
Cd	111	115	3	1.878	ppb	1.58	26,097.67	3.498E-03	Pulse	0.30	3
Sb	121	115	3	2.039	ppb	0.77	92,841.38	1.245E-02	Pulse	0.30	3
Ba	137	159	3	26.897	ppb	0.48	496,292.21	4.546E-02	Pulse	0.30	3
Tl	205	209	3	2.234	ppb	1.41	211,447.30	4.063E-02	Pulse	0.30	3
Pb	208	209	3	2.184	ppb	0.41	280,241.06	5.384E-02	Pulse	0.30	3
U	238	209	3	2.734	ppb	0.62	369,798.97	7.105E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,429,470.87	1.47	81.9	Analog	0.30	3
2	Sc	45	122,847.94	1.27	108.5	Pulse	0.30	3
3	Sc	45	4,914,997.84	0.29	105.2	Analog	0.30	3
1	Ge	72	96,158.21	0.69	87.1	Pulse	0.30	3
2	Ge	72	83,499.94	1.25	93.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,495,511.74	1.74	81.0	Analog	0.30	3
3	Rh	103	6,651,073.23	0.06	79.2	Analog	0.30	3
3	In	115	7,460,177.76	0.34	84.2	Analog	0.30	3
3	Tb	159	10,916,722.89	0.30	87.0	Analog	0.30	3
3	Bi	209	5,204,738.39	0.65	71.1	Analog	0.30	3

Quantitation Report

File Name	A0219084.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:40
Sample Name	N022998-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.002	ppb	90.60	20.00	2.493E-05	Pulse	0.30	3
	Na	23	45	2	1202234.999	ppb	0.38	1,746,105,733.98	1.506E+04	Analog	0.30	3
	Mg	26	45	2	24785.718	ppb	0.93	3,297,429.95	2.843E+01	Analog	0.30	3
	Al	27	45	2	4.492	ppb	11.56	1,466.87	1.266E-02	Pulse	0.30	3
	K	39	45	2	19679.765	ppb	0.13	8,960,196.25	7.726E+01	Analog	0.30	3
	Ca	44	45	3	419673.039	ppb	0.71	915,692,626.36	2.030E+02	Analog	0.30	3
	V	51	45	2	2.708	ppb	1.55	21,012.87	1.812E-01	Pulse	0.30	3
	Cr	52	45	2	3.964	ppb	2.33	42,294.17	3.648E-01	Pulse	0.30	3
OLR	Mn	55	45	2	342.957	ppb	0.88	1,756,454.19	1.515E+01	Analog	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-110,557.31	-9.534E-01	Pulse	0.30	3
	Co	59	45	2	0.085	ppb	2.48	1,740.47	1.501E-02	Pulse	0.30	3
	Ni	60	72	2	0.603	ppb	4.77	2,836.44	3.939E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-42,832.81	-5.946E-01	Pulse	0.30	3
	Zn	66	72	2	32.590	ppb	0.97	52,161.89	7.242E-01	Pulse	0.30	3
	As	75	72	2	1.396	ppb	5.21	1,179.51	1.638E-02	Pulse	0.75	3
	Se	78	72	1	1.145	ppb	20.60	461.14	5.801E-03	Pulse	0.30	3
	Mo	95	103	2	27.170	ppb	1.10	127,085.02	6.066E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-4,602.23	-8.443E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,626.35	-4.246E-04	Pulse	0.30	3
	Sb	121	115	3	0.072	ppb	3.75	4,416.37	7.140E-04	Pulse	0.30	3
	Ba	137	159	3	133.557	ppb	0.17	2,081,120.80	2.257E-01	Analog	0.30	3
	Tl	205	209	3	0.808	ppb	0.61	61,258.31	1.483E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-56,037.02	-1.357E-02	Pulse	0.30	3
	U	238	209	3	1.678	ppb	0.80	180,143.11	4.362E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	799,224.96	1.14	45.8	Analog	0.30	3
2	Sc	45	115,977.44	2.28	102.5	Pulse	0.30	3
3	Sc	45	4,511,163.96	0.48	96.5	Analog	0.30	3
1	Ge	72	79,566.49	0.86	72.1	Pulse	0.30	3
2	Ge	72	72,032.56	1.54	80.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,094,891.65	0.99	68.0	Analog	0.30	3
3	Rh	103	5,445,070.13	0.80	64.9	Analog	0.30	3
3	In	115	6,185,500.12	0.23	69.8	Analog	0.30	3
3	Tb	159	9,221,126.74	0.59	73.5	Analog	0.30	3
3	Bi	209	4,129,853.17	0.20	56.4	Analog	0.30	3

Quantitation Report

File Name	A0219085.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:46
Sample Name	N022998-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	2.22	1.409E-06	Pulse	0.30	3
Na	23	45	2	252024.167	ppb	0.74	406,919,540.61	3.157E+03	Analog	0.30	3
Mg	26	45	2	5392.943	ppb	0.33	797,576.80	6.188E+00	Pulse	0.30	3
Al	27	45	2	0.787	ppb	35.57	647.17	5.021E-03	Pulse	0.30	3
K	39	45	2	4129.928	ppb	1.18	2,102,004.81	1.631E+01	Analog	0.30	3
Ca	44	45	3	91903.795	ppb	1.16	230,507,834.34	4.445E+01	Analog	0.30	3
V	51	45	2	0.515	ppb	3.16	5,151.02	3.995E-02	Pulse	0.30	3
Cr	52	45	2	0.845	ppb	4.15	11,549.89	8.961E-02	Pulse	0.30	3
Mn	55	45	2	76.921	ppb	0.28	438,242.78	3.400E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-21,437.46	-1.663E-01	Pulse	0.30	3
Co	59	45	2	0.026	ppb	9.59	615.02	4.775E-03	Pulse	0.30	3
Ni	60	72	2	0.109	ppb	3.48	868.78	9.498E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-8,792.91	-9.611E-02	Pulse	0.30	3
Zn	66	72	2	7.081	ppb	2.55	16,591.26	1.813E-01	Pulse	0.30	3
As	75	72	2	0.301	ppb	4.84	333.62	3.647E-03	Pulse	0.75	3
Se	78	72	1	0.201	ppb	15.68	110.00	1.026E-03	Pulse	0.30	3
Mo	95	103	2	5.152	ppb	2.05	31,903.85	1.151E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-176.36	-2.353E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-626.19	-7.493E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,687.94	2.020E-04	Pulse	0.30	3
Ba	137	159	3	28.788	ppb	0.20	589,993.13	4.866E-02	Pulse	0.30	3
Tl	205	209	3	0.196	ppb	1.98	22,721.54	3.769E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,849.56	-1.966E-03	Pulse	0.30	3
U	238	209	3	0.317	ppb	0.81	49,806.17	8.262E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,147.62	0.78	90.1	Analog	0.30	3
2	Sc	45	128,904.21	1.39	113.9	Pulse	0.30	3
3	Sc	45	5,185,418.50	0.61	111.0	Analog	0.30	3
1	Ge	72	107,207.47	0.38	97.1	Pulse	0.30	3
2	Ge	72	91,492.93	1.25	102.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,772,073.43	1.08	90.0	Analog	0.30	3
3	Rh	103	7,485,511.48	0.32	89.2	Analog	0.30	3
3	In	115	8,356,847.23	0.32	94.3	Analog	0.30	3
3	Tb	159	12,125,435.65	0.72	96.7	Analog	0.30	3
3	Bi	209	6,028,346.37	0.41	82.3	Analog	0.30	3

Quantitation Report

~~NOT REPORTED~~
~~IS FAILED~~

File Name	A0219086.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:51
Sample Name	N022998-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	46.93	15.56	3.642E-05	Pulse	0.30	3
Na	23	45	2	2332493.713	ppb	0.62	2,904,249,663.39	2.921E+04	Analog	0.30	3
Mg	26	45	2	17018.596	ppb	1.72	1,940,851.27	1.952E+01	Analog	0.30	3
Al	27	45	2	5.950	ppb	5.55	1,557.71	1.567E-02	Pulse	0.30	3
K	39	45	2	27205.939	ppb	0.83	10,614,157.20	1.068E+02	Analog	0.30	3
Ca	44	45	3	319025.833	ppb	0.58	579,782,595.81	1.543E+02	Analog	0.30	3
V	51	45	2	0.055	ppb	26.52	1,030.08	1.035E-02	Pulse	0.30	3
OLR Cr	52	45	2	<0.000	ppb	---	-269.81	-2.698E-03	Pulse	0.30	3
Mn	55	45	2	802.735	ppb	1.22	3,524,013.55	3.545E+01	Analog	0.30	3
Fe	56	45	2	216.541	ppb	0.67	1,582,909.27	1.592E+01	Analog	0.30	3
Co	59	45	2	0.676	ppb	2.88	11,659.27	1.172E-01	Pulse	0.30	3
Ni	60	72	2	0.354	ppb	4.04	1,464.36	2.435E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-69,917.81	-1.162E+00	Pulse	0.30	3
Zn	66	72	2	44.205	ppb	1.27	58,434.27	9.713E-01	Pulse	0.30	3
As	75	72	2	3.585	ppb	1.92	2,516.64	4.181E-02	Pulse	0.75	3
Se	78	72	1	0.032	ppb	49.73	11.11	1.713E-04	Pulse	0.30	3
Mo	95	103	2	68.992	ppb	0.75	267,195.23	1.540E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-11,106.20	-2.515E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,041.92	-2.044E-04	Pulse	0.30	3
Sb	121	115	3	0.279	ppb	2.38	9,944.64	1.951E-03	Pulse	0.30	3
Ba	137	159	3	144.936	ppb	0.62	1,853,851.17	2.449E-01	Analog	0.30	3
Tl	205	209	3	0.101	ppb	2.14	6,715.15	2.050E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-47,272.59	-1.443E-02	Pulse	0.30	3
U	238	209	3	1.190	ppb	1.41	101,361.32	3.094E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	427,224.38	3.05	24.5	Analog	0.30	3
2	Sc	45	99,435.51	2.73	87.9	Pulse	0.30	3
3	Sc	45	3,757,472.90	0.74	80.4	Analog	0.30	3
1	Ge	72	65,055.92	1.09	58.9	Pulse	0.30	3
2	Ge	72	60,172.70	2.86	67.5	Pulse	0.30	3

Mary 2/21/2017

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,734,696.15	1.50	56.3	Analog	0.30	3
3	Rh	103	4,415,745.25	0.40	52.6	Analog	0.30	3
3	In	115	5,096,988.63	0.22	57.5	Analog	0.30	3
3	Tb	159	7,569,176.62	0.18	60.4	Analog	0.30	3
3	Bi	209	3,275,840.23	0.23	44.7	Analog	0.30	3

Quantitation Report

File Name	A0219087.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 22:57
Sample Name	N022998-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	7.78	5.401E-06	Pulse	0.30	3
	Na	23	45	2	485305.442	ppb	0.64	763,074,841.96	6.078E+03	Analog	0.30	3
	Mg	26	45	2	3666.068	ppb	0.77	528,074.70	4.206E+00	Pulse	0.30	3
	Al	27	45	2	0.609	ppb	7.16	584.04	4.653E-03	Pulse	0.30	3
	K	39	45	2	5602.179	ppb	1.16	2,771,649.57	2.208E+01	Analog	0.30	3
	Ca	44	45	3	68005.946	ppb	0.20	168,040,111.94	3.290E+01	Analog	0.30	3
	V	51	45	2	<0.000	ppb	---	606.71	4.825E-03	Pulse	0.30	3
	Cr	52	45	2	<0.000	ppb	---	1,430.39	1.140E-02	Pulse	0.30	3
OLR	Mn	55	45	2	182.429	ppb	0.99	1,011,660.45	8.059E+00	Pulse	0.30	3
	Fe	56	45	2	52.461	ppb	1.06	486,000.13	3.871E+00	Pulse	0.30	3
	Co	59	45	2	0.161	ppb	4.57	3,518.03	2.804E-02	Pulse	0.30	3
	Ni	60	72	2	0.083	ppb	22.83	701.24	7.964E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-17,254.03	-1.963E-01	Pulse	0.30	3
	Zn	66	72	2	9.207	ppb	2.94	19,912.48	2.266E-01	Pulse	0.30	3
	As	75	72	2	0.757	ppb	7.59	786.01	8.945E-03	Pulse	0.75	3
	Se	78	72	1	0.017	ppb	63.73	10.00	9.758E-05	Pulse	0.30	3
	Mo	95	103	2	13.049	ppb	0.98	77,282.31	2.914E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-2,929.12	-4.103E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-219.69	-2.754E-05	Pulse	0.30	3
	Sb	121	115	3	0.029	ppb	2.22	3,673.91	4.602E-04	Pulse	0.30	3
	Ba	137	159	3	30.552	ppb	0.87	595,163.53	5.164E-02	Pulse	0.30	3
	Tl	205	209	3	0.046	ppb	1.03	5,844.75	1.047E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-12,104.29	-2.169E-03	Pulse	0.30	3
	U	238	209	3	0.221	ppb	0.91	32,148.01	5.760E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,441,445.99	2.40	82.6	Analog	0.30	3
2	Sc	45	125,549.90	1.93	110.9	Pulse	0.30	3
3	Sc	45	5,108,160.65	0.57	109.3	Analog	0.30	3
1	Ge	72	102,338.47	0.97	92.7	Pulse	0.30	3
2	Ge	72	87,902.12	1.71	98.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,652,097.74	2.08	86.1	Analog	0.30	3
3	Rh	103	7,139,734.20	0.34	85.0	Analog	0.30	3
3	In	115	7,982,793.49	0.89	90.1	Analog	0.30	3
3	Tb	159	11,525,843.16	0.56	91.9	Analog	0.30	3
3	Bi	209	5,580,950.47	0.79	76.2	Analog	0.30	3

Quantitation Report

File Name	A0219088.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:02
Sample Name	N022998-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.012	ppb	38.83	17.78	8.502E-05	Pulse	0.30	3
Na	23	45	2	3040142.188	ppb	0.93	3,580,141,244.43	3.807E+04	Analog	0.30	3
Mg	26	45	2	9191.126	ppb	0.82	991,705.81	1.054E+01	Analog	0.30	3
Al	27	45	2	7.399	ppb	9.67	1,754.62	1.866E-02	Pulse	0.30	3
K	39	45	2	30287.765	ppb	1.01	11,175,644.00	1.188E+02	Analog	0.30	3
Ca	44	45	3	338749.213	ppb	0.16	570,429,253.72	1.638E+02	Analog	0.30	3
V	51	45	2	2.619	ppb	2.38	16,501.05	1.755E-01	Pulse	0.30	3
Cr	52	45	2	108.644	ppb	0.99	902,761.40	9.601E+00	Pulse	0.30	3
Mn	55	45	2	24.142	ppb	1.25	100,551.01	1.069E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-258,701.77	-2.751E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,698.83	-3.934E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-381.83	-6.731E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-67,983.57	-1.197E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,129.90	-1.784E-01	Pulse	0.30	3
As	75	72	2	9.784	ppb	2.59	6,465.98	1.138E-01	Pulse	0.75	3
Se	78	72	1	0.922	ppb	10.16	285.57	4.672E-03	Pulse	0.30	3
Mo	95	103	2	82.742	ppb	0.78	293,804.32	1.847E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,398.20	-3.527E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,045.39	-2.258E-04	Pulse	0.30	3
Sb	121	115	3	0.031	ppb	13.03	2,161.36	4.670E-04	Pulse	0.30	3
Ba	137	159	3	90.639	ppb	0.49	1,056,352.72	1.532E-01	Pulse	0.30	3
Tl	205	209	3	0.446	ppb	1.50	24,224.93	8.280E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,966.67	-1.537E-02	Pulse	0.30	3
U	238	209	3	0.691	ppb	1.35	52,611.18	1.798E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	211,250.95	4.70	12.1	Analog	0.30	3
2	Sc	45	94,041.43	2.16	83.1	Pulse	0.30	3
3	Sc	45	3,481,531.30	0.44	74.5	Analog	0.30	3
1	Ge	72	61,089.44	0.84	55.3	Pulse	0.30	3
2	Ge	72	56,788.60	2.04	63.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,590,565.97	1.94	51.6	Analog	0.30	3
3	Rh	103	3,961,638.00	0.65	47.2	Analog	0.30	3
3	In	115	4,628,658.71	0.88	52.2	Analog	0.30	3
3	Tb	159	6,896,638.44	0.66	55.0	Analog	0.30	3
3	Bi	209	2,925,885.86	0.56	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219089.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:08
Sample Name	N022998-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.004E-05	Pulse	0.30	3
Na	23	45	2	629971.225	ppb	0.41	981,001,229.83	7.890E+03	Analog	0.30	3
Mg	26	45	2	1973.911	ppb	0.80	281,638.52	2.265E+00	Pulse	0.30	3
Al	27	45	2	1.362	ppb	13.16	771.97	6.207E-03	Pulse	0.30	3
K	39	45	2	6159.258	ppb	0.71	3,016,586.38	2.426E+01	Analog	0.30	3
Ca	44	45	3	72699.643	ppb	0.47	176,801,739.59	3.517E+01	Analog	0.30	3
V	51	45	2	0.480	ppb	2.46	4,690.88	3.773E-02	Pulse	0.30	3
Cr	52	45	2	23.646	ppb	1.18	261,243.47	2.101E+00	Pulse	0.30	3
Mn	55	45	2	5.222	ppb	0.37	29,088.60	2.339E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,161.51	-5.321E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,005.81	-8.089E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-31.02	-3.598E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-16,800.95	-1.974E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,141.39	-2.516E-02	Pulse	0.30	3
As	75	72	2	2.112	ppb	1.32	2,102.44	2.470E-02	Pulse	0.75	3
Se	78	72	1	0.228	ppb	26.16	115.56	1.160E-03	Pulse	0.30	3
Mo	95	103	2	15.618	ppb	1.89	88,700.43	3.487E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,759.65	2.552E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-244.19	-3.155E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,037.86	1.341E-04	Pulse	0.30	3
Ba	137	159	3	18.798	ppb	0.36	355,881.80	3.178E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	0.65	11,675.00	2.192E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-12,120.93	-2.276E-03	Pulse	0.30	3
U	238	209	3	0.129	ppb	0.58	18,070.22	3.393E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,326,012.39	0.94	76.0	Analog	0.30	3
2	Sc	45	124,337.81	1.49	109.9	Pulse	0.30	3
3	Sc	45	5,027,673.01	0.71	107.6	Analog	0.30	3
1	Ge	72	99,598.14	1.39	90.2	Pulse	0.30	3
2	Ge	72	85,104.90	1.58	95.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,543,136.06	1.47	82.6	Analog	0.30	3
3	Rh	103	6,896,656.49	0.80	82.1	Analog	0.30	3
3	In	115	7,739,034.26	0.58	87.3	Analog	0.30	3
3	Tb	159	11,199,594.69	0.56	89.3	Analog	0.30	3
3	Bi	209	5,324,962.01	0.90	72.7	Analog	0.30	3

Quantitation Report

File Name	A0219090.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:13
Sample Name	CCV6,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.559	ppb	0.62	209,216.77	1.189E-01	Pulse	0.30	3
Na	23	45	2	943.453	ppb	3.32	1,716,232.55	1.270E+01	Analog	0.30	3
Mg	26	45	2	200.372	ppb	2.20	31,173.16	2.307E-01	Pulse	0.30	3
Al	27	45	2	22.534	ppb	1.66	6,742.01	4.989E-02	Pulse	0.30	3
K	39	45	2	234.140	ppb	0.61	140,276.07	1.038E+00	Pulse	0.30	3
Ca	44	45	3	211.813	ppb	0.70	565,699.78	1.067E-01	Pulse	0.30	3
V	51	45	2	20.246	ppb	0.40	177,138.88	1.311E+00	Pulse	0.30	3
Cr	52	45	2	20.028	ppb	0.60	240,812.06	1.782E+00	Pulse	0.30	3
Mn	55	45	2	20.184	ppb	0.43	120,887.06	8.946E-01	Pulse	0.30	3
Fe	56	45	2	20.884	ppb	1.33	209,811.06	1.553E+00	Pulse	0.30	3
Co	59	45	2	20.264	ppb	0.96	473,645.13	3.505E+00	Pulse	0.30	3
Ni	60	72	2	19.951	ppb	0.81	127,283.72	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.672	ppb	0.63	357,413.39	3.398E+00	Pulse	0.30	3
Zn	66	72	2	18.768	ppb	0.46	45,232.39	4.300E-01	Pulse	0.30	3
As	75	72	2	20.059	ppb	0.77	24,532.30	2.332E-01	Pulse	0.75	3
Se	78	72	1	19.455	ppb	1.31	12,983.50	9.836E-02	Pulse	0.30	3
Mo	95	103	2	19.914	ppb	1.16	153,464.34	4.446E-02	Pulse	0.30	3
Ag	107	103	3	19.916	ppb	0.15	1,630,755.19	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.508	ppb	1.00	370,305.68	3.815E-02	Pulse	0.30	3
Sb	121	115	3	20.191	ppb	0.32	1,171,821.34	1.207E-01	Pulse	0.30	3
Ba	137	159	3	21.834	ppb	0.72	491,454.82	3.691E-02	Pulse	0.30	3
Tl	205	209	3	20.354	ppb	0.51	2,806,686.52	3.685E-01	Analog	0.30	3
Pb	208	209	3	20.614	ppb	0.09	3,851,988.00	5.057E-01	Analog	0.30	3
U	238	209	3	19.474	ppb	0.35	3,853,229.66	5.059E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,759,648.67	0.93	100.8	Analog	0.30	3
2	Sc	45	135,134.03	0.69	119.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,303,879.37	0.17	113.5	Analog	0.30	3
1	Ge	72	132,014.55	1.20	119.6	Pulse	0.30	3
2	Ge	72	105,186.44	0.86	118.1	Pulse	0.30	3
2	Rh	103	3,451,492.34	0.42	112.0	Analog	0.30	3
3	Rh	103	9,145,450.56	0.92	108.9	Analog	0.30	3
3	In	115	9,706,966.34	0.24	109.5	Analog	0.30	3
3	Tb	159	13,316,526.33	1.01	106.2	Analog	0.30	3
3	Bi	209	7,617,189.75	0.33	104.0	Analog	0.30	3

Quantitation Report

File Name	A0219091.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:19
Sample Name	CCB6,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	16.67	9.901E-06	Pulse	0.30	3
Na	23	45	2	589.561	ppb	1.97	1,058,029.52	8.270E+00	Mix	0.30	3
Mg	26	45	2	0.247	ppb	62.02	143.34	1.120E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	372.23	2.911E-03	Pulse	0.30	3
K	39	45	2	20.081	ppb	5.84	25,457.94	1.990E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	18,150.59	3.657E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	600.04	4.690E-03	Pulse	0.30	3
Cr	52	45	2	<0.000	ppb	---	1,246.82	9.754E-03	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	305.94	2.391E-03	Pulse	0.30	3
Fe	56	45	2	0.160	ppb	20.04	3,949.44	3.086E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	26.70	2.088E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	32.27	3.205E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	810.97	8.067E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	435.70	4.336E-03	Pulse	0.30	3
As	75	72	2	0.016	ppb	40.45	33.78	3.357E-04	Pulse	0.75	3
Se	78	72	1	0.021	ppb	80.62	14.45	1.144E-04	Pulse	0.30	3
Mo	95	103	2	0.143	ppb	8.88	1,094.53	3.281E-04	Pulse	0.30	3
Ag	107	103	3	0.435	ppb	13.99	37,897.28	4.321E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-164.24	-1.759E-05	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.08	5,211.08	5.580E-04	Pulse	0.30	3
Ba	137	159	3	0.004	ppb	14.02	247.85	1.931E-05	Pulse	0.30	3
Tl	205	209	3	0.023	ppb	2.95	4,630.92	6.253E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	799.68	1.080E-04	Pulse	0.30	3
U	238	209	3	0.003	ppb	3.96	869.68	1.174E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,687,289.30	1.12	96.7	Analog	0.30	3
2	Sc	45	127,946.83	0.87	113.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,963,406.90	0.33	106.2	Analog	0.30	3
1	Ge	72	125,895.30	0.71	114.0	Pulse	0.30	3
2	Ge	72	100,507.12	1.07	112.8	Pulse	0.30	3
2	Rh	103	3,333,215.33	1.31	108.2	Analog	0.30	3
3	Rh	103	8,772,235.77	0.39	104.5	Analog	0.30	3
3	In	115	9,339,569.53	0.34	105.4	Analog	0.30	3
3	Tb	159	12,835,062.73	0.65	102.3	Analog	0.30	3
3	Bi	209	7,406,219.33	0.16	101.1	Analog	0.30	3

Quantitation Report

File Name	A0219092.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:24
Sample Name	N023014-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.000	ppb	187.72	15.55	1.320E-05	Pulse	0.30	3
	Na	23	45	2	506871.449	ppb	1.03	721,417,402.58	6.348E+03	Analog	0.30	3
	Mg	26	45	2	43129.574	ppb	1.11	5,622,928.94	4.948E+01	Analog	0.30	3
	Al	27	45	2	7.314	ppb	5.72	2,101.77	1.849E-02	Pulse	0.30	3
	K	39	45	2	14521.689	ppb	0.84	6,482,267.47	5.704E+01	Analog	0.30	3
	Ca	44	45	3	391355.997	ppb	0.34	866,001,969.32	1.893E+02	Analog	0.30	3
	V	51	45	2	5.917	ppb	0.83	44,081.89	3.879E-01	Pulse	0.30	3
OLR	Cr	52	45	2	31342.306	ppb	0.95	314,261,027.36	2.765E+03	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-8,492.91	-7.474E-02	Pulse	0.30	3
	Fe	56	45	2	4.914	ppb	1.17	43,176.93	3.800E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,162.84	-1.023E-02	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-1,659.61	-2.194E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-21,277.10	-2.813E-01	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-5,590.29	-7.392E-02	Pulse	0.30	3
	As	75	72	2	2.577	ppb	1.81	2,276.67	3.010E-02	Pulse	0.75	3
	Se	78	72	1	15.696	ppb	2.64	7,040.71	7.935E-02	Pulse	0.30	3
	Mo	95	103	2	52.200	ppb	1.74	262,628.35	1.165E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-10,212.12	-1.709E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,151.44	-3.190E-04	Pulse	0.30	3
	Sb	121	115	3	0.017	ppb	4.87	2,619.22	3.884E-04	Pulse	0.30	3
	Ba	137	159	3	33.432	ppb	0.03	566,715.38	5.651E-02	Pulse	0.30	3
	Tl	205	209	3	0.158	ppb	2.77	14,146.15	3.068E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-49,235.79	-1.068E-02	Pulse	0.30	3
	U	238	209	3	1.457	ppb	0.21	174,674.21	3.788E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,179,455.61	1.28	67.6	Analog	0.30	3
2	Sc	45	113,651.30	1.84	100.4	Pulse	0.30	3
3	Sc	45	4,575,024.37	0.31	97.9	Analog	0.30	3
1	Ge	72	88,717.14	0.94	80.3	Pulse	0.30	3
2	Ge	72	75,635.24	1.38	84.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,253,605.66	0.52	73.2	Analog	0.30	3
3	Rh	103	5,974,884.15	0.57	71.2	Analog	0.30	3
3	In	115	6,743,339.47	0.46	76.1	Analog	0.30	3
3	Tb	159	10,029,423.95	0.38	80.0	Analog	0.30	3
3	Bi	209	4,611,359.24	0.64	63.0	Analog	0.30	3

Quantitation Report

File Name	A0219093.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:30
Sample Name	N023014-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	6.67	4.471E-06	Pulse	0.30	3
	Na	23	45	2	108454.258	ppb	0.74	165,717,899.75	1.359E+03	Analog	0.30	3
	Mg	26	45	2	9616.328	ppb	0.29	1,345,378.50	1.103E+01	Analog	0.30	3
	Al	27	45	2	1.078	ppb	20.61	684.78	5.621E-03	Pulse	0.30	3
	K	39	45	2	3102.595	ppb	0.99	1,497,553.69	1.228E+01	Analog	0.30	3
	Ca	44	45	3	86075.374	ppb	0.43	201,934,885.88	4.164E+01	Analog	0.30	3
	V	51	45	2	1.216	ppb	1.83	10,379.24	8.513E-02	Pulse	0.30	3
OLR	Cr	52	45	2	6796.935	ppb	0.34	73,128,570.45	5.997E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,894.41	-1.553E-02	Pulse	0.30	3
	Fe	56	45	2	1.296	ppb	1.83	13,939.17	1.143E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-256.28	-2.103E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-381.71	-4.251E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-4,195.27	-4.671E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-903.16	-1.006E-02	Pulse	0.30	3
	As	75	72	2	0.526	ppb	5.76	562.65	6.262E-03	Pulse	0.75	3
	Se	78	72	1	3.112	ppb	5.81	1,719.06	1.574E-02	Pulse	0.30	3
	Mo	95	103	2	9.895	ppb	1.88	61,776.80	2.210E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	1,669.34	2.215E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-525.96	-6.298E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,273.44	1.525E-04	Pulse	0.30	3
	Ba	137	159	3	7.136	ppb	0.89	144,873.29	1.207E-02	Pulse	0.30	3
	Tl	205	209	3	0.039	ppb	1.59	5,643.52	9.165E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-7,258.02	-1.179E-03	Pulse	0.30	3
	U	238	209	3	0.273	ppb	0.46	43,862.21	7.123E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,499,277.06	0.95	85.9	Analog	0.30	3
2	Sc	45	121,946.97	1.84	107.7	Pulse	0.30	3
3	Sc	45	4,850,068.40	0.33	103.8	Analog	0.30	3
1	Ge	72	109,229.24	0.25	98.9	Pulse	0.30	3
2	Ge	72	89,823.37	0.95	100.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,795,474.23	0.63	90.8	Analog	0.30	3
3	Rh	103	7,535,085.72	0.12	89.7	Analog	0.30	3
3	In	115	8,351,614.58	0.18	94.2	Analog	0.30	3
3	Tb	159	12,002,685.52	0.65	95.7	Analog	0.30	3
3	Bi	209	6,157,789.84	0.60	84.1	Analog	0.30	3

Quantitation Report

File Name	A0219094.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:36
Sample Name	N023014-001B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.66	3.926E-06	Pulse	0.30	3
Na	23	45	2	2575.222	ppb	1.52	4,276,526.15	3.314E+01	Analog	0.30	3
Mg	26	45	2	203.147	ppb	2.07	30,182.30	2.339E-01	Pulse	0.30	3
Al	27	45	2	1.788	ppb	14.96	913.72	7.086E-03	Pulse	0.30	3
K	39	45	2	77.381	ppb	3.55	54,662.26	4.236E-01	Pulse	0.30	3
Ca	44	45	3	1838.525	ppb	0.31	4,524,378.68	8.934E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	681.15	5.277E-03	Pulse	0.30	3
Cr	52	45	2	149.926	ppb	1.25	1,709,152.44	1.324E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	226.95	1.763E-03	Pulse	0.30	3
Fe	56	45	2	0.320	ppb	5.18	5,502.76	4.263E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	11.12	8.662E-05	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	35.74	3.515E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	890.76	8.752E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	419.80	4.125E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	36.40	31.46	3.094E-04	Pulse	0.75	3
Se	78	72	1	0.061	ppb	40.06	40.00	3.163E-04	Pulse	0.30	3
Mo	95	103	2	0.266	ppb	7.76	1,975.77	6.014E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,683.91	4.147E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,015.87	-1.068E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	835.62	8.784E-05	Pulse	0.30	3
Ba	137	159	3	0.166	ppb	2.04	3,820.81	2.930E-04	Pulse	0.30	3
Tl	205	209	3	0.009	ppb	8.06	2,871.51	3.832E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	535.82	7.148E-05	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.62	995.36	1.329E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,700,049.24	0.40	97.4	Analog	0.30	3
2	Sc	45	129,084.58	2.07	114.1	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,064,075.20	0.83	108.4	Analog	0.30	3
1	Ge	72	126,690.49	0.84	114.7	Pulse	0.30	3
2	Ge	72	101,769.78	0.62	114.2	Pulse	0.30	3
2	Rh	103	3,283,437.28	1.19	106.6	Analog	0.30	3
3	Rh	103	8,881,628.41	0.48	105.8	Analog	0.30	3
3	In	115	9,513,246.81	0.82	107.3	Analog	0.30	3
3	Tb	159	13,039,422.86	0.70	104.0	Analog	0.30	3
3	Bi	209	7,492,113.64	0.73	102.3	Analog	0.30	3

Quantitation Report

File Name	A0219095.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:41
Sample Name	N023014-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	13.33	1.131E-05	Pulse	0.30	3
	Na	23	45	2	488571.543	ppb	0.58	689,376,665.28	6.119E+03	Analog	0.30	3
	Mg	26	45	2	41548.359	ppb	1.00	5,369,540.96	4.766E+01	Analog	0.30	3
	Al	27	45	2	18.594	ppb	3.99	4,703.31	4.176E-02	Pulse	0.30	3
	K	39	45	2	13965.581	ppb	1.16	6,180,504.77	5.486E+01	Analog	0.30	3
	Ca	44	45	3	380501.970	ppb	0.24	831,878,307.60	1.840E+02	Analog	0.30	3
OLR	V	51	45	2	5.686	ppb	1.15	42,025.41	3.730E-01	Pulse	0.30	3
	Cr	52	45	2	30172.116	ppb	0.76	299,894,758.23	2.662E+03	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-8,279.54	-7.350E-02	Pulse	0.30	3
	Fe	56	45	2	5.589	ppb	4.13	48,389.88	4.296E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,049.29	-9.313E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-825.47	-1.095E-02	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-18,577.81	-2.466E-01	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-5,169.48	-6.863E-02	Pulse	0.30	3
	As	75	72	2	2.426	ppb	4.20	2,134.74	2.835E-02	Pulse	0.75	3
	Se	78	72	1	15.038	ppb	2.52	6,656.11	7.603E-02	Pulse	0.30	3
	Mo	95	103	2	50.738	ppb	0.32	254,557.05	1.133E-01	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-11,198.35	-1.887E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-2,137.74	-3.159E-04	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,837.97	2.716E-04	Pulse	0.30	3
	Ba	137	159	3	32.721	ppb	0.51	555,302.83	5.530E-02	Pulse	0.30	3
	Tl	205	209	3	0.136	ppb	1.94	12,491.27	2.684E-03	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-46,981.68	-1.009E-02	Pulse	0.30	3
	U	238	209	3	1.409	ppb	0.72	170,515.56	3.663E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,180,360.47	0.48	67.6	Analog	0.30	3
2	Sc	45	112,662.32	1.34	99.5	Pulse	0.30	3
3	Sc	45	4,520,143.55	0.47	96.7	Analog	0.30	3
1	Ge	72	87,552.04	0.82	79.3	Pulse	0.30	3
2	Ge	72	75,326.39	1.41	84.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,247,324.32	0.85	73.0	Analog	0.30	3
3	Rh	103	5,934,612.62	0.45	70.7	Analog	0.30	3
3	In	115	6,766,194.33	0.40	76.3	Analog	0.30	3
3	Tb	159	10,041,123.32	0.40	80.1	Analog	0.30	3
3	Bi	209	4,654,543.78	0.66	63.5	Analog	0.30	3

Quantitation Report

File Name	A0219096.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:47
Sample Name	N023014-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	<0.000	ppb	---	11.11	7.570E-06	Pulse	0.30	3
	Na	23	45	2	107172.631	ppb	1.18	159,728,238.73	1.343E+03	Analog	0.30	3
	Mg	26	45	2	9379.128	ppb	0.72	1,279,847.35	1.076E+01	Analog	0.30	3
	Al	27	45	2	4.327	ppb	4.19	1,465.84	1.232E-02	Pulse	0.30	3
	K	39	45	2	3074.289	ppb	1.36	1,447,555.36	1.217E+01	Analog	0.30	3
	Ca	44	45	3	85498.034	ppb	0.29	195,257,168.20	4.136E+01	Analog	0.30	3
OLR	V	51	45	2	1.192	ppb	3.49	9,937.92	8.356E-02	Pulse	0.30	3
	Cr	52	45	2	6694.081	ppb	0.43	70,251,092.40	5.906E+02	Analog	0.30	3
	Mn	55	45	2	<0.000	ppb	---	-1,853.00	-1.558E-02	Pulse	0.30	3
	Fe	56	45	2	1.827	ppb	1.13	18,230.95	1.533E-01	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-229.91	-1.932E-03	Pulse	0.30	3
	Ni	60	72	2	<0.000	ppb	---	-119.76	-1.352E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-3,683.59	-4.174E-02	Pulse	0.30	3
	Zn	66	72	2	<0.000	ppb	---	-716.31	-8.119E-03	Pulse	0.30	3
	As	75	72	2	0.503	ppb	8.08	529.51	6.002E-03	Pulse	0.75	3
	Se	78	72	1	2.906	ppb	2.80	1,570.15	1.470E-02	Pulse	0.30	3
	Mo	95	103	2	9.722	ppb	1.32	59,824.57	2.171E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-742.14	-1.008E-04	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-436.39	-5.292E-05	Pulse	0.30	3
	Sb	121	115	3	<0.000	ppb	---	1,015.64	1.232E-04	Pulse	0.30	3
	Ba	137	159	3	7.174	ppb	0.66	143,991.96	1.214E-02	Pulse	0.30	3
	Tl	205	209	3	0.031	ppb	3.68	4,764.33	7.848E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-8,547.72	-1.408E-03	Pulse	0.30	3
	U	238	209	3	0.269	ppb	1.21	42,528.02	7.005E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,615.66	0.73	84.0	Analog	0.30	3
2	Sc	45	118,949.17	1.68	105.1	Pulse	0.30	3
3	Sc	45	4,721,356.04	0.54	101.0	Analog	0.30	3
1	Ge	72	106,822.75	0.72	96.7	Pulse	0.30	3
2	Ge	72	88,264.98	1.08	99.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,755,769.54	1.25	89.5	Analog	0.30	3
3	Rh	103	7,359,921.07	0.22	87.7	Analog	0.30	3
3	In	115	8,246,325.43	0.11	93.1	Analog	0.30	3
3	Tb	159	11,865,435.38	0.19	94.6	Analog	0.30	3
3	Bi	209	6,070,761.09	0.35	82.9	Analog	0.30	3

Quantitation Report

File Name	A0219097.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:52
Sample Name	N023014-002B,SAMP,250
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.369E-06	Pulse	0.30	3
Na	23	45	2	2495.838	ppb	1.33	4,047,632.65	3.214E+01	Analog	0.30	3
Mg	26	45	2	199.782	ppb	3.10	28,959.07	2.300E-01	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	381.58	3.031E-03	Pulse	0.30	3
K	39	45	2	75.849	ppb	3.35	52,577.99	4.176E-01	Pulse	0.30	3
Ca	44	45	3	1829.166	ppb	0.23	4,371,852.88	8.889E-01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	661.16	5.249E-03	Pulse	0.30	3
Cr	52	45	2	147.236	ppb	2.22	1,637,540.92	1.301E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	269.20	2.134E-03	Pulse	0.30	3
Fe	56	45	2	0.367	ppb	3.49	5,806.35	4.611E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	270.57	38.18	3.041E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	42.97	4.329E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	968.74	9.754E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	426.90	4.299E-03	Pulse	0.30	3
As	75	72	2	0.009	ppb	92.14	26.13	2.633E-04	Pulse	0.75	3
Se	78	72	1	0.058	ppb	31.42	37.78	3.020E-04	Pulse	0.30	3
Mo	95	103	2	0.274	ppb	5.91	1,984.66	6.194E-04	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,328.15	2.684E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-940.02	-1.015E-04	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	671.16	7.243E-05	Pulse	0.30	3
Ba	137	159	3	0.135	ppb	1.90	3,080.86	2.419E-04	Pulse	0.30	3
Tl	205	209	3	0.006	ppb	7.51	2,294.72	3.156E-04	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	25.54	2,967.01	4.082E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	7.20	984.94	1.355E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,651,231.94	1.30	94.6	Analog	0.30	3
2	Sc	45	125,956.02	2.53	111.3	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,918,197.50	0.38	105.2	Analog	0.30	3
1	Ge	72	124,949.01	0.62	113.2	Pulse	0.30	3
2	Ge	72	99,332.40	0.39	111.5	Pulse	0.30	3
2	Rh	103	3,203,868.39	0.35	104.0	Analog	0.30	3
3	Rh	103	8,672,188.97	0.67	103.3	Analog	0.30	3
3	In	115	9,264,049.24	0.41	104.5	Analog	0.30	3
3	Tb	159	12,737,635.78	1.15	101.6	Analog	0.30	3
3	Bi	209	7,271,364.26	1.21	99.3	Analog	0.30	3

Quantitation Report

File Name	A0219098.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/19/2017 23:58
Sample Name	N023014-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.007	ppb	10.50	42.22	5.244E-05	Pulse	0.30	3
	Na	23	45	2	1341748.855	ppb	1.26	1,672,927,388.41	1.680E+04	Analog	0.30	3
	Mg	26	45	2	15552.449	ppb	1.09	1,776,483.58	1.784E+01	Analog	0.30	3
	Al	27	45	2	4.937	ppb	3.44	1,352.96	1.358E-02	Pulse	0.30	3
	K	39	45	2	20126.817	ppb	0.97	7,866,711.62	7.901E+01	Analog	0.30	3
	Ca	44	45	3	233437.669	ppb	0.45	461,962,024.23	1.129E+02	Analog	0.30	3
	V	51	45	2	5.350	ppb	0.56	34,999.07	3.514E-01	Pulse	0.30	3
OLR	Cr	52	45	2	479.733	ppb	1.27	4,215,385.26	4.234E+01	Analog	0.30	3
	Mn	55	45	2	4.348	ppb	0.66	19,454.05	1.954E-01	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-119,175.56	-1.197E+00	Pulse	0.30	3
	Co	59	45	2	<0.000	ppb	---	-1,585.06	-1.593E-02	Pulse	0.30	3
	Ni	60	72	2	0.022	ppb	73.08	276.63	4.242E-03	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	-11,812.59	-1.814E-01	Pulse	0.30	3
	Zn	66	72	2	0.671	ppb	9.16	2,925.68	4.493E-02	Pulse	0.30	3
	As	75	72	2	2.083	ppb	4.70	1,585.89	2.435E-02	Pulse	0.75	3
	Se	78	72	1	6.075	ppb	5.91	2,319.16	3.072E-02	Pulse	0.30	3
	Mo	95	103	2	33.890	ppb	0.95	144,522.35	7.566E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-8,931.43	-1.751E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-1,043.38	-1.783E-04	Pulse	0.30	3
	Sb	121	115	3	0.019	ppb	4.28	2,329.17	3.982E-04	Pulse	0.30	3
	Ba	137	159	3	32.146	ppb	0.24	472,493.87	5.433E-02	Pulse	0.30	3
	Tl	205	209	3	1.996	ppb	1.17	142,583.76	3.632E-02	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-28,477.02	-7.254E-03	Pulse	0.30	3
	U	238	209	3	5.644	ppb	0.22	575,597.59	1.466E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	804,799.07	0.99	46.1	Analog	0.30	3
2	Sc	45	99,583.62	3.12	88.0	Pulse	0.30	3
3	Sc	45	4,091,539.59	1.33	87.5	Analog	0.30	3
1	Ge	72	75,489.21	0.08	68.4	Pulse	0.30	3
2	Ge	72	65,100.73	1.47	73.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,909,853.96	2.23	62.0	Analog	0.30	3
3	Rh	103	5,099,848.09	0.40	60.7	Analog	0.30	3
3	In	115	5,849,332.26	0.74	66.0	Analog	0.30	3
3	Tb	159	8,696,485.29	0.32	69.3	Analog	0.30	3
3	Bi	209	3,925,638.00	0.38	53.6	Analog	0.30	3

Quantitation Report

File Name	A0219099.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:03
Sample Name	N023014-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	77.03	25.55	1.759E-05	Pulse	0.30	3
Na	23	45	2	290123.328	ppb	0.73	443,223,002.29	3.634E+03	Analog	0.30	3
Mg	26	45	2	3470.851	ppb	0.84	485,714.16	3.983E+00	Pulse	0.30	3
Al	27	45	2	0.429	ppb	89.50	521.60	4.281E-03	Pulse	0.30	3
K	39	45	2	4315.920	ppb	0.02	2,078,136.22	1.704E+01	Analog	0.30	3
Ca	44	45	3	51952.369	ppb	0.13	123,814,909.27	2.513E+01	Analog	0.30	3
V	51	45	2	1.098	ppb	1.29	9,456.41	7.752E-02	Pulse	0.30	3
Cr	52	45	2	109.624	ppb	0.76	1,181,447.50	9.687E+00	Pulse	0.30	3
Mn	55	45	2	0.926	ppb	2.60	5,396.17	4.425E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-28,112.06	-2.305E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-394.45	-3.233E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	220.93	2.501E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-1,209.11	-1.371E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,579.94	1.795E-02	Pulse	0.30	3
As	75	72	2	0.443	ppb	0.87	466.56	5.297E-03	Pulse	0.75	3
Se	78	72	1	1.329	ppb	14.71	705.61	6.727E-03	Pulse	0.30	3
Mo	95	103	2	6.519	ppb	0.70	39,065.36	1.456E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,152.11	-1.592E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-276.90	-3.421E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,004.52	1.241E-04	Pulse	0.30	3
Ba	137	159	3	6.782	ppb	1.21	133,899.35	1.147E-02	Pulse	0.30	3
Tl	205	209	3	0.415	ppb	0.78	44,456.58	7.718E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,524.37	-9.592E-04	Pulse	0.30	3
U	238	209	3	1.075	ppb	1.10	161,011.22	2.796E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,224.11	0.32	83.2	Analog	0.30	3
2	Sc	45	121,973.90	1.94	107.8	Pulse	0.30	3
3	Sc	45	4,926,648.57	0.44	105.4	Analog	0.30	3
1	Ge	72	104,813.86	0.73	94.9	Pulse	0.30	3
2	Ge	72	88,082.79	2.27	98.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,682,897.60	0.51	87.1	Analog	0.30	3
3	Rh	103	7,236,699.75	0.37	86.2	Analog	0.30	3
3	In	115	8,095,929.85	0.44	91.4	Analog	0.30	3
3	Tb	159	11,671,239.55	0.30	93.1	Analog	0.30	3
3	Bi	209	5,759,924.57	0.91	78.6	Analog	0.30	3

Quantitation Report

File Name	A0219100.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:09
Sample Name	N023014-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	432.94	15.55	1.208E-05	Pulse	0.30	3
Na	23	45	2	466307.779	ppb	0.57	705,129,838.38	5.840E+03	Analog	0.30	3
Mg	26	45	2	30011.227	ppb	1.09	4,156,414.17	3.443E+01	Analog	0.30	3
Al	27	45	2	2.274	ppb	3.04	976.70	8.088E-03	Pulse	0.30	3
K	39	45	2	12252.580	ppb	0.93	5,812,699.91	4.815E+01	Analog	0.30	3
Ca	44	45	3	219164.144	ppb	0.76	534,302,240.93	1.060E+02	Analog	0.30	3
V	51	45	2	1.889	ppb	0.49	15,508.90	1.285E-01	Pulse	0.30	3
Cr	52	45	2	173.939	ppb	1.44	1,854,546.78	1.536E+01	Analog	0.30	3
Mn	55	45	2	111.584	ppb	0.56	595,260.58	4.930E+00	Pulse	0.30	3
Fe	56	45	2	17.831	ppb	0.63	160,401.06	1.329E+00	Pulse	0.30	3
Co	59	45	2	2.790	ppb	0.39	58,282.44	4.828E-01	Pulse	0.30	3
Ni	60	72	2	447.525	ppb	0.85	2,212,853.85	2.708E+01	Analog	0.30	3
Cu	63	72	2	0.739	ppb	4.25	14,830.90	1.815E-01	Pulse	0.30	3
Zn	66	72	2	4.293	ppb	2.36	9,968.98	1.220E-01	Pulse	0.30	3
As	75	72	2	0.596	ppb	6.90	577.77	7.075E-03	Pulse	0.75	3
Se	78	72	1	7.592	ppb	2.77	3,699.48	3.839E-02	Pulse	0.30	3
Mo	95	103	2	32.376	ppb	1.75	175,444.95	7.228E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,573.29	-2.411E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,149.28	-1.554E-04	Pulse	0.30	3
Sb	121	115	3	0.060	ppb	9.51	4,744.26	6.414E-04	Pulse	0.30	3
Ba	137	159	3	48.101	ppb	0.52	879,796.53	8.129E-02	Pulse	0.30	3
Tl	205	209	3	0.554	ppb	1.02	51,630.82	1.024E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,411.36	-6.033E-03	Pulse	0.30	3
U	238	209	3	7.835	ppb	0.86	1,026,063.95	2.035E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,285,401.22	1.19	73.7	Analog	0.30	3
2	Sc	45	120,735.79	1.91	106.7	Pulse	0.30	3
3	Sc	45	5,040,357.36	0.31	107.9	Analog	0.30	3
1	Ge	72	96,370.53	1.21	87.3	Pulse	0.30	3
2	Ge	72	81,711.30	1.77	91.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,427,167.01	1.51	78.8	Analog	0.30	3
3	Rh	103	6,524,766.78	0.38	77.7	Analog	0.30	3
3	In	115	7,396,487.65	0.26	83.5	Analog	0.30	3
3	Tb	159	10,822,947.61	0.97	86.3	Analog	0.30	3
3	Bi	209	5,041,235.27	1.07	68.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219101.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:14
Sample Name	N023014-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.078E-06	Pulse	0.30	3
Na	23	45	2	99195.581	ppb	0.87	159,022,620.97	1.243E+03	Analog	0.30	3
Mg	26	45	2	6544.700	ppb	0.82	960,556.77	7.509E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	373.12	2.918E-03	Pulse	0.30	3
K	39	45	2	2606.431	ppb	1.67	1,322,207.77	1.034E+01	Analog	0.30	3
Ca	44	45	3	48305.294	ppb	0.59	117,929,081.58	2.337E+01	Analog	0.30	3
V	51	45	2	0.358	ppb	7.31	3,822.83	2.989E-02	Pulse	0.30	3
Cr	52	45	2	38.639	ppb	1.05	438,019.09	3.424E+00	Pulse	0.30	3
Mn	55	45	2	24.132	ppb	1.21	136,744.36	1.069E+00	Pulse	0.30	3
Fe	56	45	2	4.065	ppb	1.61	40,634.66	3.177E-01	Pulse	0.30	3
Co	59	45	2	0.620	ppb	2.32	13,745.25	1.074E-01	Pulse	0.30	3
Ni	60	72	2	97.534	ppb	1.08	560,349.48	5.905E+00	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	4,749.37	5.006E-02	Pulse	0.30	3
Zn	66	72	2	0.269	ppb	21.73	3,451.49	3.638E-02	Pulse	0.30	3
As	75	72	2	0.127	ppb	18.93	154.01	1.625E-03	Pulse	0.75	3
Se	78	72	1	1.507	ppb	7.06	887.84	7.629E-03	Pulse	0.30	3
Mo	95	103	2	6.209	ppb	1.85	40,149.24	1.387E-02	Pulse	0.30	3
Ag	107	103	3	0.183	ppb	8.56	16,125.57	2.071E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-228.93	-2.642E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,485.69	1.715E-04	Pulse	0.30	3
Ba	137	159	3	10.071	ppb	0.37	208,934.97	1.703E-02	Pulse	0.30	3
Tl	205	209	3	0.109	ppb	3.17	13,848.14	2.195E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,236.68	-3.546E-04	Pulse	0.30	3
U	238	209	3	1.488	ppb	0.09	244,055.79	3.869E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,572,563.69	0.72	90.1	Analog	0.30	3
2	Sc	45	127,934.44	1.53	113.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,046,799.99	0.71	108.0	Analog	0.30	3
1	Ge	72	116,382.30	0.52	105.4	Pulse	0.30	3
2	Ge	72	94,909.89	1.47	106.5	Pulse	0.30	3
2	Rh	103	2,894,829.99	0.90	94.0	Analog	0.30	3
3	Rh	103	7,786,970.03	0.66	92.7	Analog	0.30	3
3	In	115	8,664,184.74	0.31	97.8	Analog	0.30	3
3	Tb	159	12,268,525.10	0.84	97.8	Analog	0.30	3
3	Bi	209	6,308,027.34	0.50	86.1	Analog	0.30	3

Quantitation Report

File Name	A0219102.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:20
Sample Name	CCV7,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.478	ppb	0.84	196,472.55	1.184E-01	Pulse	0.30	3
Na	23	45	2	452.628	ppb	4.63	834,377.27	6.555E+00	Pulse	0.30	3
Mg	26	45	2	201.228	ppb	2.02	29,500.04	2.317E-01	Pulse	0.30	3
Al	27	45	2	22.773	ppb	6.06	6,411.88	5.038E-02	Pulse	0.30	3
K	39	45	2	224.989	ppb	3.38	127,581.25	1.002E+00	Pulse	0.30	3
Ca	44	45	3	213.545	ppb	0.14	527,726.58	1.075E-01	Pulse	0.30	3
V	51	45	2	20.121	ppb	2.62	165,857.39	1.303E+00	Pulse	0.30	3
Cr	52	45	2	20.736	ppb	1.92	234,862.96	1.845E+00	Pulse	0.30	3
Mn	55	45	2	20.196	ppb	2.60	113,961.59	8.951E-01	Pulse	0.30	3
Fe	56	45	2	20.964	ppb	2.87	198,408.73	1.559E+00	Pulse	0.30	3
Co	59	45	2	20.169	ppb	2.21	444,166.05	3.489E+00	Pulse	0.30	3
Ni	60	72	2	19.941	ppb	0.53	119,966.00	1.210E+00	Pulse	0.30	3
Cu	63	72	2	20.434	ppb	0.30	333,223.33	3.360E+00	Pulse	0.30	3
Zn	66	72	2	18.715	ppb	0.92	42,539.05	4.289E-01	Pulse	0.30	3
As	75	72	2	19.958	ppb	0.84	23,016.80	2.321E-01	Pulse	0.75	3
Se	78	72	1	18.541	ppb	1.15	11,933.75	9.374E-02	Pulse	0.30	3
Mo	95	103	2	19.809	ppb	2.55	144,135.60	4.423E-02	Pulse	0.30	3
Ag	107	103	3	19.861	ppb	0.61	1,534,716.53	1.778E-01	Analog	0.30	3
Cd	111	115	3	20.488	ppb	0.80	346,856.57	3.811E-02	Pulse	0.30	3
Sb	121	115	3	20.233	ppb	0.29	1,100,951.02	1.210E-01	Pulse	0.30	3
Ba	137	159	3	21.802	ppb	0.26	460,083.67	3.685E-02	Pulse	0.30	3
Tl	205	209	3	20.259	ppb	0.40	2,620,578.95	3.667E-01	Analog	0.30	3
Pb	208	209	3	20.569	ppb	0.81	3,605,611.43	5.046E-01	Analog	0.30	3
U	238	209	3	19.374	ppb	0.57	3,595,979.93	5.032E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,659,315.30	0.86	95.1	Analog	0.30	3
2	Sc	45	127,357.13	2.17	112.5	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,909,285.90	0.52	105.0	Analog	0.30	3
1	Ge	72	127,308.29	0.20	115.3	Pulse	0.30	3
2	Ge	72	99,182.66	0.36	111.3	Pulse	0.30	3
2	Rh	103	3,259,577.73	1.16	105.8	Analog	0.30	3
3	Rh	103	8,630,667.79	0.31	102.8	Analog	0.30	3
3	In	115	9,101,098.42	0.25	102.7	Analog	0.30	3
3	Tb	159	12,483,892.45	0.15	99.5	Analog	0.30	3
3	Bi	209	7,145,617.53	0.18	97.5	Analog	0.30	3

Quantitation Report

File Name	A0219103.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:25
Sample Name	CCB7,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	82.19	24.44	1.513E-05	Pulse	0.30	3
Na	23	45	2	216.923	ppb	4.23	438,848.81	3.604E+00	Pulse	0.30	3
Mg	26	45	2	0.165	ppb	218.51	125.56	1.026E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	378.90	3.105E-03	Pulse	0.30	3
K	39	45	2	10.748	ppb	15.36	19,780.19	1.624E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	17,802.47	3.765E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	691.16	5.673E-03	Pulse	0.30	3
Cr	52	45	2	0.664	ppb	13.57	8,962.35	7.366E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	276.93	2.274E-03	Pulse	0.30	3
Fe	56	45	2	0.169	ppb	12.09	3,845.90	3.158E-02	Pulse	0.30	3
Co	59	45	2	0.000	ppb	183.37	32.88	2.700E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	53.99	5.613E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	905.61	9.446E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	375.23	3.909E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	34.94	28.00	2.917E-04	Pulse	0.75	3
Se	78	72	1	0.013	ppb	100.08	8.89	7.406E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	3.36	882.29	2.797E-04	Pulse	0.30	3
Ag	107	103	3	0.447	ppb	15.12	37,317.99	4.428E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-42.77	-4.791E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	9.98	4,968.78	5.563E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	20.27	381.20	3.096E-05	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	2.31	2,789.26	3.953E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,133.65	1.607E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	15.01	884.45	1.254E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,613,880.26	0.73	92.5	Analog	0.30	3
2	Sc	45	121,833.74	1.93	107.6	Pulse	0.30	3
3	Sc	45	4,727,838.19	0.64	101.2	Analog	0.30	3
1	Ge	72	120,979.95	1.44	109.6	Pulse	0.30	3
2	Ge	72	95,934.10	1.51	107.7	Pulse	0.30	3
2	Rh	103	3,154,471.80	0.53	102.4	Analog	0.30	3
3	Rh	103	8,430,825.15	0.65	100.4	Analog	0.30	3
3	In	115	8,931,479.90	0.22	100.8	Analog	0.30	3
3	Tb	159	12,309,814.26	0.25	98.2	Analog	0.30	3
3	Bi	209	7,056,532.19	0.15	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219104.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:31
Sample Name	N023014-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.008	ppb	181.19	11.11	5.879E-05	Pulse	0.30	3
Na	23	45	2	3227892.398	ppb	1.24	3,294,084,110.92	4.042E+04	Analog	0.30	3
Mg	26	45	2	5780.483	ppb	1.36	540,438.82	6.632E+00	Pulse	0.30	3
Al	27	45	2	1.087	ppb	21.27	459.46	5.638E-03	Pulse	0.30	3
K	39	45	2	33471.930	ppb	1.34	10,700,973.45	1.313E+02	Analog	0.30	3
Ca	44	45	3	345435.269	ppb	0.42	518,384,076.72	1.671E+02	Analog	0.30	3
V	51	45	2	0.937	ppb	2.82	5,476.70	6.717E-02	Pulse	0.30	3
Cr	52	45	2	0.634	ppb	9.13	5,773.68	7.094E-02	Pulse	0.30	3
Mn	55	45	2	12.955	ppb	1.07	46,890.54	5.754E-01	Pulse	0.30	3
Fe	56	45	2	26.396	ppb	2.43	159,489.35	1.957E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,052.39	-3.748E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-2,051.76	-4.080E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-76,782.27	-1.527E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-8,733.57	-1.737E-01	Pulse	0.30	3
As	75	72	2	5.879	ppb	3.20	3,443.68	6.847E-02	Pulse	0.75	3
Se	78	72	1	2.162	ppb	9.49	598.93	1.094E-02	Pulse	0.30	3
Mo	95	103	2	66.039	ppb	0.76	205,158.61	1.474E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,918.79	-2.773E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,105.79	-2.631E-04	Pulse	0.30	3
Sb	121	115	3	0.056	ppb	6.37	2,604.77	6.198E-04	Pulse	0.30	3
Ba	137	159	3	42.564	ppb	0.47	452,223.91	7.194E-02	Pulse	0.30	3
Tl	205	209	3	0.032	ppb	9.24	2,120.25	7.924E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-44,750.80	-1.673E-02	Pulse	0.30	3
U	238	209	3	0.105	ppb	2.28	7,378.26	2.759E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	184,255.08	4.71	10.6	Analog	0.30	3
2	Sc	45	81,511.64	3.39	72.0	Pulse	0.30	3
3	Sc	45	3,102,652.07	1.08	66.4	Analog	0.30	3
1	Ge	72	54,768.40	1.81	49.6	Pulse	0.30	3
2	Ge	72	50,290.53	1.59	56.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,391,496.52	1.49	45.2	Analog	0.30	3
3	Rh	103	3,576,526.75	0.43	42.6	Analog	0.30	3
3	In	115	4,202,316.30	0.47	47.4	Analog	0.30	3
3	Tb	159	6,286,523.38	0.61	50.1	Analog	0.30	3
3	Bi	209	2,674,853.40	0.68	36.5	Analog	0.30	3

Quantitation Report

File Name	A0219105.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:36
Sample Name	N023014-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	13.33	1.064E-05	Pulse	0.30	3
Na	23	45	2	699224.156	ppb	0.45	1,043,565,140.00	8.757E+03	Analog	0.30	3
Mg	26	45	2	1282.017	ppb	0.66	175,360.55	1.472E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	389.21	3.266E-03	Pulse	0.30	3
K	39	45	2	6960.222	ppb	0.49	3,265,476.24	2.740E+01	Analog	0.30	3
Ca	44	45	3	75923.225	ppb	0.57	175,617,275.16	3.673E+01	Analog	0.30	3
V	51	45	2	0.157	ppb	6.03	2,013.55	1.690E-02	Pulse	0.30	3
Cr	52	45	2	0.387	ppb	13.64	5,853.70	4.917E-02	Pulse	0.30	3
Mn	55	45	2	2.845	ppb	1.98	15,367.45	1.290E-01	Pulse	0.30	3
Fe	56	45	2	6.656	ppb	1.66	60,523.59	5.079E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-945.25	-7.932E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-550.25	-6.725E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-23,253.25	-2.843E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,524.66	-1.864E-02	Pulse	0.30	3
As	75	72	2	1.274	ppb	4.10	1,223.10	1.496E-02	Pulse	0.75	3
Se	78	72	1	0.481	ppb	8.46	230.01	2.440E-03	Pulse	0.30	3
Mo	95	103	2	12.358	ppb	2.28	66,625.40	2.760E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-3,765.79	-5.775E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-367.91	-4.980E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,312.33	1.776E-04	Pulse	0.30	3
Ba	137	159	3	8.931	ppb	1.31	160,105.92	1.510E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	3.30	1,669.06	3.342E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,958.88	-2.795E-03	Pulse	0.30	3
U	238	209	3	0.020	ppb	1.65	2,702.13	5.411E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,252,647.56	0.69	71.8	Analog	0.30	3
2	Sc	45	119,172.02	1.78	105.3	Pulse	0.30	3
3	Sc	45	4,781,971.70	0.63	102.3	Analog	0.30	3
1	Ge	72	94,334.17	1.00	85.4	Pulse	0.30	3
2	Ge	72	81,794.16	0.73	91.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,414,291.34	0.51	78.4	Analog	0.30	3
3	Rh	103	6,520,649.00	0.13	77.7	Analog	0.30	3
3	In	115	7,389,427.28	0.27	83.4	Analog	0.30	3
3	Tb	159	10,600,549.84	0.31	84.5	Analog	0.30	3
3	Bi	209	4,994,216.00	0.21	68.2	Analog	0.30	3

Quantitation Report

File Name	A0219106.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:42
Sample Name	N023014-006B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.005	ppb	25.19	27.78	4.027E-05	Pulse	0.30	3
Na	23	45	2	1614842.095	ppb	1.48	2,145,665,870.25	2.022E+04	Analog	0.30	3
Mg	26	45	2	31768.329	ppb	1.29	3,866,795.25	3.644E+01	Analog	0.30	3
Al	27	45	2	4.309	ppb	9.76	1,303.41	1.229E-02	Pulse	0.30	3
K	39	45	2	14960.434	ppb	0.81	6,235,405.74	5.876E+01	Analog	0.30	3
Ca	44	45	3	394622.878	ppb	0.23	787,228,246.04	1.909E+02	Analog	0.30	3
V	51	45	2	1.435	ppb	1.71	10,533.79	9.926E-02	Pulse	0.30	3
Cr	52	45	2	29.181	ppb	1.73	274,751.93	2.590E+00	Pulse	0.30	3
Mn	55	45	2	1.724	ppb	1.06	8,436.07	7.949E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-167,097.99	-1.575E+00	Pulse	0.30	3
Co	59	45	2	0.072	ppb	12.77	1,347.85	1.267E-02	Pulse	0.30	3
Ni	60	72	2	0.185	ppb	16.93	899.12	1.414E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-40,466.02	-6.356E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-972.68	-1.525E-02	Pulse	0.30	3
As	75	72	2	1.612	ppb	0.49	1,202.25	1.888E-02	Pulse	0.75	3
Se	78	72	1	3.641	ppb	4.64	1,325.67	1.842E-02	Pulse	0.30	3
Mo	95	103	2	26.230	ppb	1.56	110,281.24	5.856E-02	Pulse	0.30	3
Ag	107	103	3	0.022	ppb	40.71	3,054.43	6.290E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-1,955.70	-3.477E-04	Pulse	0.30	3
Sb	121	115	3	0.127	ppb	0.55	5,876.88	1.045E-03	Pulse	0.30	3
Ba	137	159	3	133.784	ppb	0.30	1,874,250.81	2.261E-01	Analog	0.30	3
Tl	205	209	3	0.210	ppb	1.84	14,439.82	4.006E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-43,786.72	-1.215E-02	Pulse	0.30	3
U	238	209	3	2.529	ppb	0.49	236,825.64	6.571E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,877.13	2.88	39.5	Analog	0.30	3
2	Sc	45	106,122.10	2.51	93.8	Pulse	0.30	3
3	Sc	45	4,124,458.10	0.57	88.3	Analog	0.30	3
1	Ge	72	71,992.86	0.77	65.2	Pulse	0.30	3
2	Ge	72	63,668.20	1.71	71.5	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,883,239.43	1.32	61.1	Analog	0.30	3
3	Rh	103	4,856,122.98	0.29	57.8	Analog	0.30	3
3	In	115	5,625,429.60	0.08	63.5	Analog	0.30	3
3	Tb	159	8,290,372.24	0.25	66.1	Analog	0.30	3
3	Bi	209	3,604,031.23	0.46	49.2	Analog	0.30	3

Quantitation Report

File Name	A0219107.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:47
Sample Name	N023014-006B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	7.849E-06	Pulse	0.30	3
Na	23	45	2	346363.949	ppb	1.20	548,409,569.61	4.338E+03	Analog	0.30	3
Mg	26	45	2	7131.799	ppb	1.14	1,034,315.93	8.182E+00	Pulse	0.30	3
Al	27	45	2	0.152	ppb	23.85	469.11	3.710E-03	Pulse	0.30	3
K	39	45	2	3189.927	ppb	1.24	1,595,859.85	1.262E+01	Analog	0.30	3
Ca	44	45	3	88724.012	ppb	1.22	216,430,787.88	4.292E+01	Analog	0.30	3
V	51	45	2	0.291	ppb	0.77	3,229.34	2.554E-02	Pulse	0.30	3
Cr	52	45	2	6.737	ppb	1.65	77,037.28	6.094E-01	Pulse	0.30	3
Mn	55	45	2	0.375	ppb	5.18	2,520.67	1.995E-02	Pulse	0.30	3
Fe	56	45	2	11.773	ppb	0.28	111,711.30	8.836E-01	Pulse	0.30	3
Co	59	45	2	0.022	ppb	33.55	517.78	4.109E-03	Pulse	0.30	3
Ni	60	72	2	0.010	ppb	203.14	311.33	3.534E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-9,140.99	-1.036E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	461.53	5.229E-03	Pulse	0.30	3
As	75	72	2	0.334	ppb	7.96	356.46	4.040E-03	Pulse	0.75	3
Se	78	72	1	0.865	ppb	10.72	461.14	4.383E-03	Pulse	0.30	3
Mo	95	103	2	5.045	ppb	2.18	29,967.89	1.127E-02	Pulse	0.30	3
Ag	107	103	3	0.040	ppb	4.93	5,707.07	7.943E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-451.23	-5.603E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	2,253.60	2.799E-04	Pulse	0.30	3
Ba	137	159	3	29.083	ppb	0.40	566,725.90	4.916E-02	Pulse	0.30	3
Tl	205	209	3	0.038	ppb	3.84	5,041.08	9.057E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-6,266.64	-1.126E-03	Pulse	0.30	3
U	238	209	3	0.485	ppb	1.16	70,309.60	1.263E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,413,743.64	1.52	81.0	Analog	0.30	3
2	Sc	45	126,426.61	1.89	111.7	Pulse	0.30	3
3	Sc	45	5,043,411.59	0.94	107.9	Analog	0.30	3
1	Ge	72	105,256.89	0.73	95.3	Pulse	0.30	3
2	Ge	72	88,193.88	0.70	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,659,160.39	0.55	86.3	Analog	0.30	3
3	Rh	103	7,185,744.96	0.32	85.6	Analog	0.30	3
3	In	115	8,051,105.41	0.90	90.8	Analog	0.30	3
3	Tb	159	11,528,907.88	0.22	91.9	Analog	0.30	3
3	Bi	209	5,566,675.19	0.56	76.0	Analog	0.30	3

Quantitation Report

File Name	A0219108.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:53
Sample Name	N023014-007B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.011	ppb	53.02	22.22	7.563E-05	Pulse	0.30	3
Na	23	45	2	2892056.926	ppb	0.65	3,268,205,889.08	3.622E+04	Analog	0.30	3
Mg	26	45	2	2875.486	ppb	0.58	297,744.74	3.300E+00	Pulse	0.30	3
Al	27	45	2	9.955	ppb	3.34	2,160.55	2.393E-02	Pulse	0.30	3
K	39	45	2	28923.234	ppb	0.62	10,242,224.01	1.135E+02	Analog	0.30	3
Ca	44	45	3	250940.447	ppb	0.51	411,343,198.31	1.214E+02	Analog	0.30	3
V	51	45	2	2.476	ppb	0.43	15,008.46	1.663E-01	Pulse	0.30	3
Cr	52	45	2	6.658	ppb	1.23	54,370.68	6.025E-01	Pulse	0.30	3
Mn	55	45	2	8.992	ppb	0.77	36,132.10	4.004E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-256,032.19	-2.837E+00	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-3,555.44	-3.940E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-3,092.66	-5.515E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-77,196.04	-1.377E+00	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-10,013.97	-1.786E-01	Pulse	0.30	3
As	75	72	2	13.523	ppb	1.84	8,818.50	1.573E-01	Pulse	0.75	3
Se	78	72	1	0.200	ppb	14.95	63.34	1.021E-03	Pulse	0.30	3
Mo	95	103	2	84.148	ppb	1.03	292,843.14	1.879E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,195.65	-2.328E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-688.64	-1.498E-04	Pulse	0.30	3
Sb	121	115	3	0.090	ppb	6.29	3,767.27	8.194E-04	Pulse	0.30	3
Ba	137	159	3	35.501	ppb	0.68	410,405.64	6.000E-02	Pulse	0.30	3
Tl	205	209	3	0.886	ppb	0.88	47,441.23	1.625E-02	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-40,232.16	-1.378E-02	Pulse	0.30	3
U	238	209	3	0.097	ppb	2.68	7,410.80	2.539E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	295,611.35	5.47	16.9	Analog	0.30	3
2	Sc	45	90,246.18	2.45	79.7	Pulse	0.30	3
3	Sc	45	3,389,115.33	0.95	72.5	Analog	0.30	3
1	Ge	72	62,073.30	0.96	56.2	Pulse	0.30	3
2	Ge	72	56,077.30	2.54	62.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,558,976.87	1.88	50.6	Analog	0.30	3
3	Rh	103	3,949,366.92	0.16	47.0	Analog	0.30	3
3	In	115	4,597,737.30	0.26	51.9	Analog	0.30	3
3	Tb	159	6,840,109.76	0.57	54.5	Analog	0.30	3
3	Bi	209	2,919,651.24	0.85	39.9	Analog	0.30	3

Quantitation Report

File Name	A0219109.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 00:58
Sample Name	N023014-007B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.653E-06	Pulse	0.30	3
Na	23	45	2	613797.360	ppb	0.67	940,111,265.99	7.687E+03	Analog	0.30	3
Mg	26	45	2	622.938	ppb	1.09	87,498.54	7.155E-01	Pulse	0.30	3
Al	27	45	2	1.436	ppb	19.43	776.88	6.359E-03	Pulse	0.30	3
K	39	45	2	5961.690	ppb	0.67	2,872,687.18	2.349E+01	Analog	0.30	3
Ca	44	45	3	54515.605	ppb	0.04	129,708,830.29	2.637E+01	Analog	0.30	3
V	51	45	2	0.486	ppb	2.44	4,661.98	3.813E-02	Pulse	0.30	3
Cr	52	45	2	1.661	ppb	2.37	19,757.56	1.616E-01	Pulse	0.30	3
Mn	55	45	2	1.959	ppb	2.47	10,993.64	8.988E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-66,406.28	-5.431E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,004.33	-8.213E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-842.51	-9.923E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-21,316.66	-2.512E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-2,404.65	-2.834E-02	Pulse	0.30	3
As	75	72	2	2.901	ppb	3.77	2,873.82	3.386E-02	Pulse	0.75	3
Se	78	72	1	0.069	ppb	30.99	35.56	3.600E-04	Pulse	0.30	3
Mo	95	103	2	15.882	ppb	1.55	89,988.74	3.546E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-2,965.84	-4.317E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-126.00	-1.629E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,501.25	1.941E-04	Pulse	0.30	3
Ba	137	159	3	7.459	ppb	0.64	139,929.90	1.262E-02	Pulse	0.30	3
Tl	205	209	3	0.201	ppb	2.09	20,174.41	3.848E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,978.31	-2.094E-03	Pulse	0.30	3
U	238	209	3	0.019	ppb	1.36	2,708.99	5.167E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,284,644.87	0.45	73.6	Analog	0.30	3
2	Sc	45	122,301.83	1.87	108.1	Pulse	0.30	3
3	Sc	45	4,918,538.12	0.69	105.2	Analog	0.30	3
1	Ge	72	98,779.20	0.90	89.5	Pulse	0.30	3
2	Ge	72	84,868.21	1.39	95.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,537,415.34	1.06	82.4	Analog	0.30	3
3	Rh	103	6,869,704.00	0.63	81.8	Analog	0.30	3
3	In	115	7,736,148.10	0.25	87.3	Analog	0.30	3
3	Tb	159	11,090,674.84	0.50	88.4	Analog	0.30	3
3	Bi	209	5,242,717.42	0.63	71.6	Analog	0.30	3

Quantitation Report

File Name	A0219110.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:04
Sample Name	N023014-008B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.003	ppb	62.01	18.89	2.734E-05	Pulse	0.30	3
Na	23	45	2	1763170.463	ppb	0.81	2,335,980,302.97	2.208E+04	Analog	0.30	3
Mg	26	45	2	6355.799	ppb	1.27	771,408.90	7.292E+00	Pulse	0.30	3
Al	27	45	2	3.110	ppb	9.42	1,037.60	9.812E-03	Pulse	0.30	3
K	39	45	2	20335.529	ppb	1.01	8,445,090.43	7.983E+01	Analog	0.30	3
Ca	44	45	3	137294.209	ppb	0.19	273,456,709.26	6.641E+01	Analog	0.30	3
V	51	45	2	0.050	ppb	20.10	1,057.86	1.001E-02	Pulse	0.30	3
Cr	52	45	2	0.323	ppb	14.91	4,597.24	4.352E-02	Pulse	0.30	3
Mn	55	45	2	97.054	ppb	1.17	453,691.80	4.289E+00	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-100,900.18	-9.538E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-2,146.07	-2.029E-02	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-659.43	-9.485E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-52,781.00	-7.576E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-6,276.99	-9.011E-02	Pulse	0.30	3
As	75	72	2	7.151	ppb	0.96	5,800.59	8.325E-02	Pulse	0.75	3
Se	78	72	1	0.045	ppb	38.78	18.89	2.391E-04	Pulse	0.30	3
Mo	95	103	2	50.936	ppb	0.78	218,732.41	1.137E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-9,319.55	-1.845E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-283.47	-4.876E-05	Pulse	0.30	3
Sb	121	115	3	0.078	ppb	8.33	4,368.57	7.514E-04	Pulse	0.30	3
Ba	137	159	3	35.915	ppb	0.10	515,433.16	6.070E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	4.88	1,469.03	3.938E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-30,523.28	-8.182E-03	Pulse	0.30	3
U	238	209	3	0.807	ppb	1.36	78,318.81	2.100E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	689,828.66	0.93	39.5	Analog	0.30	3
2	Sc	45	105,806.16	2.65	93.5	Pulse	0.30	3
3	Sc	45	4,117,790.04	0.51	88.1	Analog	0.30	3
1	Ge	72	79,070.46	0.45	71.6	Pulse	0.30	3
2	Ge	72	69,672.78	1.73	78.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	1,923,421.10	1.43	62.4	Analog	0.30	3
3	Rh	103	5,050,540.24	0.74	60.2	Analog	0.30	3
3	In	115	5,814,812.67	0.62	65.6	Analog	0.30	3
3	Tb	159	8,491,478.28	0.50	67.7	Analog	0.30	3
3	Bi	209	3,730,482.51	0.78	50.9	Analog	0.30	3

Quantitation Report

File Name	A0219111.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:09
Sample Name	N023014-008B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	186.61	21.11	1.512E-05	Pulse	0.30	3
Na	23	45	2	371214.083	ppb	0.97	588,450,777.90	4.650E+03	Analog	0.30	3
Mg	26	45	2	1358.967	ppb	0.80	197,413.97	1.560E+00	Pulse	0.30	3
Al	27	45	2	0.758	ppb	29.43	628.13	4.960E-03	Pulse	0.30	3
K	39	45	2	4232.244	ppb	1.37	2,114,714.71	1.671E+01	Analog	0.30	3
Ca	44	45	3	29698.248	ppb	0.13	72,403,884.48	1.437E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	584.48	4.617E-03	Pulse	0.30	3
Cr	52	45	2	0.204	ppb	14.82	4,179.70	3.304E-02	Pulse	0.30	3
Mn	55	45	2	21.446	ppb	0.94	120,274.48	9.503E-01	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-10,807.36	-8.539E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-539.79	-4.264E-03	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	-136.00	-1.525E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-12,298.19	-1.380E-01	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-988.16	-1.110E-02	Pulse	0.30	3
As	75	72	2	1.623	ppb	3.90	1,694.64	1.902E-02	Pulse	0.75	3
Se	78	72	1	0.012	ppb	125.17	7.78	7.210E-05	Pulse	0.30	3
Mo	95	103	2	9.628	ppb	1.88	58,382.83	2.150E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,918.66	-2.613E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-61.67	-7.473E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,584.59	1.922E-04	Pulse	0.30	3
Ba	137	159	3	7.571	ppb	0.58	149,450.27	1.281E-02	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	27.28	1,395.68	2.461E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,657.21	2.922E-04	Pulse	0.30	3
U	238	209	3	0.154	ppb	1.28	22,791.28	4.019E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,396,847.13	1.04	80.0	Analog	0.30	3
2	Sc	45	126,570.00	1.31	111.8	Pulse	0.30	3
3	Sc	45	5,039,171.28	0.24	107.8	Analog	0.30	3
1	Ge	72	108,137.28	0.36	97.9	Pulse	0.30	3
2	Ge	72	89,110.64	2.12	100.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,715,346.59	0.86	88.1	Analog	0.30	3
3	Rh	103	7,343,753.09	0.25	87.5	Analog	0.30	3
3	In	115	8,242,228.70	0.67	93.0	Analog	0.30	3
3	Tb	159	11,670,752.74	0.69	93.1	Analog	0.30	3
3	Bi	209	5,670,735.89	0.51	77.4	Analog	0.30	3

Quantitation Report

File Name	A0219112.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:15
Sample Name	N023028-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	153.14	22.23	1.587E-05	Pulse	0.30	3
Na	23	45	2	401589.121	ppb	0.38	632,393,341.69	5.030E+03	Analog	0.30	3
Mg	26	45	2	28216.689	ppb	0.58	4,069,981.92	3.237E+01	Analog	0.30	3
Al	27	45	2	2.185	ppb	13.65	993.10	7.904E-03	Pulse	0.30	3
K	39	45	2	9679.882	ppb	0.75	4,785,476.56	3.806E+01	Analog	0.30	3
Ca	44	45	3	104027.434	ppb	0.43	263,332,391.63	5.032E+01	Analog	0.30	3
V	51	45	2	13.379	ppb	0.47	109,200.31	8.685E-01	Pulse	0.30	3
Cr	52	45	2	151.734	ppb	0.51	1,684,985.33	1.340E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-4,351.30	-3.462E-02	Pulse	0.30	3
Fe	56	45	2	0.118	ppb	32.10	3,489.04	2.778E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-271.48	-2.164E-03	Pulse	0.30	3
Ni	60	72	2	2.934	ppb	2.44	15,690.65	1.805E-01	Pulse	0.30	3
Cu	63	72	2	0.165	ppb	6.33	7,735.41	8.895E-02	Pulse	0.30	3
Zn	66	72	2	3.059	ppb	4.68	8,324.79	9.576E-02	Pulse	0.30	3
As	75	72	2	1.694	ppb	2.08	1,725.25	1.984E-02	Pulse	0.75	3
Se	78	72	1	4.563	ppb	3.75	2,368.06	2.307E-02	Pulse	0.30	3
Mo	95	103	2	3.883	ppb	2.23	22,495.49	8.676E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,500.33	-9.314E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-678.77	-8.579E-05	Pulse	0.30	3
Sb	121	115	3	0.005	ppb	58.77	2,482.53	3.137E-04	Pulse	0.30	3
Ba	137	159	3	51.910	ppb	0.46	991,696.85	8.773E-02	Pulse	0.30	3
Tl	205	209	3	0.060	ppb	3.91	6,971.95	1.308E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-10,404.12	-1.952E-03	Pulse	0.30	3
U	238	209	3	2.744	ppb	0.18	379,947.99	7.129E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,399,349.92	0.49	80.2	Analog	0.30	3
2	Sc	45	125,727.18	1.53	111.1	Pulse	0.30	3
3	Sc	45	5,233,399.40	0.70	112.0	Analog	0.30	3
1	Ge	72	102,608.28	0.72	92.9	Pulse	0.30	3
2	Ge	72	86,953.39	1.40	97.6	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,592,480.40	1.40	84.2	Analog	0.30	3
3	Rh	103	6,979,270.17	0.33	83.1	Analog	0.30	3
3	In	115	7,912,349.83	0.38	89.3	Analog	0.30	3
3	Tb	159	11,304,411.36	0.86	90.1	Analog	0.30	3
3	Bi	209	5,329,466.03	0.76	72.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219113.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:20
Sample Name	N023028-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	7.78	5.039E-06	Pulse	0.30	3
Na	23	45	2	83954.391	ppb	0.74	135,758,765.75	1.052E+03	Analog	0.30	3
Mg	26	45	2	6047.734	ppb	1.34	895,142.63	6.939E+00	Pulse	0.30	3
Al	27	45	2	0.278	ppb	78.18	511.87	3.970E-03	Pulse	0.30	3
K	39	45	2	2120.102	ppb	1.10	1,087,626.47	8.431E+00	Pulse	0.30	3
Ca	44	45	3	22554.528	ppb	0.38	55,383,530.28	1.091E+01	Analog	0.30	3
V	51	45	2	2.765	ppb	2.52	23,856.87	1.849E-01	Pulse	0.30	3
Cr	52	45	2	33.045	ppb	1.05	378,078.26	2.931E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-646.83	-5.012E-03	Pulse	0.30	3
Fe	56	45	2	0.453	ppb	3.78	6,763.25	5.242E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-59.07	-4.527E-04	Pulse	0.30	3
Ni	60	72	2	0.592	ppb	3.03	3,713.06	3.875E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	3,011.93	3.143E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,687.52	2.806E-02	Pulse	0.30	3
As	75	72	2	0.337	ppb	9.11	389.77	4.066E-03	Pulse	0.75	3
Se	78	72	1	1.096	ppb	8.31	672.27	5.553E-03	Pulse	0.30	3
Mo	95	103	2	0.751	ppb	1.17	5,005.44	1.684E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-196.77	-2.444E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-104.41	-1.176E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	943.40	1.062E-04	Pulse	0.30	3
Ba	137	159	3	10.719	ppb	0.86	226,105.63	1.813E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	8.94	2,542.54	3.929E-04	Pulse	0.30	3
Pb	208	209	3	0.051	ppb	3.10	10,005.83	1.546E-03	Pulse	0.30	3
U	238	209	3	0.515	ppb	0.96	86,784.15	1.341E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,542,502.03	0.13	88.4	Analog	0.30	3
2	Sc	45	129,027.17	1.75	114.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,074,952.49	0.44	108.6	Analog	0.30	3
1	Ge	72	121,131.73	0.94	109.7	Pulse	0.30	3
2	Ge	72	95,809.43	0.82	107.5	Pulse	0.30	3
2	Rh	103	2,972,250.44	2.01	96.5	Analog	0.30	3
3	Rh	103	8,053,164.95	0.53	95.9	Analog	0.30	3
3	In	115	8,882,169.90	0.73	100.2	Analog	0.30	3
3	Tb	159	12,474,863.70	0.92	99.5	Analog	0.30	3
3	Bi	209	6,472,215.88	0.95	88.4	Analog	0.30	3

Quantitation Report

File Name	A0219114.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:26
Sample Name	CCV8,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.741	ppb	0.96	187,946.23	1.200E-01	Pulse	0.30	3
Na	23	45	2	564.972	ppb	3.59	1,025,810.35	7.962E+00	Pulse	0.30	3
Mg	26	45	2	199.841	ppb	1.16	29,650.18	2.301E-01	Pulse	0.30	3
Al	27	45	2	22.149	ppb	1.65	6,326.29	4.909E-02	Pulse	0.30	3
K	39	45	2	226.815	ppb	3.01	130,044.74	1.009E+00	Pulse	0.30	3
Ca	44	45	3	212.353	ppb	0.30	527,394.23	1.069E-01	Pulse	0.30	3
V	51	45	2	20.078	ppb	1.25	167,517.74	1.300E+00	Pulse	0.30	3
Cr	52	45	2	19.985	ppb	1.11	229,149.77	1.778E+00	Pulse	0.30	3
Mn	55	45	2	20.105	ppb	1.93	114,819.82	8.911E-01	Pulse	0.30	3
Fe	56	45	2	20.857	ppb	0.28	199,853.18	1.551E+00	Pulse	0.30	3
Co	59	45	2	20.057	ppb	1.24	447,057.12	3.469E+00	Pulse	0.30	3
Ni	60	72	2	19.333	ppb	0.90	119,678.53	1.173E+00	Pulse	0.30	3
Cu	63	72	2	19.889	ppb	1.27	333,859.17	3.272E+00	Pulse	0.30	3
Zn	66	72	2	18.426	ppb	0.79	43,143.25	4.228E-01	Pulse	0.30	3
As	75	72	2	19.636	ppb	1.40	23,298.55	2.283E-01	Pulse	0.75	3
Se	78	72	1	18.769	ppb	2.33	12,192.86	9.489E-02	Pulse	0.30	3
Mo	95	103	2	19.884	ppb	0.53	145,414.09	4.440E-02	Pulse	0.30	3
Ag	107	103	3	19.599	ppb	1.68	1,526,826.62	1.755E-01	Analog	0.30	3
Cd	111	115	3	20.337	ppb	1.14	348,796.22	3.783E-02	Pulse	0.30	3
Sb	121	115	3	20.076	ppb	1.28	1,106,673.03	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.075	ppb	0.33	467,978.24	3.731E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.27	2,634,397.32	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.598	ppb	0.26	3,628,985.79	5.053E-01	Analog	0.30	3
U	238	209	3	19.194	ppb	0.31	3,580,603.05	4.986E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,566,261.89	1.34	89.7	Analog	0.30	3
2	Sc	45	128,876.49	1.54	113.9	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,932,690.83	0.08	105.5	Analog	0.30	3
1	Ge	72	128,507.40	0.59	116.4	Pulse	0.30	3
2	Ge	72	102,061.14	2.16	114.6	Pulse	0.30	3
2	Rh	103	3,275,355.30	0.71	106.3	Analog	0.30	3
3	Rh	103	8,700,448.90	0.09	103.6	Analog	0.30	3
3	In	115	9,220,431.27	1.02	104.0	Analog	0.30	3
3	Tb	159	12,541,595.78	0.17	100.0	Analog	0.30	3
3	Bi	209	7,181,777.74	0.22	98.0	Analog	0.30	3

Quantitation Report

File Name	A0219115.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:31
Sample Name	CCB8,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	115.10	30.00	1.983E-05	Pulse	0.30	3
Na	23	45	2	328.081	ppb	4.69	608,400.43	4.996E+00	Pulse	0.30	3
Mg	26	45	2	0.068	ppb	321.68	111.12	9.150E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	360.01	2.956E-03	Pulse	0.30	3
K	39	45	2	13.301	ppb	17.27	20,996.30	1.724E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,957.13	3.616E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	672.27	5.522E-03	Pulse	0.30	3
Cr	52	45	2	0.169	ppb	13.71	3,645.50	2.994E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	250.95	2.062E-03	Pulse	0.30	3
Fe	56	45	2	0.172	ppb	9.09	3,867.48	3.175E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	128.36	46.04	3.799E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	44.93	4.647E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	658.26	6.791E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	393.64	4.060E-03	Pulse	0.30	3
As	75	72	2	0.013	ppb	54.19	29.33	3.035E-04	Pulse	0.75	3
Se	78	72	1	0.012	ppb	164.84	8.89	7.135E-05	Pulse	0.30	3
Mo	95	103	2	0.111	ppb	3.69	820.06	2.567E-04	Pulse	0.30	3
Ag	107	103	3	0.441	ppb	14.82	37,022.16	4.372E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-70.36	-7.843E-06	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	5.39	5,124.39	5.712E-04	Pulse	0.30	3
Ba	137	159	3	0.005	ppb	37.96	276.88	2.240E-05	Pulse	0.30	3
Tl	205	209	3	0.004	ppb	13.46	2,001.33	2.838E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	911.39	1.294E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	6.54	860.93	1.221E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,516,802.55	1.05	86.9	Analog	0.30	3
2	Sc	45	121,847.03	1.86	107.7	Pulse	0.30	3
3	Sc	45	4,689,828.44	0.90	100.4	Analog	0.30	3
1	Ge	72	123,467.14	1.09	111.8	Pulse	0.30	3
2	Ge	72	96,874.49	1.52	108.7	Pulse	0.30	3
2	Rh	103	3,195,317.66	0.57	103.7	Analog	0.30	3
3	Rh	103	8,471,889.18	0.54	100.9	Analog	0.30	3
3	In	115	8,970,901.86	0.49	101.2	Analog	0.30	3
3	Tb	159	12,356,158.57	0.43	98.5	Analog	0.30	3
3	Bi	209	7,052,494.69	1.03	96.3	Analog	0.30	3

Quantitation Report

File Name	A0219116.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:37
Sample Name	LLCCV2,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.484	ppb	4.35	4,907.58	2.952E-03	Pulse	0.30	3
Na	23	45	2	234.890	ppb	7.28	516,660.84	3.829E+00	Pulse	0.30	3
Mg	26	45	2	3.603	ppb	22.20	671.15	4.971E-03	Pulse	0.30	3
Al	27	45	2	12.341	ppb	6.05	3,895.00	2.886E-02	Pulse	0.30	3
K	39	45	2	11.393	ppb	16.16	22,264.67	1.649E-01	Pulse	0.30	3
Ca	44	45	3	7.832	ppb	2.96	40,997.02	7.999E-03	Pulse	0.30	3
V	51	45	2	0.951	ppb	2.38	9,189.58	6.805E-02	Pulse	0.30	3
Cr	52	45	2	1.131	ppb	3.31	15,498.39	1.148E-01	Pulse	0.30	3
Mn	55	45	2	0.538	ppb	10.16	3,659.73	2.713E-02	Pulse	0.30	3
Fe	56	45	2	11.097	ppb	2.90	112,610.10	8.340E-01	Pulse	0.30	3
Co	59	45	2	0.477	ppb	1.91	11,176.96	8.275E-02	Pulse	0.30	3
Ni	60	72	2	0.936	ppb	4.77	6,299.74	5.956E-02	Pulse	0.30	3
Cu	63	72	2	0.740	ppb	0.22	19,235.24	1.818E-01	Pulse	0.30	3
Zn	66	72	2	8.678	ppb	1.11	22,784.73	2.153E-01	Pulse	0.30	3
As	75	72	2	0.103	ppb	23.85	142.23	1.347E-03	Pulse	0.75	3
Se	78	72	1	0.474	ppb	7.60	327.80	2.404E-03	Pulse	0.30	3
Mo	95	103	2	0.547	ppb	4.31	4,317.45	1.228E-03	Pulse	0.30	3
Ag	107	103	3	0.450	ppb	1.40	41,746.34	4.454E-03	Pulse	0.30	3
Cd	111	115	3	0.504	ppb	1.49	9,384.90	9.441E-04	Pulse	0.30	3
Sb	121	115	3	0.508	ppb	1.27	32,966.50	3.317E-03	Pulse	0.30	3
Ba	137	159	3	1.207	ppb	0.94	28,262.20	2.052E-03	Pulse	0.30	3
Tl	205	209	3	0.474	ppb	0.87	68,702.17	8.794E-03	Pulse	0.30	3
Pb	208	209	3	1.033	ppb	0.75	200,161.67	2.562E-02	Pulse	0.30	3
U	238	209	3	0.498	ppb	1.22	101,245.89	1.296E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,662,026.18	0.67	95.2	Analog	0.30	3
2	Sc	45	135,093.53	2.84	119.4	Pulse	0.30	3
3	Sc	45	5,125,353.71	0.93	109.7	Analog	0.30	3
1	Ge	72	136,373.75	0.56	123.5	Pulse	0.30	3
2	Ge	72	105,814.22	1.62	118.8	Pulse	0.30	3
2	Rh	103	3,515,155.57	1.04	114.1	Analog	0.30	3
3	Rh	103	9,373,627.01	0.47	111.6	Analog	0.30	3
3	In	115	9,940,187.47	0.40	112.2	Analog	0.30	3
3	Tb	159	13,771,201.18	0.41	109.8	Analog	0.30	3
3	Bi	209	7,812,185.78	0.41	106.6	Analog	0.30	3

Quantitation Report

File Name	A0219117.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:42
Sample Name	ICSA3,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	64.19	37.78	2.443E-05	Pulse	0.30	3
Na	23	45	2	91492.489	ppb	1.29	152,917,538.83	1.147E+03	Analog	0.30	3
Mg	26	45	2	89925.157	ppb	1.25	13,757,935.07	1.032E+02	Analog	0.30	3
Al	27	45	2	0.799	ppb	78.82	674.76	5.046E-03	Pulse	0.30	3
K	39	45	2	99061.880	ppb	0.85	51,803,852.01	3.884E+02	Analog	0.30	3
Ca	44	45	3	97176.367	ppb	0.56	252,512,122.90	4.700E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	637.82	4.775E-03	Pulse	0.30	3
Cr	52	45	2	0.286	ppb	9.03	5,370.26	4.027E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-13,304.13	-9.975E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-3,660.87	-2.747E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	83.22	73.37	5.471E-04	Pulse	0.30	3
Ni	60	72	2	0.356	ppb	2.60	2,352.43	2.446E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,367.70	-2.459E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,297.02	-1.349E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-0.38	-4.220E-06	Pulse	0.75	3
Se	78	72	1	0.011	ppb	29.05	7.78	6.611E-05	Pulse	0.30	3
Mo	95	103	2	0.056	ppb	13.68	383.36	1.320E-04	Pulse	0.30	3
Ag	107	103	3	0.077	ppb	11.56	9,041.20	1.124E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-539.43	-6.105E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,611.27	1.824E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-22,620.56	-1.816E-03	Pulse	0.30	3
Tl	205	209	3	0.008	ppb	6.76	2,154.70	3.647E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,787.93	-3.027E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	41.96	327.21	5.544E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,549,915.50	1.02	88.8	Analog	0.30	3
2	Sc	45	133,390.42	2.62	117.9	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,372,314.88	1.51	115.0	Analog	0.30	3
1	Ge	72	117,667.98	0.44	106.6	Pulse	0.30	3
2	Ge	72	96,164.67	1.28	107.9	Pulse	0.30	3
2	Rh	103	2,899,354.16	1.56	94.1	Analog	0.30	3
3	Rh	103	8,043,522.52	0.74	95.8	Analog	0.30	3
3	In	115	8,833,900.06	0.59	99.7	Analog	0.30	3
3	Tb	159	12,457,496.34	0.57	99.3	Analog	0.30	3
3	Bi	209	5,907,875.82	0.72	80.7	Analog	0.30	3

Quantitation Report

File Name	A0219118.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:45
Sample Name	ICSAB3,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.538	ppb	0.40	171,834.60	1.188E-01	Pulse	0.30	3
Na	23	45	2	90502.545	ppb	0.53	136,587,116.85	1.134E+03	Analog	0.30	3
Mg	26	45	2	89935.079	ppb	0.50	12,424,179.12	1.032E+02	Analog	0.30	3
Al	27	45	2	20.755	ppb	2.39	5,565.90	4.622E-02	Pulse	0.30	3
K	39	45	2	95057.269	ppb	0.51	44,886,463.77	3.727E+02	Analog	0.30	3
Ca	44	45	3	95944.403	ppb	0.77	235,239,052.05	4.641E+01	Analog	0.30	3
V	51	45	2	20.264	ppb	0.24	158,004.73	1.312E+00	Pulse	0.30	3
Cr	52	45	2	19.326	ppb	0.26	207,169.69	1.720E+00	Pulse	0.30	3
Mn	55	45	2	16.455	ppb	0.30	87,907.90	7.299E-01	Pulse	0.30	3
Fe	56	45	2	20.277	ppb	0.72	181,602.31	1.508E+00	Pulse	0.30	3
Co	59	45	2	18.391	ppb	0.60	383,069.47	3.181E+00	Pulse	0.30	3
Ni	60	72	2	19.860	ppb	0.85	101,780.59	1.205E+00	Pulse	0.30	3
Cu	63	72	2	19.323	ppb	1.06	268,694.46	3.180E+00	Pulse	0.30	3
Zn	66	72	2	17.383	ppb	0.42	33,846.69	4.006E-01	Pulse	0.30	3
As	75	72	2	19.519	ppb	0.36	19,178.25	2.270E-01	Pulse	0.75	3
Se	78	72	1	16.788	ppb	3.33	8,117.93	8.488E-02	Pulse	0.30	3
Mo	95	103	2	23.302	ppb	0.55	136,114.44	5.202E-02	Pulse	0.30	3
Ag	107	103	3	19.168	ppb	1.81	1,295,380.23	1.716E-01	Mix	0.30	3
Cd	111	115	3	19.162	ppb	0.60	295,460.63	3.565E-02	Pulse	0.30	3
Sb	121	115	3	21.120	ppb	0.54	1,046,507.57	1.263E-01	Pulse	0.30	3
Ba	137	159	3	24.624	ppb	0.52	496,512.08	4.162E-02	Pulse	0.30	3
Tl	205	209	3	22.381	ppb	0.96	2,310,706.86	4.051E-01	Analog	0.30	3
Pb	208	209	3	22.204	ppb	0.21	3,106,742.54	5.447E-01	Analog	0.30	3
U	238	209	3	22.570	ppb	0.61	3,343,945.50	5.863E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,446,746.35	0.85	82.9	Analog	0.30	3
2	Sc	45	120,431.94	2.82	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,069,210.37	1.54	108.5	Analog	0.30	3
1	Ge	72	95,685.19	2.61	86.7	Pulse	0.30	3
2	Ge	72	84,497.29	3.29	94.8	Pulse	0.30	3
2	Rh	103	2,616,310.26	2.80	84.9	Analog	0.30	3
3	Rh	103	7,547,390.37	0.56	89.9	Analog	0.30	3
3	In	115	8,288,957.74	0.97	93.5	Analog	0.30	3
3	Tb	159	11,929,437.74	1.33	95.1	Analog	0.30	3
3	Bi	209	5,703,728.04	0.51	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219119.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:51
Sample Name	N023028-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	60.72	38.89	3.298E-05	Pulse	0.30	3
Na	23	45	2	251754.599	ppb	1.25	339,904,674.93	3.154E+03	Analog	0.30	3
Mg	26	45	2	18339.489	ppb	0.96	2,267,833.86	2.104E+01	Analog	0.30	3
Al	27	45	2	3.869	ppb	16.63	1,226.17	1.138E-02	Pulse	0.30	3
K	39	45	2	7327.301	ppb	1.97	3,108,226.80	2.884E+01	Analog	0.30	3
Ca	44	45	3	108212.092	ppb	0.82	230,855,545.45	5.234E+01	Analog	0.30	3
V	51	45	2	8.854	ppb	1.52	62,215.00	5.771E-01	Pulse	0.30	3
Cr	52	45	2	59.510	ppb	1.10	567,540.06	5.266E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-2,844.71	-2.640E-02	Pulse	0.30	3
Fe	56	45	2	0.285	ppb	21.96	4,323.02	4.007E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-318.85	-2.954E-03	Pulse	0.30	3
Ni	60	72	2	0.385	ppb	3.84	2,069.07	2.620E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,903.81	2.411E-02	Pulse	0.30	3
Zn	66	72	2	0.588	ppb	10.79	3,409.48	4.317E-02	Pulse	0.30	3
As	75	72	2	1.408	ppb	4.66	1,304.83	1.651E-02	Pulse	0.75	3
Se	78	72	1	4.069	ppb	2.67	2,061.33	2.058E-02	Pulse	0.30	3
Mo	95	103	2	6.122	ppb	2.20	32,500.74	1.367E-02	Pulse	0.30	3
Ag	107	103	3	0.267	ppb	5.88	18,101.86	2.822E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-577.38	-7.912E-05	Pulse	0.30	3
Sb	121	115	3	0.084	ppb	4.00	5,727.96	7.848E-04	Pulse	0.30	3
Ba	137	159	3	45.693	ppb	0.18	816,209.21	7.722E-02	Pulse	0.30	3
Tl	205	209	3	0.075	ppb	0.40	8,178.15	1.571E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-8,788.50	-1.688E-03	Pulse	0.30	3
U	238	209	3	0.767	ppb	0.58	103,921.53	1.996E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,176,484.16	1.26	67.4	Analog	0.30	3
2	Sc	45	107,802.85	2.33	95.3	Pulse	0.30	3
3	Sc	45	4,410,721.29	1.02	94.4	Analog	0.30	3
1	Ge	72	100,173.11	0.20	90.7	Pulse	0.30	3
2	Ge	72	78,989.24	1.28	88.7	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,376,633.89	0.85	77.2	Analog	0.30	3
3	Rh	103	6,414,411.22	0.23	76.4	Analog	0.30	3
3	In	115	7,299,317.54	0.52	82.4	Analog	0.30	3
3	Tb	159	10,569,395.88	0.39	84.3	Analog	0.30	3
3	Bi	209	5,205,623.08	0.84	71.1	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219120.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 01:59
Sample Name	N023028-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	269.18	20.00	1.369E-05	Pulse	0.30	3
Na	23	45	2	54485.114	ppb	0.68	81,735,534.34	6.832E+02	Analog	0.30	3
Mg	26	45	2	4052.593	ppb	0.79	556,291.69	4.650E+00	Pulse	0.30	3
Al	27	45	2	0.146	ppb	113.62	442.33	3.698E-03	Pulse	0.30	3
K	39	45	2	1626.032	ppb	0.39	776,933.39	6.494E+00	Pulse	0.30	3
Ca	44	45	3	23619.723	ppb	1.23	53,394,839.76	1.143E+01	Analog	0.30	3
V	51	45	2	1.814	ppb	1.57	14,790.52	1.236E-01	Pulse	0.30	3
Cr	52	45	2	12.806	ppb	0.72	136,972.11	1.145E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-299.06	-2.499E-03	Pulse	0.30	3
Fe	56	45	2	0.377	ppb	7.63	5,601.01	4.681E-02	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-72.29	-6.035E-04	Pulse	0.30	3
Ni	60	72	2	0.046	ppb	5.52	525.93	5.690E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,444.03	1.562E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,301.72	1.408E-02	Pulse	0.30	3
As	75	72	2	0.298	ppb	2.71	334.78	3.622E-03	Pulse	0.75	3
Se	78	72	1	0.843	ppb	8.72	496.70	4.273E-03	Pulse	0.30	3
Mo	95	103	2	1.151	ppb	5.57	7,432.03	2.578E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,889.70	3.749E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-19,753.30	-2.324E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	831.17	9.779E-05	Pulse	0.30	3
Ba	137	159	3	8.364	ppb	1.31	170,809.74	1.415E-02	Pulse	0.30	3
Tl	205	209	3	0.010	ppb	12.19	2,488.11	3.885E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-36,009.54	-5.622E-03	Pulse	0.30	3
U	238	209	3	0.145	ppb	1.48	24,267.82	3.789E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,464,198.83	0.75	83.9	Analog	0.30	3
2	Sc	45	119,639.90	0.80	105.7	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,672,455.63	0.70	100.0	Analog	0.30	3
1	Ge	72	116,210.17	0.40	105.2	Pulse	0.30	3
2	Ge	72	92,438.88	1.08	103.8	Pulse	0.30	3
2	Rh	103	2,882,119.02	0.75	93.6	Analog	0.30	3
3	Rh	103	7,708,244.19	0.11	91.8	Analog	0.30	3
3	In	115	8,499,661.34	0.08	95.9	Analog	0.30	3
3	Tb	159	12,075,336.76	0.92	96.3	Analog	0.30	3
3	Bi	209	6,404,642.54	0.31	87.4	Analog	0.30	3

Quantitation Report

File Name	A0219121.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:04
Sample Name	N023028-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	98.13	26.67	2.100E-05	Pulse	0.30	3
Na	23	45	2	355637.411	ppb	1.32	506,904,654.67	4.455E+03	Analog	0.30	3
Mg	26	45	2	18171.945	ppb	1.04	2,372,426.51	2.085E+01	Analog	0.30	3
Al	27	45	2	5.370	ppb	13.85	1,644.73	1.448E-02	Pulse	0.30	3
K	39	45	2	9474.039	ppb	1.25	4,239,726.43	3.726E+01	Analog	0.30	3
Ca	44	45	3	111344.528	ppb	0.84	254,148,727.32	5.386E+01	Analog	0.30	3
V	51	45	2	16.854	ppb	1.41	124,305.88	1.092E+00	Pulse	0.30	3
Cr	52	45	2	152.724	ppb	0.74	1,535,193.70	1.349E+01	Analog	0.30	3
Mn	55	45	2	<0.000	ppb	---	-861.99	-7.598E-03	Pulse	0.30	3
Fe	56	45	2	2.478	ppb	6.42	22,866.40	2.011E-01	Pulse	0.30	3
Co	59	45	2	0.469	ppb	3.01	9,251.43	8.131E-02	Pulse	0.30	3
Ni	60	72	2	1.546	ppb	4.86	7,735.69	9.649E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-3,825.13	-4.771E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,417.68	3.016E-02	Pulse	0.30	3
As	75	72	2	2.643	ppb	2.95	2,474.01	3.086E-02	Pulse	0.75	3
Se	78	72	1	5.402	ppb	3.00	2,692.55	2.732E-02	Pulse	0.30	3
Mo	95	103	2	22.393	ppb	1.10	120,631.63	5.000E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-5,502.91	-8.395E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-486.15	-6.532E-05	Pulse	0.30	3
Sb	121	115	3	0.048	ppb	11.31	4,265.21	5.731E-04	Pulse	0.30	3
Ba	137	159	3	49.417	ppb	0.18	901,528.54	8.352E-02	Pulse	0.30	3
Tl	205	209	3	0.052	ppb	2.42	5,961.48	1.157E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-11,417.52	-2.216E-03	Pulse	0.30	3
U	238	209	3	0.887	ppb	0.44	118,927.01	2.308E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,268,925.46	0.36	72.7	Analog	0.30	3
2	Sc	45	113,818.60	2.45	100.6	Pulse	0.30	3
3	Sc	45	4,718,931.35	0.53	101.0	Analog	0.30	3
1	Ge	72	98,596.81	1.36	89.3	Pulse	0.30	3
2	Ge	72	80,173.65	2.00	90.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,412,679.01	1.13	78.3	Analog	0.30	3
3	Rh	103	6,555,189.83	0.54	78.1	Analog	0.30	3
3	In	115	7,441,813.81	0.43	84.0	Analog	0.30	3
3	Tb	159	10,794,708.31	0.58	86.1	Analog	0.30	3
3	Bi	209	5,152,465.79	0.73	70.3	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219122.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:10
Sample Name	N023028-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	6.125E-06	Pulse	0.30	3
Na	23	45	2	76132.719	ppb	1.41	113,612,202.75	9.543E+02	Analog	0.30	3
Mg	26	45	2	3941.378	ppb	1.81	538,365.31	4.522E+00	Pulse	0.30	3
Al	27	45	2	0.494	ppb	27.05	525.23	4.415E-03	Pulse	0.30	3
K	39	45	2	2105.719	ppb	1.61	996,940.60	8.374E+00	Pulse	0.30	3
Ca	44	45	3	24696.623	ppb	0.28	55,299,806.95	1.195E+01	Analog	0.30	3
V	51	45	2	3.534	ppb	1.69	27,912.26	2.345E-01	Pulse	0.30	3
Cr	52	45	2	33.659	ppb	1.32	355,347.29	2.985E+00	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-25.22	-2.038E-04	Pulse	0.30	3
Fe	56	45	2	0.509	ppb	10.71	6,724.76	5.651E-02	Pulse	0.30	3
Co	59	45	2	0.103	ppb	2.60	2,142.83	1.800E-02	Pulse	0.30	3
Ni	60	72	2	0.282	ppb	4.44	1,806.11	2.000E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-63.11	-6.929E-04	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	914.99	1.014E-02	Pulse	0.30	3
As	75	72	2	0.563	ppb	1.32	604.63	6.695E-03	Pulse	0.75	3
Se	78	72	1	1.183	ppb	9.92	676.71	5.989E-03	Pulse	0.30	3
Mo	95	103	2	4.256	ppb	1.15	26,861.22	9.508E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	2,087.05	2.769E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-57.45	-6.856E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,350.12	1.611E-04	Pulse	0.30	3
Ba	137	159	3	10.200	ppb	0.34	203,891.77	1.725E-02	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	18.78	2,082.45	3.356E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,345.45	-2.168E-04	Pulse	0.30	3
U	238	209	3	0.168	ppb	1.34	27,311.22	4.401E-03	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,453,250.81	0.22	83.3	Analog	0.30	3
2	Sc	45	119,079.94	2.37	105.2	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,627,986.29	0.42	99.0	Analog	0.30	3
1	Ge	72	112,973.86	0.38	102.3	Pulse	0.30	3
2	Ge	72	90,324.85	1.36	101.4	Pulse	0.30	3
2	Rh	103	2,825,190.13	1.23	91.7	Analog	0.30	3
3	Rh	103	7,536,101.55	0.41	89.8	Analog	0.30	3
3	In	115	8,379,560.23	0.45	94.6	Analog	0.30	3
3	Tb	159	11,820,955.52	0.42	94.3	Analog	0.30	3
3	Bi	209	6,205,194.42	0.71	84.7	Analog	0.30	3

Quantitation Report

File Name	A0219123.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:15
Sample Name	N023029-001B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.004	ppb	85.97	31.11	3.410E-05	Pulse	0.30	3
Na	23	45	2	1101147.648	ppb	1.26	1,451,554,733.92	1.379E+04	Analog	0.30	3
Mg	26	45	2	18629.195	ppb	1.57	2,249,386.88	2.137E+01	Analog	0.30	3
Al	27	45	2	3.835	ppb	12.34	1,191.33	1.131E-02	Pulse	0.30	3
K	39	45	2	13745.990	ppb	0.63	5,684,733.73	5.400E+01	Analog	0.30	3
Ca	44	45	3	170747.591	ppb	0.62	348,026,212.59	8.259E+01	Analog	0.30	3
V	51	45	2	0.734	ppb	3.26	5,693.44	5.411E-02	Pulse	0.30	3
Cr	52	45	2	1.673	ppb	1.27	17,125.20	1.627E-01	Pulse	0.30	3
Mn	55	45	2	1.451	ppb	2.00	7,099.67	6.743E-02	Pulse	0.30	3
Fe	56	45	2	5.661	ppb	14.76	45,749.44	4.348E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-1,194.50	-1.135E-02	Pulse	0.30	3
Ni	60	72	2	1.112	ppb	3.97	4,826.59	7.019E-02	Pulse	0.30	3
Cu	63	72	2	1.801	ppb	0.43	24,279.88	3.529E-01	Pulse	0.30	3
Zn	66	72	2	8.993	ppb	1.14	15,272.77	2.220E-01	Pulse	0.30	3
As	75	72	2	1.365	ppb	5.06	1,101.76	1.602E-02	Pulse	0.75	3
Se	78	72	1	0.766	ppb	5.22	314.46	3.885E-03	Pulse	0.30	3
Mo	95	103	2	19.652	ppb	1.02	89,075.30	4.388E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-4,994.64	-9.118E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-645.92	-1.029E-04	Pulse	0.30	3
Sb	121	115	3	0.022	ppb	2.02	2,604.77	4.148E-04	Pulse	0.30	3
Ba	137	159	3	30.618	ppb	0.18	473,501.87	5.175E-02	Pulse	0.30	3
Tl	205	209	3	0.430	ppb	2.43	32,320.58	8.003E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-13,992.61	-3.465E-03	Pulse	0.30	3
U	238	209	3	7.152	ppb	0.02	750,317.17	1.858E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	919,661.92	2.13	52.7	Analog	0.30	3
2	Sc	45	105,283.51	3.09	93.0	Pulse	0.30	3
3	Sc	45	4,214,091.54	0.87	90.2	Analog	0.30	3
1	Ge	72	80,948.57	0.14	73.3	Pulse	0.30	3
2	Ge	72	68,798.92	2.52	77.2	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,030,032.30	1.08	65.9	Analog	0.30	3
3	Rh	103	5,477,689.08	0.35	65.2	Analog	0.30	3
3	In	115	6,279,343.66	0.35	70.9	Analog	0.30	3
3	Tb	159	9,149,644.72	0.21	73.0	Analog	0.30	3
3	Bi	209	4,038,479.42	0.32	55.1	Analog	0.30	3

Quantitation Report

File Name	A0219124.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:21
Sample Name	N023029-001B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	10.00	7.228E-06	Pulse	0.30	3
Na	23	45	2	235213.335	ppb	0.93	358,395,910.22	2.946E+03	Analog	0.30	3
Mg	26	45	2	4166.701	ppb	0.56	581,532.88	4.781E+00	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	388.70	3.193E-03	Pulse	0.30	3
K	39	45	2	2916.213	ppb	0.74	1,405,039.08	1.155E+01	Analog	0.30	3
Ca	44	45	3	37165.260	ppb	0.19	86,174,067.61	1.798E+01	Analog	0.30	3
V	51	45	2	0.133	ppb	9.26	1,871.30	1.539E-02	Pulse	0.30	3
Cr	52	45	2	0.391	ppb	1.40	6,029.18	4.957E-02	Pulse	0.30	3
Mn	55	45	2	0.205	ppb	9.29	1,509.89	1.242E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-16,887.74	-1.389E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-273.25	-2.243E-03	Pulse	0.30	3
Ni	60	72	2	0.211	ppb	5.96	1,387.08	1.572E-02	Pulse	0.30	3
Cu	63	72	2	0.205	ppb	7.77	8,419.75	9.546E-02	Pulse	0.30	3
Zn	66	72	2	1.357	ppb	6.28	5,251.77	5.954E-02	Pulse	0.30	3
As	75	72	2	0.271	ppb	5.20	291.15	3.300E-03	Pulse	0.75	3
Se	78	72	1	0.180	ppb	27.71	102.23	9.191E-04	Pulse	0.30	3
Mo	95	103	2	3.769	ppb	1.30	22,768.13	8.421E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	1,834.62	2.505E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-121.13	-1.479E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	974.52	1.189E-04	Pulse	0.30	3
Ba	137	159	3	6.378	ppb	0.37	125,269.01	1.079E-02	Pulse	0.30	3
Tl	205	209	3	0.077	ppb	2.25	9,188.80	1.611E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,636.49	-2.869E-04	Pulse	0.30	3
U	238	209	3	1.340	ppb	0.08	198,790.97	3.484E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,384,499.19	0.93	79.3	Analog	0.30	3
2	Sc	45	121,643.44	1.09	107.5	Pulse	0.30	3
3	Sc	45	4,792,868.99	0.37	102.6	Analog	0.30	3
1	Ge	72	111,184.06	0.86	100.7	Pulse	0.30	3
2	Ge	72	88,207.21	0.98	99.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,703,645.52	0.87	87.8	Analog	0.30	3
3	Rh	103	7,324,808.43	0.42	87.2	Analog	0.30	3
3	In	115	8,196,349.78	0.45	92.5	Analog	0.30	3
3	Tb	159	11,609,373.58	0.83	92.6	Analog	0.30	3
3	Bi	209	5,705,297.21	0.29	77.9	Analog	0.30	3

Quantitation Report

File Name	A0219125.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:27
Sample Name	N023029-002B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

	Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
	Be	9	6	3	0.005	ppb	65.74	36.67	3.946E-05	Pulse	0.30	3
	Na	23	45	2	971379.398	ppb	0.52	1,338,769,446.72	1.217E+04	Analog	0.30	3
	Mg	26	45	2	23742.485	ppb	0.76	2,997,520.76	2.724E+01	Analog	0.30	3
	Al	27	45	2	6.303	ppb	8.92	1,804.61	1.640E-02	Pulse	0.30	3
	K	39	45	2	16071.034	ppb	0.56	6,945,741.56	6.311E+01	Analog	0.30	3
	Ca	44	45	3	195087.655	ppb	0.62	419,080,313.75	9.436E+01	Analog	0.30	3
	V	51	45	2	1.056	ppb	3.78	8,235.76	7.484E-02	Pulse	0.30	3
OLR	Cr	52	45	2	508.626	ppb	0.77	4,940,107.88	4.489E+01	Analog	0.30	3
	Mn	55	45	2	0.584	ppb	10.14	3,209.58	2.917E-02	Pulse	0.30	3
	Fe	56	45	2	<0.000	ppb	---	-65,700.48	-5.970E-01	Pulse	0.30	3
	Co	59	45	2	0.215	ppb	5.92	4,125.12	3.749E-02	Pulse	0.30	3
	Ni	60	72	2	2.826	ppb	1.18	12,755.91	1.739E-01	Pulse	0.30	3
	Cu	63	72	2	<0.000	ppb	---	3,890.53	5.309E-02	Pulse	0.30	3
	Zn	66	72	2	16.878	ppb	1.72	28,597.92	3.898E-01	Pulse	0.30	3
	As	75	72	2	1.272	ppb	3.07	1,095.51	1.493E-02	Pulse	0.75	3
	Se	78	72	1	3.636	ppb	9.83	1,605.70	1.839E-02	Pulse	0.30	3
	Mo	95	103	2	13.785	ppb	0.38	65,366.02	3.078E-02	Pulse	0.30	3
	Ag	107	103	3	<0.000	ppb	---	-7,615.14	-1.328E-03	Pulse	0.30	3
	Cd	111	115	3	<0.000	ppb	---	-596.27	-9.082E-05	Pulse	0.30	3
	Sb	121	115	3	0.031	ppb	6.97	3,088.21	4.704E-04	Pulse	0.30	3
	Ba	137	159	3	36.467	ppb	1.00	587,844.70	6.163E-02	Pulse	0.30	3
	Tl	205	209	3	0.029	ppb	5.85	3,187.17	7.393E-04	Pulse	0.30	3
	Pb	208	209	3	<0.000	ppb	---	-29,738.23	-6.897E-03	Pulse	0.30	3
	U	238	209	3	5.340	ppb	0.81	598,079.41	1.387E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	925,644.96	1.32	53.0	Analog	0.30	3
2	Sc	45	110,047.31	0.83	97.2	Pulse	0.30	3
3	Sc	45	4,441,439.31	1.31	95.0	Analog	0.30	3
1	Ge	72	87,329.96	0.47	79.1	Pulse	0.30	3
2	Ge	72	73,351.69	1.39	82.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,123,620.92	1.51	68.9	Analog	0.30	3
3	Rh	103	5,731,907.55	0.76	68.3	Analog	0.30	3
3	In	115	6,565,351.74	0.33	74.1	Analog	0.30	3
3	Tb	159	9,538,062.71	0.50	76.1	Analog	0.30	3
3	Bi	209	4,311,691.67	1.13	58.9	Analog	0.30	3

Quantitation Report

File Name	A0219126.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:32
Sample Name	N023029-002B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	294.91	18.89	1.341E-05	Pulse	0.30	3
Na	23	45	2	208009.439	ppb	1.56	325,096,455.16	2.606E+03	Analog	0.30	3
Mg	26	45	2	5244.480	ppb	0.94	750,787.70	6.017E+00	Pulse	0.30	3
Al	27	45	2	0.813	ppb	33.33	632.95	5.073E-03	Pulse	0.30	3
K	39	45	2	3413.496	ppb	0.90	1,684,420.01	1.350E+01	Analog	0.30	3
Ca	44	45	3	42886.400	ppb	0.32	101,623,728.49	2.075E+01	Analog	0.30	3
V	51	45	2	0.192	ppb	8.30	2,388.06	1.915E-02	Pulse	0.30	3
Cr	52	45	2	112.120	ppb	1.25	1,236,072.84	9.907E+00	Analog	0.30	3
Mn	55	45	2	0.085	ppb	15.40	887.60	7.119E-03	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-6,911.84	-5.545E-02	Pulse	0.30	3
Co	59	45	2	0.050	ppb	6.17	1,104.54	8.855E-03	Pulse	0.30	3
Ni	60	72	2	0.591	ppb	2.40	3,521.20	3.870E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,699.96	2.967E-02	Pulse	0.30	3
Zn	66	72	2	3.066	ppb	4.93	8,721.29	9.590E-02	Pulse	0.30	3
As	75	72	2	0.289	ppb	9.31	319.98	3.518E-03	Pulse	0.75	3
Se	78	72	1	0.742	ppb	9.09	425.58	3.761E-03	Pulse	0.30	3
Mo	95	103	2	2.676	ppb	2.68	16,455.68	5.981E-03	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	245.27	3.301E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-66.33	-7.975E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,274.55	1.533E-04	Pulse	0.30	3
Ba	137	159	3	7.657	ppb	0.23	152,239.73	1.295E-02	Pulse	0.30	3
Tl	205	209	3	0.001	ppb	57.16	1,403.45	2.397E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-5,251.43	-8.971E-04	Pulse	0.30	3
U	238	209	3	1.016	ppb	1.23	154,707.50	2.643E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,404,559.08	1.07	80.5	Analog	0.30	3
2	Sc	45	124,781.85	1.73	110.3	Pulse	0.30	3
3	Sc	45	4,898,323.02	0.52	104.8	Analog	0.30	3
1	Ge	72	113,187.71	0.44	102.5	Pulse	0.30	3
2	Ge	72	90,966.55	1.08	102.1	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,751,614.30	0.78	89.3	Analog	0.30	3
3	Rh	103	7,430,870.58	0.07	88.5	Analog	0.30	3
3	In	115	8,312,694.19	0.19	93.8	Analog	0.30	3
3	Tb	159	11,754,432.88	0.48	93.7	Analog	0.30	3
3	Bi	209	5,854,281.37	0.38	79.9	Analog	0.30	3

Quantitation Report

File Name	A0219127.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:38
Sample Name	N023029-003B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.006	ppb	58.94	56.67	4.717E-05	Pulse	0.30	3
Na	23	45	2	533303.574	ppb	1.04	786,768,663.83	6.679E+03	Analog	0.30	3
Mg	26	45	2	15261.790	ppb	1.66	2,062,155.44	1.751E+01	Analog	0.30	3
Al	27	45	2	3.472	ppb	7.18	1,244.47	1.056E-02	Pulse	0.30	3
K	39	45	2	9888.898	ppb	0.70	4,580,343.09	3.888E+01	Analog	0.30	3
Ca	44	45	3	145501.290	ppb	0.18	343,249,212.66	7.038E+01	Analog	0.30	3
V	51	45	2	5.026	ppb	1.06	38,937.80	3.305E-01	Pulse	0.30	3
Cr	52	45	2	164.624	ppb	1.19	1,712,712.82	1.454E+01	Analog	0.30	3
Mn	55	45	2	0.963	ppb	1.00	5,408.60	4.591E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-24,796.75	-2.105E-01	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-427.48	-3.627E-03	Pulse	0.30	3
Ni	60	72	2	0.606	ppb	5.40	3,169.14	3.959E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,727.27	3.405E-02	Pulse	0.30	3
Zn	66	72	2	0.070	ppb	244.47	2,575.65	3.216E-02	Pulse	0.30	3
As	75	72	2	2.153	ppb	2.20	2,014.42	2.517E-02	Pulse	0.75	3
Se	78	72	1	12.319	ppb	2.03	5,958.01	6.229E-02	Pulse	0.30	3
Mo	95	103	2	75.338	ppb	0.81	399,377.73	1.682E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-6,767.64	-1.046E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-7.25	-9.694E-07	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,826.85	2.486E-04	Pulse	0.30	3
Ba	137	159	3	27.631	ppb	0.38	491,926.05	4.670E-02	Pulse	0.30	3
Tl	205	209	3	0.137	ppb	2.39	12,995.12	2.692E-03	Pulse	0.30	3
Pb	208	209	3	0.030	ppb	6.61	5,079.58	1.052E-03	Pulse	0.30	3
U	238	209	3	7.712	ppb	0.93	967,268.37	2.003E-01	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,201,594.04	0.95	68.9	Analog	0.30	3
2	Sc	45	117,802.95	1.97	104.1	Pulse	0.30	3
3	Sc	45	4,877,213.57	0.38	104.4	Analog	0.30	3
1	Ge	72	95,657.32	0.69	86.6	Pulse	0.30	3
2	Ge	72	79,999.65	2.05	89.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,374,490.36	1.39	77.1	Analog	0.30	3
3	Rh	103	6,471,892.61	0.85	77.1	Analog	0.30	3
3	In	115	7,348,295.81	0.37	82.9	Analog	0.30	3
3	Tb	159	10,532,939.01	0.23	84.0	Analog	0.30	3
3	Bi	209	4,827,949.55	0.75	65.9	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219128.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:43
Sample Name	N023029-003B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	67.14	24.44	1.681E-05	Pulse	0.30	3
Na	23	45	2	112703.845	ppb	1.46	176,992,959.58	1.412E+03	Analog	0.30	3
Mg	26	45	2	3208.298	ppb	1.00	461,389.08	3.681E+00	Pulse	0.30	3
Al	27	45	2	0.053	ppb	276.81	439.57	3.507E-03	Pulse	0.30	3
K	39	45	2	2154.280	ppb	1.38	1,073,351.21	8.564E+00	Pulse	0.30	3
Ca	44	45	3	31702.671	ppb	0.47	75,157,484.99	1.534E+01	Analog	0.30	3
V	51	45	2	1.018	ppb	1.59	9,067.30	7.235E-02	Pulse	0.30	3
Cr	52	45	2	36.081	ppb	0.99	400,872.18	3.198E+00	Pulse	0.30	3
Mn	55	45	2	0.197	ppb	5.35	1,515.37	1.209E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	750.45	6.013E-03	Pulse	0.30	3
Co	59	45	2	<0.000	ppb	---	-93.37	-7.463E-04	Pulse	0.30	3
Ni	60	72	2	0.145	ppb	5.93	1,111.22	1.173E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	2,681.85	2.833E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	993.96	1.050E-02	Pulse	0.30	3
As	75	72	2	0.433	ppb	2.46	491.97	5.191E-03	Pulse	0.75	3
Se	78	72	1	2.519	ppb	5.83	1,506.80	1.274E-02	Pulse	0.30	3
Mo	95	103	2	14.232	ppb	1.67	91,471.52	3.178E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	491.47	6.369E-05	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	11.11	1.301E-06	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	766.72	8.992E-05	Pulse	0.30	3
Ba	137	159	3	5.661	ppb	0.77	114,751.84	9.579E-03	Pulse	0.30	3
Tl	205	209	3	0.022	ppb	2.18	3,770.63	6.170E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-2,325.02	-3.807E-04	Pulse	0.30	3
U	238	209	3	1.428	ppb	0.51	226,807.31	3.712E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,455,513.36	0.72	83.4	Analog	0.30	3
2	Sc	45	125,346.52	1.83	110.8	Pulse	0.30	3
3	Sc	45	4,900,259.86	0.63	104.9	Analog	0.30	3
1	Ge	72	118,315.81	1.32	107.2	Pulse	0.30	3
2	Ge	72	94,758.81	1.47	106.4	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,878,459.68	0.78	93.4	Analog	0.30	3
3	Rh	103	7,710,232.73	0.32	91.8	Analog	0.30	3
3	In	115	8,528,079.49	0.31	96.2	Analog	0.30	3
3	Tb	159	11,980,439.40	0.98	95.5	Analog	0.30	3
3	Bi	209	6,110,457.82	1.20	83.4	Analog	0.30	3

Quantitation Report

File Name	A0219129.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:49
Sample Name	CCV9,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.619	ppb	0.47	184,896.98	1.193E-01	Pulse	0.30	3
Na	23	45	2	421.406	ppb	4.13	771,077.25	6.164E+00	Pulse	0.30	3
Mg	26	45	2	198.238	ppb	2.72	28,555.13	2.283E-01	Pulse	0.30	3
Al	27	45	2	21.395	ppb	0.74	5,949.58	4.754E-02	Pulse	0.30	3
K	39	45	2	228.308	ppb	2.36	127,014.07	1.015E+00	Pulse	0.30	3
Ca	44	45	3	213.725	ppb	0.32	516,491.33	1.076E-01	Pulse	0.30	3
V	51	45	2	20.151	ppb	1.57	163,253.75	1.305E+00	Pulse	0.30	3
Cr	52	45	2	20.136	ppb	1.64	224,170.89	1.792E+00	Pulse	0.30	3
Mn	55	45	2	20.275	ppb	1.58	112,439.54	8.986E-01	Pulse	0.30	3
Fe	56	45	2	20.898	ppb	1.29	194,414.08	1.554E+00	Pulse	0.30	3
Co	59	45	2	20.083	ppb	1.99	434,632.49	3.474E+00	Pulse	0.30	3
Ni	60	72	2	19.430	ppb	1.20	116,583.90	1.179E+00	Pulse	0.30	3
Cu	63	72	2	20.242	ppb	0.92	329,258.45	3.329E+00	Pulse	0.30	3
Zn	66	72	2	18.500	ppb	1.42	41,975.69	4.243E-01	Pulse	0.30	3
As	75	72	2	19.844	ppb	1.00	22,824.54	2.307E-01	Pulse	0.75	3
Se	78	72	1	19.031	ppb	1.05	12,215.06	9.622E-02	Pulse	0.30	3
Mo	95	103	2	20.057	ppb	1.19	142,601.66	4.478E-02	Pulse	0.30	3
Ag	107	103	3	19.798	ppb	1.01	1,513,893.35	1.773E-01	Analog	0.30	3
Cd	111	115	3	20.284	ppb	0.82	344,585.10	3.773E-02	Pulse	0.30	3
Sb	121	115	3	19.943	ppb	0.41	1,088,942.21	1.192E-01	Pulse	0.30	3
Ba	137	159	3	22.121	ppb	0.83	460,387.76	3.739E-02	Pulse	0.30	3
Tl	205	209	3	20.314	ppb	0.45	2,588,625.45	3.677E-01	Analog	0.30	3
Pb	208	209	3	20.507	ppb	0.69	3,541,296.43	5.031E-01	Analog	0.30	3
U	238	209	3	19.073	ppb	0.55	3,487,421.75	4.954E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,550,335.31	1.08	88.8	Analog	0.30	3
2	Sc	45	125,149.04	2.05	110.6	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,800,901.29	0.13	102.7	Analog	0.30	3
1	Ge	72	126,961.29	0.92	115.0	Pulse	0.30	3
2	Ge	72	98,921.40	1.11	111.0	Pulse	0.30	3
2	Rh	103	3,184,420.58	0.96	103.4	Analog	0.30	3
3	Rh	103	8,540,545.22	0.54	101.7	Analog	0.30	3
3	In	115	9,132,531.14	0.26	103.1	Analog	0.30	3
3	Tb	159	12,312,521.76	0.12	98.2	Analog	0.30	3
3	Bi	209	7,039,289.06	0.04	96.1	Analog	0.30	3

Quantitation Report

File Name	A0219130.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 02:54
Sample Name	CCB9,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	8.89	5.871E-06	Pulse	0.30	3
Na	23	45	2	195.030	ppb	5.92	395,064.68	3.329E+00	Pulse	0.30	3
Mg	26	45	2	0.172	ppb	191.47	123.34	1.034E-03	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	330.01	2.783E-03	Pulse	0.30	3
K	39	45	2	12.387	ppb	12.65	20,037.23	1.688E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,736.89	3.637E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	668.93	5.635E-03	Pulse	0.30	3
Cr	52	45	2	0.077	ppb	7.30	2,591.03	2.183E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	262.33	2.214E-03	Pulse	0.30	3
Fe	56	45	2	0.176	ppb	5.46	3,806.29	3.206E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	47.44	52.92	4.451E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	56.25	5.873E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	589.91	6.181E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	305.33	3.201E-03	Pulse	0.30	3
As	75	72	2	0.012	ppb	49.24	28.00	2.929E-04	Pulse	0.75	3
Se	78	72	1	0.005	ppb	59.80	4.44	3.678E-05	Pulse	0.30	3
Mo	95	103	2	0.122	ppb	8.90	867.84	2.791E-04	Pulse	0.30	3
Ag	107	103	3	0.468	ppb	12.58	38,359.09	4.613E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-36.14	-4.089E-06	Pulse	0.30	3
Sb	121	115	3	0.047	ppb	8.17	4,989.88	5.647E-04	Pulse	0.30	3
Ba	137	159	3	0.007	ppb	58.02	298.83	2.463E-05	Pulse	0.30	3
Tl	205	209	3	0.003	ppb	17.08	1,811.30	2.634E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,010.55	1.470E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	2.28	924.65	1.345E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,514,115.14	1.29	86.8	Analog	0.30	3
2	Sc	45	118,731.78	2.06	104.9	Pulse	0.30	3
3	Sc	45	4,601,726.01	0.37	98.5	Analog	0.30	3
1	Ge	72	120,860.13	0.33	109.5	Pulse	0.30	3
2	Ge	72	95,396.60	1.44	107.1	Pulse	0.30	3
2	Rh	103	3,107,962.00	1.11	100.9	Analog	0.30	3
3	Rh	103	8,315,913.42	0.22	99.0	Analog	0.30	3
3	In	115	8,836,257.13	0.63	99.7	Analog	0.30	3
3	Tb	159	12,137,000.79	0.68	96.8	Analog	0.30	3
3	Bi	209	6,876,463.02	0.40	93.9	Analog	0.30	3

Quantitation Report

File Name	A0219131.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:00
Sample Name	N023029-004B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.000	ppb	145.79	18.89	1.407E-05	Pulse	0.30	3
Na	23	45	2	263840.212	ppb	0.99	391,900,856.38	3.305E+03	Analog	0.30	3
Mg	26	45	2	4169.413	ppb	1.36	567,250.93	4.784E+00	Pulse	0.30	3
Al	27	45	2	5.148	ppb	4.94	1,663.59	1.402E-02	Pulse	0.30	3
K	39	45	2	4277.316	ppb	1.48	2,002,212.56	1.689E+01	Analog	0.30	3
Ca	44	45	3	21192.795	ppb	0.88	49,354,934.27	1.025E+01	Analog	0.30	3
V	51	45	2	13.034	ppb	0.88	100,361.13	8.463E-01	Pulse	0.30	3
Cr	52	45	2	0.823	ppb	1.60	10,391.69	8.764E-02	Pulse	0.30	3
Mn	55	45	2	119.745	ppb	1.10	627,356.78	5.291E+00	Pulse	0.30	3
Fe	56	45	2	4.064	ppb	1.90	37,656.44	3.175E-01	Pulse	0.30	3
Co	59	45	2	0.300	ppb	2.95	6,185.72	5.213E-02	Pulse	0.30	3
Ni	60	72	2	0.679	ppb	2.30	3,804.94	4.401E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	1,454.37	1.681E-02	Pulse	0.30	3
Zn	66	72	2	2.232	ppb	4.43	6,756.60	7.817E-02	Pulse	0.30	3
As	75	72	2	8.593	ppb	4.17	8,644.72	1.000E-01	Pulse	0.75	3
Se	78	72	1	0.856	ppb	3.06	455.58	4.339E-03	Pulse	0.30	3
Mo	95	103	2	45.285	ppb	1.12	265,033.04	1.011E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,768.63	-2.480E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	8.87	511.87	6.382E-05	Pulse	0.30	3
Sb	121	115	3	0.081	ppb	9.01	6,144.78	7.662E-04	Pulse	0.30	3
Ba	137	159	3	36.471	ppb	0.41	703,088.89	6.164E-02	Pulse	0.30	3
Tl	205	209	3	0.087	ppb	0.49	9,893.65	1.783E-03	Pulse	0.30	3
Pb	208	209	3	0.004	ppb	21.14	2,267.97	4.086E-04	Pulse	0.30	3
U	238	209	3	2.069	ppb	0.19	298,452.97	5.377E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,344,050.85	0.93	77.0	Analog	0.30	3
2	Sc	45	118,602.16	2.83	104.8	Pulse	0.30	3
3	Sc	45	4,813,416.84	1.57	103.0	Analog	0.30	3
1	Ge	72	105,005.02	0.69	95.1	Pulse	0.30	3
2	Ge	72	86,454.51	0.94	97.0	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,621,428.95	1.78	85.1	Analog	0.30	3
3	Rh	103	7,131,635.52	0.61	84.9	Analog	0.30	3
3	In	115	8,020,463.51	0.34	90.5	Analog	0.30	3
3	Tb	159	11,406,179.41	0.74	90.9	Analog	0.30	3
3	Bi	209	5,550,297.49	0.91	75.8	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219132.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:05
Sample Name	N023029-004B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	6.67	4.544E-06	Pulse	0.30	3
Na	23	45	2	56689.251	ppb	0.34	85,944,958.72	7.108E+02	Analog	0.30	3
Mg	26	45	2	909.077	ppb	1.54	126,182.31	1.044E+00	Pulse	0.30	3
Al	27	45	2	0.705	ppb	21.38	586.34	4.852E-03	Pulse	0.30	3
K	39	45	2	952.007	ppb	1.05	465,708.06	3.852E+00	Pulse	0.30	3
Ca	44	45	3	4569.598	ppb	0.32	10,473,836.09	2.214E+00	Analog	0.30	3
V	51	45	2	2.725	ppb	1.18	22,046.65	1.823E-01	Pulse	0.30	3
Cr	52	45	2	0.205	ppb	3.19	4,006.88	3.314E-02	Pulse	0.30	3
Mn	55	45	2	25.999	ppb	1.58	139,193.07	1.151E+00	Pulse	0.30	3
Fe	56	45	2	1.084	ppb	13.83	11,928.64	9.877E-02	Pulse	0.30	3
Co	59	45	2	0.068	ppb	4.31	1,460.95	1.209E-02	Pulse	0.30	3
Ni	60	72	2	0.103	ppb	12.88	865.20	9.155E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	722.95	7.645E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	2,057.77	2.177E-02	Pulse	0.30	3
As	75	72	2	1.818	ppb	4.23	2,011.78	2.128E-02	Pulse	0.75	3
Se	78	72	1	0.175	ppb	7.59	106.67	8.953E-04	Pulse	0.30	3
Mo	95	103	2	8.599	ppb	1.38	56,460.31	1.920E-02	Pulse	0.30	3
Ag	107	103	3	0.023	ppb	25.88	5,092.49	6.435E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-20,448.99	-2.361E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,937.99	2.237E-04	Pulse	0.30	3
Ba	137	159	3	6.391	ppb	0.73	131,111.49	1.081E-02	Pulse	0.30	3
Tl	205	209	3	0.013	ppb	7.84	2,875.96	4.455E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-37,534.28	-5.816E-03	Pulse	0.30	3
U	238	209	3	0.392	ppb	0.64	65,941.03	1.022E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,467,606.69	0.38	84.1	Analog	0.30	3
2	Sc	45	120,916.71	1.63	106.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,729,980.49	0.58	101.2	Analog	0.30	3
1	Ge	72	119,095.37	1.00	107.9	Pulse	0.30	3
2	Ge	72	94,547.78	1.10	106.1	Pulse	0.30	3
2	Rh	103	2,939,954.51	0.76	95.4	Analog	0.30	3
3	Rh	103	7,914,194.67	0.11	94.3	Analog	0.30	3
3	In	115	8,662,203.43	0.69	97.7	Analog	0.30	3
3	Tb	159	12,126,910.38	0.73	96.7	Analog	0.30	3
3	Bi	209	6,453,789.00	0.84	88.1	Analog	0.30	3

Quantitation Report

File Name	A0219133.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:11
Sample Name	N023029-005B,SAMP,1
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	11.11	8.575E-06	Pulse	0.30	3
Na	23	45	2	243502.096	ppb	0.59	346,701,110.39	3.050E+03	Analog	0.30	3
Mg	26	45	2	3778.112	ppb	0.91	492,738.55	4.335E+00	Pulse	0.30	3
Al	27	45	2	5.361	ppb	3.11	1,643.25	1.446E-02	Pulse	0.30	3
K	39	45	2	3936.906	ppb	0.54	1,767,731.50	1.555E+01	Analog	0.30	3
Ca	44	45	3	19020.898	ppb	0.17	42,362,231.59	9.204E+00	Analog	0.30	3
V	51	45	2	10.562	ppb	0.96	78,093.02	6.871E-01	Pulse	0.30	3
Cr	52	45	2	3.617	ppb	0.41	37,982.74	3.342E-01	Pulse	0.30	3
Mn	55	45	2	114.942	ppb	0.38	577,255.48	5.079E+00	Pulse	0.30	3
Fe	56	45	2	4.781	ppb	1.09	42,079.80	3.702E-01	Pulse	0.30	3
Co	59	45	2	0.125	ppb	9.24	2,483.13	2.186E-02	Pulse	0.30	3
Ni	60	72	2	0.119	ppb	18.74	827.30	1.015E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-5,154.56	-6.335E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	1,551.39	1.906E-02	Pulse	0.30	3
As	75	72	2	8.448	ppb	2.76	7,998.39	9.831E-02	Pulse	0.75	3
Se	78	72	1	0.541	ppb	4.94	276.68	2.747E-03	Pulse	0.30	3
Mo	95	103	2	46.458	ppb	0.82	262,845.17	1.037E-01	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	-1,849.27	-2.696E-04	Pulse	0.30	3
Cd	111	115	3	0.031	ppb	14.81	488.07	6.343E-05	Pulse	0.30	3
Sb	121	115	3	0.043	ppb	4.02	4,156.28	5.404E-04	Pulse	0.30	3
Ba	137	159	3	33.228	ppb	0.31	614,251.48	5.616E-02	Pulse	0.30	3
Tl	205	209	3	0.067	ppb	2.42	7,583.38	1.430E-03	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-163.51	-3.092E-05	Pulse	0.30	3
U	238	209	3	2.528	ppb	1.45	348,290.89	6.569E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,301,756.33	1.19	74.6	Analog	0.30	3
2	Sc	45	113,665.89	1.35	100.4	Pulse	0.30	3
3	Sc	45	4,602,661.18	0.81	98.5	Analog	0.30	3
1	Ge	72	100,713.22	0.40	91.2	Pulse	0.30	3
2	Ge	72	81,379.35	1.91	91.3	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,534,183.29	0.86	82.3	Analog	0.30	3
3	Rh	103	6,859,699.34	0.18	81.7	Analog	0.30	3
3	In	115	7,690,858.18	0.58	86.8	Analog	0.30	3
3	Tb	159	10,937,514.14	0.24	87.2	Analog	0.30	3
3	Bi	209	5,302,572.39	0.61	72.4	Analog	0.30	3

Quantitation Report

NOT REPORTED

File Name	A0219134.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:16
Sample Name	N023029-005B,SAMP,5
Sample Type	Sample
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	<0.000	ppb	---	5.56	3.825E-06	Pulse	0.30	3
Na	23	45	2	49535.252	ppb	2.31	75,163,043.88	6.212E+02	Analog	0.30	3
Mg	26	45	2	771.339	ppb	1.23	107,189.09	8.857E-01	Pulse	0.30	3
Al	27	45	2	0.845	ppb	37.70	622.68	5.141E-03	Pulse	0.30	3
K	39	45	2	835.016	ppb	1.92	410,602.52	3.393E+00	Pulse	0.30	3
Ca	44	45	3	3963.874	ppb	0.41	8,927,714.03	1.921E+00	Analog	0.30	3
V	51	45	2	2.097	ppb	1.16	17,169.56	1.419E-01	Pulse	0.30	3
Cr	52	45	2	0.750	ppb	6.05	9,822.80	8.122E-02	Pulse	0.30	3
Mn	55	45	2	23.443	ppb	2.30	125,654.29	1.039E+00	Pulse	0.30	3
Fe	56	45	2	1.344	ppb	2.64	14,258.91	1.178E-01	Pulse	0.30	3
Co	59	45	2	0.028	ppb	11.50	606.53	5.004E-03	Pulse	0.30	3
Ni	60	72	2	0.004	ppb	313.50	296.41	3.180E-03	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-417.50	-4.471E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	693.24	7.424E-03	Pulse	0.30	3
As	75	72	2	1.656	ppb	4.82	1,810.48	1.939E-02	Pulse	0.75	3
Se	78	72	1	0.096	ppb	33.54	58.89	4.965E-04	Pulse	0.30	3
Mo	95	103	2	8.657	ppb	1.19	56,559.64	1.933E-02	Pulse	0.30	3
Ag	107	103	3	<0.000	ppb	---	3,192.99	4.093E-04	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-17,866.32	-2.093E-03	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,532.37	1.795E-04	Pulse	0.30	3
Ba	137	159	3	5.657	ppb	1.21	113,932.73	9.572E-03	Pulse	0.30	3
Tl	205	209	3	0.007	ppb	11.76	2,204.70	3.460E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-29,279.06	-4.595E-03	Pulse	0.30	3
U	238	209	3	0.455	ppb	0.73	75,545.38	1.186E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,451,887.20	0.18	83.2	Analog	0.30	3
2	Sc	45	121,044.24	2.76	107.0	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,646,537.36	0.50	99.4	Analog	0.30	3
1	Ge	72	118,321.30	1.43	107.2	Pulse	0.30	3
2	Ge	72	93,340.32	0.92	104.8	Pulse	0.30	3
2	Rh	103	2,925,532.67	0.31	95.0	Analog	0.30	3
3	Rh	103	7,798,408.57	0.62	92.9	Analog	0.30	3
3	In	115	8,534,959.87	0.25	96.3	Analog	0.30	3
3	Tb	159	11,902,968.85	0.41	94.9	Analog	0.30	3
3	Bi	209	6,371,840.53	0.44	87.0	Analog	0.30	3

Quantitation Report

File Name	A0219135.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:22
Sample Name	CCV10,CCV,1
Sample Type	6-CCV
Comment	20/200 ug/L,5<50mL of 2MWST- 170107C
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.449	ppb	1.01	175,531.24	1.182E-01	Pulse	0.30	3
Na	23	45	2	334.027	ppb	3.27	610,297.83	5.070E+00	Pulse	0.30	3
Mg	26	45	2	195.959	ppb	1.93	27,162.81	2.256E-01	Pulse	0.30	3
Al	27	45	2	21.263	ppb	2.61	5,689.61	4.726E-02	Pulse	0.30	3
K	39	45	2	221.919	ppb	1.76	119,201.03	9.901E-01	Pulse	0.30	3
Ca	44	45	3	212.628	ppb	1.14	490,638.08	1.071E-01	Pulse	0.30	3
V	51	45	2	20.193	ppb	0.97	157,407.25	1.307E+00	Pulse	0.30	3
Cr	52	45	2	19.914	ppb	0.65	213,350.13	1.772E+00	Pulse	0.30	3
Mn	55	45	2	20.248	ppb	1.70	108,035.62	8.974E-01	Pulse	0.30	3
Fe	56	45	2	20.831	ppb	1.45	186,453.87	1.549E+00	Pulse	0.30	3
Co	59	45	2	20.048	ppb	1.06	417,484.03	3.468E+00	Pulse	0.30	3
Ni	60	72	2	19.425	ppb	1.14	112,305.47	1.178E+00	Pulse	0.30	3
Cu	63	72	2	20.097	ppb	0.73	315,038.72	3.305E+00	Pulse	0.30	3
Zn	66	72	2	18.622	ppb	1.50	40,694.39	4.269E-01	Pulse	0.30	3
As	75	72	2	19.977	ppb	0.99	22,140.05	2.323E-01	Pulse	0.75	3
Se	78	72	1	18.809	ppb	0.34	11,663.56	9.509E-02	Pulse	0.30	3
Mo	95	103	2	20.080	ppb	1.11	139,789.50	4.483E-02	Pulse	0.30	3
Ag	107	103	3	19.915	ppb	0.12	1,471,455.91	1.783E-01	Analog	0.30	3
Cd	111	115	3	20.392	ppb	0.32	335,103.89	3.793E-02	Pulse	0.30	3
Sb	121	115	3	20.069	ppb	0.52	1,060,011.52	1.200E-01	Pulse	0.30	3
Ba	137	159	3	22.157	ppb	0.28	448,415.57	3.745E-02	Pulse	0.30	3
Tl	205	209	3	20.263	ppb	0.73	2,525,334.01	3.668E-01	Analog	0.30	3
Pb	208	209	3	20.504	ppb	0.42	3,462,871.04	5.030E-01	Analog	0.30	3
U	238	209	3	19.108	ppb	0.18	3,417,069.84	4.963E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,484,656.67	0.40	85.1	Analog	0.30	3
2	Sc	45	120,403.88	1.44	106.4	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	4,583,282.43	0.29	98.1	Analog	0.30	3
1	Ge	72	122,655.79	1.06	111.1	Pulse	0.30	3
2	Ge	72	95,316.16	0.90	107.0	Pulse	0.30	3
2	Rh	103	3,118,021.97	0.12	101.2	Analog	0.30	3
3	Rh	103	8,252,382.80	0.42	98.3	Analog	0.30	3
3	In	115	8,834,186.70	0.17	99.7	Analog	0.30	3
3	Tb	159	11,972,495.79	0.14	95.5	Analog	0.30	3
3	Bi	209	6,884,641.63	0.23	94.0	Analog	0.30	3

Quantitation Report

File Name	A0219136.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:27
Sample Name	CCB10,CCB,1
Sample Type	6-CCB
Comment	
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.002	ppb	31.74	32.22	2.218E-05	Pulse	0.30	3
Na	23	45	2	128.739	ppb	6.02	286,743.52	2.499E+00	Pulse	0.30	3
Mg	26	45	2	0.038	ppb	493.42	101.11	8.800E-04	Pulse	0.30	3
Al	27	45	2	<0.000	ppb	---	317.79	2.766E-03	Pulse	0.30	3
K	39	45	2	11.060	ppb	14.37	18,775.71	1.636E-01	Pulse	0.30	3
Ca	44	45	3	<0.000	ppb	---	16,439.95	3.727E-03	Pulse	0.30	3
V	51	45	2	<0.000	ppb	---	573.37	4.997E-03	Pulse	0.30	3
Cr	52	45	2	0.061	ppb	16.07	2,341.08	2.039E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	263.08	2.294E-03	Pulse	0.30	3
Fe	56	45	2	0.163	ppb	9.95	3,568.20	3.110E-02	Pulse	0.30	3
Co	59	45	2	0.001	ppb	80.02	43.03	3.757E-04	Pulse	0.30	3
Ni	60	72	2	<0.000	ppb	---	48.58	5.289E-04	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	749.15	8.171E-03	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	312.31	3.401E-03	Pulse	0.30	3
As	75	72	2	0.018	ppb	19.83	33.33	3.636E-04	Pulse	0.75	3
Se	78	72	1	0.011	ppb	162.08	7.78	6.518E-05	Pulse	0.30	3
Mo	95	103	2	0.120	ppb	7.00	841.17	2.757E-04	Pulse	0.30	3
Ag	107	103	3	0.446	ppb	14.92	35,748.23	4.417E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-21.75	-2.528E-06	Pulse	0.30	3
Sb	121	115	3	0.046	ppb	7.48	4,816.50	5.599E-04	Pulse	0.30	3
Ba	137	159	3	0.011	ppb	32.53	374.77	3.164E-05	Pulse	0.30	3
Tl	205	209	3	0.002	ppb	21.49	1,641.27	2.444E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	1,120.01	1.668E-04	Pulse	0.30	3
U	238	209	3	0.004	ppb	5.12	919.62	1.369E-04	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,452,162.11	0.52	83.2	Analog	0.30	3
2	Sc	45	114,769.78	1.19	101.4	Pulse	0.30	3
3	Sc	45	4,411,184.62	0.36	94.4	Analog	0.30	3
1	Ge	72	118,692.16	0.91	107.5	Pulse	0.30	3
2	Ge	72	91,727.15	0.80	103.0	Pulse	0.30	3
2	Rh	103	3,051,295.47	0.53	99.1	Analog	0.30	3
3	Rh	103	8,096,550.85	0.54	96.4	Analog	0.30	3
3	In	115	8,602,761.25	0.16	97.1	Analog	0.30	3
3	Tb	159	11,841,870.10	0.43	94.4	Analog	0.30	3
3	Bi	209	6,715,519.00	0.78	91.7	Analog	0.30	3

Quantitation Report

File Name	A0219137.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:33
Sample Name	LLCCV3,CCV2,1
Sample Type	6-ICB
Comment	2MWST- 170107G
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.475	ppb	1.90	4,523.02	2.899E-03	Pulse	0.30	3
Na	23	45	2	86.916	ppb	10.25	249,977.90	1.975E+00	Pulse	0.30	3
Mg	26	45	2	3.807	ppb	17.40	657.82	5.204E-03	Pulse	0.30	3
Al	27	45	2	12.118	ppb	6.09	3,594.93	2.840E-02	Pulse	0.30	3
K	39	45	2	9.015	ppb	17.37	19,701.18	1.556E-01	Pulse	0.30	3
Ca	44	45	3	8.292	ppb	2.13	39,533.60	8.221E-03	Pulse	0.30	3
V	51	45	2	0.978	ppb	1.57	8,841.61	6.981E-02	Pulse	0.30	3
Cr	52	45	2	1.044	ppb	1.09	13,574.65	1.071E-01	Pulse	0.30	3
Mn	55	45	2	0.531	ppb	1.79	3,396.44	2.681E-02	Pulse	0.30	3
Fe	56	45	2	11.175	ppb	2.65	106,320.95	8.397E-01	Pulse	0.30	3
Co	59	45	2	0.484	ppb	2.47	10,630.24	8.395E-02	Pulse	0.30	3
Ni	60	72	2	0.928	ppb	1.92	5,987.61	5.909E-02	Pulse	0.30	3
Cu	63	72	2	0.717	ppb	1.98	18,036.78	1.780E-01	Pulse	0.30	3
Zn	66	72	2	8.468	ppb	0.80	21,366.83	2.109E-01	Pulse	0.30	3
As	75	72	2	0.123	ppb	8.13	160.00	1.579E-03	Pulse	0.75	3
Se	78	72	1	0.498	ppb	25.64	332.24	2.527E-03	Pulse	0.30	3
Mo	95	103	2	0.528	ppb	5.22	3,959.54	1.187E-03	Pulse	0.30	3
Ag	107	103	3	0.451	ppb	2.48	39,425.28	4.465E-03	Pulse	0.30	3
Cd	111	115	3	0.510	ppb	1.76	8,984.28	9.553E-04	Pulse	0.30	3
Sb	121	115	3	0.514	ppb	1.57	31,484.73	3.348E-03	Pulse	0.30	3
Ba	137	159	3	1.208	ppb	1.27	26,693.05	2.055E-03	Pulse	0.30	3
Tl	205	209	3	0.471	ppb	0.21	64,534.66	8.743E-03	Pulse	0.30	3
Pb	208	209	3	1.038	ppb	1.11	190,132.50	2.576E-02	Pulse	0.30	3
U	238	209	3	0.496	ppb	0.89	95,343.12	1.292E-02	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,560,219.25	1.07	89.4	Analog	0.30	3
2	Sc	45	126,677.50	2.85	111.9	Pulse	0.30	3
3	Sc	45	4,808,535.76	0.67	102.9	Analog	0.30	3
1	Ge	72	131,425.07	0.74	119.0	Pulse	0.30	3

2	Ge	72	101,333.27	0.81	113.7	Pulse	0.30	3
2	Rh	103	3,334,095.40	0.80	108.2	Analog	0.30	3
3	Rh	103	8,828,599.59	0.55	105.2	Analog	0.30	3
3	In	115	9,405,032.15	0.43	106.1	Analog	0.30	3
3	Tb	159	12,989,240.22	0.43	103.6	Analog	0.30	3
3	Bi	209	7,381,330.23	0.66	100.8	Analog	0.30	3

Quantitation Report

File Name	A0219138.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:38
Sample Name	ICSA4,ICSA,1
Sample Type	Sample
Comment	2MWST- 170107H
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	0.001	ppb	43.41	30.00	2.046E-05	Pulse	0.30	3
Na	23	45	2	90294.415	ppb	1.27	144,442,735.63	1.132E+03	Analog	0.30	3
Mg	26	45	2	89564.640	ppb	0.87	13,115,646.89	1.027E+02	Analog	0.30	3
Al	27	45	2	0.636	ppb	68.64	601.02	4.708E-03	Pulse	0.30	3
K	39	45	2	100024.117	ppb	0.69	50,065,768.14	3.922E+02	Analog	0.30	3
Ca	44	45	3	96884.226	ppb	0.35	239,884,394.20	4.686E+01	Analog	0.30	3
V	51	45	2	<0.000	ppb	---	620.04	4.851E-03	Pulse	0.30	3
Cr	52	45	2	0.223	ppb	4.08	4,435.35	3.475E-02	Pulse	0.30	3
Mn	55	45	2	<0.000	ppb	---	-12,578.01	-9.852E-02	Pulse	0.30	3
Fe	56	45	2	<0.000	ppb	---	-2,992.67	-2.344E-02	Pulse	0.30	3
Co	59	45	2	0.002	ppb	39.16	77.91	6.094E-04	Pulse	0.30	3
Ni	60	72	2	0.336	ppb	4.65	2,147.59	2.324E-02	Pulse	0.30	3
Cu	63	72	2	<0.000	ppb	---	-2,413.52	-2.611E-02	Pulse	0.30	3
Zn	66	72	2	<0.000	ppb	---	-1,259.17	-1.365E-02	Pulse	0.30	3
As	75	72	2	<0.000	ppb	---	-4.67	-5.141E-05	Pulse	0.75	3
Se	78	72	1	0.013	ppb	89.38	8.89	7.741E-05	Pulse	0.30	3
Mo	95	103	2	0.059	ppb	9.72	390.02	1.392E-04	Pulse	0.30	3
Ag	107	103	3	0.080	ppb	17.04	8,924.18	1.152E-03	Pulse	0.30	3
Cd	111	115	3	<0.000	ppb	---	-517.23	-6.110E-05	Pulse	0.30	3
Sb	121	115	3	<0.000	ppb	---	1,585.71	1.873E-04	Pulse	0.30	3
Ba	137	159	3	<0.000	ppb	---	-20,907.62	-1.735E-03	Pulse	0.30	3
Tl	205	209	3	0.005	ppb	15.88	1,746.85	3.086E-04	Pulse	0.30	3
Pb	208	209	3	<0.000	ppb	---	-1,695.51	-2.994E-04	Pulse	0.30	3
U	238	209	3	0.001	ppb	16.45	324.53	5.738E-05	Pulse	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,466,208.18	0.31	84.0	Analog	0.30	3
2	Sc	45	127,664.11	2.27	112.8	Pulse	0.30	3
3	Sc	45	5,118,899.89	1.14	109.5	Analog	0.30	3
1	Ge	72	114,636.66	0.51	103.8	Pulse	0.30	3
2	Ge	72	92,473.74	3.05	103.8	Pulse	0.30	3

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
2	Rh	103	2,803,239.16	1.23	91.0	Analog	0.30	3
3	Rh	103	7,754,783.56	1.26	92.4	Analog	0.30	3
3	In	115	8,465,249.80	0.75	95.5	Analog	0.30	3
3	Tb	159	12,050,089.26	0.63	96.1	Analog	0.30	3
3	Bi	209	5,658,665.05	1.25	77.2	Analog	0.30	3

Quantitation Report

File Name	A0219139.D
File Path	C:\ICPMH\1\DATA\170219A.B
Method File	DEFAULT.M
Method Path	C:\ICPMH\1\METHODS\
Acq Time	02/20/2017 03:45
Sample Name	ICSAB4,ICSAB,1
Sample Type	Sample
Comment	2MWST- 170107I
Prep Dilution	1.000
Auto Dilution	N/A
Total Dilution	1.000
Operator Name	
Acq Mode	Spectrum
Cal Title	
Cal Type	External Calibration
Last Calib	02/20/2017 12:56
Bkg File	
Bkg Mode	Count Subtraction except for ISTD
Interference File	Acq. Defined
FQ Blank File	
VIS Fit	Point to Point

Tune Step	Tune File
1	h2.u
2	he.u
3	nogas.u

Analyte Table

Element	Mass	ISTD	Tune	Conc	Units	RSD(%)	CPS	Ratio	Det	Time(sec)	Rep
Be	9	6	3	19.213	ppb	0.40	175,944.89	1.168E-01	Pulse	0.30	3
Na	23	45	2	91946.778	ppb	0.18	140,542,459.01	1.152E+03	Analog	0.30	3
Mg	26	45	2	91187.920	ppb	1.03	12,756,973.00	1.046E+02	Analog	0.30	3
Al	27	45	2	21.020	ppb	3.76	5,701.67	4.676E-02	Pulse	0.30	3
K	39	45	2	96106.649	ppb	0.40	45,959,730.43	3.768E+02	Analog	0.30	3
Ca	44	45	3	96392.206	ppb	0.16	240,609,789.75	4.663E+01	Analog	0.30	3
V	51	45	2	20.491	ppb	0.63	161,803.52	1.327E+00	Pulse	0.30	3
Cr	52	45	2	19.339	ppb	1.39	209,902.35	1.721E+00	Pulse	0.30	3
Mn	55	45	2	16.568	ppb	1.13	89,642.04	7.349E-01	Pulse	0.30	3
Fe	56	45	2	20.317	ppb	1.60	184,251.47	1.511E+00	Pulse	0.30	3
Co	59	45	2	18.511	ppb	0.55	390,506.34	3.202E+00	Pulse	0.30	3
Ni	60	72	2	20.065	ppb	1.54	102,857.70	1.217E+00	Pulse	0.30	3
Cu	63	72	2	19.432	ppb	0.65	270,322.87	3.198E+00	Pulse	0.30	3
Zn	66	72	2	17.489	ppb	0.73	34,057.95	4.028E-01	Pulse	0.30	3
As	75	72	2	19.414	ppb	0.77	19,081.16	2.257E-01	Pulse	0.75	3
Se	78	72	1	16.673	ppb	3.18	8,368.08	8.430E-02	Pulse	0.30	3
Mo	95	103	2	22.979	ppb	2.00	135,822.92	5.130E-02	Pulse	0.30	3
Ag	107	103	3	19.334	ppb	0.32	1,325,589.61	1.731E-01	Pulse	0.30	3
Cd	111	115	3	19.064	ppb	0.11	298,923.16	3.546E-02	Pulse	0.30	3
Sb	121	115	3	20.638	ppb	0.44	1,040,052.53	1.234E-01	Pulse	0.30	3
Ba	137	159	3	24.730	ppb	0.53	502,731.63	4.180E-02	Pulse	0.30	3
Tl	205	209	3	22.537	ppb	0.78	2,329,064.51	4.080E-01	Analog	0.30	3
Pb	208	209	3	22.375	ppb	0.67	3,133,526.71	5.489E-01	Analog	0.30	3
U	238	209	3	22.784	ppb	0.36	3,378,945.65	5.918E-01	Analog	0.30	3

ISTD Table

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Li	6	1,506,374.79	0.45	86.3	Analog	0.30	3
2	Sc	45	121,966.73	2.29	107.8	Pulse	0.30	3

Quantitation Report

Tune	Element	Mass	CPS	RSD(%)	ISTD Recovery%	Det	Time(sec)	Rep
3	Sc	45	5,160,483.47	0.68	110.4	Analog	0.30	3
1	Ge	72	99,274.20	1.34	89.9	Pulse	0.30	3
2	Ge	72	84,537.82	2.68	94.9	Pulse	0.30	3
2	Rh	103	2,647,253.97	1.36	85.9	Analog	0.30	3
3	Rh	103	7,657,026.00	0.53	91.2	Analog	0.30	3
3	In	115	8,429,339.12	0.59	95.1	Analog	0.30	3
3	Tb	159	12,026,964.54	0.73	95.9	Analog	0.30	3
3	Bi	209	5,709,311.86	0.86	77.9	Analog	0.30	3

STANDARDS LOG

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-121025B	7500 Series PA Tuning 1	2.5, 5.0, 10, 50 ppm	Agilent	19-64VYY2	10/25/12	11/1/12	12/31/2013		MI
↓ C	7500 Series PA Tuning 2	5, 10 ppm	↓	19-62VYY2	↓	11/1/12	↓		↓
↓ D	Germanium	1000 ppm	High Purity Stds	1215310	10/25/12	11/6/12	4/15/2014		MI
2MSST-130301A	ICPMS major cations	50 ppm	ERA	750412	3/1/13	8/7/13	6/2015		MI
↓ B	ICPMS Trace Metals	10 ppm	↓	740412	↓	8/7/13	10/2014		↓
↓ C	ICPMS IS 1	10 ppm	High Purity Std	1211618	3/1/13	4/25/13	1/14/14		MI
2MSST-130329A	ICPMS Tuning Solution	10 ppm	ERA	140309	3/29/13	3/29/13	4/2014		MI
↓	ICPMS IS 1	10 ppm	High Purity Std	1301405	↓	5/26/13	3/20/14		↓
2MSST-130603A	ICPMS IS 1	10 ppm	High Purity Std	1301405	6/3/13	8/7/13	5/29/14		WS
2MSST-130910C ~~2MSST-130910A~~ MC 2/14/14	Hg - STD (1°) mercury	1000 ppm	High Purity Std	1316504	9/10/13	9/11/13	3/4/15		MC
2MSST-130910A	ICPMS Trace Metals	10 ppm	ERA	740412	9/10/13	1/7/14	10/2014		HSG
2MSST-130910B	ICPMS Major Cations	50 ppm	↓	750412	9/10/13	↓	6/2015		HSG
2MSST-130913A	ICPMS IS 1	10 ppm	High Purity Std	1301405	9/13/13	↓	9/9/14		HSC
2MSST-131220A	7500 Series PA Tuning 1	Multi concentration of Analytes	Agilent	20-47VYY2	12/20/13	1/2/14	02/28/15		MI
↓ B	7500 Series PA Tuning 2	↓	↓	20-45VYY2	↓	1/2/14	02/28/15		MI
2MSST-140113A	Hg 2° Standard Mercury	1000 ppm	Ultra Scientific	P00139	MC 3/4/14 ~~14~~ 01/13/14	MC 3/4/14 ~~R~~ 2/10/14	3/31/19		MC
2MSST-140217B	ICPMS IS 1	10 ppm	High Purity Stds	1333708	2/17/14	4/15/14	2/10/15	→ exp: 3/18/15 MI 3/18/14	PLN
2MSST ~~2MSST~~ - 140317A MI 3/17/14	Uranium	1000 ppm	High Purity Stds	1326239	3/17/14	3/18/14	9/11/15		MI
2MSST-140404A	Germanium	1000 ppm	High Purity Stds	1309919	4/4/14	4/15/14 ~~9/28/15~~ MI 4/4/14	9/28/15		MI

Advanced Technology Laboratories-Las Vegas
Logbool #1

3/6/14 9/24/13 3/28/13 9/29

ICP Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
6/21/13	Magnesium	MSST-130621C	10,000 ppm	High Purity Standards	1301003	6/21/13	7/25/13	12/14/14	WES
7/31/13	Yttrium	MSST-130731A	1000 ppm	High Purity standards	1305206	7/31/13	8/1/13	1/25/15	AM
7/31/13	Scandium	MSST-130731B	1000 ppm	High Purity standards	1231735	7/31/13	8/1/13	1/25/15	AM
9/13/13	Boron 1°	MSST-130913A	5000 ppm	High Purity Standards	1221604	9/13/13	9/16/13	3/9/15	AM
↓	Molybdenum 1°	MSST-130913B	1000 ppm	↓	1222707	9/13/13	9/16/13	↓	↓
↓	Chromium 1°	MSST-130913C	1000 ppm	↓	1230012	9/13/13	9/16/13	↓	↓
↓	Aluminum 1°	MSST-130913D	10000 ppm	↓	1318241	9/13/13	~~9/16/13~~ rec 9/17/13	↓	↓
9/13/13	Antimony 2°	MSST-130913E	1000 ppm	Ultra Scientific	L012826	9/13/13		12/31/17	MI
11/26/13	Aluminum 2°	MSST-131126A	10000 ppm	Ultra Scientific	M002666B	11/26/13		4/30/17	AM
12/9/13	Yttrium	MSST-131209A	1000 ppm	High Purity Standards	1222829	12/9/13	3/24/14	~~5/27/15~~ 3/24/14 mi	AM
12/9/13	Scandium	MSST-131209B	1000 ppm	High Purity Standards	1309122 AM	12/9/13	3/24/14	~~5/27/15~~ 3/24/14 3/24/14	AM
12/23/13	Calcium 1°	MSST-131223A	10,000 ppm	High Purity Standards	1320711	12/23/13	1/6/14	6/13/15	AM
12/23/13	Magnesium 1°	MSST-131223B	↓	↓	1330907	↓	1/6/14	↓	AM
12/23/13	Manganese 1°	MSST-131223C	↓	↓	1331633	↓	1/6/14	↓	AM
AM 1/10/14 1/10/14	Aluminum 1°	MSST-140110A	10000 ppm	High Purity Standards	1334617	1/10/14	~~7/7/15~~ AM 1/10/14	7/7/15	AM
1/20/14	Nickel 2° AM 1/21/14	MSST-140120A	1000 ppm	~~High Purity Standards~~ Ultra Scientific	M008666	1/20/14		9/30/18	AM
↓	Sodium 2°	MSST-140120B	10000 ppm	AM 1/21/14 ↓	R01257	↓		12/31/20	↓
↓	Beryllium 2°	MSST-140120C	100 ppm	↓	R00202	↓		4/30/20	↓
1/21/14	Strontium 2°	MSST-140121A	1000 ppm	CPI International	14A095	1/21/14	1/21/14	7/16/2015	MI

ICP Stock Standard Logbook

SG 3/25/14

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact.	Initials
1/21/14	Tin 2°	MSST-140121B	1000 ppm	CPI International	1340860	1/21/14	1/21/14	7/16/2015	MI
↓	Titanium 2°	MSST-140121C	1000 ppm	CPI International	126230	1/21/14	1/21/14	7/16/2015	MI
2/18/14	Wave Cal Solution	MSST-140218A	1/20/100 ppm	Perkin Elmer Pure	10-133-YPX1	2/18/14		3/30/2015	MI
	Optima Family Multi-Element Standard	B	1/10/50 ppm		10-134YPX1			6/30/2015	
	VIS Wavecal Solution	C	1/10/50 ppm		10-71YPT1			6/30/2015	
	Instrument Calibration Standard 4	D	50/100 ppm		10-117YPY1			6/30/2015	
	Solution - Optimal Blank	E	—	Perkin Elmer Pure Plus	1-76KFX1			6/30/2015	
4/4/14	Magnesium 2°	MSST-140404A	10,000 ppm	Ultra Scientific	R00244	4/4/14	4/4/14	4/30/2020	MI
STF 5/28/14 4/5/28/14	Bismuth 1000ppm (1°)	MSST-140528A	1000ppm	High Purity Standards	1404513	5/28/14	5/28/14	11/27/2015	STF
5/28/14	Lithium 1000ppm (1°)	MSST-140528B	1000ppm		1231934	5/28/14	5/28/14	11/27/2015	STF
5/30/14	Calcium (Ca) 1°	MSST-140530A	10000 ppm	High Purity Standards	1404943	5/30/14	6/13/14	11/23/15	STF
	Iron (Fe) 1°	B	10000ppm		1324617		6/16/14	11/23/15	STF
	Magnesium (Mg) 1°	C	10,000ppm		1409813		6/13/14	11/23/15	STF
	Strontium (Sr) 1°	D	1000ppm		1401301		6/13/14	11/23/15	STF
6/3/14	Magnesium (Mg) 2°	MSST-140603A	10,000ppm	Ultra Scientific	R00244	6/3/14	STF 6/13/14	4/30/2020	STF
6/11/14	Copper	MSST-140611A	1000 ppm	High Purity Standards	1403501	6/11/14	6/12/14	12-5-15	MC
	Cobalt	B	1000ppm		1303712				
	Barium	C			1323402				
	Silver	D			1401302				

Advanced Technology Laboratories-Las Vegas
Logbook #1

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
1/15/15	Strontium 1°	MSST-150115D	1000 ppm	High Purity Stds	1412501	1/15/15	2/10/15	6/10/16	MEJ
↓	Scandium E	↓	1000 ppm m 1/15/15	↓	1414317	↓	1/20/15	↓	↓
↓	Yttrium F	↓	↓	↓	1423204	↓	1/20/15	↓	↓
1/12/15	Arsenic 2°	MISS-150112A	1000 ppm	Ultra Scientific	R005943	1/12/15		9/30/2020	MEJ
↓	Copper 2°	B	↓	↓	BH02515 ~~RF058487~~ m 1/14/15	↓		6/30/2021	↓
↓	Antimony 2°	C	↓	↓	RM058187	↓		9/30/2021	↓
↓	Chromium 2°	D	↓	↓	BH013V5	↓	1/30/15	12/31/2019	↓
↓	Molybdenum 2°	E	↓	↓	RM07695	↓	1/30/15	1/31/2022	↓
↓	Thallium 2°	F	↓	↓	BH02110	↓	1/30/15	7/31/2020	↓
3/9/15	Chromium 1°	MSST-150309A	1000 ppm	High Purity Standards	1320011	3/9/15	3/9/15	9/3/16	MEJ
↓	Molybdenum 1°	B	↓	↓	1420609	↓	↓	↓	↓
↓	Boron 1°	C	5000	↓	1421703	↓	↓	↓	↓
3/10/15	Mercury 1°	MSST-150310A	100 ppm	High Purity Standards	14343	3/10/15	4/5/15	9/10/16	[illegible]
5/14/15	Cadmium 2°	MSST-150514A	100 ppm	Ultra Scientific	CL-2608	5/14/15		8/31/21	[illegible]
5/14/15	Zinc 2°	MSST-150514B	100 ppm	Ultra Scientific	TU0108	5/14/15		2/28/21	[illegible]
5/18/15	Manganese 1°	MSST-150518A	10000 ppm	High Purity Standards	1413613	5/18/15	6/1/15	11/8/16	[illegible]
6/15/15	Barium 2°	MISS-150615A	1000 ppm	Ultra Scientific	CM-2359	6/15/15	6/15/15	6/30/22	MJ
↓	Lead 2°	B	↓	↓	CL-4072	↓	↓	11/30/21 ~~10/16/22~~ m 6/16/15	↓
↓	Silicon 2°	C	10000	↓	CL-2940	↓	↓	8/31/2021	↓

Advanced Technology Laboratories-Las Vegas 3151-3153 W. Post Rd. Las Vegas, NV 89118 Tel: 702-307-2659 Fax 702-307-2691

ICP Stock Standard Logbook

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
6/15/15	tin 2°	MSST-150615D	1000 ppm	CPI	13H086	6/15/15		12/15/16	MI
	Titanium 2°	↓ E	↓	↓	14K176	↓		↓	↓
7/2/15	Aluminum	MSST-150702A	10000 ppm	High Purity Standards	1516016	7/2/15	11/23/15	12/25/16	HSG
	Calcium	↓ B	↓	↓	1511140	↓	↓	↓	↓
	Magnesium	↓ C	↓	↓	1510445	↓	↓	↓	↓
7/17/15	Strontium 2°	MSST-150717A	1000	CPI	15F052	7/17/15	9/10/15	01/14/17	HSG
9/9/15	Selenium 2°	MSST-150909A	1000 ppm	Ultra Scientific	R00180	9/9/15	9/10/15	4/30/20	AA
9/23/15	Scandium primary	MSST-150923A	1000 ppm	High Purity Standards	1506438	9/23/15	9/28/15	3/17/17	AM
9/23/15	Yttrium primary	MSST-150923B	1000 ppm	High Purity Standards	1507112	9/23/15	9/28/15	3/17/17	AM
9/28/15	Lead secondary	MSST-150928A	1000 ppm	Ultra Scientific	CM-3389	9/28/15		7/3/22	AM
10/29/15	Calcium	MSST-151029A	10000 ppm	Ultra Scientific	CM-4634	10/29/15 ~~9/30/22~~	11/2/15	9/30/22	Am
10/29/15	Manganese	MSST-151029B	1000 ppm	Ultra Scientific	CM-2432	10/29/15	10/29/15	6/30/22	Am
10/29/15	Thallium	MSST-151029C	1000	Ultra Scientific	CM-1100	10/29/15		4/30/22	Am
11/10/15	Iron	MSST-151102A	10000 ppm	High Purity Standards	1524703	11/2/15	11/23/15	4/28/17	Am
11/10/15	Strontium	MSST-151102B	1000 ppm	High Purity Standards	1429002	11/2/15	↓	4/28/17	Am
11/10/15	Bismuth	MSST-151102C	1000 ppm	High Purity Standards	1404513	11/2/15	11/23/15	4/28/17	Am
11/10/15	Lithium	MSST-151102D	1000 ppm	High Purity Standards	1516729	11/2/15	↓	↓	
12/11/15	Titanium	MSST-151207A	1000 ppm	High purity standards	1510001	12/7/15	4/5/16	6/1/17	Am
12/11/15	Cadmium	MSST-151207B	1000 ppm	High purity standards	1512903	12/7/15	↓	6/1/17	Am

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
12/11/15	Arsenic	MSST-151207C	1000 ppm	High Purity Standards	1500712	12/7/15	12/15/15	6/1/18	Am
	Cobalt	MSST-151207D	1000 ppm		1425215	12/7/15		6/1/18	
	Zinc	MSST-151207E			1403401			6/1/17	
	Beryllium	MSST-151207F			1412111				
	Nickel	MSST-151207G			1512402				
	Barium	MSST-151207H			1431507				
	Antimony	-151207I			1520412				
	Copper	-151207J			1403501				
	Selenium	151207K			1427632				
	Silver	151207L			~~1527709~~ 1527902 Am 12/8/15				
	Tin	151207M			1516806				
	lead	151207N			1513919				
	Vanadium	151207O			1420604				
	Thallium	151207P			1523215				
	Silicon	151208Q			1528501				
	Potassium	151207R	10000 ppm		1512614				
	Sodium	151207S			1526616				
	Aluminum	151207T			1526032				
	Calcium	151207U			1527523				

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact	Initials
2/11/17	Magnesium	MSST-1512076	10000 ppm	High Purity Standards	1510445	12/7/15	6/5/15	6/1/17	Am
1/29/16	Boron (2°)	MSST-160129A	10000 ppm	Ultra Scientific ~~Ultra Grade~~ MI 1/29/16	[illegible]124A	1/29/16	2/1/16	12/31/21	MI
↓	Vanadium (2°)	MSST-160129B	10000 ppm	Ultra Scientific	[illegible]	1/29/16	2/1/16 ~~11/30/22~~ MI 2/1/16	11/30/22	MI
1/23/16	Boron (1°)	MSST-160323A	5000 ppm	High Purity Standards	15[illegible]	3/23/16	6/6/16	9/16/17	MI
↓	Scandium (1°)	↓ B	1000 ppm	↓	1604311	↓	3/23/16	↓	↓
↓	Yttrium (1°)	↓ C	↓	↓	1524022	↓	↓	↓	↓
4/20/16	Calcium (1°)	MSST-160420A	10000 ppm	High Purity Standards	1606907	4/20/16	5/23/16	10/18/17	MO
↓	Magnesium (1°)	↓ B	↓	↓	1531412	↓	5/3/16	↓	↓
↓	Aluminum (1°)	↓ C	↓	↓	1605734	↓	5/23/16	↓	↓
↓	Cadmium (1°)	↓ D	1000 ppm	↓	1582227	↓	6/6/16	↓	↓
↓	Boron (1°)	↓ E	5000 ppm	↓	1524418	↓		↓	↓
4/25/16	Magnesium (2°)	MSST-160425A	10000 ppm	Ultra Scientific	CM-4445	4/25/16	5/30/16	7/30/22	MO
↓	Chromium (2°)	↓ B	1000 ppm	↓	R01377	4/25/16	↓	1/31/21	↓
5/30/16	Molybdenum (2°)	MSST-160530A MI 5/30/16	1000 ppm	Ultra Scientific	RM07695	5/30/16 ~~4/21/23~~ MO 5/30/16	5/30/16	1/31/23	MO
↓	Zinc (2°)	MSST-160530B	1000	↓	RM07777	↓	↓	8/31/22	↓
↓	Arsenic (2°)	MSST-160530C	1000	↓	CM-3990	↓	↓	8/31/22	↓
↓	Cadmium (2°)	MSST-160530D	↓	↓	RM-07888	↓	↓	8/31/21	↓
↓	Copper (2°)	MSST-160530E	↓	↓	CP-1013	↓	↓	4/30/23	↓
↓	Silver (2°)	MSST-160530F	↓	↓	CM-1594	↓	↓	5/31/22	↓

Date	Stock STD							Exp Date	
	STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Stock/Manufact.	Initials
8/16	Tellurium (1°)	MSST-160608A	1000 ppm	High Purity Standards	1528101	6/8/16	6/8/16	12/7/17	AM
8/16	Tellurium (2°)	MSST-160608B	1000 ppm	CPI International	165110	6/8/16	6/8/16	12/6/17	AM
29/16	Cobalt (2°)	MSST-160629A	1000 ppm	Ultra Scientific	T00692	6/29/16	7/1/16	7/31/21	MET
1/16	Gallium (2°)	MSST-160701A	1000 ppm	Ultra Scientific	CM-60789	7/1/16		12/31/22	MET
↓	Scandium (2°)	↓ B	↓	↓	CL-3201	7/1/16		9/30/2021	↓
5/16	Scandium (1°)	MSST-160705A	1000 ppm	High Purity Standards	16173333	7/5/16		12/28/17	MG
	Gallium (1°)	MSST-160705B	↓	↓	1517715	↓		12/28/17	↓
6/16	Molybdenum	MSST-160906A	1000 ppm	High Purity Standards	1609722	9/6/16	9/9/16	~~2/28/18~~ 2/28/18	MG
	Chromium	MSST-160906B	1000 ppm		1530127		9/9/16	2/28/18	
	Silver	MSST-160906C			1621839			2/28/18	
	Scandium	MSST-160906D			16133333			2/28/18	
	Yttrium	MSST-160906E			1620524			2/28/18	
	Magnesium	MSST-160906F	10,000 ppm		1510445		12/6/16	2/28/18	
	Iron	MSST-160906G			1618214			2/28/18	
	Aluminum	MSST-160906H			1619320			2/28/18	
	Calcium	MSST-160906I			1620901			2/28/18	
9/30/16	Calcium	MSST-160930A	10000 ppm	Ultra Scientific	CP 4462	9/30/16	12/1/16	9/30/2023	MI
12/2/16 ↓	Bismuth	MSST-160931B	1000 ppm	↓	CP 4838	↓		10/31/2023	↓
20/16	~~Terms 15~~ 1 Manganese	MSST-161020A	10000 ppm	High Purity Stds	1614132	10/20/16	10/09/16	4/19/18	MG

MG 10/20/16

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-140530A	Cerium - 10 ppm	10 ppm	High Purity Stds	1321107	5/3/14	11/4/14	5/23/2015		mi
2MSST-140530B	ICP-MS Internal Standard 1	10 ppm	↓	1333708	5/30/14	6/13/14	5/23/2015		mi
2MSST-140630A	ICP-MS Major Cations	50 ppm	ERA	111013	6/30/14	11/1/14	4/2016	~~Exp 11/1/16~~ 6/30/14	mi
2MSST ~~2MSS~~ mi 9/9/14 -140801A	ICP-MS Internal Standard 1	10 ppm	High Purity Stds	1333708	8/18/14	11/1/14	7/29/15		mi
2MSST-141025A	ICP-MS trace metals	10 ppm	ERA	170913	10/23/14	11/1/14	3/2016	~~Exp 11/1/15~~ 10/25/14	mi
2MSST-150310A	Mercury	1000 ppm	High Purity Stds	1434315	3/10/15	4/15/15	9/10/16		mi
2MSST-150413A	Tune Solution AA tuning 1	multi-element for analyzer	Agilent	121-1047112	4/13/15	4/13/15	7/31/16		mi
↓ B	↓ 2	↓	↓	↓	↓	↓	↓		↓
2MSST-150601A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	6/1/15	6/1/15	5/26/16		mi
2MSST-150907A	ICP-MS Internal Std 1	10 ppm	High Purity Std	1420416	9/7/15	9/7/15	9/29/16		mi
↓ B	Gallium	1000 ppm	High Purity Std	1506202	↓	↓	1/7/17		↓
2MSST-151019A	Uranium - 1000 ppm	1000 ppm	High Purity Std	1410530	10/~~20~~ 19/15 mi 10/19/15	10/19/15	4/16/17		mi
2MSST-151207A	ICP-MS Internal Standard 1	10 ppm	High Purity Std.	1509020	12/7/15	4/1/16	12/1/16		Am
2MSST-151207B	Cerium	10 ppm	High Purity Std	1504927	12/7/15	5/3/16	7/7/16		mei
2MSST-151207C	ICP-MS Major Cations	50 ppm	ERA	140714	12/7/15	4/1/16	1/2017		mei
↓ D	ICP-MS Trace Metals	10 ppm	↓	351214	↓	↓	7/2017		↓
2MSST-160420A	ICPMS Internal Standard 1	10 ppm	High Purity Stds	19 1509020 mei 4/20/16	4/20/16	4/20/16	4/18/17		mei
2MSST-160906A	ICPMS Major Cations	50 ppm	ERA	140714	9/6/16	12/6/16	8/2017		MG
2MSST-160906B	ICPMS Trace Metals	10 ppm	ERA	201215	9/6/16	12/6/16	7/2018		MG

Advanced Technology Laboratories-Las Vegas
Logbook #1

MERCURY Stock Standard Log

Stock STD							Exp Date		
Stock Std Code	STD Name	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Manufacturer	Comments	Initials
2MSST-160906C	Mercury	1000 ppm	High Purity Standard	1612621	9/6/16	9/12/16	2/28/16		MG
2MSST-161020A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	10/20/16	12/14/16	10/19/17		MG
2MSST-170103A	ICP-MS-IS-1	10000 ppm	High Purity Stds	1617326	1/3/17	1/7/17	12/27/17		MG
2MSST-170103B	Germanium	1000 ppm	High Purity Stds	1623822	1/3/17	1/7/17	6/27/18		MG

Advanced Technology Laboratories-Las Vegas
Logbool #1

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)	
9/12/16	LLICV / LLCCV Solution A	2MWST - 160906C	MSST - 151207N (Pb)	1000 ppm	1.0 ml	1
↓	↓	↓	2MSST - 151019A (U)	↓	0.5 ml	
			MSST - 150518A (Mo)	10000 ppm	0.05 ml	
			MSST - 151207O (V)	1000 ppm	1.0 ml	
			↓ E (Zn)	↓	10. ml	5
			MSST - 160420C (Al)	10000 ppm	1 ml	
			MSST - 151102A (Fe)	↓	↓	
	LLICV / LLCCV Working Solution	2MWST - 160906D	2MWST - 160906C	0.1/0.5/1.0/10 ppm	1 ml	
	↓	↓	2MWST - 160801B	1/50 ppm	↓	
↓	↓	↓	2MWST - 160602A	10 ppm	5 ml	10
9/12/16	Hg 500 ppb (1°)	2MWST - 160912A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	2MWST - 160912B	2MSST - 140113A	↓	↓	
10/1/16	ICSA (100 ppm NaKCaMg)	2MWST - 161001A	2MWST - 160606A	1000 ppm	5 ml	
10/1/16	ICSA (100 ppm NaKCaMg)	↓	MSST - 160420A/B (Ca/Mg)	10000 ppm	10 ml	
↓	↓	↓	MSST - 151207R/S Na/K	↓	↓	15
10/12/16	Hg 500 ppb (1°)	2MWST - 161012A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	2MWST - 161012B	2MSST - 140113A	↓	↓	
11/08/16	Hg 500 ppb (1°)	2MWST - 161108A	2MSST - 160906C	1000 ppm	0.05 ml	
↓	Hg 500 ppb (2°)	↓ B	2MSST - 140113A	↓	↓	
11/9/16	ICV / LCS / MS / MSD / LCSD Solution A	2MWST - 161109A	MSST - 160720D (Cd)	1000 ppm	1.0 ml	20

MCJ 11/9/16 MCJ 11/9/16

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1 ppm	2.5% HNO_3	Omnitrace	55259	11/8/16	6/1/17		MET
↓	0.5 ppm	↓	↓	↓	↓	4/16/17		↓
↓	↓	↓	↓	↓	↓	11/8/16		↓
↓	1 ppm	↓	↓	↓	↓	6/1/17		↓
↓	10 ppm	↓	↓	↓	↓	↓		↓
↓	↓	↓	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	4/28/17		↓
1000 ml	0.1/0.5/1.0/10/50 ppb	1% HNO_3 0.5% HCl	Omnitrace	55259/55006	11/8/16	11/8/16		↓
↓	↓	↓	↓	↓	↓	2/1/17		↓
↓	50 ppb	↓	↓	↓	↓	12/6/16		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS ~~Baker~~ MT 9/16/16	56032/56120	10/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
1000 ml	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	55259/55006	12/6/16	12/6/16		MET
↓	100 ppm	1% HNO_3 0.5% HCl	↓	↓	↓	10/18/17		↓
↓	↓	↓	↓	↓	↓	10/1/17		↓
100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS	56032/56120	11/12/16	2/28/18		MET
↓	↓	↓	↓	↓	↓	3/31/19		↓
MT 11/8/16 100 ml	500 ppb	2% HNO_3, 4% HCl	GR ACS		12/08/16	2/28/18		MET
↓	↓	↓	↓		↓	3/31/19		↓
1000 ml	1/10 ppb	1% HNO_3, 0.5% HCl	Omnitrace	55259/55006	4/28/18 ~~11/8/16~~ ~~5/9/17~~ MET 11/9/16	10/18/17		MET

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc.
3731 W. Post Rd. Las Vegas NV 89118 Tel 702 307 2659 Fax 702 307 2691
83 of 101
Logbook #2
ICPMS &Hg WK Std Log
703

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	10V/LS/LSD/MS/MSD Solution A	2MSST-161109A	MSST-151207C (Ts)	1000 ppm	1 mL
			D (Co)		
			E (Zn)		
			F (Be)		
			G (Ni)		
			H (Ba)		
			J (Cu)		
			K (Se)		
			P (Th)		
			N (Pb)		
			O (V)		
			I (Sb)		
			MSST-160907A (Cr)		
			B (Mo)		
			MSST-160420A (Mn)	10000 ppm	
			MSST-151207B (Na)		
			I (K)		
			MSST-160420C (Al)		
			MSST-160420A (Ca)		
			MSST-160420B (Mg)		

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1/10 ppm	1% HNO_3 0.5% HCl	omnitrace	55259/55000	4/28/17 ~~6/9/17~~ 11/9/16	10/18/17		MT
						6/1/17		
						10/28/18		
						4/19/18		
						6/1/17		
						10/18/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Logbook #2
ICPMS &Hg WK Std Log

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
11/9/16	ICV/LCS/MS/MSD/LCSD Solution A	2MUST-161109A	MSST-151102A (Fe)	10000 ppm	1 ml
	ICV 10/100 ppb	2MUST-161109B	2MUST-161109A	1/10 ppm	5 ml
			2MUST-160606D	1	
			F	1	
			2MUST-160501A	10/100	10 ml
			2MUST-~~1602~~ 160606A	10 ppm	5 ml
	LLICV/LLCW Solution A	2MUST-161109C	MOT 11/9/16 MSST-151207C (As)	1000 ppm	0.10 ml
			F (Be)		0.50 ml
			O (Co)		
			K (Se)		
			MSST-160906A (Mo)		
			MSST-151207L (Ag)		
			MSST-160420D (Cd)		
			MSST-151207I (Sb)		
			P (Tl)		
			MSST-160906B (Cr)		1.0 ml
			MSST-~~1~~151207G (Ni)		
			MOT 11/9/16 H (Ba)		
			J (Cu)		
			MSST-151207N (Pb)		

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	1/10 ppm	1% HNO3 0.5% HCl	Omnitrace	55259/55000	4/28/17	4/28/17		MEJ
500 ml ~~ppm~~ MEJ 11/9/16	10/100 ppb				12/6/16	4/28/17		
						12/6/16		
						2/1/17		
	50 ppb	~~0.1 ppm~~ MEJ 11/9/16				12/6/16		
1000	0.1 ppm	~~0.1 ppm~~			4/16/17 ~~4/28/17~~ MEJ 11/9/16	6/1/~~17~~ 17 MEJ 11/9/16		
	0.5 ppm							
						2/28/18		
						6/1/17		
						10/18/17		
						6/1/17		
	1.0 ppm					2/28/18		
						6/1/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

1. Act | 2. InAct

INDEX

8570	HYDROCHLORIC
8569	HYDROCHLORIC
8568	HYDROCHLORIC
8567	HYDROCHLORIC
8566	HYDROCHLORIC
8565	HYDROCHLORIC
8564	HYDROCHLORIC
8563	NITRIC ACID
8562	NITRIC ACID
8561	NITRIC ACID
8560	NITRIC ACID
8559	NITRIC ACID
8558	NITRIC ACID
8557	HYDROGEN PER
8556	Silica Gel Cartrid
8555	Silica Gel Cartrid
8554	Silica Gel Cartrid
8553	Silica Gel Cartrid
8552	
8551	BOILING STONE
8543	NITRIC ACID
8542	NITRIC ACID
8541	Potassium Persu
8540	SAND
8539	SAND
8535	STANNOUS CHL

3487 Records

Bottle #: 8570 Chemical: HYDROCHLORIC ACID ☑ Active

Received:	8/15/2016	Expires:	12/6/2018
Synonyms:	MURIATIC ACID	Status:	New
Formula:	HCL	CAS #:	7647-01-0
Location:	Inorganics	Formula Wt:	36.46
8 Vendor:	OmniTrace	Lot #:	52250
		Catalog #	HX0607-4
		Conc/Purity:	34-37%
		Amount:	2.5
		Units:	L
		Notes:	

Merck Index:

Add to Reagents database

1 of 1. RECEIVED ON 8/15/16

1. Act | 2. InAct

INDEX

8736	NITRIC ACID
8735	Sodium Sulfate, A
8734	DICHLOROMETH
8733	DICHLOROMETH
8732	DICHLOROMETH
8731	DICHLOROMETH
8730	DICHLOROMETH
8729	DICHLOROMETH
8728	DICHLOROMETH
8727	DICHLOROMETH
8726	DICHLOROMETH
8725	DICHLOROMETH
8724	DICHLOROMETH
8723	DICHLOROMETH
8722	SODIUM HYDRO
8721	DICHLOROMETH
8720	DICHLOROMETH
8719	DICHLOROMETH
8718	DICHLOROMETH
8717	DICHLOROMETH
8716	DICHLOROMETH
8715	DICHLOROMETH
8714	DICHLOROMETH
8713	DICHLOROMETH
8712	DICHLOROMETH
8711	DICHLOROMETH

3487 Records

Bottle #: 8736 Chemical: NITRIC ACID ☑ Active

Received:	11/23/2016	Expires:	12/6/2018
Synonyms:		Status:	New
Formula:	HNO3	CAS #:	7697-37-2
Location:	Inorganics	Formula Wt:	63.01
8 Vendor:	Emd	Lot #:	56176
		Catalog #	NX0407-02
		Conc/Purity:	68.0-70.0%
		Amount:	2.5
		Units:	L
		Notes:	

EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:

Merck Index:

Add to Reagents database

1 of 2, Opened:12/6/16

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
/16	LLICV / LLCCV Solution A	2MUST-161109C	2MSST-151079A (U)	1000 ppm	0.5 ml
			MSST-161020A (Mn)	10000 ppm	0.05 ml
			MSST-151201Q (V)	1000 ppm	1.0 ml
			↓ E (Zn)	↓	10 ml
			MSST-160420C (Al)	10000 ppm	1.0 ml
	↓	↓	MSST-151102A (Fe)	↓	↓ ml
	LLICV / LLCCV Working Solution	2MUST-161109D	2MUST-161104C	0.1/0.5/1.0/10 ppm	1 ml
	LLICV / LLCCV Working Solution		2MUST-160801B	1/50 ppm	↓
↓	↓	↓	2MUST-160606A	10 ppm	5 ml
/16 MC 11/9/16	~~ICSAB~~ 11/9/16				
/16	MIX Internal Standard A	2MUST-161206A	2MSST-161020A	10000 ppb	500 ml
	↓	↓	↓	1000 ppm	5
	50 ppb IS in 2000 ml 1/20	2MUST-161206B	2MUST-161206A	~10 ppm	12.5
	ICAL (Si Sn Ti Sr B)	2MUST-161206C	MSST-151207Q	10000 ppm	10
			↓ M		
			↓ A		
			MSST-151102B	↓	↓
	↓	↓	MSST-160723A MC 12/6/16	5000	20
	ICAL (200/2000 ppb)	2MUST-161206D	2MSST-160906A/B	50/10 ppm	40/20
↓	↓	↓	2MUST-161206C	10/100	20 ml

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000 ml	0.5 ppm	1% HNO_3, 0.5% HCl ~~Omnitrace~~ MEJ 11/9/16	Omnitrace	53259/53009/6 MEJ 11/9/16	4/16/17	4/16/17		MEJ
						4/19/18		
	1 ppm					6/1/17		
	10 ppm							
						10/18/17		
						4/28/17		
1000 ml	0.1/1.0/0.5 10/50 ppb				12/6/16	4/16/17		
						2/1/17		
						12/6/16		
500 ml	~ 10 ppm				1/7/17	10/19/17		MEJ
						1/7/17		
2000	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	53250/56176	MEJ 12/6/16 1/7/17	1/7/17		
1000	100				4/28/17	6/1/17		
	10							
						4/28/17		
						9/16/17		
1000	200/2000				1/7/17	7/2018, 8/2017		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Advanced Technology Laboratories, Inc. 3151 W. Post Rd. Las Vegas, NV 89118 Tel 702-307-2659 Fax 702-307-2691

89 of 101

Logbook #2
ICPMS &Hg WK Std Log

711

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/6/16	ICAL (200/2000 ppb)	2MWST-161206D	2MWST-161206A	10 ppm	5 ml
	ICV/LCS/LCSD/MS/MSD Solution C	2MWST-161206E	~~2~~ MSST-151207L (A) MT 12/6/16	10000 MT 12/6/16	1.0
	ICV/LCS/LCSD/MS/MSD Solution D	2MWST-161206F	2MSST-151019A (U)	↓	↓
	ICV	2MWST-161206G	2MWST-161109A	1/10 ppm	5 ml
	↓	↓	2MWST-160801A	↓	10
			2MWST-161206E		5
			↓ F	↓	↓
	↓	↓	2MWST-161206A	10 ppm	↓
	LLICV/LLCV Working Solution	2MWST-161206H	2MWST-161109C	0.1/0.5/1.0/10 ppm	1 ml
	↓	↓	2MWST-160801B	1/50 ppm	
	↓	↓	2MWST-161206A	10 ppm	5 ml
	ICSA	2MWST-161206I	MSST-160906F/~~G/H~~/I MT 12/6/16	10,000	10
	↓	↓	MSST-151207R/S		
	↓	↓	2MWST-161206A	10 ppm	5
	ICSAB	2MWST-161206J	MSST-160906F/I	10,000	10
	↓	↓	MSST-151207R/S	↓	↓
			2MWST-161206A	10	5
			2MSST-160906B	10/100	2 ml
↓	↓	↓	2MWST-161206C	↓	↓

PREPARATION INFORMATION

Final Vol. (ml)	Final Conc. (ug/ml)	Solvent: Solvent	Solvent: Supplier	Solvent: Lot #	Exp Date *: Working STD	Exp Date *: Manufacturer	Comments	Initial
1000	50 ppb	1% HNO_3 / 0.5% HCl	Omnitrace	52250/56174	1/7/17	1/7/17		MET
1000	1 ppm				6/6/17	6/1/17		
1000	1 ppm				4/16/17	4/16/17		
500	10/100				1/7/17	4/28/17		
						2/1/17		
						6/1/17		
						4/16/17		
	50					1/7/17		
1000	0.1/0.5/1.0 10/50 ppb				1/7/17	4/16/17		
						2/1/17		
	50 ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
1000	100 ppm				1/7/17	2/28/18		
						6/1/17		
	50 ppb					1/7/17		
	20/200					7/2018		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION: Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
12/5/16	Hg Std ppb (2°)	2MUST-161203B	2MSST 140113A	1000 ppm	0.05 mL
1/7/17	Mix Internal Standard A	2MUST-170107A	2MSST-170103A	10000 ppm	500 mL
↓	↓	↓	↓ B	1000 ppm	5 mL
	50 ppb IS in 2000 mL H_2O	2MUST-170107B	2MUST-170107A	10 ppm	12.5 mL
	ICAL (200/2000 ppb)	2MUST-170107C	2MSST-160906A/B	50/10 ppm	40/20
	↓	↓	2MUST-161206C	10/100	20
	↓	↓	2MUST-170107A	10 ppm	5 mL
	ICV/LCS/LCSD/MS/MSD Solution B	2MUST-170107D	MSST-151207M (Sn)	1000 ppm	10 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	↓
	↓	↓	MSST-160129A (B)	10000	mL
	LLICV/LLCCV Solution B	2MUST-170107E	MSST-151207M (Sn)	1000 ppm	1 mL
	↓	↓	↓ Q (Si)	10000	↓
	↓	↓	↓ A (Ti)	1000	5 mL
	↓	↓	MSST-160129A (B)	10000	↓
	ICV (10/100 ppb)	2MUST-170107F	2MUST-161109A	1/H 100 ppm	5 mL
	↓	↓	2MUST-170107D	↓	10 mL
	↓	↓	2MUST-161206E	↓	5 mL
	↓	↓	2MUST-161206F	↓	↓
↓	↓	↓	~~2MSST~~ 2MUST-170107A MET 1/7/17	10 ppm	MET 1/7/17 ↓

PREPARATION INFORMATION								
Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
		Solvent	Supplier	Lot #	Working STD	Manufacturer		
100 ml	500 ppb	2% HNO_3 4% HCl	GR ACS	56032/56120	1/8/17	3/31/19		MEM
500 ml	~ 10 ppm				7/7/17	12/27/17		MEM
↓	↓					6/27/18		
2000 ml	50 ppb	~~2%~~ 0.5% HNO_3 ~~4%~~ HCl MEM 1/7/17	~~GR ACS~~ Omnitrace 1/7/17 MEM	56032/56120	7/7/17	7/7/17		
1000	200/2000				4/28/17	7/2018 / 8/2017		
	↓					4/28/17		
	50 ppb					7/7/17		
1000	10/100 ppm	2.5% HNO_3			6/1/17	6/1/17		
						12/31/21		
1000	1 ppm	2.5% HNO_3			6/1/17	6/1/17		
	50 ppm					12/31/21		
500	10/100 ppb	1% HNO_3, 0.5% HCl			4/16/17	4/28/17		
						6/1/17		
						6/6/17		
						4/16/17		
						7/7/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

Date	STD Name	Working STD Code	STOCK INFORMATION Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
1/7/17	LLCV/ LLCCV Working Solution	2MWST-170107 G	2MWST-1601109C	0.1/0.5/1/10 ppm	1 ml
			MET 1/7/17 2MWST-170107 E	1/50	
			2MWST-170107 A	10	5 ml
	ICSA	2MWST-170107 H	MSST-160906 F/I	10000 ppm	10
			MSST-151207 R/S		
			2MWST-170107 A	10 ppm	5
	ICSAB	2MWST-170107 I	MSST-~~170107A~~ 160906 F/I	10000 ppm	10
			MET 1/7/17 MSST-151207 R/S		
			2MWST-170107 A	10 ppm	5
			2MSST-160906 B	10/100	2 ml
			2MWST-161206 C		

PREPARATION INFORMATION								
Final Vol.	Final Conc.	Solvent			Exp Date *			
(ml)	(ug/ml)	Solvent	Supplier	Lot #	Working STD	Manufacturer	Comments	Initial
1000	0.1/0.5/1.0 10/50ppb	0.5% HCl, 1% HNO3	Omnitrace	5C032/5C120	4/16/17	4/16/17		MEI
						6/1/17		
						7/7/17		
1000	100 ppm				6/1/17	2/28/18		
						6/1/17		
	50 ppb					7/7/17		
1000	100 ppm				4/28/17	2/28/18		
						6/1/17		
	50 ppm					7/7/17		
	20/200					7/20/8		
						4/28/17		

* Working std expiration date must not exceed the manufacturer's expiration date.

February 24, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023028

RE: PG&E Topock - BCW, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 09, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Lucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *24-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - BCW, RC000753.0801
Lab Order: N023028

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N023028-002 and N023028-003 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium on QC sample N023028-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *24-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - BCW, RC000753.0801
Lab Order: N023028
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023028-001A	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001B	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001C	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001D	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-002A	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002B	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002C	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002D	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-003A	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003B	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003C	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003D	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_170213F** QC Batch: **61245** PrepDate **2/13/2017** Analyst: **LR**							
Total Dissolved Solids (Residue, Filterable)	1700	25	25		mg/L	1	2/13/2017 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170213F**	QC Batch: **61245**				PrepDate	**2/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	2/13/2017 12:48 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170213F**	QC Batch: **61245**				PrepDate	**2/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1600	20	20		mg/L	1	2/13/2017 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-61245	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/13/2017	RunNo:	113497
Client ID:	LCSW	Batch ID:	61245	TestNo:	SM2540C			Analysis Date:	2/13/2017	SeqNo:	2565504

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	963.000	10	1000	0	96.3	80	120				

Sample ID	MB-61245	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/13/2017	RunNo:	113497
Client ID:	PBW	Batch ID:	61245	TestNo:	SM2540C			Analysis Date:	2/13/2017	SeqNo:	2565505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N023040-010EDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	2/13/2017	RunNo:	113497
Client ID:	ZZZZZZ	Batch ID:	61245	TestNo:	SM2540C			Analysis Date:	2/13/2017	SeqNo:	2565515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4590.000	50						4570	0.437	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	160	1.3	4.0		µg/L	20	2/13/2017 05:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	2/20/2017 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	60	0.66	2.0		µg/L	10	2/13/2017 05:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	60	0.019	1.0		µg/L	1	2/20/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	160	1.3	4.0		µg/L	20	2/13/2017 05:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	2/20/2017 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113519** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **PBW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113519** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **LCSW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **N023014-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.605	1.0	25.00	30.58	100	90	110				

Sample ID **N023014-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.416	1.0	25.00	30.58	99.3	90	110	55.60	0.340	20	

Sample ID **N023014-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4478	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023014-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0	105	90	110				

Sample ID **N023014-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.798	1.0	5.000	0	96.0	90	110				

Sample ID **N023014-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.464	1.0	5.000	6.104	107	90	110				

Sample ID **N023029-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.306	0.20	1.000	1.227	108	90	110				

Sample ID **N023029-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1020.970	20	500.0	546.6	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023029-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.565	0.20						0.5703	0.969	20	

Sample ID **N023029-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.533	0.20	1.000	0.5703	96.3	90	110				

Sample ID **N023029-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.845	0.20	1.000	3.817	103	90	110				

Sample ID **N023029-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N023028-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.272	4.0	100.0	155.5	98.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023028-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.465	2.0	50.00	59.62	99.7	90	110				

Sample ID **N023028-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.302	4.0	100.0	156.8	103	90	110				

Sample ID **N023029-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	426.040	10	250.0	175.9	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61257	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	PBW	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-61257	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	LCSW	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID	N022998-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID	N022998-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/14/2017	RunNo:	113617
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	98	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R113434** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **LCSW** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.409	5.0	100.0	0	103	85	115				

Sample ID **MB-R113434** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **PBW** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	138.636	5.0						139.8	0.816	30	

Sample ID **N023028-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	198.864	5.0	100.0	97.73	101	75	125				

Sample ID **N023028-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	197.727	5.0	100.0	97.73	100	75	125	198.9	0.573	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.60	0.0090	0.10		mg/L	1	2/13/2017 11:39 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	720	0.72	100		mg/L	200	2/13/2017 01:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	250	0.64	25		mg/L	50	2/13/2017 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.63	0.018	0.20		mg/L	2	2/13/2017 11:55 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	530	0.72	100		mg/L	200	2/13/2017 02:58 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	190	0.64	25		mg/L	50	2/13/2017 03:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.86	0.018	0.20		mg/L	2	2/13/2017 12:41 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	610	0.72	100		mg/L	200	2/13/2017 04:00 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	260	0.64	25		mg/L	50	2/13/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R113515_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **LCS-R113515_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.169	0.10	1.250	0	93.5	90	110				

Sample ID **N023028-002CMS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.969	0.20	2.500	0.6264	93.7	80	120				

Sample ID **N023028-002CMSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.005	0.20	2.500	0.6264	95.1	80	120	2.969	1.18	20	

Sample ID **N023028-003CDUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.832	0.20						0.8624	3.54	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R113515_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.169	0.50									

Sample ID **LCS-R113515_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.058	0.50	2.000	0	103	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1607.660	100	400.0	1173	109	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1593.400	100	400.0	1173	105	80	120	1608	0.891	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	721.740	100						724.1	0.324	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R113515_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R113515_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.002	0.50	4.000	0	100	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	616.385	25	200.0	402.3	107	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	608.870	25	200.0	402.3	103	80	120	616.4	1.23	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	244.785	25						245.4	0.263	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	5.8	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate		**2/17/2017**	Analyst: **CEI**
Boron	760	38	100		ug/L	1	2/17/2017 06:49 PM
Calcium	110000	28	500		ug/L	1	2/17/2017 06:49 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 06:49 PM
Magnesium	28000	4.4	100		ug/L	1	2/17/2017 06:49 PM
Sodium	440000	290	12000		ug/L	25	2/20/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate	**2/17/2017**		Analyst: **CEI**
Boron	500	38	100		ug/L	1	2/17/2017 07:14 PM
Calcium	120000	28	500		ug/L	1	2/17/2017 07:14 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 07:14 PM
Magnesium	19000	4.4	100		ug/L	1	2/17/2017 07:14 PM
Sodium	290000	120	5000		ug/L	10	2/20/2017 02:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate		**2/17/2017**	Analyst: **CEI**
Boron	870	38	100		ug/L	1	2/17/2017 07:19 PM
Calcium	120000	28	500		ug/L	1	2/17/2017 07:19 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 07:19 PM
Magnesium	18000	4.4	100		ug/L	1	2/17/2017 07:19 PM
Sodium	390000	290	12000		ug/L	25	2/20/2017 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61303** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **PBW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	39.299	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-61303** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **LCSW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4607.917	100	5000	0	92.2	85	115				
Calcium	9124.368	500	10000	0	91.2	85	115				
Iron	100.500	20	100.0	0	100	85	115				
Magnesium	9379.930	100	10000	0	93.8	85	115				

Sample ID **N023028-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5624.852	100	5000	760.2	97.3	75	125				
Calcium	120234.234	500	10000	111000	92.8	75	125				
Iron	95.904	20	100.0	0	95.9	75	125				
Magnesium	37065.624	100	10000	27870	91.9	75	125				

Sample ID **N023028-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5651.703	100	5000	760.2	97.8	75	125	5625	0.476	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N023028-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121330.232	500	10000	111000	104	75	125	120200	0.907	20	
Iron	96.929	20	100.0	0	96.9	75	125	95.90	1.06	20	
Magnesium	37376.678	100	10000	27870	95.0	75	125	37070	0.836	20	

Sample ID **MB-61303** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **PBW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-61303** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **LCSW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19657.944	500	20000	0	98.3	85	115				

Sample ID **N023028-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	318891.509	5000	20000	294800	120	75	125				

Sample ID **N023028-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	326163.248	5000	20000	294800	157	75	125	318900	2.25	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.7	0.025	0.10		µg/L	1	2/20/2017 01:15 AM
Manganese	ND	0.056	0.50		µg/L	1	2/20/2017 01:15 AM
Molybdenum	3.9	0.039	0.50		µg/L	1	2/20/2017 01:15 AM
Selenium	4.6	0.028	0.50		µg/L	1	2/20/2017 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	2/20/2017 01:51 AM
Manganese	ND	0.056	0.50		µg/L	1	2/20/2017 01:51 AM
Molybdenum	6.1	0.039	0.50		µg/L	1	2/20/2017 01:51 AM
Selenium	4.1	0.028	0.50		µg/L	1	2/20/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Molybdenum	22	0.039	0.50		µg/L	1	2/20/2017 02:04 AM
Selenium	5.4	0.028	0.50		µg/L	1	2/20/2017 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702 307 2659 F: 702 307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219 7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Blows	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mblows@pivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: [illegible] Date: 2/9/17	Sampled By: Jacob Mathing		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for [illegible]		
Project Name: PG&E Topock - BCW	Signature: [illegible] Date: 2/9/17		
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1 Chilled	✓	
Geotracker		RWQCB	✓	2 Headspace		
Labspec		CalTrans		3 Container Intact		
Others	✓	LEVEL III		4 Seal Present		
Specify: RWQCB		LEVEL IV		5 IR number	2	
		Regulatory		6 Method of Cooling: ICE		
Global ID		Specify State: CA		Sample Temp: 1.9°C		

Courier
Tracking No

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Metals Dissolved (6020AFF) As, Mn, HNO3	Metals Dissolved (6020AFF) Ca, Mg, Fe, B, HNO3	Metals Dissolved (6020AFF) Na, Mo, Se, Cr, HNO3	Chloride, Bromide, Sulfate (E300)	Alkalinity (total as CaCo3)	TDS (SM2540C)	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
			Matrix: Ground x, Sediment; Potable, Soil; NPDES, Other Solid; Surface			250 mL poly	2x250 mL poly	500 mL poly	500 mL poly	500 mL poly	1 L poly	1 L poly	1 L Poly	125 mL poly					
1	N023028 - 01	MW-09-Q117	2/9/2017	1339		X		X	X	X	X	X	X	X	E	4	P	BNS	
2	- 02	MW-11-Q117	2/9/2017	1422		X		X	X	X	X	X	X	X	E	4	P	BNS	
3	- 03	MW-10-Q117	2/9/2017	1505		X			X	X	X	X	X	X	E	4	P	BNS	
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/9/17 1600	Jorge Galang	2/9/17 1600
Jorge Galang	2/9/17 2240	Jorge Galang	2/9/17 2240
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Title 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis:
   Less than 24 Hrs +200% Next Day+100% 2 Workdays+50% 3 Workdays+35 % 4 Workdays+20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analyses, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	O=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/9/2017	Workorder:	N023028
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B YR 2/10/2017

Reviewed By: MBC 2/20/2017

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023028

Client ID: ARCUS02

Project: PG&E Topock - BCW, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023028-001A	MW-09-Q117	2/9/2017 1:39:00 PM	2/23/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-001B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-001C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023028-001D			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-002A	MW-11-Q117	2/9/2017 2:22:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-002B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-002C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023028

Client ID: ARCUS02

Project: PG&E Topock - BCW, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023028-002D	MW-11-Q117	2/9/2017 2:22:00 PM	2/23/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-003A	MW-10-Q117	2/9/2017 3:05:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-003B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-003C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023028-003D			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-004A	FOLDER	2/23/2017	2/23/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/23/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - BCW

Project No.: RC000753.801A

ASSET Laboratories Work Order: N023028

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N023028

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-41
Sample Receiving Items	42-46
List of Analysts	47
Raw Data	
SM 2540C	48-58
EPA 218.6	59-199
SM 2320B	200-209
EPA 300.0	210-247
SM 4500-NO3F	248-261
EPA 6010B_Dissolved	262-303
EPA 6020_Dissolved	304-368

February 24, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023028

RE: PG&E Topock - BCW, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 09, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Lucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - BCW, RC000753.0801
Lab Order: N023028

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N023028-002 and N023028-003 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium on QC sample N023028-002B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *24-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - BCW, RC000753.0801
Lab Order: N023028
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023028-001A	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001B	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001C	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-001D	MW-09-Q117	Groundwater	2/9/2017 1:39:00 PM	2/9/2017	2/24/2017
N023028-002A	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002B	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002C	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-002D	MW-11-Q117	Groundwater	2/9/2017 2:22:00 PM	2/9/2017	2/24/2017
N023028-003A	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003B	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003C	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017
N023028-003D	MW-10-Q117	Groundwater	2/9/2017 3:05:00 PM	2/9/2017	2/24/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170213F**	QC Batch: **61245**				PrepDate	**2/13/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	25	25		mg/L	1	2/13/2017 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_170213F** QC Batch: **61245** PrepDate **2/13/2017** Analyst: **LR**							
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	2/13/2017 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_170213F** QC Batch: **61245** PrepDate **2/13/2017** Analyst: **LR**							
Total Dissolved Solids (Residue, Filterable)	1600	20	20		mg/L	1	2/13/2017 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-61245** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/13/2017** RunNo: **113497**
Client ID: **LCSW** Batch ID: **61245** TestNo: **SM2540C** Analysis Date: **2/13/2017** SeqNo: **2565504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	963.000	10	1000	0	96.3	80	120				

Sample ID **MB-61245** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/13/2017** RunNo: **113497**
Client ID: **PBW** Batch ID: **61245** TestNo: **SM2540C** Analysis Date: **2/13/2017** SeqNo: **2565505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N023040-010EDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **2/13/2017** RunNo: **113497**
Client ID: **ZZZZZZ** Batch ID: **61245** TestNo: **SM2540C** Analysis Date: **2/13/2017** SeqNo: **2565515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4590.000	50						4570	0.437	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	1.3	4.0		µg/L	20	2/13/2017 05:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate		**2/14/2017**	Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	2/20/2017 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	60	0.66	2.0		µg/L	10	2/13/2017 05:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	60	0.019	1.0		µg/L	1	2/20/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	160	1.3	4.0		µg/L	20	2/13/2017 05:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	150	0.019	1.0		µg/L	1	2/20/2017 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113519** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **PBW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113519** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **LCSW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **N023014-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.605	1.0	25.00	30.58	100	90	110				

Sample ID **N023014-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.416	1.0	25.00	30.58	99.3	90	110	55.60	0.340	20	

Sample ID **N023014-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4478	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023014-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0	105	90	110				

Sample ID **N023014-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.798	1.0	5.000	0	96.0	90	110				

Sample ID **N023014-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.464	1.0	5.000	6.104	107	90	110				

Sample ID **N023029-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.306	0.20	1.000	1.227	108	90	110				

Sample ID **N023029-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1020.970	20	500.0	546.6	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023029-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.565	0.20						0.5703	0.969	20	

Sample ID **N023029-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.533	0.20	1.000	0.5703	96.3	90	110				

Sample ID **N023029-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.845	0.20	1.000	3.817	103	90	110				

Sample ID **N023029-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N023028-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.272	4.0	100.0	155.5	98.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023028-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.465	2.0	50.00	59.62	99.7	90	110				

Sample ID **N023028-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.302	4.0	100.0	156.8	103	90	110				

Sample ID **N023029-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	426.040	10	250.0	175.9	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	98	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170210A**	QC Batch: **R113434**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	2/10/2017 09:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R113434** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **LCSW** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.409	5.0	100.0	0	103	85	115				

Sample ID **MB-R113434** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **PBW** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	138.636	5.0						139.8	0.816	30	

Sample ID **N023028-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	198.864	5.0	100.0	97.73	101	75	125				

Sample ID **N023028-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **113434**
Client ID: **ZZZZZZ** Batch ID: **R113434** TestNo: **SM 2320 B** Analysis Date: **2/10/2017** SeqNo: **2562770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	197.727	5.0	100.0	97.73	100	75	125	198.9	0.573	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.60	0.0090	0.10		mg/L	1	2/13/2017 11:39 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	720	0.72	100		mg/L	200	2/13/2017 01:57 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	250	0.64	25		mg/L	50	2/13/2017 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.63	0.018	0.20		mg/L	2	2/13/2017 11:55 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	530	0.72	100		mg/L	200	2/13/2017 02:58 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	190	0.64	25		mg/L	50	2/13/2017 03:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Bromide	0.86	0.018	0.20		mg/L	2	2/13/2017 12:41 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Chloride	610	0.72	100		mg/L	200	2/13/2017 04:00 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170213A** QC Batch: **R113515** PrepDate							Analyst: **RAB**
Sulfate	260	0.64	25		mg/L	50	2/13/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R113515_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **LCS-R113515_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.169	0.10	1.250	0	93.5	90	110				

Sample ID **N023028-002CMS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	2.969	0.20	2.500	0.6264	93.7	80	120				

Sample ID **N023028-002CMSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.005	0.20	2.500	0.6264	95.1	80	120	2.969	1.18	20	

Sample ID **N023028-003CDUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.832	0.20						0.8624	3.54	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R113515_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.169	0.50									

Sample ID **LCS-R113515_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.058	0.50	2.000	0	103	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1607.660	100	400.0	1173	109	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1593.400	100	400.0	1173	105	80	120	1608	0.891	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	721.740	100						724.1	0.324	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R113515_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **PBW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R113515_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **LCSW** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.002	0.50	4.000	0	100	90	110				

Sample ID **N022999-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	616.385	25	200.0	402.3	107	80	120				

Sample ID **N022999-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	608.870	25	200.0	402.3	103	80	120	616.4	1.23	20	

Sample ID **N023028-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ZZZZZZ** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	244.785	25						245.4	0.263	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	5.8	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate		**2/17/2017**	Analyst: **CEI**
Boron	760	38	100		ug/L	1	2/17/2017 06:49 PM
Calcium	110000	28	500		ug/L	1	2/17/2017 06:49 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 06:49 PM
Magnesium	28000	4.4	100		ug/L	1	2/17/2017 06:49 PM
Sodium	440000	290	12000		ug/L	25	2/20/2017 02:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate		**2/17/2017**	Analyst: **CEI**
Boron	500	38	100		ug/L	1	2/17/2017 07:14 PM
Calcium	120000	28	500		ug/L	1	2/17/2017 07:14 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 07:14 PM
Magnesium	19000	4.4	100		ug/L	1	2/17/2017 07:14 PM
Sodium	290000	120	5000		ug/L	10	2/20/2017 02:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170217F**	QC Batch: **61303**			PrepDate		**2/17/2017**	Analyst: **CEI**
Boron	870	38	100		ug/L	1	2/17/2017 07:19 PM
Calcium	120000	28	500		ug/L	1	2/17/2017 07:19 PM
Iron	ND	1.8	20		ug/L	1	2/17/2017 07:19 PM
Magnesium	18000	4.4	100		ug/L	1	2/17/2017 07:19 PM
Sodium	390000	290	12000		ug/L	25	2/20/2017 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *24-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61303** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **PBW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	39.299	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-61303** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **LCSW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4607.917	100	5000	0	92.2	85	115				
Calcium	9124.368	500	10000	0	91.2	85	115				
Iron	100.500	20	100.0	0	100	85	115				
Magnesium	9379.930	100	10000	0	93.8	85	115				

Sample ID **N023028-001B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5624.852	100	5000	760.2	97.3	75	125				
Calcium	120234.234	500	10000	111000	92.8	75	125				
Iron	95.904	20	100.0	0	95.9	75	125				
Magnesium	37065.624	100	10000	27870	91.9	75	125				

Sample ID **N023028-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5651.703	100	5000	760.2	97.8	75	125	5625	0.476	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N023028-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121330.232	500	10000	111000	104	75	125	120200	0.907	20	
Iron	96.929	20	100.0	0	96.9	75	125	95.90	1.06	20	
Magnesium	37376.678	100	10000	27870	95.0	75	125	37070	0.836	20	

Sample ID **MB-61303** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **PBW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-61303** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **LCSW** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19657.944	500	20000	0	98.3	85	115				

Sample ID **N023028-002B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	318891.509	5000	20000	294800	120	75	125				

Sample ID **N023028-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/17/2017** RunNo: **113645**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	326163.248	5000	20000	294800	157	75	125	318900	2.25	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 1:39:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.7	0.025	0.10		µg/L	1	2/20/2017 01:15 AM
Manganese	ND	0.056	0.50		µg/L	1	2/20/2017 01:15 AM
Molybdenum	3.9	0.039	0.50		µg/L	1	2/20/2017 01:15 AM
Selenium	4.6	0.028	0.50		µg/L	1	2/20/2017 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 2:22:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**				PrepDate	**2/14/2017**	Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	2/20/2017 01:51 AM
Manganese	ND	0.056	0.50		µg/L	1	2/20/2017 01:51 AM
Molybdenum	6.1	0.039	0.50		µg/L	1	2/20/2017 01:51 AM
Selenium	4.1	0.028	0.50		µg/L	1	2/20/2017 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q117
Lab Order:	N023028	**Collection Date:**	2/9/2017 3:05:00 PM
Project:	PG&E Topock - BCW, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023028-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Molybdenum	22	0.039	0.50		µg/L	1	2/20/2017 02:04 AM
Selenium	5.4	0.028	0.50		µg/L	1	2/20/2017 02:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702 307 2659 F: 702 307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219 7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Blocs	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: [illegible]	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mblocs@pivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax:		
Signature: [illegible] Date: 2/9/17	Sampled By: Jacob Mathing		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for [illegible]		
Project Name: PG&E Topock - BCW	Signature: [illegible] Date: 2/9/17		
Project Number: RC000753.0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1 Chilled	✓	
Geotracker		RWQCB	✓	2 Headspace		
Labspec		CalTrans		3 Container Intact		
Others	✓	LEVEL III		4 Seal Present		
Specify: RWQCB		LEVEL IV		5 IR number	2	
		Regulatory		6 Method of Cooling: ICE		
Global ID		Specify State: CA		Sample Temp: 1.9°C		

Courier
Tracking No

Item No.	Laboratory Work Order No.	Sample ID/Location	Matrix: Ground / Potable / NPDES / Surface / Sediment / Soil / Other Solid	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Metals Dissolved (6020AFF) As, Mn, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Ca, Mg, Fe, B, HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Na, Mo, Se, Cr, HNO3 (500 mL poly)	Chloride, Bromide, Sulfate (E300) (1 L poly)	Alkalinity (total as CaCo3) (1 L poly)	TDS (SM2540C) (1 L Poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023028 - 01	MW-09-Q117		2/9/2017	1339		X		X	X	X	X	X	X	X	E	4	P	BNS	
2	- 02	MW-11-Q117		2/9/2017	1422		X		X	X	X	X	X	X	X	E	4	P	BNS	
3	- 03	MW-10-Q117		2/9/2017	1505		X			X	X	X	X	X	X	E	4	P	BNS	
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[illegible]	2/9/17 1600	Jonga Lang	2/9/17 1600
Jonga Lang	2/9/17 2240	Jonga Lang	2/9/17 2240
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Title 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis:
   Less than 24 Hrs +200% Next Day+100% 2 Workdays+50% 3 Workdays+35 % 4 Workdays+20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analyses, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/9/2017	Workorder:	N023028
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed B YR YR 2/10/2017

Reviewed By: MBC 2/20/2017

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023028

Client ID: ARCUS02

Project: PG&E Topock - BCW, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023028-001A	MW-09-Q117	2/9/2017 1:39:00 PM	2/23/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-001B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-001C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023028-001D			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-002A	MW-11-Q117	2/9/2017 2:22:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-002B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-002C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023028

Client ID: ARCUS02

Project: PG&E Topock - BCW, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023028-002D	MW-11-Q117	2/9/2017 2:22:00 PM	2/23/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-003A	MW-10-Q117	2/9/2017 3:05:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023028-003B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023028-003C			2/23/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			2/23/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			2/23/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			2/23/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023028-003D			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023028-004A	FOLDER	2/23/2017	2/23/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/23/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N023028**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B. EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	SM 2540C, SM 2320B

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61245 **Analyst:** LSR

ASSET #: N023028 **Date Analyzed:** 2/13/2017

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Lilia Ramit Date: 2/15/2017

2nd Level Reviewer Nancy 2/24/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N023028-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.7985 - 61.7287)*1000000}{40}$$
$$= 1745 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 1700 mg/L

Julia Ramit 2/15/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/13/2017 12:48:22**
Prep End Date: **2/14/2017 11:55:00**

Reviewed/ Date: 2/24/2017
Initials/ Date: Lilia Ramit 2/15/2017

Prep Batch **61245** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61245	Water		100	☐	0	0	100	1.000		
MB-61245	Water		100	☐	0	0	100	1.000		
N022631-009A	Water		100	☐	0	0	100	1.000		
N022736-006A	Wastewater		100	☐	0	0	100	1.000		
N023028-001C	Groundwater		40	☐	0	0	100	2.500		
N023028-002C	Groundwater		60	☐	0	0	100	1.667		
N023028-003C	Groundwater		50	☐	0	0	100	2.000		
N023040-003F	Water		60	☐	0	0	100	1.667		
N023040-004F	Water		100	☐	0	0	100	1.000		
N023040-006F	Water		75	☐	0	0	100	1.333		
N023040-010E	Water		20	☐	0	0	100	5.000		
N023040-010E-DU	Water		20	☐	0	0	100	5.000		
N023041-005E	Unknown		40	☐	0	0	100	2.500		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8833	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170118B	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/13/2017 12:48:22**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 2/15/2017

Prep Batch **61245** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit** Prep Factor Units **mL / mL**

Sample ID	Matrix	~~pH~~ Cond	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61245	Water	IW SC170118B	100	☐	0	0	100	1.000		
MB-61245	Water		100	☐	0	0	100	1.000		
N022631-009A	Water	807	100	☐	0	0	100	1.000		
N022736-006A	Wastewater	493	100	☐	0	0	100	1.000		
N023028-001C	Groundwater	3140	100 /40	☐	0	0	100	1.000		
N023028-002C	Groundwater	2330	100 /60	☐	0	0	100	1.000		
N023028-003C	Groundwater	2750	100 /50	☐	0	0	100	1.000		
N023040-003F	Water	2190	100 /60	☐	0	0	100	1.000		
N023040-004F	Water	1495	100	☐	0	0	100	1.000		
N023040-006F	Water	1804	100 /75	☐	0	0	100	1.000		
N023040-010E	Water	5270	100 /20	☐	0	0	100	1.000		
N023040-010E-DU	Water	!	100 /20	☐	0	0	100	1.000		
N023041-005E	Unknown	3860	100 /40	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8833

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/13/17 1248 LL	MB 61245	100	59.9177 59.9180	59.9182 59.9181	
L5	~~N022631-009A~~ LCS 61245	100	74.6185 74.6181	74.7140 74.7144	
L3	N022631-009A	100	75.6369 75.6366	75.7026 75.7029	
L1	N022726-006A	100	76.6688 76.6689	76.7050 76.7053	
M7	N023028-001C	40	61.7290 61.7287	61.7982 61.7985	
M	2C	60	60.6014 60.6012	60.6806 60.6809	
Mm	2C	50	60.7015 60.7011	60.7789 60.7791	
(-)	N023040-003F	60	62.4554 62.4551	62.5503 62.5507	
3	4F	100	54.5596 54.5600	54.6523 54.6524	
D1	6F	75	60.7703 60.7706	60.8520 60.8523	

ASSET Laboratories Silia Ramit 2/15/2017 Logbook#5

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/13/17 C1	N0230940-010E	20	60.8874 60.8877	60.9788 60.9791	
8A	10E DUP	20	60.3597 60.3598	60.4572 60.4516	
7	N0230941-005E	40	60.4690 60.4691	60.6045 60.6048	
Silvia Ramit	2/15/2017				

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
2/14/2017									
MB-61245	100	59.918	59.9181	1	1	1			MBLK
LCS-61245	100	74.6181	74.7144	963	1	963			LCS
N022631-009A	100	75.6366	75.7029	663	1	663	867	0.765	SAMP
N022736-006A	100	76.6689	76.7053	364	1	364	493	0.738	SAMP
N023028-001C	40	61.7287	61.7985	698	2.5	1745	3140	0.556	SAMP
N023028-002C	60	60.6012	60.6809	797	1.66666667	1328.33333	2330	0.570	SAMP
N023028-003C	50	60.7011	60.7791	780	2	1560	2750	0.567	SAMP
N023040-003F	60	62.4551	62.5507	956	1.66666667	1593.33333	2190	0.728	SAMP
N023040-004F	100	54.56	54.6524	924	1	924	1495	0.618	SAMP
N023040-006F	75	60.7706	60.8523	817	1.33333333	1089.33333	1804	0.604	SAMP
N023040-010E	20	60.8877	60.9791	914	5	4570	5270	0.867	SAMP
N023040-010EDUP	20	60.3598	60.4516	918	5	4590	5270	0.871	DUP
N023041-005E	40	60.4691	60.6048	1357	2.5	3392.5	3860	0.879	SAMP

Julia Ramit 2/15/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113519
ASSET #: N023028

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/13/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/19/2017

2nd Level Reviewer 2/22/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N023028-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.7773 * 20$$

$$Cr^{+6}, \mu g/L = 155.55$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 160}$$

rba 2/19/2017

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/13/17 9:43 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/13/17 9:53 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/13/17 10:02 AM	Reported
15	MB-R113519	MBLK	1	Hexavalent Chromium	02/13/17 10:12 AM	Reported
16	LCS-R113519	LCS	1	Hexavalent Chromium	02/13/17 10:24 AM	Reported
17	N023014-006A	SAMP	5	Hexavalent Chromium	02/13/17 10:43 AM	Reported
18	N023014-006AMS	MS	5	Hexavalent Chromium	02/13/17 10:54 AM	Reported
19	N023014-006AMSD	MSD	5	Hexavalent Chromium	02/13/17 11:03 AM	Reported
20	N023014-005A	SAMP	1	Hexavalent Chromium	02/13/17 11:13 AM	Not Reported
21	N023014-005AMS	MS	1	Hexavalent Chromium	02/13/17 11:22 AM	Not Reported
22	N023014-007A	SAMP	1	Hexavalent Chromium	02/13/17 11:32 AM	Not Reported
23	N023014-007AMS	MS	1	Hexavalent Chromium	02/13/17 11:41 AM	Not Reported
24	N023014-008A	SAMP	1	Hexavalent Chromium	02/13/17 11:51 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/13/17 12:00 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/13/17 12:10 PM	Reported
27	N023014-008AMS	MS	1	Hexavalent Chromium	02/13/17 12:19 PM	Reported
28	N023014-009A	SAMP	1	Hexavalent Chromium	02/13/17 12:29 PM	Reported
29	N023014-009AMS	MS	1	Hexavalent Chromium	02/13/17 12:38 PM	Reported
30	N023014-005A	SAMP	5	Hexavalent Chromium	02/13/17 12:48 PM	Reported
31	N023014-005AMS	MS	5	Hexavalent Chromium	02/13/17 12:57 PM	Reported
32	N023014-007A	SAMP	5	Hexavalent Chromium	02/13/17 1:07 PM	Reported
33	N023014-007AMS	MS	5	Hexavalent Chromium	02/13/17 1:16 PM	Reported
34	N023014-008A	SAMP	5	Hexavalent Chromium	02/13/17 1:25 PM	Not Reported
35	N023014-008AMS	MS	5	Hexavalent Chromium	02/13/17 1:35 PM	Not Reported
36	N023028-001A	SAMP	1	Hexavalent Chromium	02/13/17 1:51 PM	Not Reported
37	N023028-002A	SAMP	1	Hexavalent Chromium	02/13/17 2:02 PM	Not Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/13/17 2:12 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/13/17 2:21 PM	Reported
40	N023028-003A	SAMP	1	Hexavalent Chromium	02/13/17 2:30 PM	Not Reported
41	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 2:40 PM	Not Reported
42	N023029-001AMS	MS	1	Hexavalent Chromium	02/13/17 2:49 PM	Reported

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023029-002A	SAMP	100	Hexavalent Chromium	02/13/17 2:59 PM	Reported
44	N023029-002AMS	MS	100	Hexavalent Chromium	02/13/17 3:08 PM	Reported
45	N023029-003A	SAMP	100	Hexavalent Chromium	02/13/17 3:18 PM	Not Reported
46	N023029-003AMS	MS	100	Hexavalent Chromium	02/13/17 3:27 PM	Not Reported
47	N023029-004A	SAMP	1	Hexavalent Chromium	02/13/17 3:37 PM	Reported
48	N023029-004ADUP	DUP	1	Hexavalent Chromium	02/13/17 3:46 PM	Reported
49	N023029-004AMS	MS	1	Hexavalent Chromium	02/13/17 3:56 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	02/13/17 4:05 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/13/17 4:15 PM	Reported
52	N023029-005A	SAMP	1	Hexavalent Chromium	02/13/17 4:24 PM	Reported
53	N023029-005AMS	MS	1	Hexavalent Chromium	02/13/17 4:33 PM	Reported
54	N023029-006A	SAMP	1	Hexavalent Chromium	02/13/17 4:43 PM	Reported
55	N023029-006AMS	MS	1	Hexavalent Chromium	02/13/17 4:52 PM	Reported
56	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 5:02 PM	Reported
57	N023028-001A	SAMP	20	Hexavalent Chromium	02/13/17 5:11 PM	Reported
58	N023028-001AMS	MS	20	Hexavalent Chromium	02/13/17 5:25 PM	Reported
59	N023028-002A	SAMP	10	Hexavalent Chromium	02/13/17 5:36 PM	Reported
60	N023028-002AMS	MS	10	Hexavalent Chromium	02/13/17 5:45 PM	Reported
61	N023028-003A	SAMP	20	Hexavalent Chromium	02/13/17 5:54 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/13/17 6:04 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/13/17 6:13 PM	Reported
64	N023028-003AMS	MS	20	Hexavalent Chromium	02/13/17 6:23 PM	Reported
65	N023029-003A	SAMP	50	Hexavalent Chromium	02/13/17 6:32 PM	Reported
66	N023029-003AMS	MS	50	Hexavalent Chromium	02/13/17 6:42 PM	Reported
67	N023043-001A	SAMP	1	Hexavalent Chromium	02/13/17 6:51 PM	Not Reported
68	N023043-002A	SAMP	1	Hexavalent Chromium	02/13/17 7:01 PM	Not Reported
69	N023043-003A	SAMP	1	Hexavalent Chromium	02/13/17 7:10 PM	Not Reported
70	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 7:20 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	02/13/17 7:29 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	02/13/17 7:39 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Feb/17 09:47:02**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/13/2017 09:23	Finished	
11	BLANK	2	1000	Unknown		02/13/2017 09:34	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/13/2017 09:43	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/13/2017 09:53	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/13/2017 10:02	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/13/2017 10:12	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/13/2017 10:24	Finished	LCS, IWST-161114D
17	N023014-006A,SAMP	9	1000	Unknown		02/13/2017 10:43	Finished	SAMP, 2>10mL
18	N023014-006AMS,MS	10	1000	Unknown		02/13/2017 10:54	Finished	MS (5ppb), IWST-161114D,2>1
19	N023014-006AMSD,M	11	1000	Unknown		02/13/2017 11:03	Finished	MSD (5ppb), IWST-161114D,2
20	N023014-005A,SAMP	12	1000	Unknown		02/13/2017 11:13	Finished	SAMP, 10mL
21	N023014-005AMS,MS	13	1000	Unknown		02/13/2017 11:22	Finished	MS (1ppb), IWST-161114D,10
22	N023014-007A,SAMP	14	1000	Unknown		02/13/2017 11:32	Finished	SAMP, 10mL
23	N023014-007AMS,MS	15	1000	Unknown		02/13/2017 11:41	Finished	MS (1ppb), IWST-161114D,10
24	N023014-008A,SAMP	16	1000	Unknown		02/13/2017 11:51	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		02/13/2017 12:00	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/13/2017 12:10	Finished	CCB R170123B
27	N023014-008AMS,MS	19	1000	Unknown		02/13/2017 12:19	Finished	MS (1ppb), IWST-161114D,10
28	N023014-009A,SAMP	20	1000	Unknown		02/13/2017 12:29	Finished	SAMP, 10mL
29	N023014-009AMS,MS	21	1000	Unknown		02/13/2017 12:38	Finished	MS (1ppb), IWST-161114D,10
30	N023014-005A,SAMP	22	1000	Unknown		02/13/2017 12:48	Finished	SAMP, 2>10mL
31	N023014-005AMS,MS	23	1000	Unknown		02/13/2017 12:57	Finished	MS (1ppb), IWST-161114D,2>1
32	N023014-007A,SAMP	24	1000	Unknown		02/13/2017 13:07	Finished	SAMP, 2>10mL
33	N023014-007AMS,MS	25	1000	Unknown		02/13/2017 13:16	Finished	MS (1ppb), IWST-161114D,2>1
34	N023014-008A,SAMP	26	1000	Unknown		02/13/2017 13:25	Finished	SAMP, 2>10mL
35	N023014-008AMS,MS	27	1000	Unknown		02/13/2017 13:35	Finished	MS (1ppb), IWST-161114D,2>1
36	N023028-001A,SAMP	29	1000	Unknown		02/13/2017 13:51	Finished	SAMP, 10mL
37	N023028-002A,SAMP	30	1000	Unknown		02/13/2017 14:02	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/13/2017 14:12	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/13/2017 14:21	Finished	CCB R170112D
40	N023028-003A,SAMP	33	1000	Unknown		02/13/2017 14:30	Finished	SAMP, 10mL
41	N023029-001A,SAMP	34	1000	Unknown		02/13/2017 14:40	Finished	SAMP, 10mL
42	N023029-001AMS,MS	35	1000	Unknown		02/13/2017 14:49	Finished	MS (1ppb), IWST-161114D,10
43	N023029-002A,SAMP	36	1000	Unknown		02/13/2017 14:59	Finished	SAMP, 0.1>10mL
44	N023029-002AMS,MS	37	1000	Unknown		02/13/2017 15:08	Finished	MS (5ppb), IWST-161114D,0.1
45	N023029-003A,SAMP	38	1000	Unknown		02/13/2017 15:18	Finished	SAMP, 0.1>10mL
46	N023029-003AMS,MS	39	1000	Unknown		02/13/2017 15:27	Finished	MS (5ppb), IWST-161114D,0.1
47	N023029-004A,SAMP	40	1000	Unknown		02/13/2017 15:37	Finished	SAMP, 10mL
48	N023029-004ADUP,D	41	1000	Unknown		02/13/2017 15:46	Finished	DUP, 10mL
49	N023029-004AMS,MS	42	1000	Unknown		02/13/2017 15:56	Finished	MS (1ppb), IWST-161114D,10
50	CCV-4,CCV1,1,	43	1000	Unknown		02/13/2017 16:05	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	44	1000	Unknown		02/13/2017 16:15	Finished	CCB R170112D
52	N023029-005A,SAMP	45	1000	Unknown		02/13/2017 16:24	Finished	SAMP, 10mL
53	N023029-005AMS,MS	46	1000	Unknown		02/13/2017 16:33	Finished	MS (1ppb), IWST-161114D,10
54	N023029-006A,SAMP	47	1000	Unknown		02/13/2017 16:43	Finished	SAMP, 10mL
55	N023029-006AMS,MS	48	1000	Unknown		02/13/2017 16:52	Finished	MS (1ppb), IWST-161114D,10
56	N023029-001A,SAMP	49	1000	Unknown		02/13/2017 17:02	Finished	SAMP, 10mL
57	N023028-001A,SAMP	50	1000	Unknown		02/13/2017 17:11	Finished	SAMP, 0.5>10mL
58	N023028-001AMS,MS	1	1000	Unknown		02/13/2017 17:25	Finished	MS (5ppb), IWST-161114D,0.5
59	N023028-002A,SAMP	2	1000	Unknown		02/13/2017 17:36	Finished	SAMP, 1>10mL
60	N023028-002AMS,MS	3	1000	Unknown		02/13/2017 17:45	Finished	MS (5ppb), IWST-161114D,1>1

61	N023028-003A,SAMP	4	1000	Unknown		02/13/2017 17:54	Finished	SAMP,0.5>10mL
62	CCV-5,CCV,1,	5	1000	Unknown		02/13/2017 18:04	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	6	1000	Unknown		02/13/2017 18:13	Finished	CCB R170123B
64	N023028-003AMS,MS	7	1000	Unknown		02/13/2017 18:23	Finished	MS (5ppb), IWST-161114D,0.5
65	N023029-003A,SAMP	8	1000	Unknown		02/13/2017 18:32	Finished	SAMP,0.2>10mL
66	N023029-003AMS,MS	9	1000	Unknown		02/13/2017 18:42	Finished	MS (5ppb), IWST-161114D,0.2
67	N023043-001A,SAMP	10	1000	Unknown		02/13/2017 18:51	Finished	SAMP, 10mL
68	N023043-002A,SAMP	11	1000	Unknown		02/13/2017 19:01	Finished	SAMP, 10mL
69	N023043-003A,SAMP	12	1000	Unknown		02/13/2017 19:10	Finished	SAMP, 10mL
70	BLANK	13	1000	Unknown		02/13/2017 19:20	Finished	
71	CCV-6,CCV1,1,	14	1000	Unknown		02/13/2017 19:29	Finished	CCV @10ppb, IWST-161114C
72	CCB-6,CCB,1,	15	1000	Unknown		02/13/2017 19:39	Finished	CCB R170123B
73	SHUTDOWN	16	1000	Unknown		02/13/2017 19:48	Finished	
74	Eluent: R170209B	17	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R170213A	18	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 2/10/17
Time Prepared: 1200
Prepared By: MG

slope - 98.7%
pH 4 - 4.01 @ 22.2°C
pH 7 - 7.03 @ 22.3°C
pH 10 - 10.01 @ 22.3°C
LCS - 7.01 @ 22.3°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLNV-161012A
NH4OH + NH4SO4 eluent: R170209B
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023028-1A	9.40	–	~250mL	~250mL		R170123B
2)	2A	9.39	–				
3)	3A	9.36	–			+2 drops 6N NaOH	
4)	N023029-1A	9.25	9.32				
5)	2A	9.38	–				
6)	3A	9.36	–				
7)	4A	9.49	–				
8)	5A	9.50	–				
9)	6A	9.57	–				
10)	N023030-1A	9.48	–				
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/11/17
Time Prepared: 1456
Prepared By: MSA

slope: 98.2%
pH 4: 4.02 @ 21.2°C
7: 7.00 @ 21.5°C
10: 10.04 @ 21.3°C
LCS 7.02 @ 21.3°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CLNV-161012A 6N NaOH: N170126A
NH4OH + NH4SO4 eluent: N170209B
NH4OH + NH4SO4 buffer: N170112D / N170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023002-5A	9.54	–	~250 ml	~250ml		~~N170112D~~
2)	6A	9.52	–			+3 drops 6N NaOH	
3)	N023062-2A	9.20	9.50			"	
4)	N023063-1A	9.17	9.38				lab filtered / preserved
5)	N023030-1A	9.44	–				L2R170123B
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

rba 2/19/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ICV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.990	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.212	0.20	0.2000	0	106	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.023	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.015	0.20	5.000	0	100	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.043	0.20	10.00	0	100	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCV** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.965	0.20	5.000	0	99.3	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.026	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ICB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2566447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **CCB** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113519
Client ID:	CCB	Batch ID:	R113519	TestNo:	EPA 218.6			Analysis Date:	2/13/2017	SeqNo:	2566487

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	CCB-6	SampType:	CCB	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	113519
Client ID:	CCB	Batch ID:	R113519	TestNo:	EPA 218.6			Analysis Date:	2/13/2017	SeqNo:	2566492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
MB-R113519	N.A.	N.A.
LCS-R113519	4.206	PASS
N023014-006A	4.173	PASS
N023014-006AMS	4.173	PASS
N023014-006AMSD	4.173	PASS
N023014-005A	N.A.	N.A.
N023014-005AMS	N.A.	N.A.
N023014-007A	N.A.	N.A.
N023014-007AMS	N.A.	N.A.
N023014-008A	4.098	PASS
N023014-008AMS	4.048	PASS
N023014-009A	N.A.	N.A.
N023014-009AMS	4.206	PASS
N023014-005A	N.A.	N.A.
N023014-005AMS	4.148	PASS
N023014-007A	4.156	PASS
N023014-007AMS	4.156	PASS
N023014-008A	4.181	PASS
N023014-008AMS	4.181	PASS
N023028-001A	4.165	PASS
N023028-002A	4.173	PASS
N023028-003A	4.173	PASS
N023029-001A	4.106	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
N023029-001AMS	4.106	PASS
N023029-002A	4.206	PASS
N023029-002AMS	4.206	PASS
N023029-003A	4.206	PASS
N023029-003AMS	4.206	PASS
N023029-004A	4.190	PASS
N023029-004ADUP	4.190	PASS
N023029-004AMS	4.190	PASS
N023029-005A	4.190	PASS
N023029-005AMS	4.190	PASS
N023029-006A	N.A.	N.A.
N023029-006AMS	4.206	PASS
N023029-001A	4.106	PASS
N023028-001A	4.206	PASS
N023028-001AMS	4.206	PASS
N023028-002A	4.206	PASS
N023028-002AMS	4.198	PASS
N023028-003A	4.206	PASS
N023028-003AMS	4.206	PASS
N023029-003A	4.206	PASS
N023029-003AMS	4.206	PASS
N023043-001A	N.A.	N.A.
N023043-002A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.206	
CCV-2	4.206	
CCV-3	4.206	
CCV-4	4.198	
CCV-5	4.206	
CCV-6	4.206	
Average	4.205	
Actual RT Window	4.125 - 4.285	
Applied RT Window	4.005 - 4.405	
N023043-003A	N.A.	N.A.

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

INITIAL CALIBRATION

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

rba 2/7/2017

IC-07 RBA 2/6/2017 11:58:01 PM

96

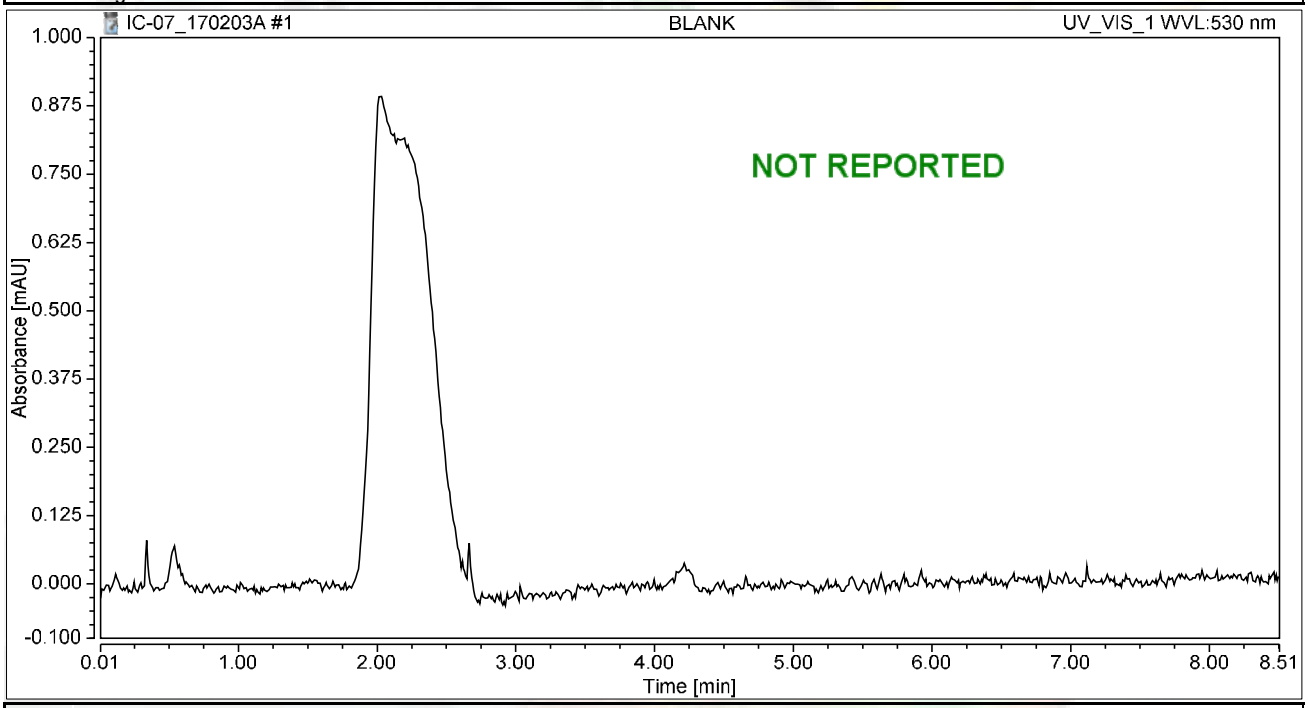
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

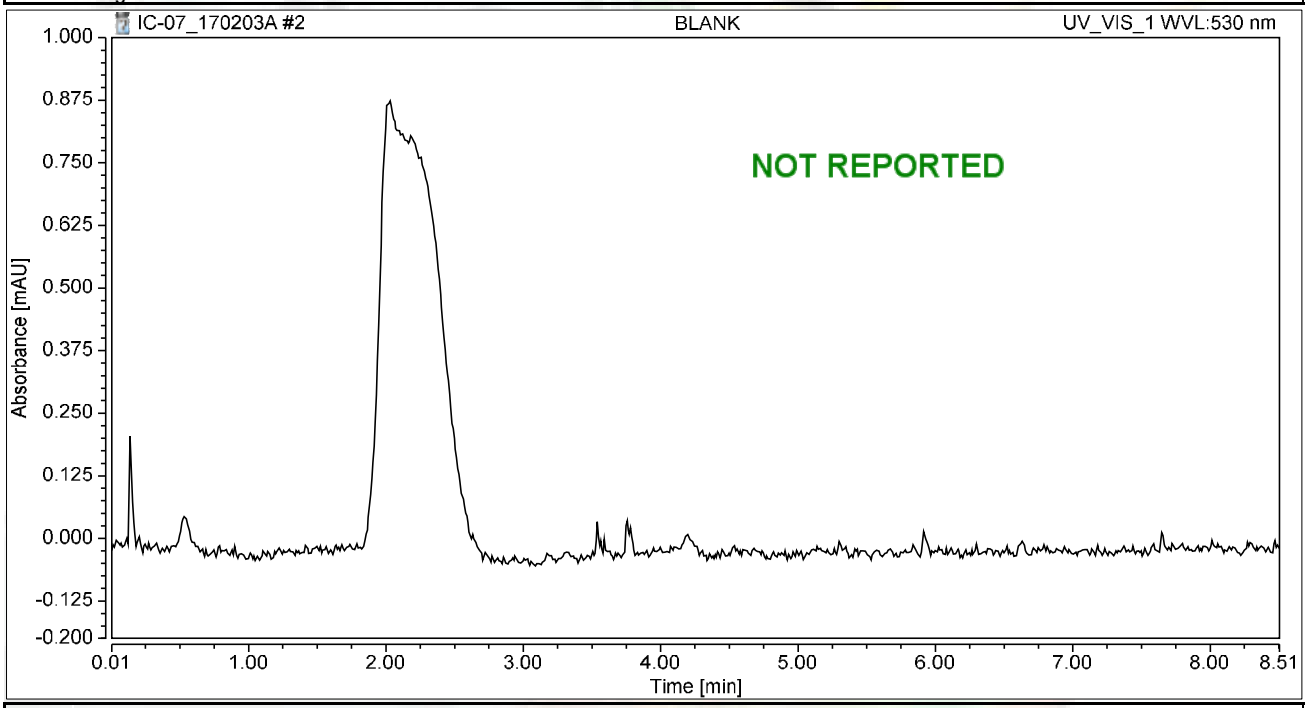
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

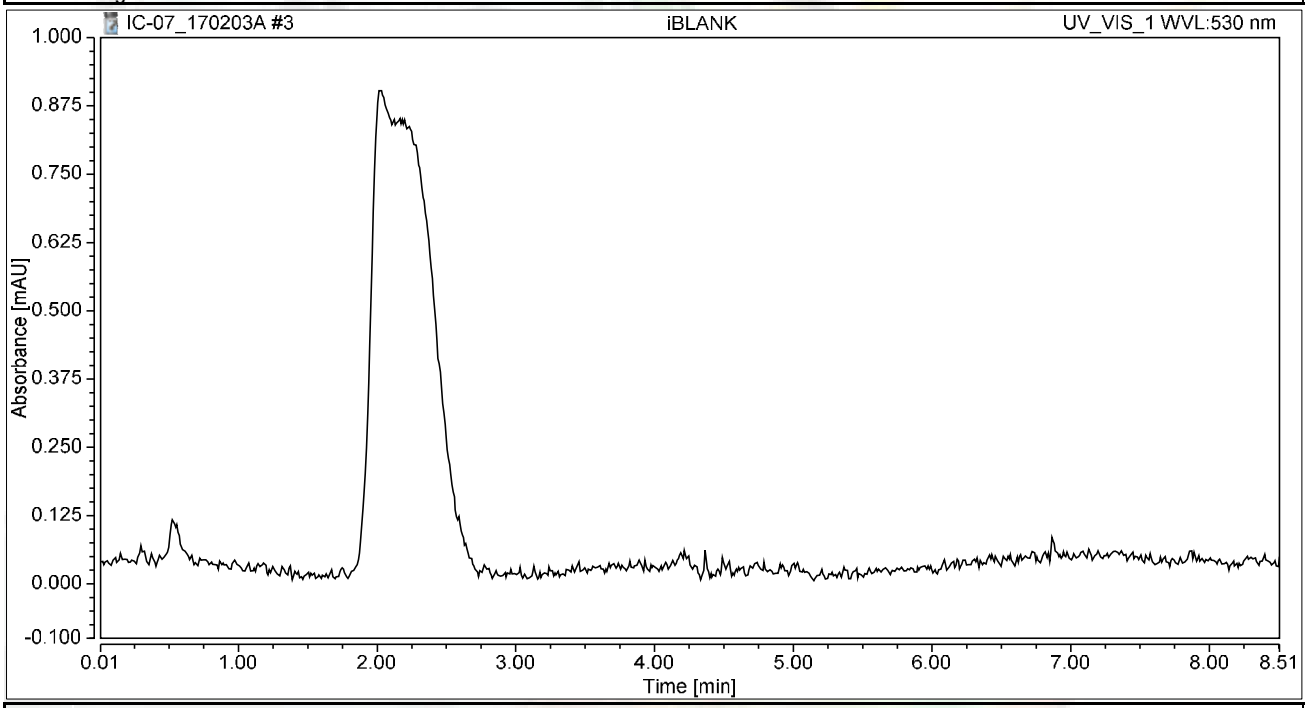
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

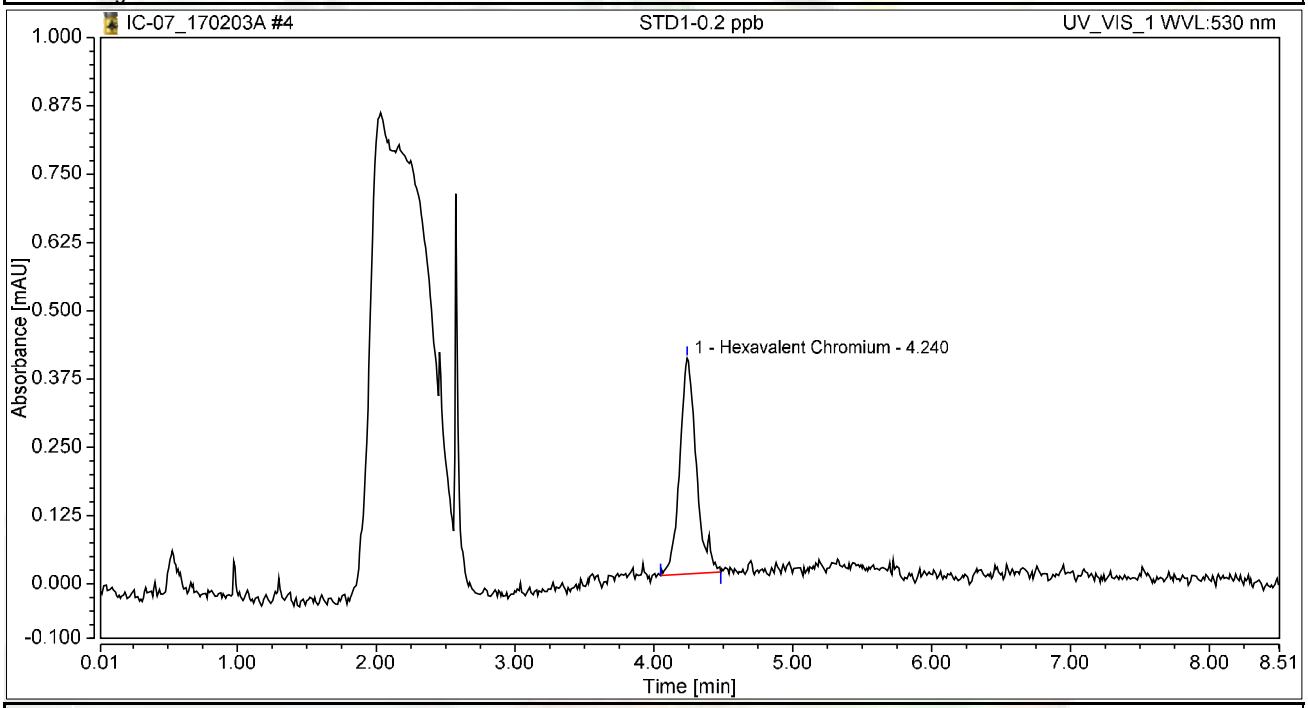
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

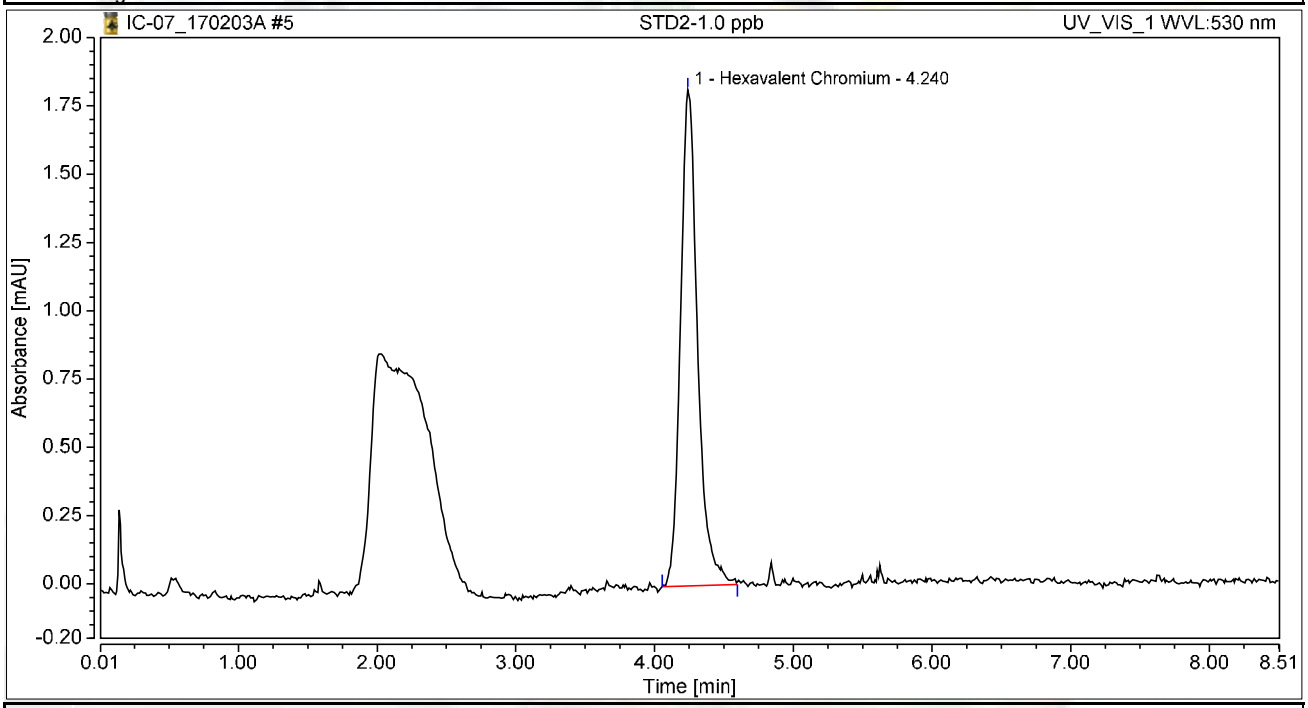
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

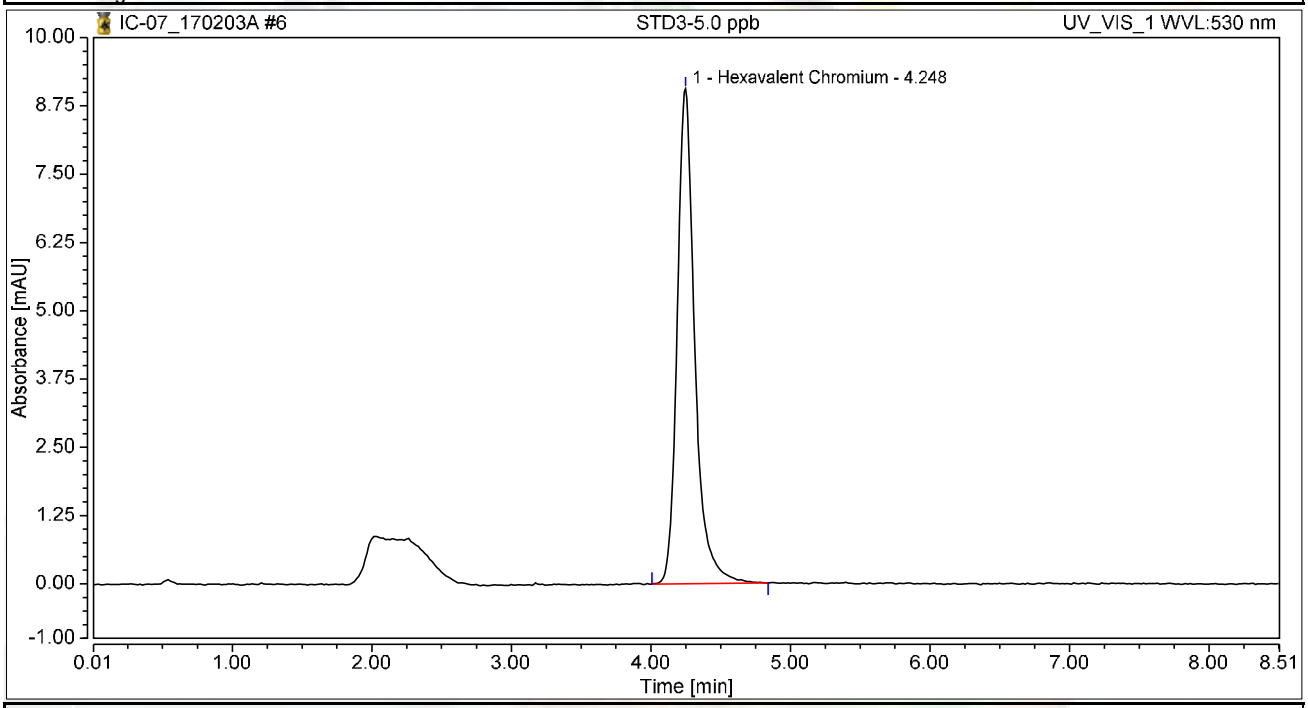
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

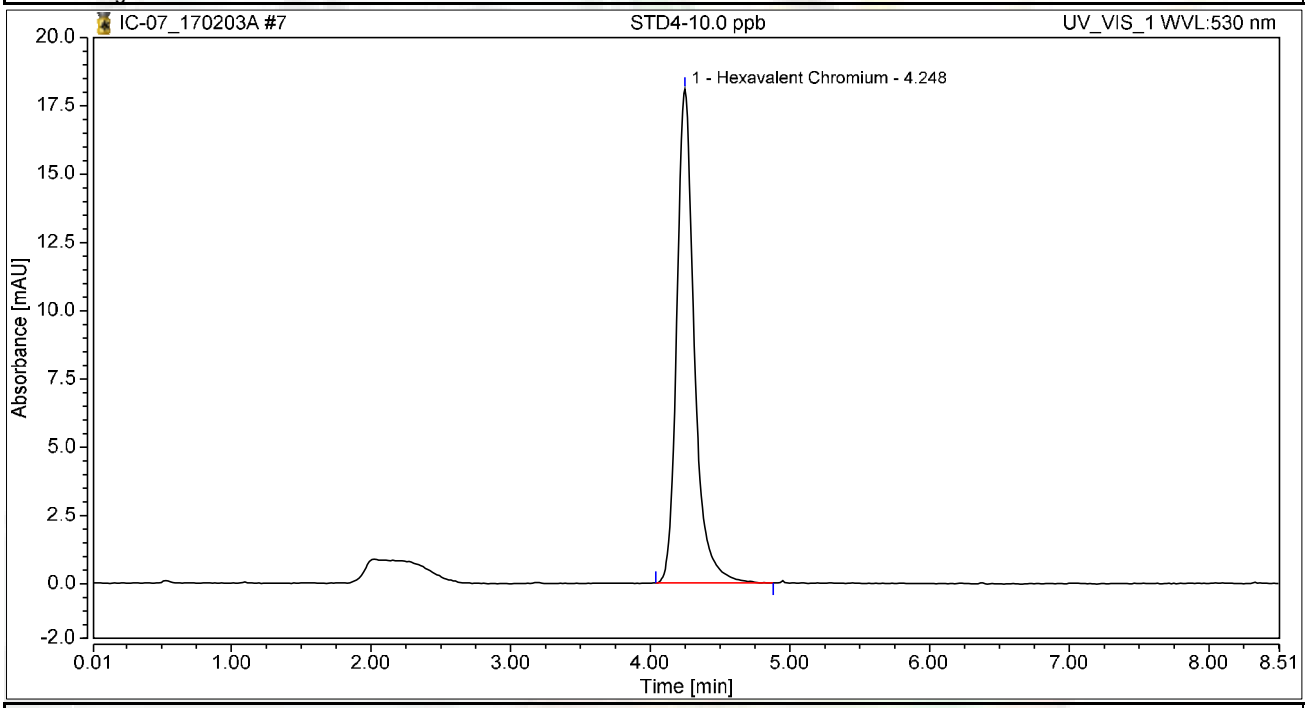
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

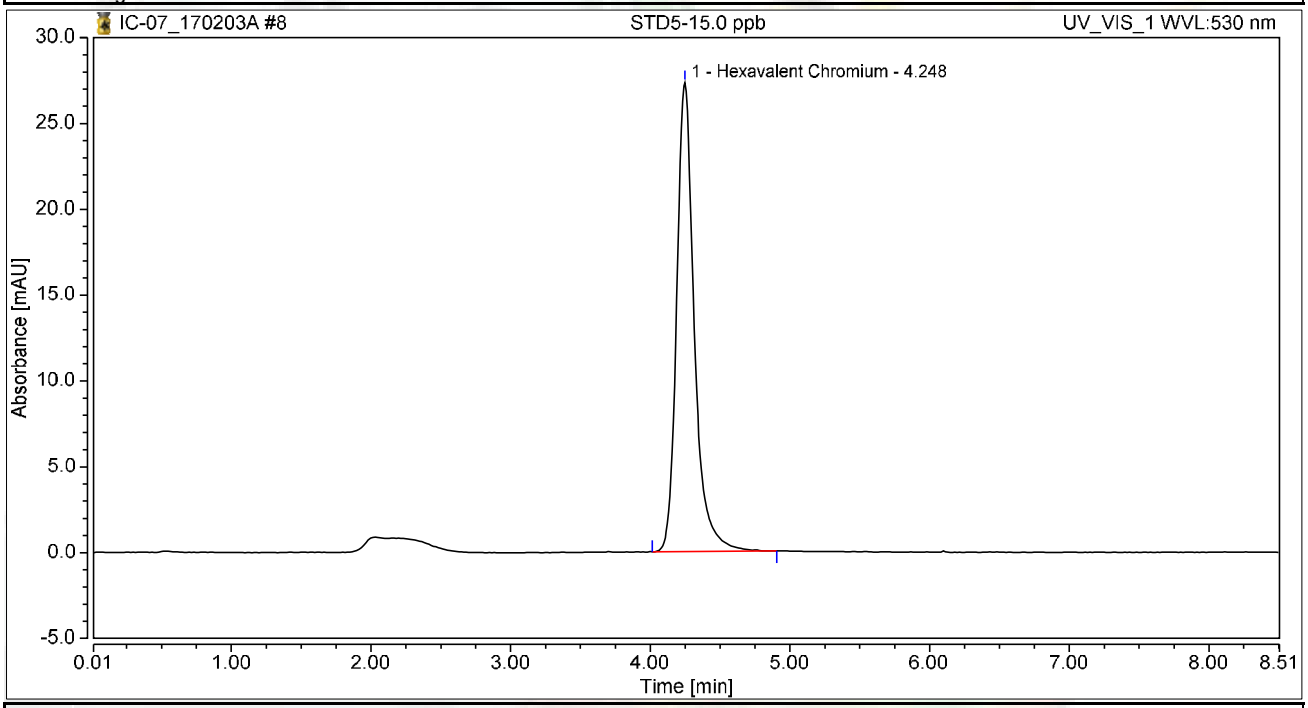
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

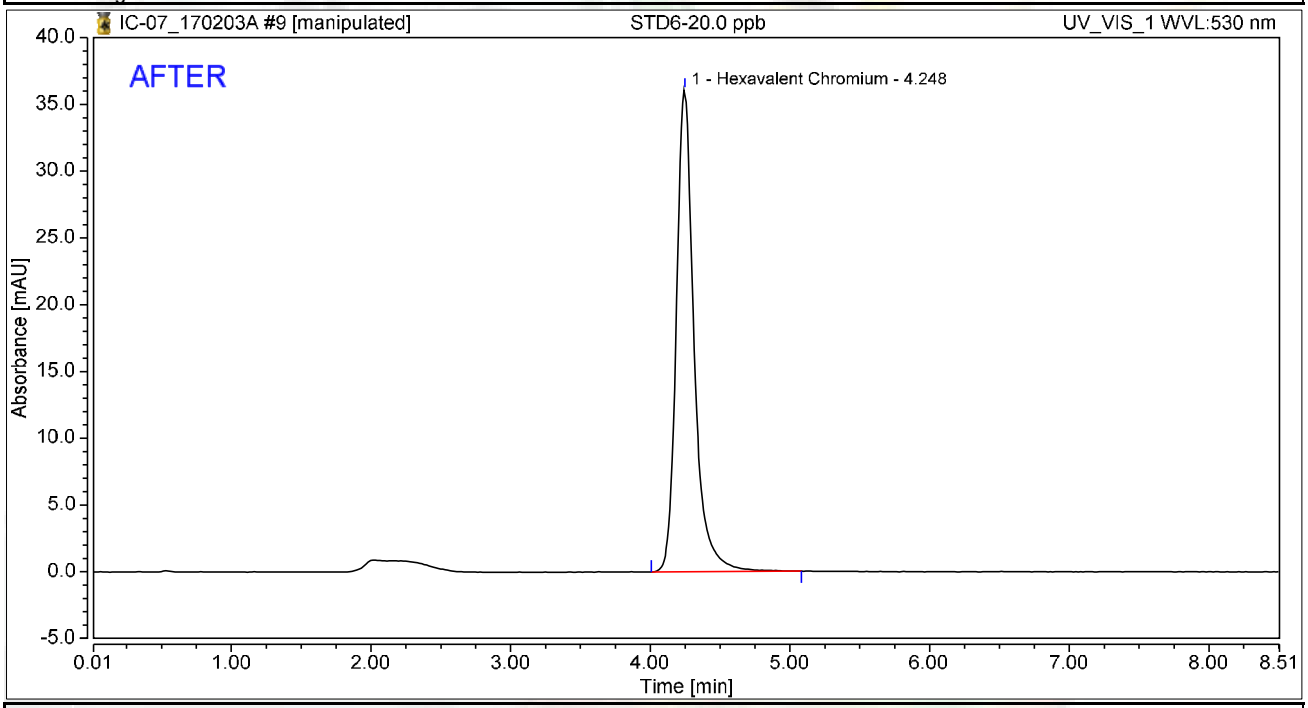
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

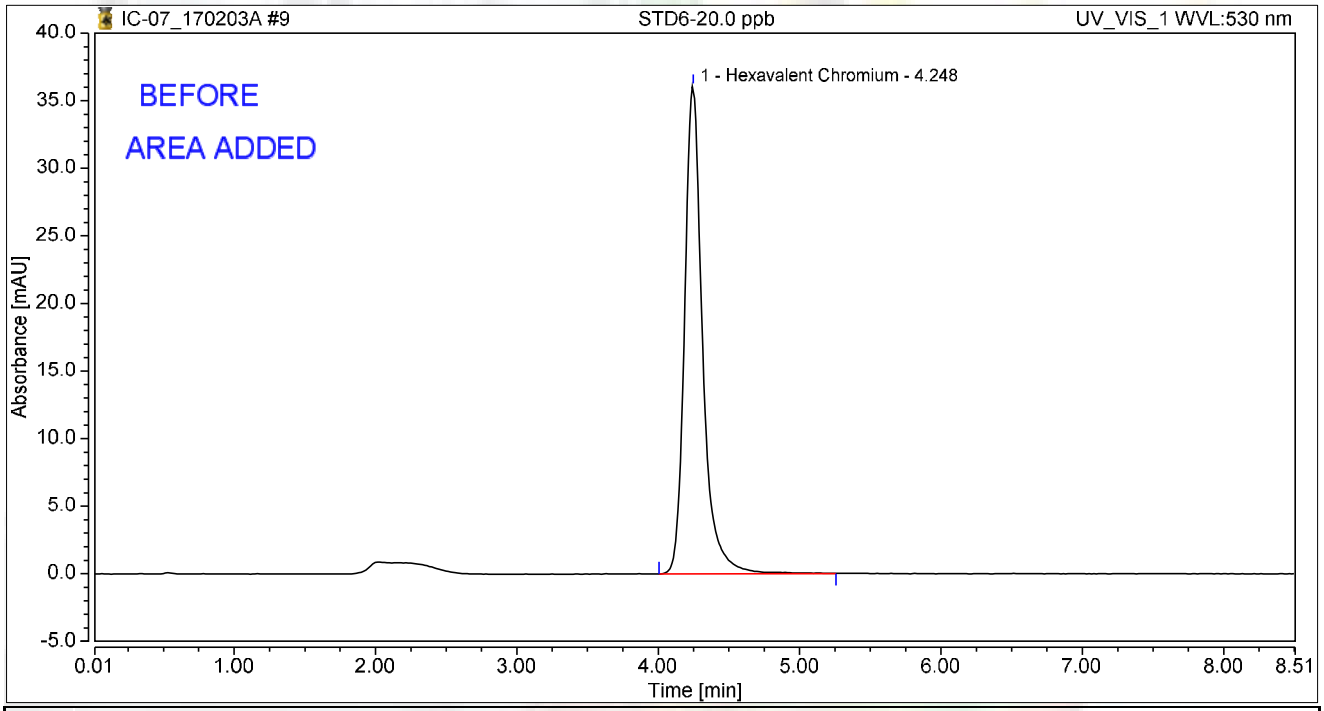
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

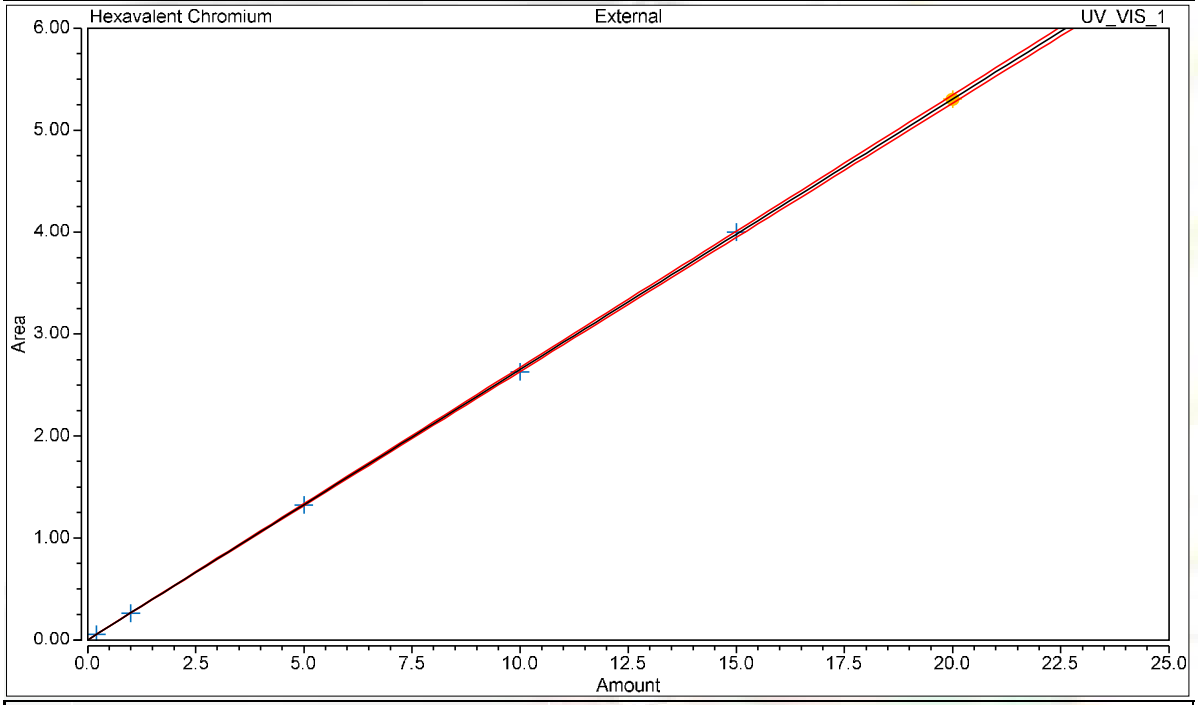
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

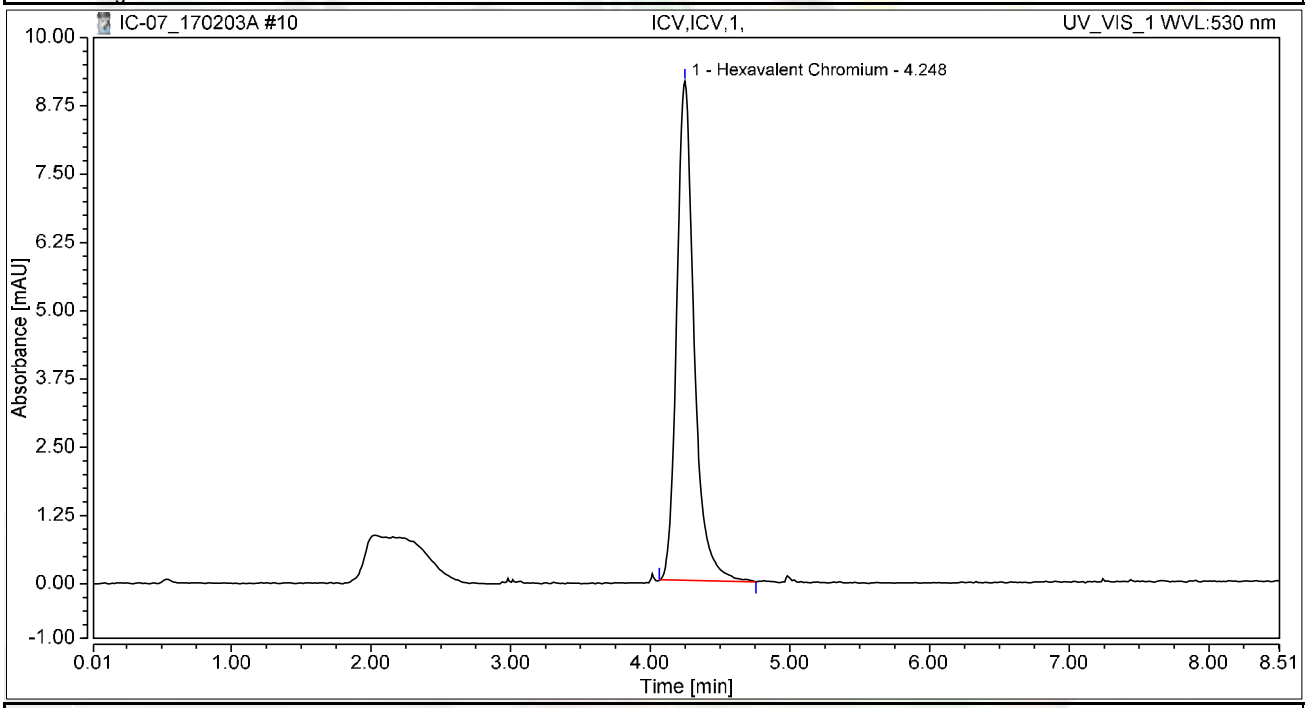
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

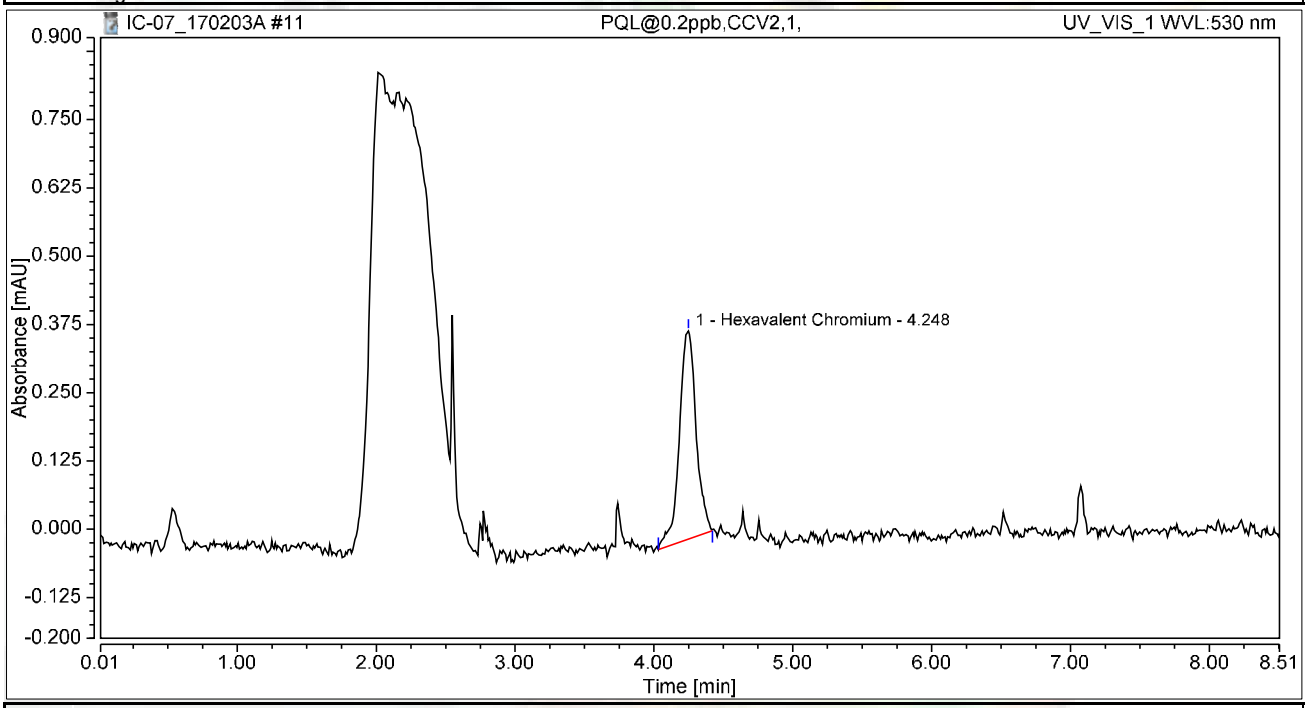
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

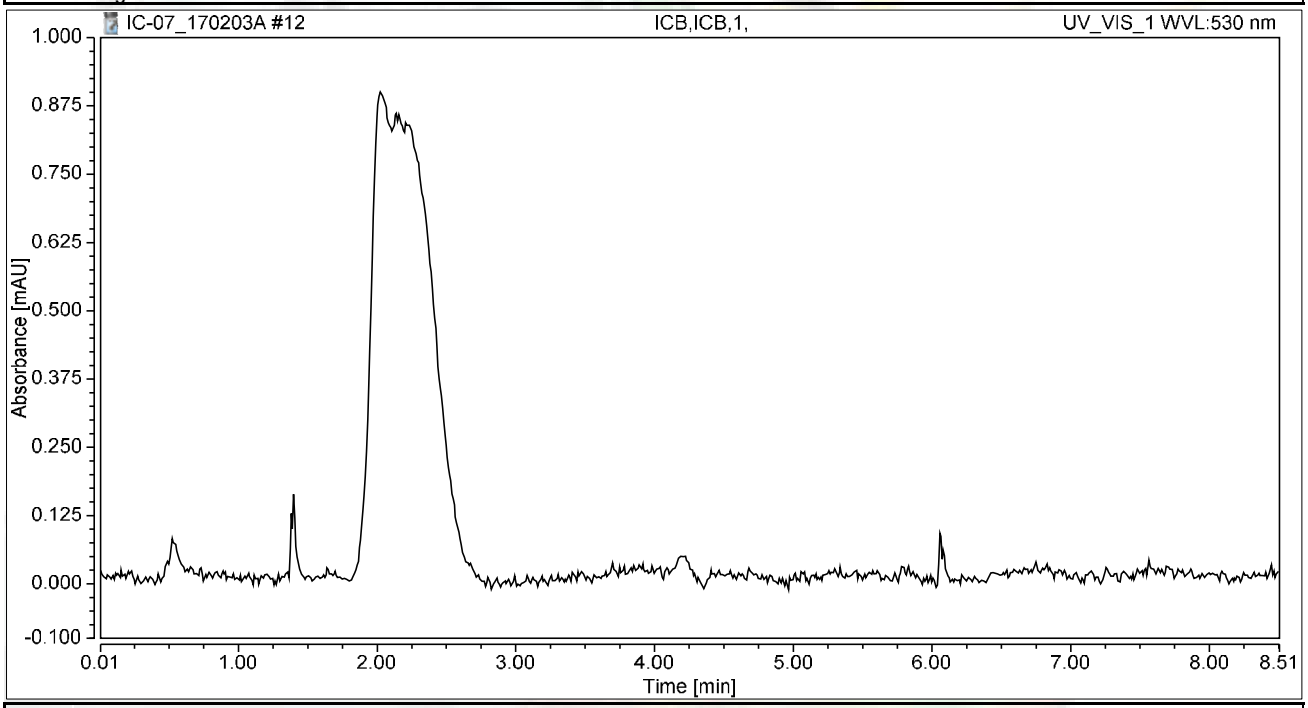
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:23 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 9:34 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/13/17 9:43 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/13/17 9:53 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/13/17 10:02 AM	Reported
15	MB-R113519	MBLK	1	Hexavalent Chromium	02/13/17 10:12 AM	Reported
16	LCS-R113519	LCS	1	Hexavalent Chromium	02/13/17 10:24 AM	Reported
17	N023014-006A	SAMP	5	Hexavalent Chromium	02/13/17 10:43 AM	Reported
18	N023014-006AMS	MS	5	Hexavalent Chromium	02/13/17 10:54 AM	Reported
19	N023014-006AMSD	MSD	5	Hexavalent Chromium	02/13/17 11:03 AM	Reported
20	N023014-005A	SAMP	1	Hexavalent Chromium	02/13/17 11:13 AM	Not Reported
21	N023014-005AMS	MS	1	Hexavalent Chromium	02/13/17 11:22 AM	Not Reported
22	N023014-007A	SAMP	1	Hexavalent Chromium	02/13/17 11:32 AM	Not Reported
23	N023014-007AMS	MS	1	Hexavalent Chromium	02/13/17 11:41 AM	Not Reported
24	N023014-008A	SAMP	1	Hexavalent Chromium	02/13/17 11:51 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/13/17 12:00 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/13/17 12:10 PM	Reported
27	N023014-008AMS	MS	1	Hexavalent Chromium	02/13/17 12:19 PM	Reported
28	N023014-009A	SAMP	1	Hexavalent Chromium	02/13/17 12:29 PM	Reported
29	N023014-009AMS	MS	1	Hexavalent Chromium	02/13/17 12:38 PM	Reported
30	N023014-005A	SAMP	5	Hexavalent Chromium	02/13/17 12:48 PM	Reported
31	N023014-005AMS	MS	5	Hexavalent Chromium	02/13/17 12:57 PM	Reported
32	N023014-007A	SAMP	5	Hexavalent Chromium	02/13/17 1:07 PM	Reported
33	N023014-007AMS	MS	5	Hexavalent Chromium	02/13/17 1:16 PM	Reported
34	N023014-008A	SAMP	5	Hexavalent Chromium	02/13/17 1:25 PM	Not Reported
35	N023014-008AMS	MS	5	Hexavalent Chromium	02/13/17 1:35 PM	Not Reported
36	N023028-001A	SAMP	1	Hexavalent Chromium	02/13/17 1:51 PM	Not Reported
37	N023028-002A	SAMP	1	Hexavalent Chromium	02/13/17 2:02 PM	Not Reported
38	CCV-3	CCV	1	Hexavalent Chromium	02/13/17 2:12 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	02/13/17 2:21 PM	Reported
40	N023028-003A	SAMP	1	Hexavalent Chromium	02/13/17 2:30 PM	Not Reported
41	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 2:40 PM	Not Reported
42	N023029-001AMS	MS	1	Hexavalent Chromium	02/13/17 2:49 PM	Reported

rba 2/19/2017

IC7 RBA 2/16/2017 9:38 AM

Nancy 2/22/2017

INJECTION LOG: 170213A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023029-002A	SAMP	100	Hexavalent Chromium	02/13/17 2:59 PM	Reported
44	N023029-002AMS	MS	100	Hexavalent Chromium	02/13/17 3:08 PM	Reported
45	N023029-003A	SAMP	100	Hexavalent Chromium	02/13/17 3:18 PM	Not Reported
46	N023029-003AMS	MS	100	Hexavalent Chromium	02/13/17 3:27 PM	Not Reported
47	N023029-004A	SAMP	1	Hexavalent Chromium	02/13/17 3:37 PM	Reported
48	N023029-004ADUP	DUP	1	Hexavalent Chromium	02/13/17 3:46 PM	Reported
49	N023029-004AMS	MS	1	Hexavalent Chromium	02/13/17 3:56 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	02/13/17 4:05 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	02/13/17 4:15 PM	Reported
52	N023029-005A	SAMP	1	Hexavalent Chromium	02/13/17 4:24 PM	Reported
53	N023029-005AMS	MS	1	Hexavalent Chromium	02/13/17 4:33 PM	Reported
54	N023029-006A	SAMP	1	Hexavalent Chromium	02/13/17 4:43 PM	Reported
55	N023029-006AMS	MS	1	Hexavalent Chromium	02/13/17 4:52 PM	Reported
56	N023029-001A	SAMP	1	Hexavalent Chromium	02/13/17 5:02 PM	Reported
57	N023028-001A	SAMP	20	Hexavalent Chromium	02/13/17 5:11 PM	Reported
58	N023028-001AMS	MS	20	Hexavalent Chromium	02/13/17 5:25 PM	Reported
59	N023028-002A	SAMP	10	Hexavalent Chromium	02/13/17 5:36 PM	Reported
60	N023028-002AMS	MS	10	Hexavalent Chromium	02/13/17 5:45 PM	Reported
61	N023028-003A	SAMP	20	Hexavalent Chromium	02/13/17 5:54 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	02/13/17 6:04 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	02/13/17 6:13 PM	Reported
64	N023028-003AMS	MS	20	Hexavalent Chromium	02/13/17 6:23 PM	Reported
65	N023029-003A	SAMP	50	Hexavalent Chromium	02/13/17 6:32 PM	Reported
66	N023029-003AMS	MS	50	Hexavalent Chromium	02/13/17 6:42 PM	Reported
67	N023043-001A	SAMP	1	Hexavalent Chromium	02/13/17 6:51 PM	Not Reported
68	N023043-002A	SAMP	1	Hexavalent Chromium	02/13/17 7:01 PM	Not Reported
69	N023043-003A	SAMP	1	Hexavalent Chromium	02/13/17 7:10 PM	Not Reported
70	BLANK	BLANK	1	Hexavalent Chromium	02/13/17 7:20 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	02/13/17 7:29 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	02/13/17 7:39 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170213A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**15/Feb/17 09:47:02**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/13/2017 09:23	Finished	
11	BLANK	2	1000	Unknown		02/13/2017 09:34	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/13/2017 09:43	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/13/2017 09:53	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/13/2017 10:02	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/13/2017 10:12	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/13/2017 10:24	Finished	LCS, IWST-161114D
17	N023014-006A,SAMF	9	1000	Unknown		02/13/2017 10:43	Finished	SAMP, 2>10mL
18	N023014-006AMS,MS	10	1000	Unknown		02/13/2017 10:54	Finished	MS (5ppb), IWST-161114D,2>1
19	N023014-006AMSD,M	11	1000	Unknown		02/13/2017 11:03	Finished	MSD (5ppb), IWST-161114D,2
20	N023014-005A,SAMF	12	1000	Unknown		02/13/2017 11:13	Finished	SAMP, 10mL
21	N023014-005AMS,MS	13	1000	Unknown		02/13/2017 11:22	Finished	MS (1ppb), IWST-161114D,10
22	N023014-007A,SAMF	14	1000	Unknown		02/13/2017 11:32	Finished	SAMP, 10mL
23	N023014-007AMS,MS	15	1000	Unknown		02/13/2017 11:41	Finished	MS (1ppb), IWST-161114D,10
24	N023014-008A,SAMF	16	1000	Unknown		02/13/2017 11:51	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	17	1000	Unknown		02/13/2017 12:00	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/13/2017 12:10	Finished	CCB R170123B
27	N023014-008AMS,MS	19	1000	Unknown		02/13/2017 12:19	Finished	MS (1ppb), IWST-161114D,10
28	N023014-009A,SAMF	20	1000	Unknown		02/13/2017 12:29	Finished	SAMP, 10mL
29	N023014-009AMS,MS	21	1000	Unknown		02/13/2017 12:38	Finished	MS (1ppb), IWST-161114D,10
30	N023014-005A,SAMF	22	1000	Unknown		02/13/2017 12:48	Finished	SAMP, 2>10mL
31	N023014-005AMS,MS	23	1000	Unknown		02/13/2017 12:57	Finished	MS (1ppb), IWST-161114D,2>1
32	N023014-007A,SAMF	24	1000	Unknown		02/13/2017 13:07	Finished	SAMP, 2>10mL
33	N023014-007AMS,MS	25	1000	Unknown		02/13/2017 13:16	Finished	MS (1ppb), IWST-161114D,2>1
34	N023014-008A,SAMF	26	1000	Unknown		02/13/2017 13:25	Finished	SAMP, 2>10mL
35	N023014-008AMS,MS	27	1000	Unknown		02/13/2017 13:35	Finished	MS (1ppb), IWST-161114D,2>1
36	N023028-001A,SAMF	29	1000	Unknown		02/13/2017 13:51	Finished	SAMP, 10mL
37	N023028-002A,SAMF	30	1000	Unknown		02/13/2017 14:02	Finished	SAMP, 10mL
38	CCV-3,CCV,1,	31	1000	Unknown		02/13/2017 14:12	Finished	CCV @5ppb, IWST-161114C
39	CCB-3,CCB,1,	32	1000	Unknown		02/13/2017 14:21	Finished	CCB R170112D
40	N023028-003A,SAMF	33	1000	Unknown		02/13/2017 14:30	Finished	SAMP, 10mL
41	N023029-001A,SAMF	34	1000	Unknown		02/13/2017 14:40	Finished	SAMP, 10mL
42	N023029-001AMS,MS	35	1000	Unknown		02/13/2017 14:49	Finished	MS (1ppb), IWST-161114D,10
43	N023029-002A,SAMF	36	1000	Unknown		02/13/2017 14:59	Finished	SAMP, 0.1>10mL
44	N023029-002AMS,MS	37	1000	Unknown		02/13/2017 15:08	Finished	MS (5ppb), IWST-161114D,0.1
45	N023029-003A,SAMF	38	1000	Unknown		02/13/2017 15:18	Finished	SAMP, 0.1>10mL
46	N023029-003AMS,MS	39	1000	Unknown		02/13/2017 15:27	Finished	MS (5ppb), IWST-161114D,0.1
47	N023029-004A,SAMF	40	1000	Unknown		02/13/2017 15:37	Finished	SAMP, 10mL
48	N023029-004ADUP,D	41	1000	Unknown		02/13/2017 15:46	Finished	DUP, 10mL
49	N023029-004AMS,MS	42	1000	Unknown		02/13/2017 15:56	Finished	MS (1ppb), IWST-161114D,10
50	CCV-4,CCV1,1,	43	1000	Unknown		02/13/2017 16:05	Finished	CCV @10ppb, IWST-161114C
51	CCB-4,CCB,1,	44	1000	Unknown		02/13/2017 16:15	Finished	CCB R170112D
52	N023029-005A,SAMF	45	1000	Unknown		02/13/2017 16:24	Finished	SAMP, 10mL
53	N023029-005AMS,MS	46	1000	Unknown		02/13/2017 16:33	Finished	MS (1ppb), IWST-161114D,10
54	N023029-006A,SAMF	47	1000	Unknown		02/13/2017 16:43	Finished	SAMP, 10mL
55	N023029-006AMS,MS	48	1000	Unknown		02/13/2017 16:52	Finished	MS (1ppb), IWST-161114D,10
56	N023029-001A,SAMF	49	1000	Unknown		02/13/2017 17:02	Finished	SAMP, 10mL
57	N023028-001A,SAMF	50	1000	Unknown		02/13/2017 17:11	Finished	SAMP, 0.5>10mL
58	N023028-001AMS,MS	1	1000	Unknown		02/13/2017 17:25	Finished	MS (5ppb), IWST-161114D,0.5
59	N023028-002A,SAMF	2	1000	Unknown		02/13/2017 17:36	Finished	SAMP, 1>10mL
60	N023028-002AMS,MS	3	1000	Unknown		02/13/2017 17:45	Finished	MS (5ppb), IWST-161114D,1>1

rba 2/19/2017

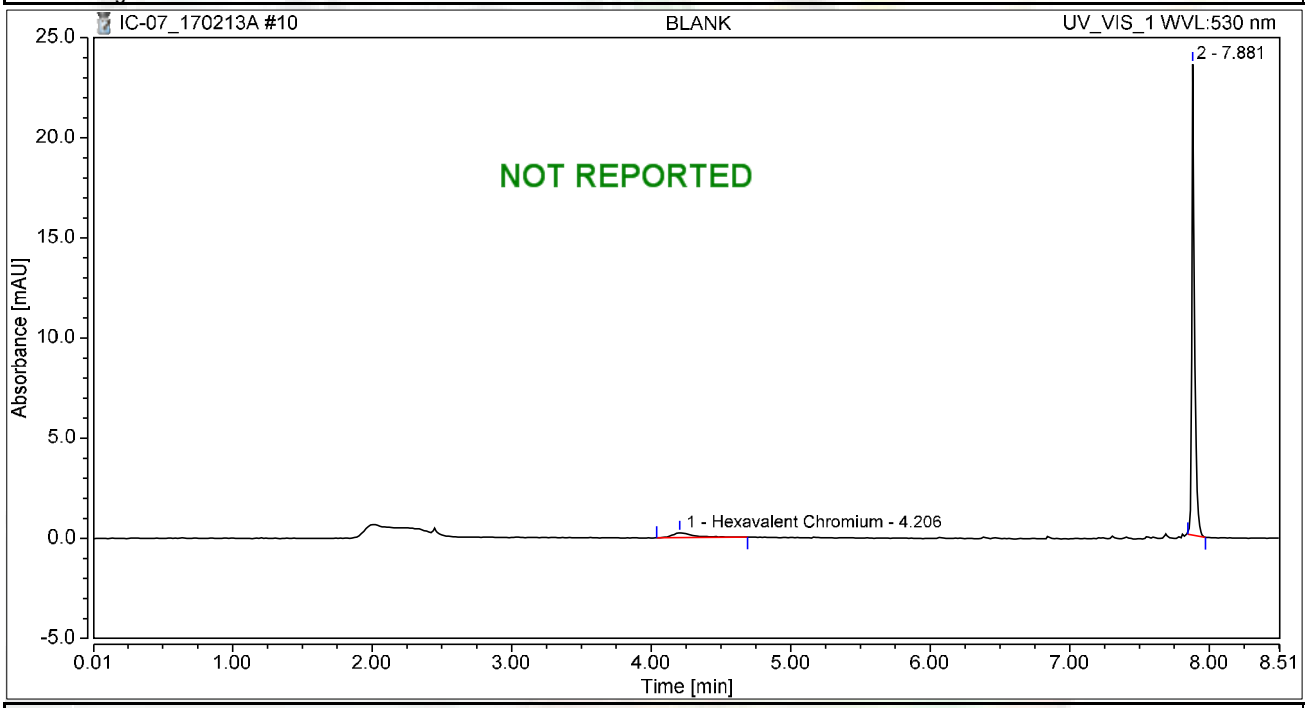
61	N023028-003A,SAMF	4	1000	Unknown		02/13/2017 17:54	Finished	SAMP,0.5>10mL
62	CCV-5,CCV,1,	5	1000	Unknown		02/13/2017 18:04	Finished	CCV @5ppb, IWST-161114C
63	CCB-5,CCB,1,	6	1000	Unknown		02/13/2017 18:13	Finished	CCB R170123B
64	N023028-003AMS,MS	7	1000	Unknown		02/13/2017 18:23	Finished	MS (5ppb), IWST-161114D,0.5
65	N023029-003A,SAMF	8	1000	Unknown		02/13/2017 18:32	Finished	SAMP,0.2>10mL
66	N023029-003AMS,MS	9	1000	Unknown		02/13/2017 18:42	Finished	MS (5ppb), IWST-161114D,0.2
67	N023043-001A,SAMF	10	1000	Unknown		02/13/2017 18:51	Finished	SAMP, 10mL
68	N023043-002A,SAMF	11	1000	Unknown		02/13/2017 19:01	Finished	SAMP, 10mL
69	N023043-003A,SAMF	12	1000	Unknown		02/13/2017 19:10	Finished	SAMP, 10mL
70	BLANK	13	1000	Unknown		02/13/2017 19:20	Finished	
71	CCV-6,CCV1,1,	14	1000	Unknown		02/13/2017 19:29	Finished	CCV @10ppb, IWST-161114C
72	CCB-6,CCB,1,	15	1000	Unknown		02/13/2017 19:39	Finished	CCB R170123B
73	SHUTDOWN	16	1000	Unknown		02/13/2017 19:48	Finished	
74	Eluent: R170209B	17	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R170213A	18	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

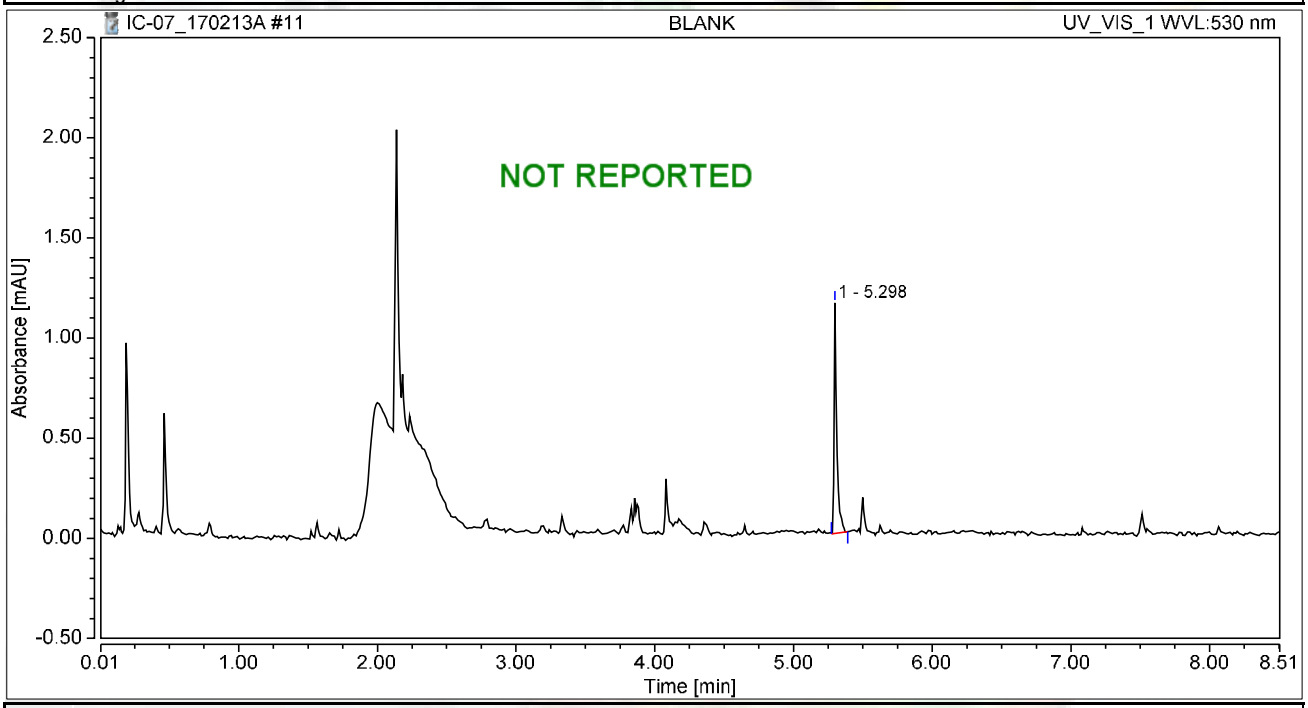
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.049	0.247	8.12	1.04	0.1859
2		7.881	0.558	23.526	91.88	98.96	n.a.
Total:			**0.607**	**23.774**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

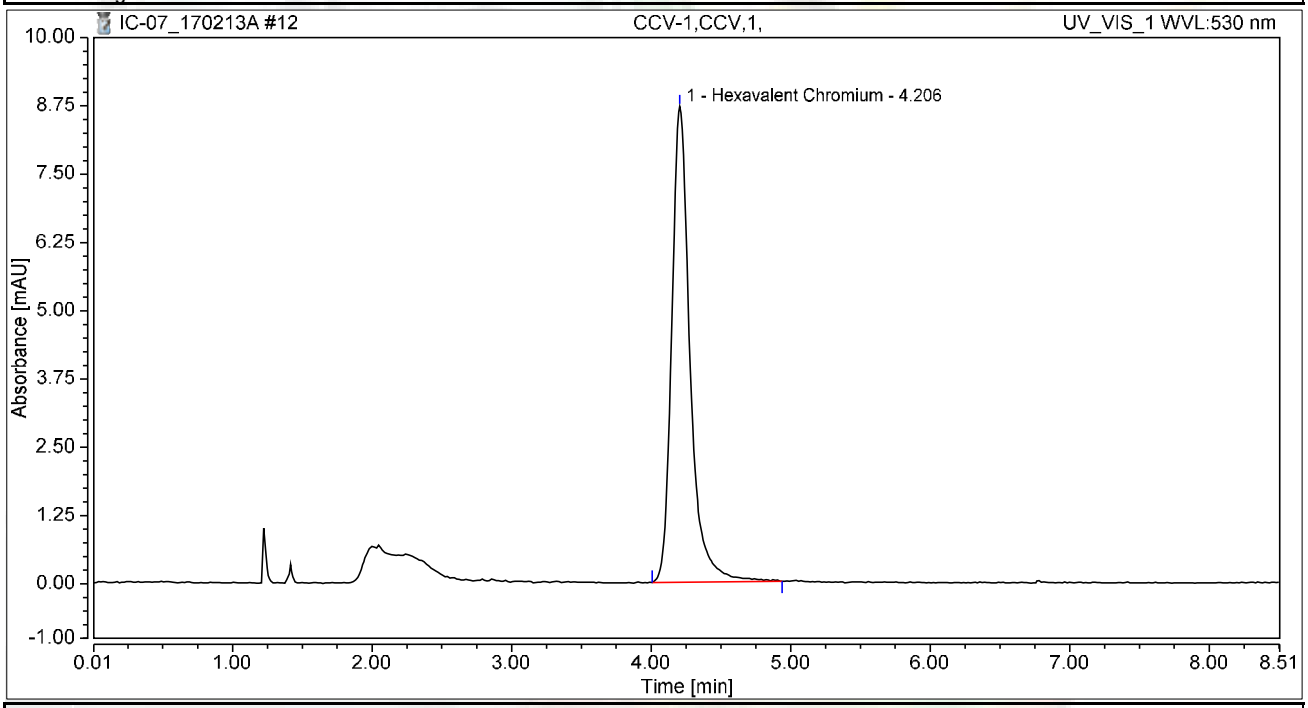
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.298	0.026	1.151	100.00	100.00	n.a.
Total:			**0.026**	**1.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

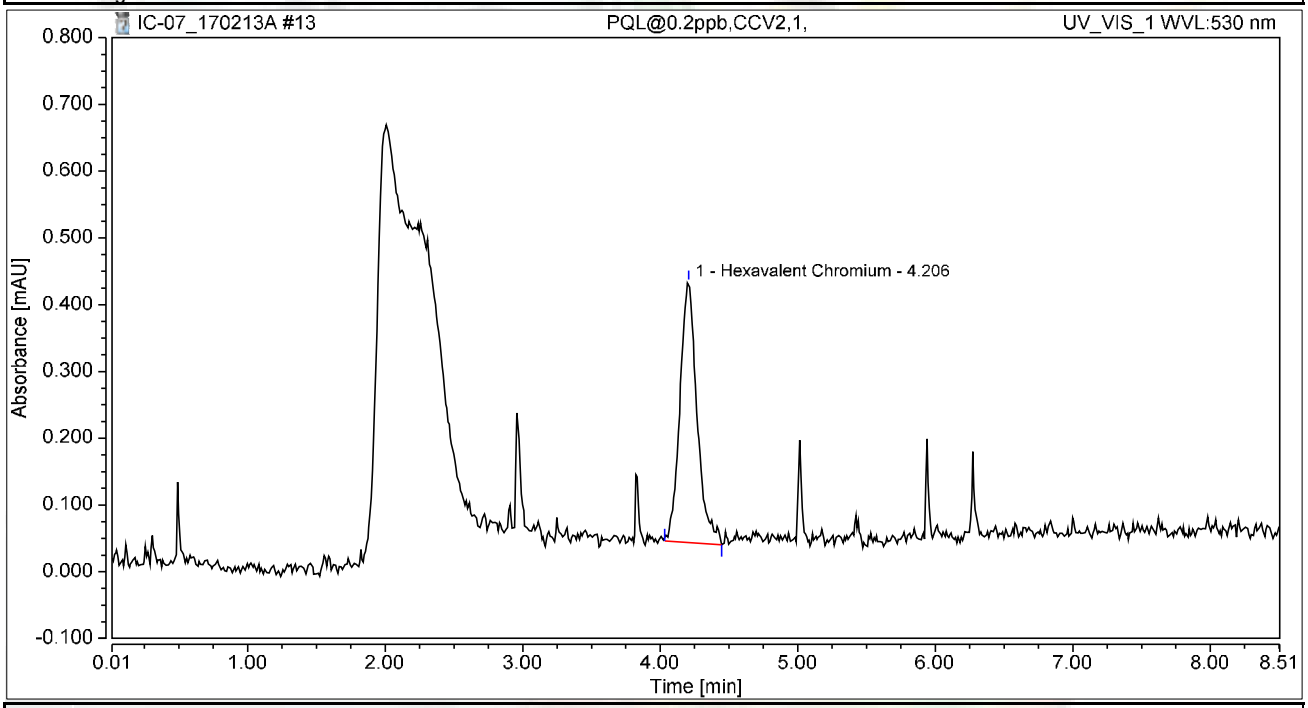
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.323	8.707	100.00	100.00	4.9895
Total:			**1.323**	**8.707**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

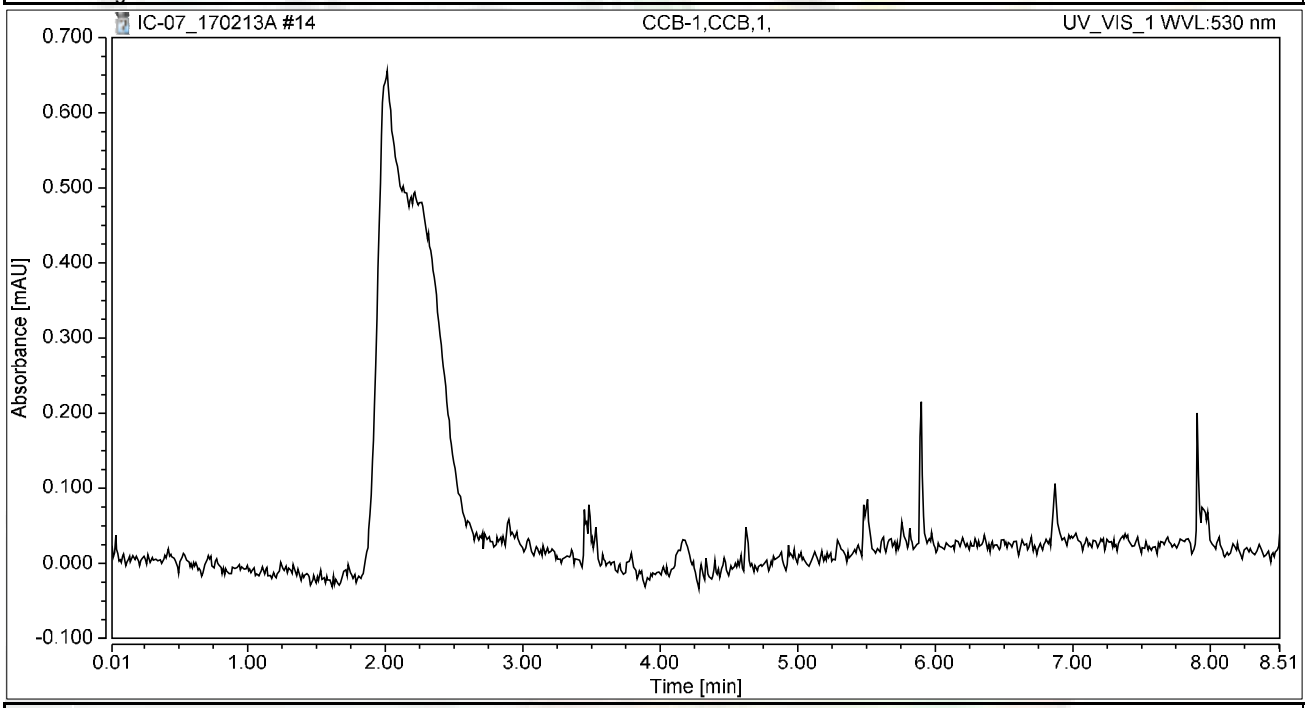
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.056	0.390	100.00	100.00	0.2124
Total:			**0.056**	**0.390**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

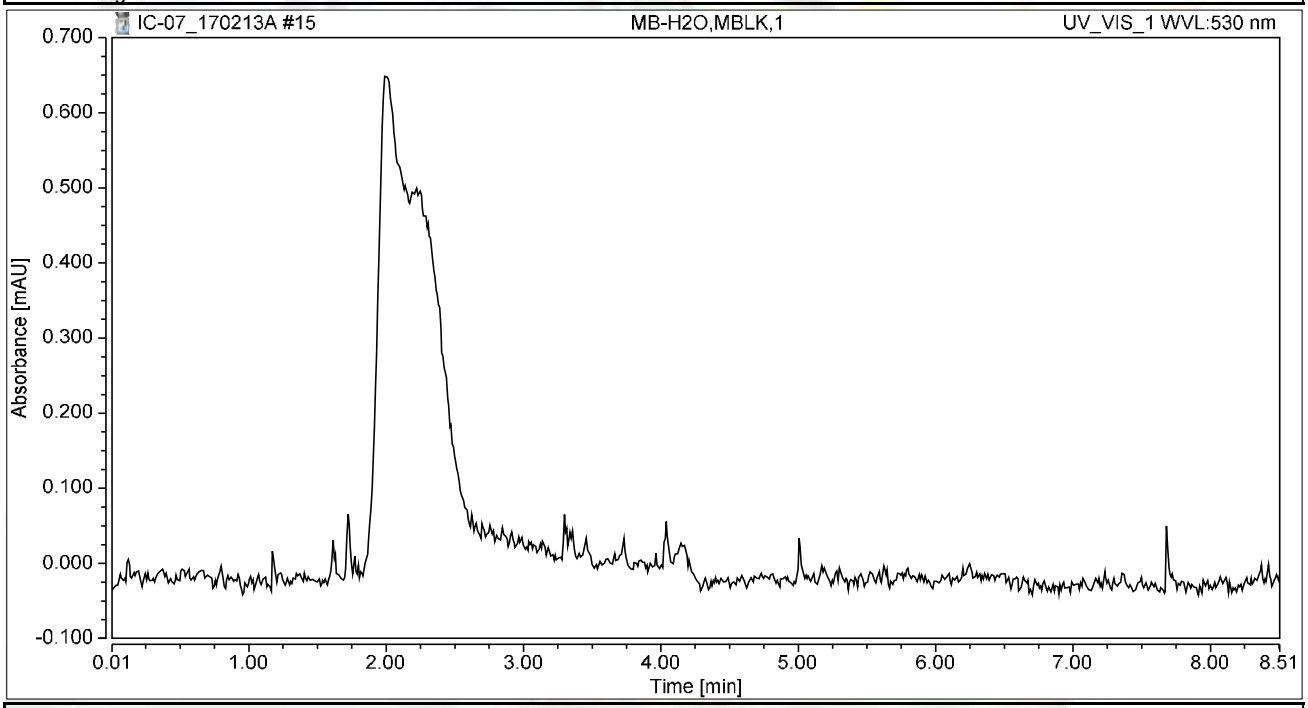
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

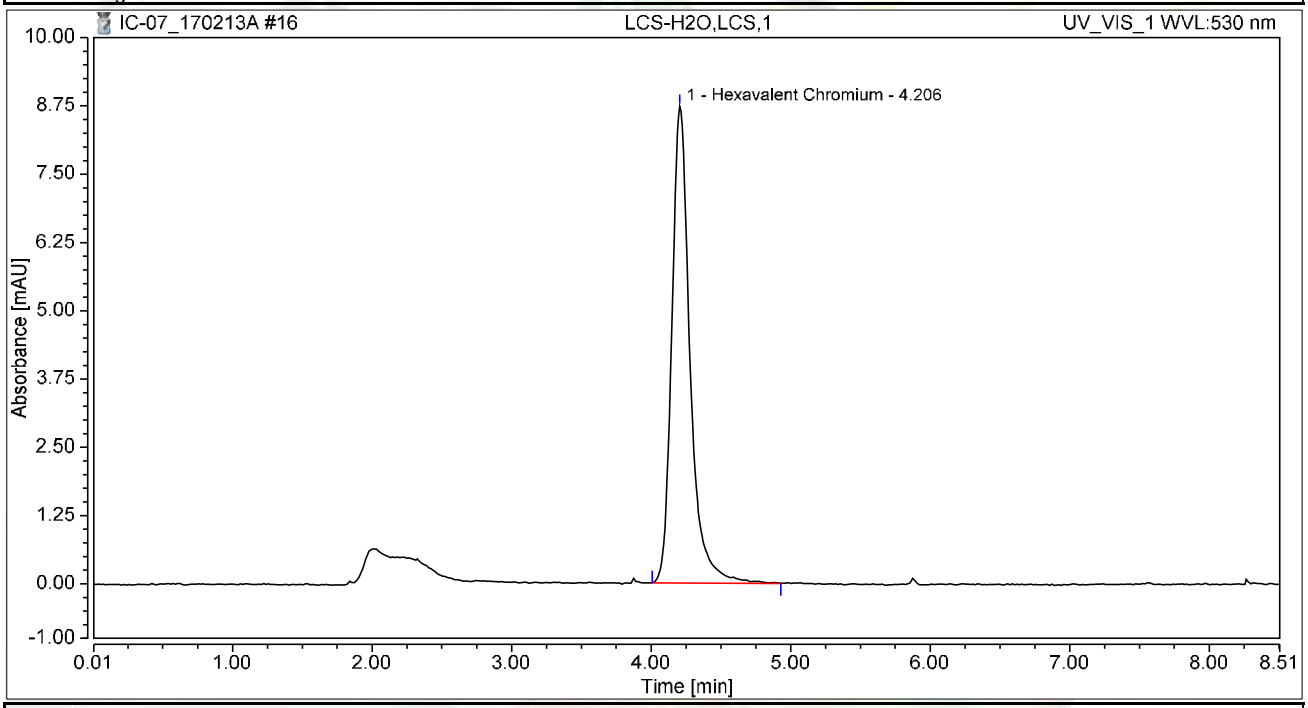
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

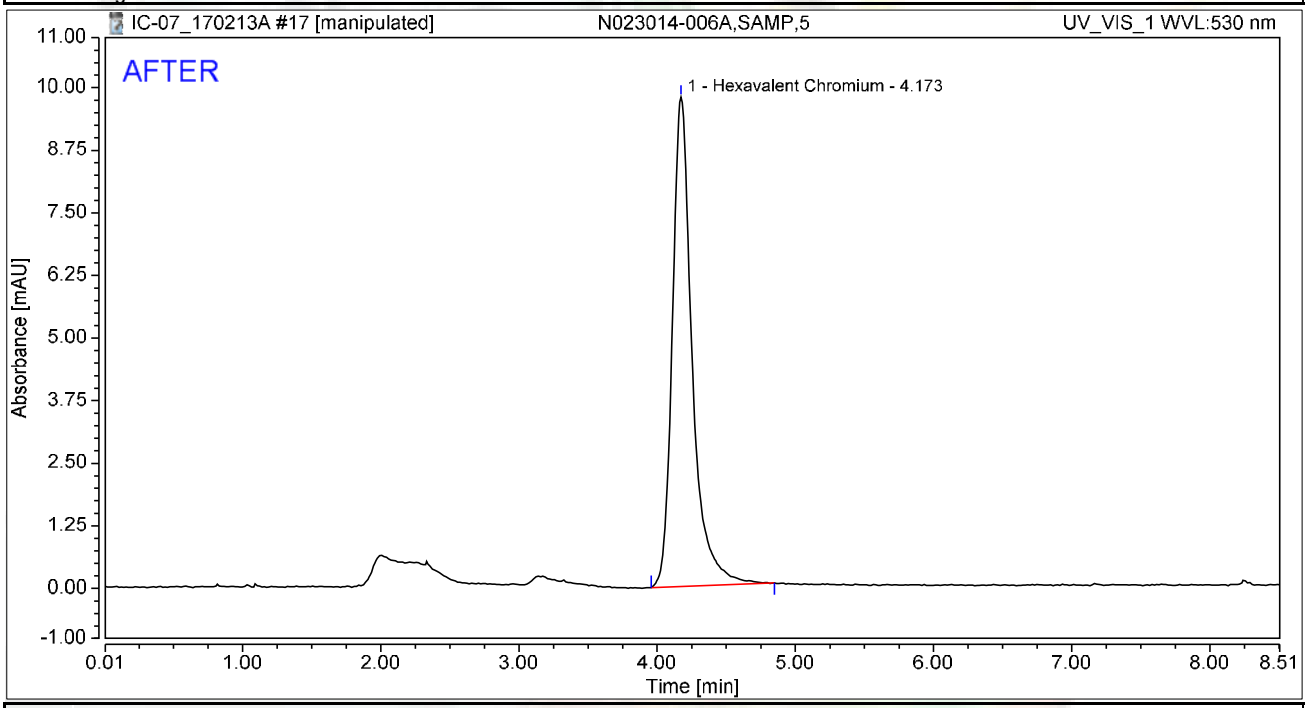
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.319	8.723	100.00	100.00	4.9729
Total:			**1.319**	**8.723**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.622	9.769	100.00	100.00	6.1161
Total:			**1.622**	**9.769**	**100.00**	**100.00**	

rba 2/19/2017

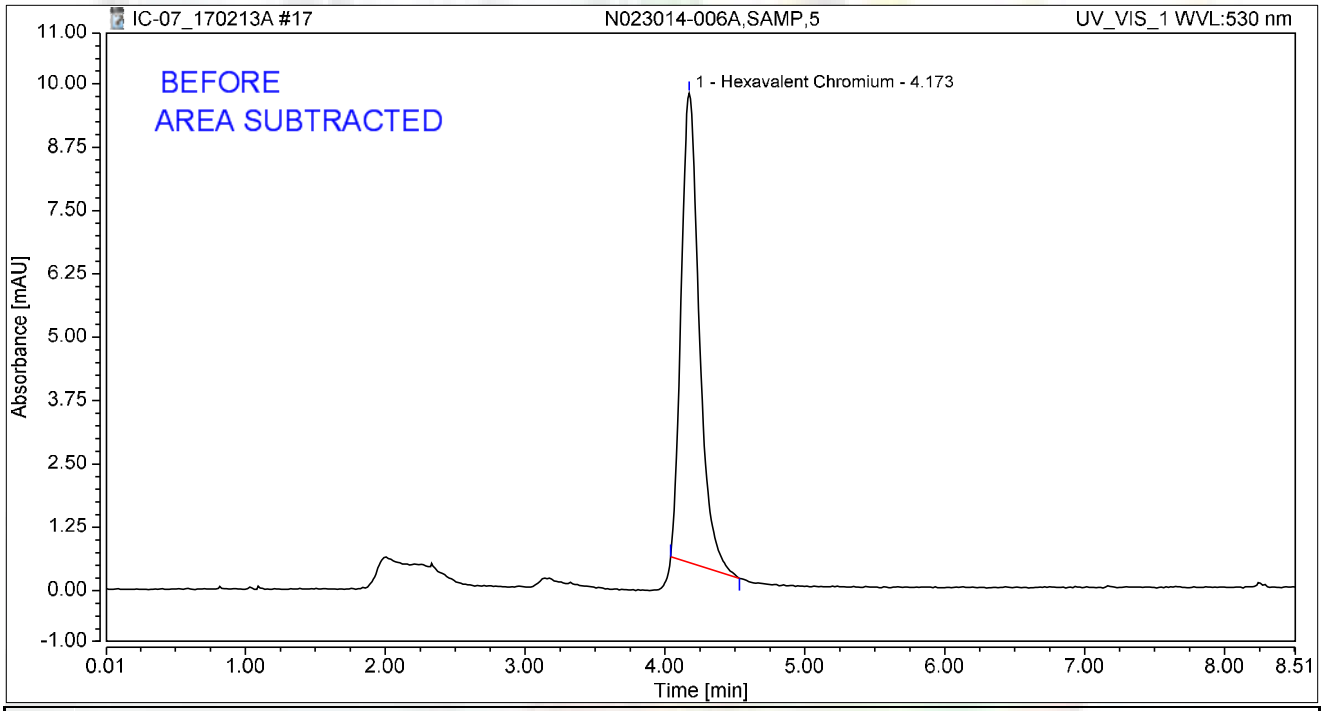
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.393	9.258	100.00	100.00	5.2510
Total:			**1.393**	**9.258**	**100.00**	**100.00**	

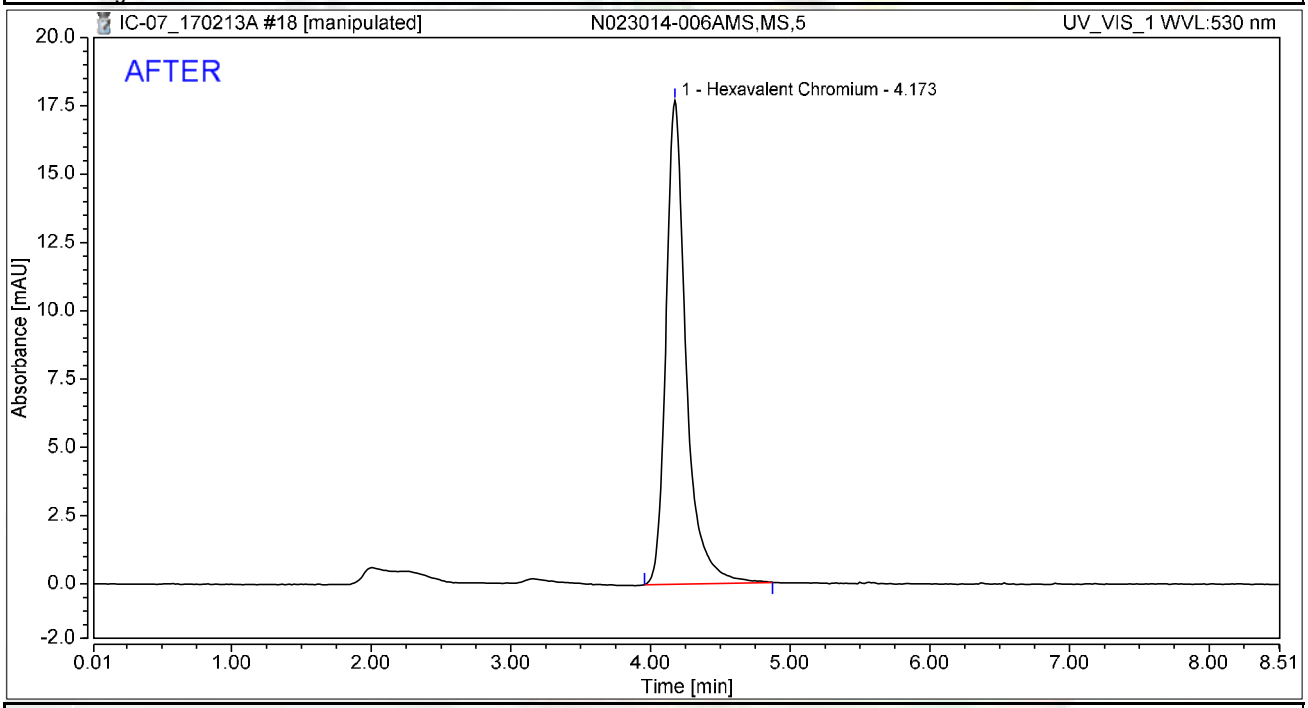
rba **2/19/2017**

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.950	17.711	100.00	100.00	11.1209
Total:			**2.950**	**17.711**	**100.00**	**100.00**	

rba 2/19/2017

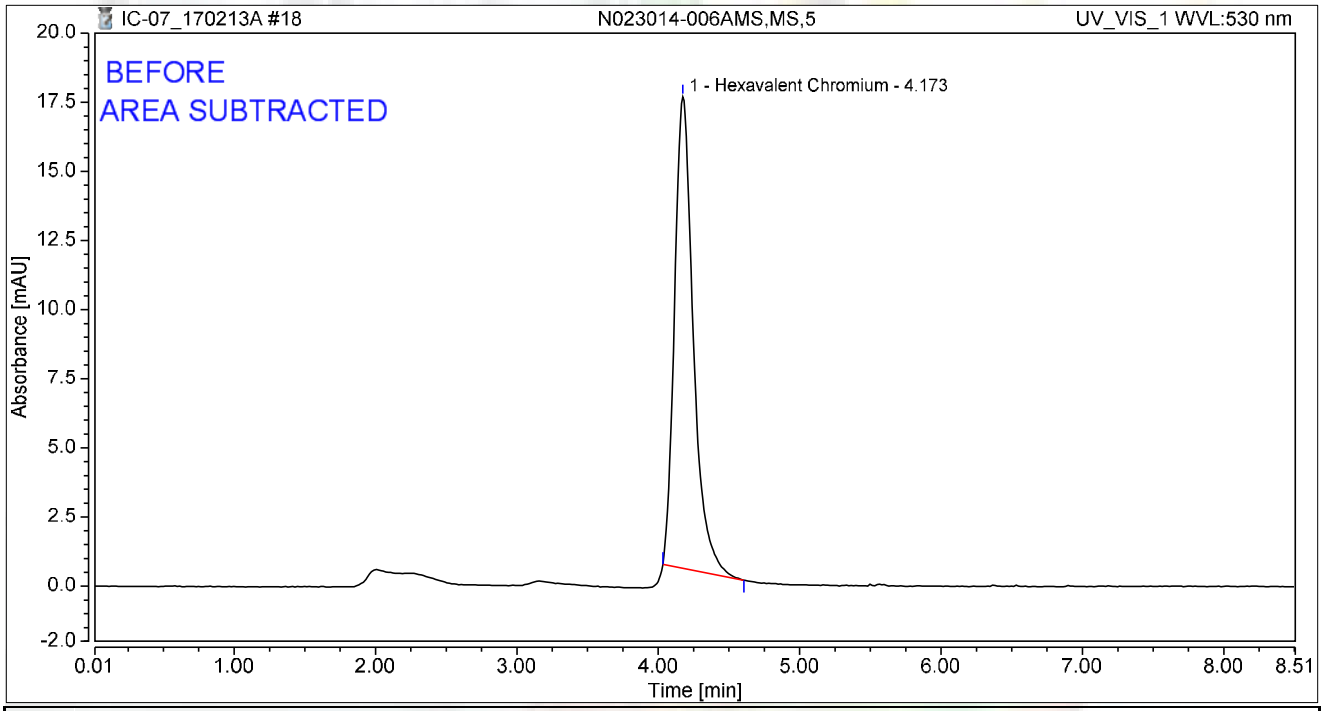
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.626	17.056	100.00	100.00	9.9021
Total:			**2.626**	**17.056**	**100.00**	**100.00**	

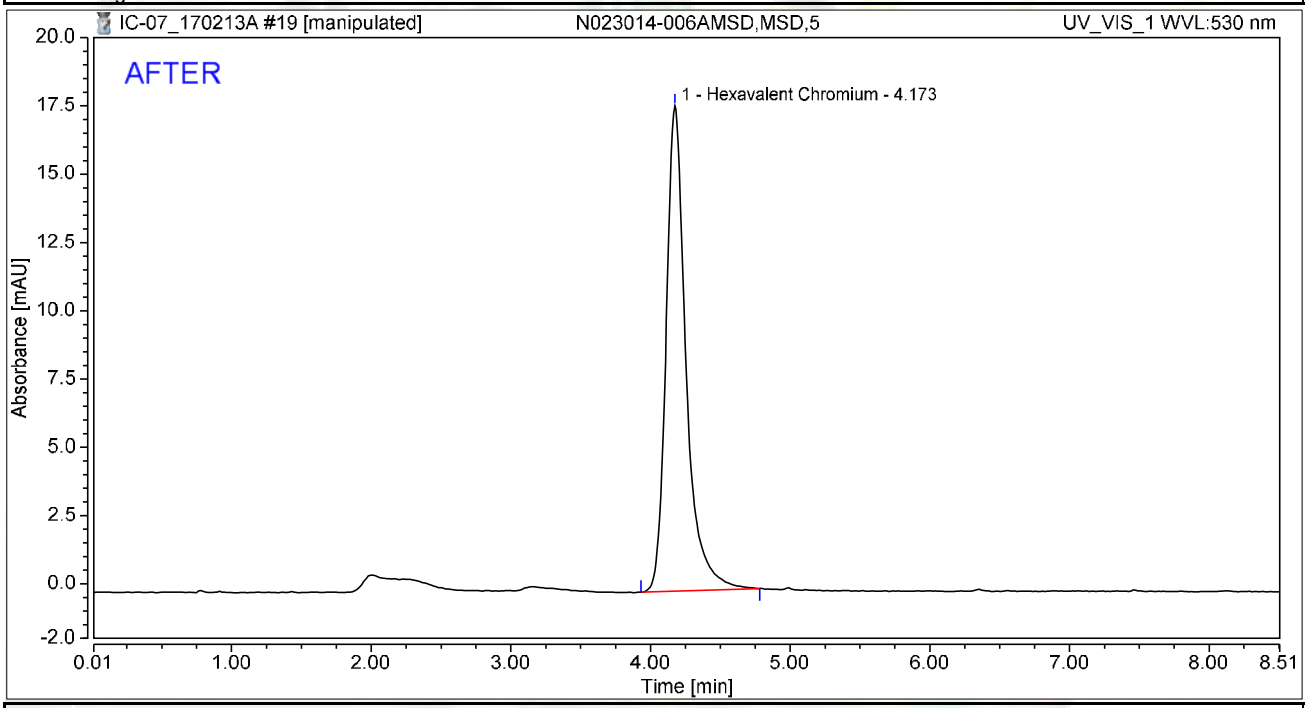
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMSD,MSD,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.940	17.775	100.00	100.00	11.0831
Total:			**2.940**	**17.775**	**100.00**	**100.00**	

rba 2/19/2017

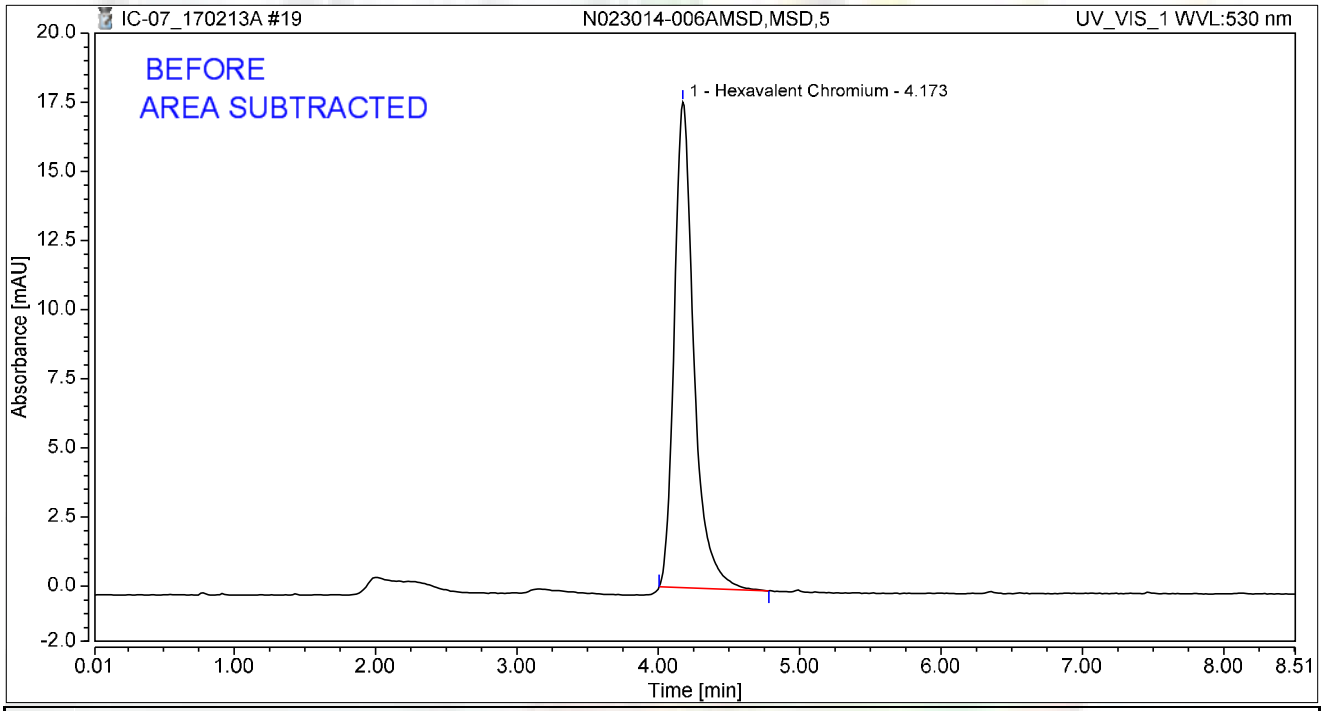
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-006AMSD,MSD,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.831	17.565	100.00	100.00	10.6715
Total:			**2.831**	**17.565**	**100.00**	**100.00**	

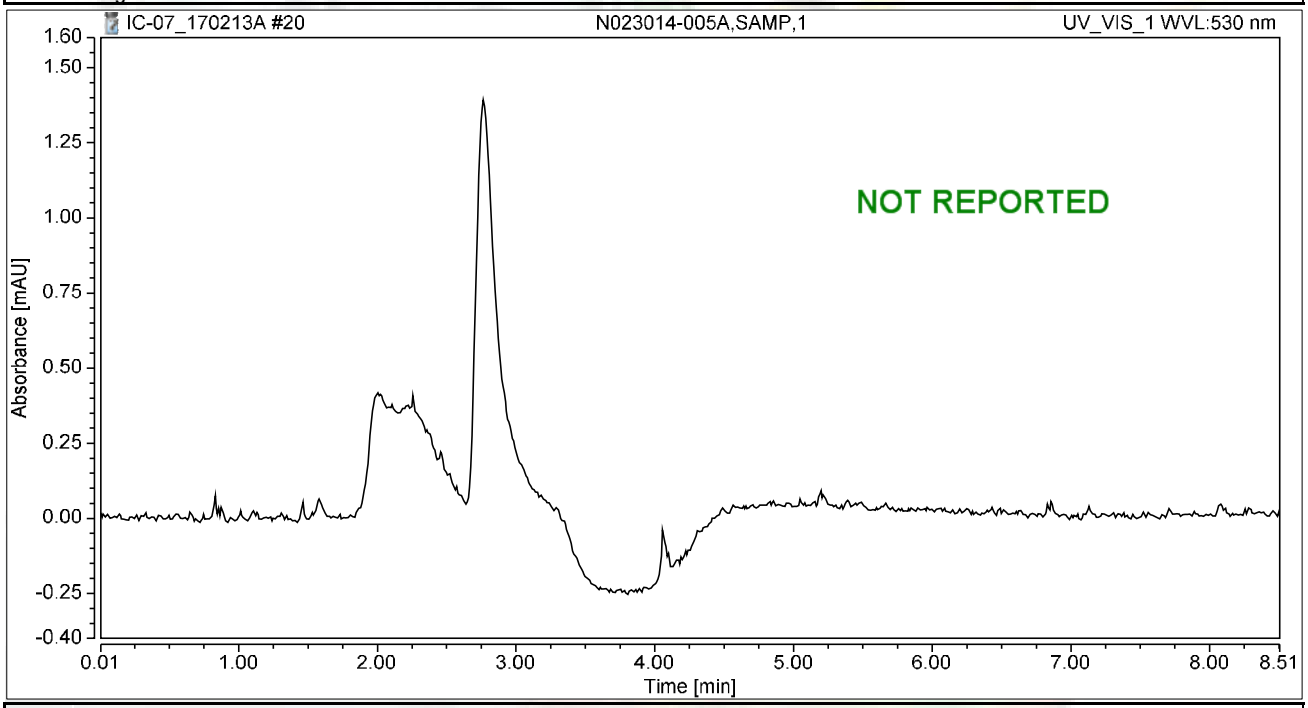
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

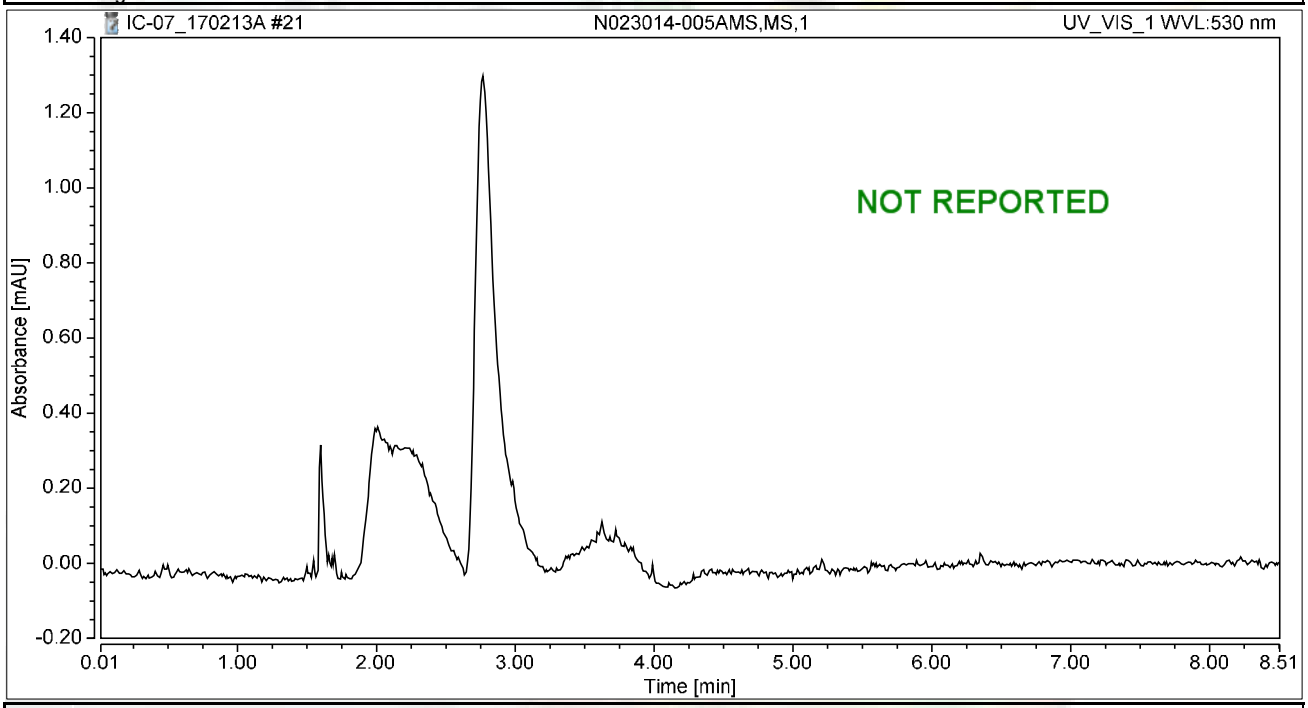
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

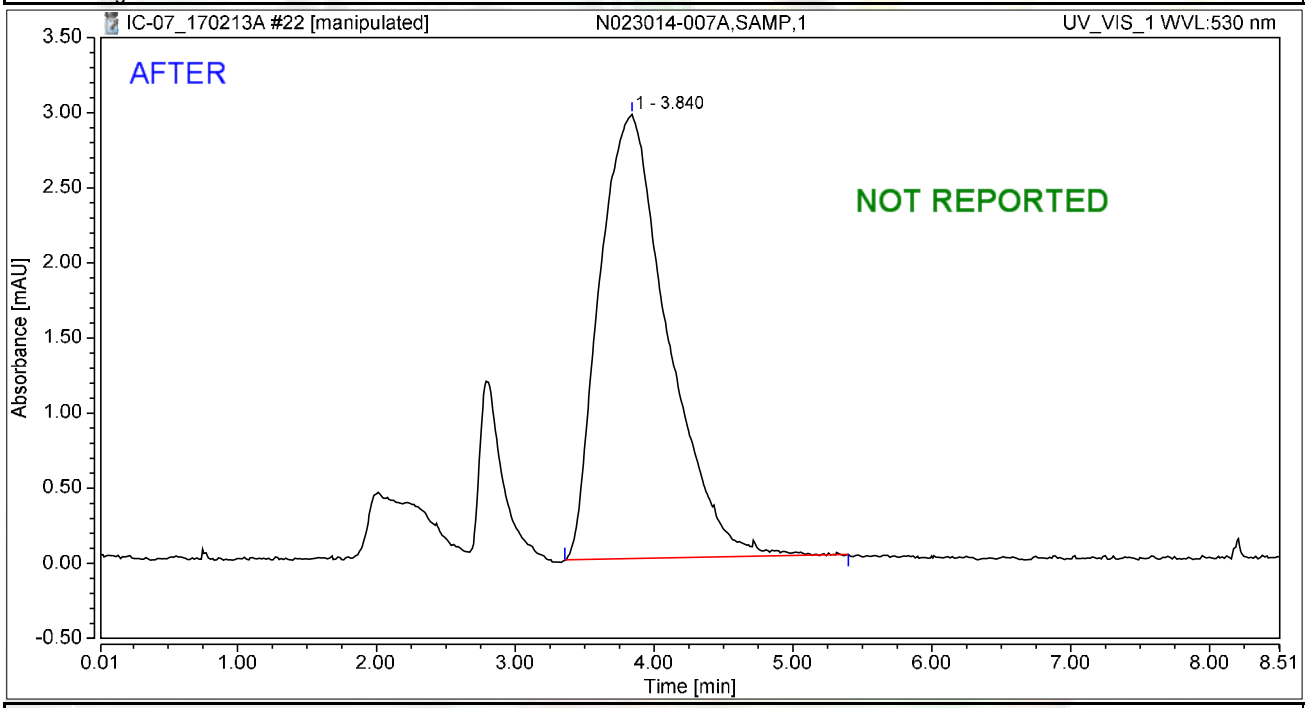
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.840	1.686	2.958	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.686**	**2.958**	**100.00**	**100.00**	

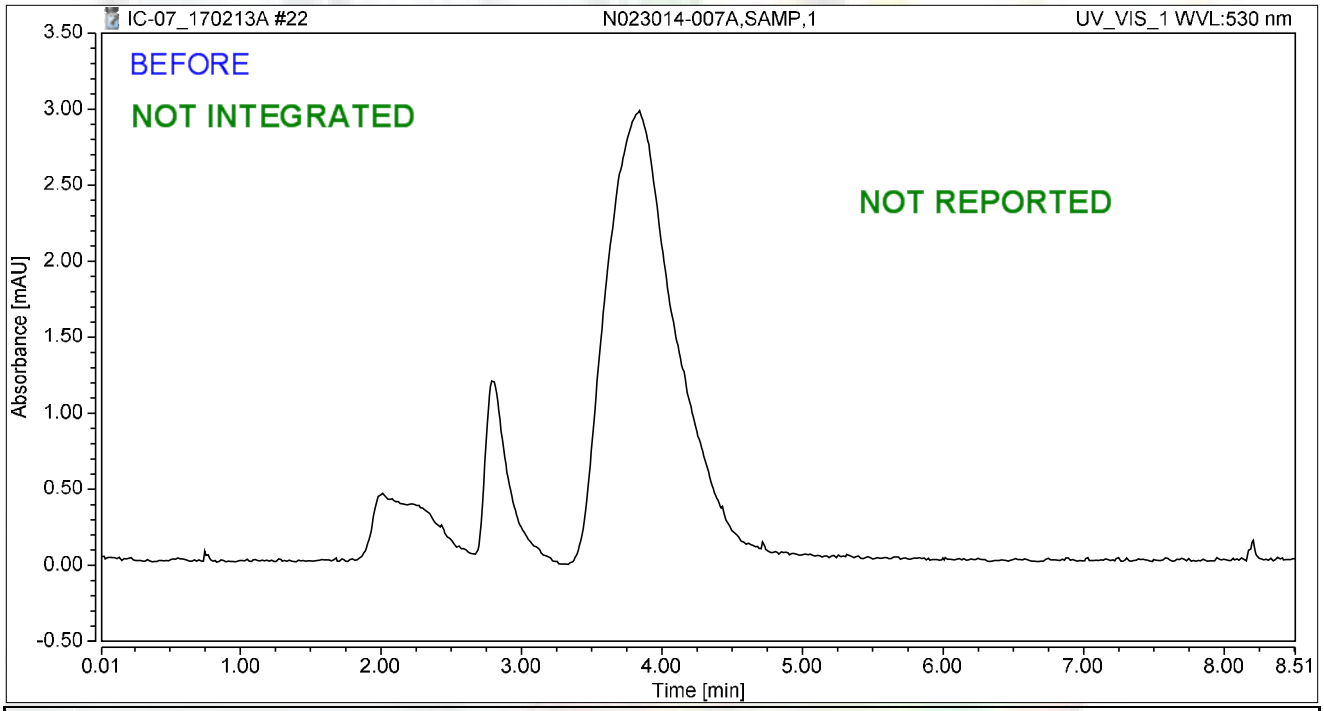
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

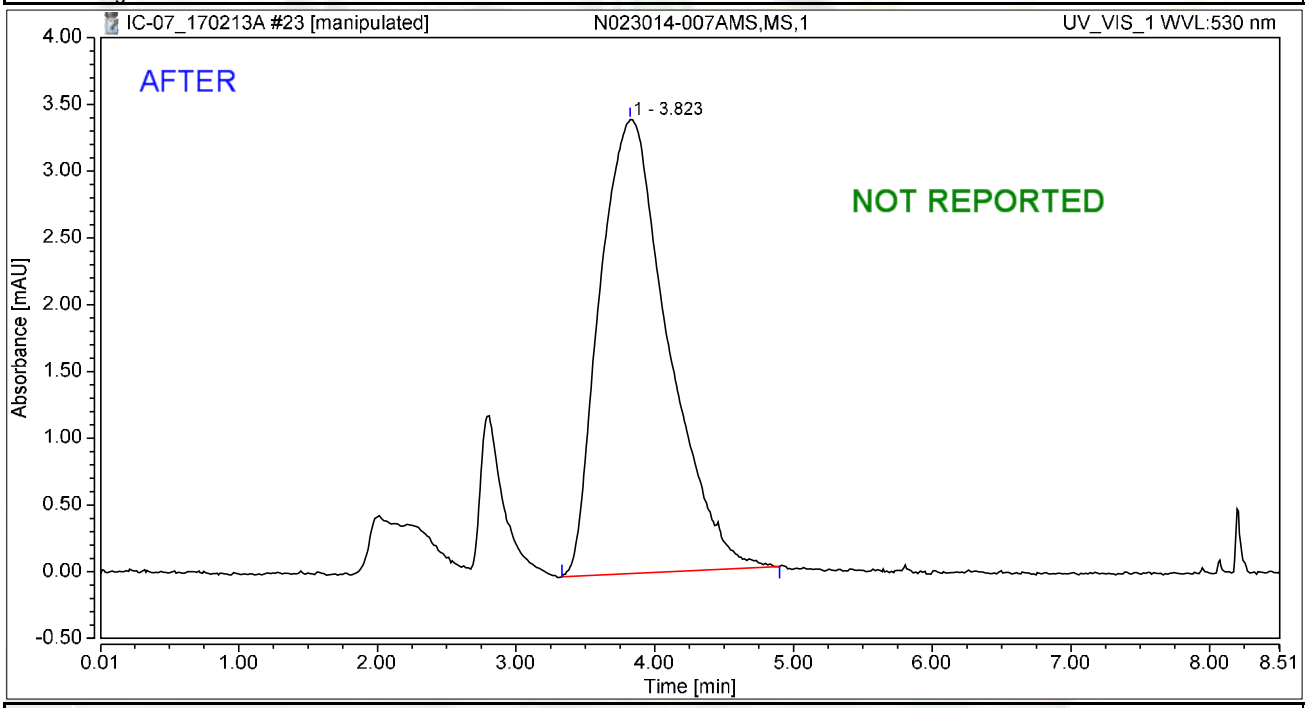
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.823	1.941	3.399	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.941**	**3.399**	**100.00**	**100.00**	

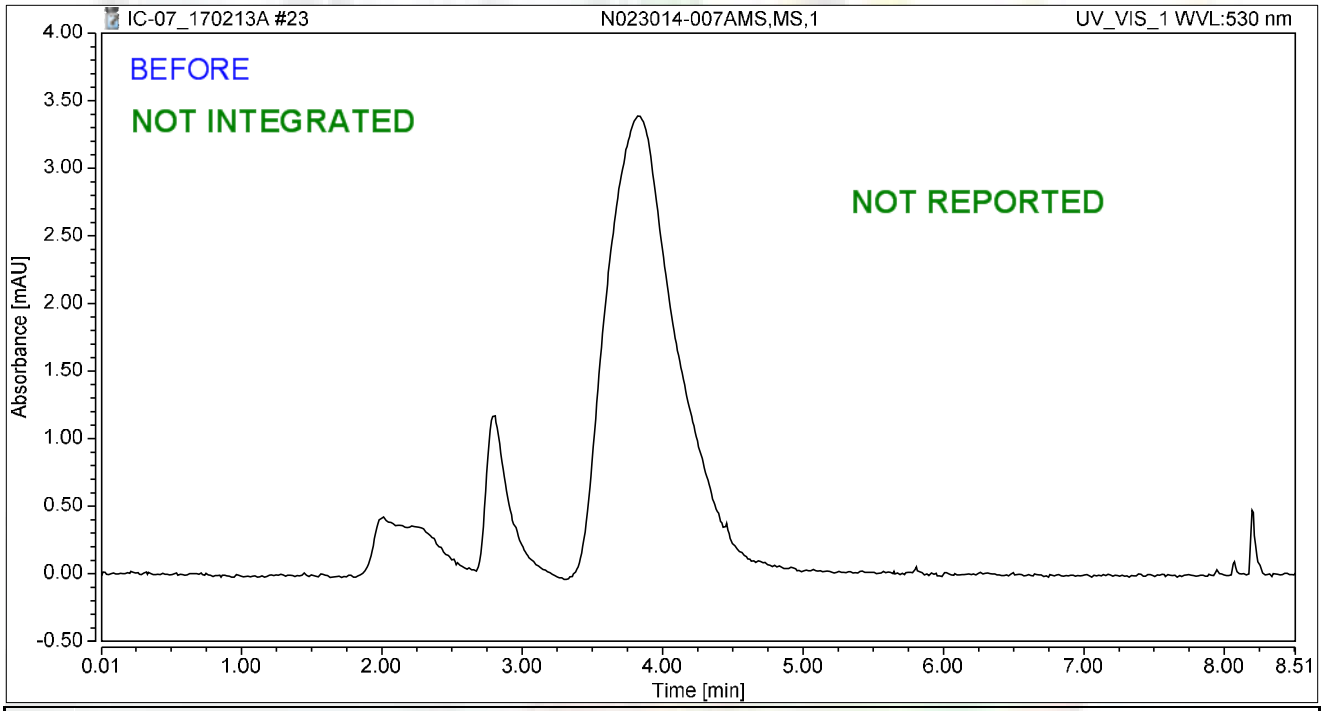
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

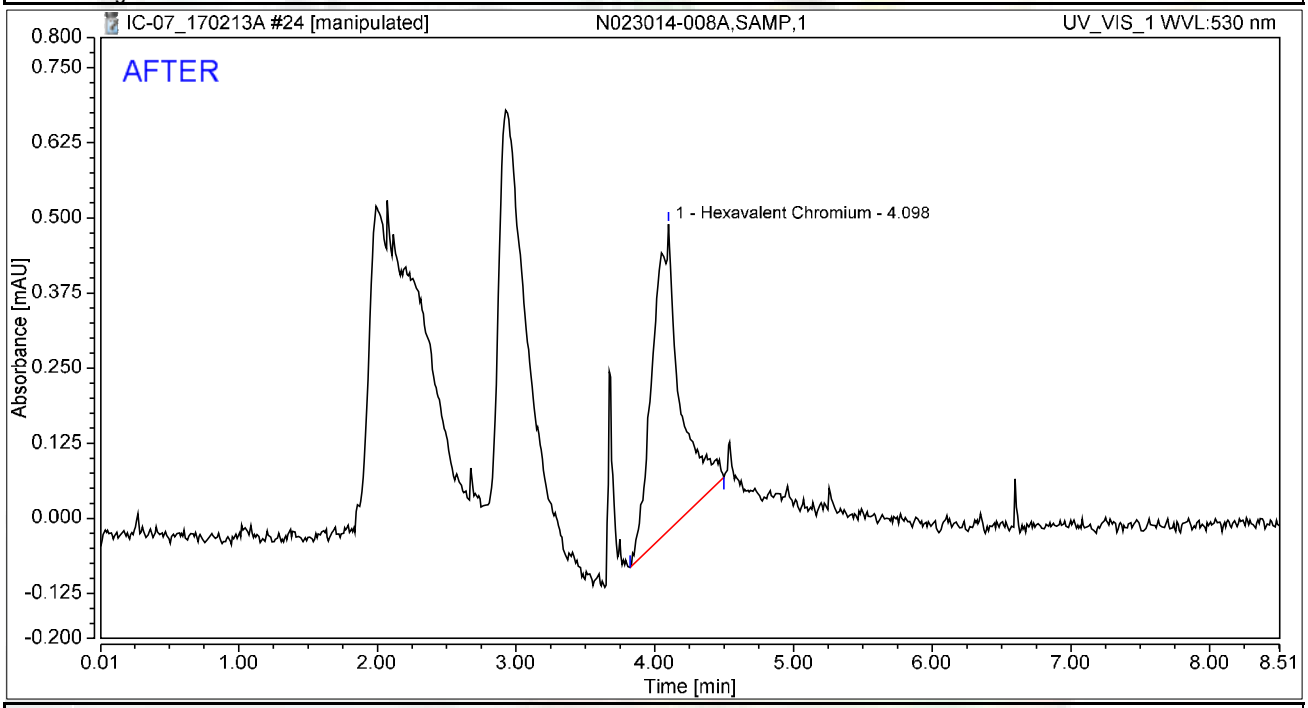
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.119	0.511	100.00	100.00	0.4478
Total:			**0.119**	**0.511**	**100.00**	**100.00**	

rba 2/19/2017

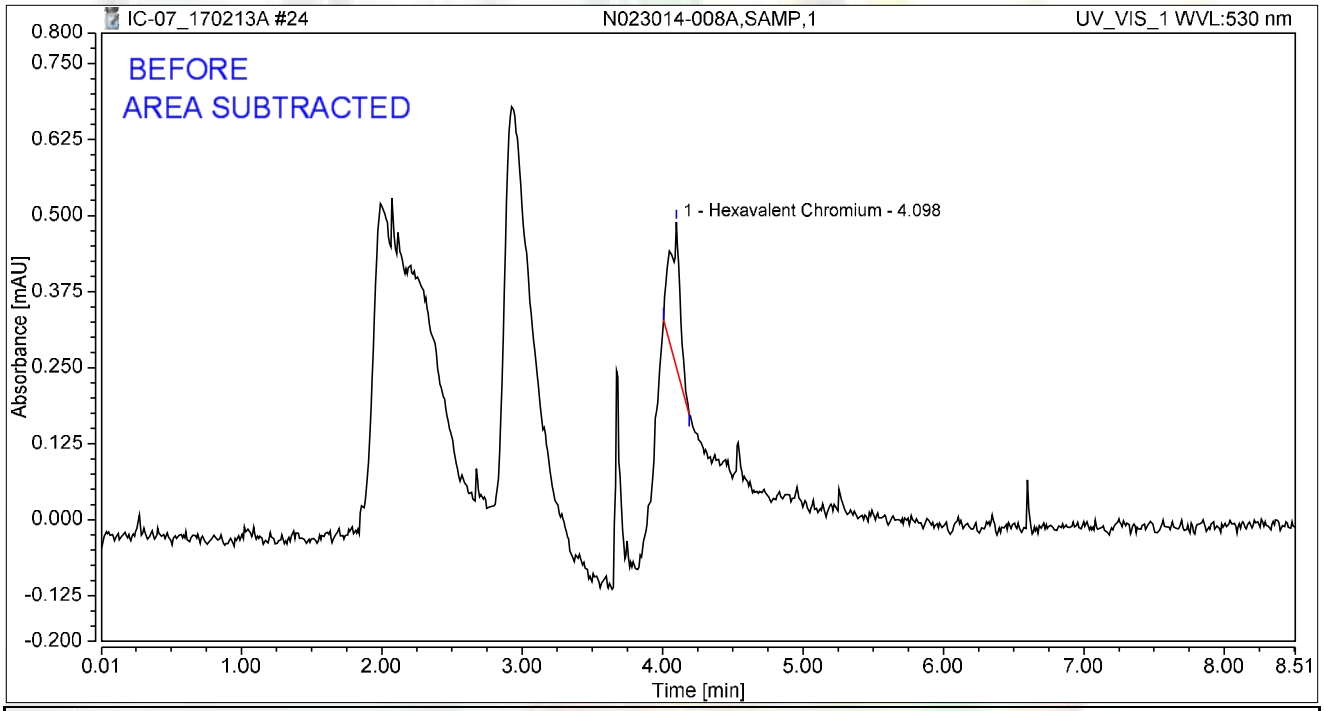
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.020	0.239	100.00	100.00	0.0756
Total:			**0.020**	**0.239**	**100.00**	**100.00**	

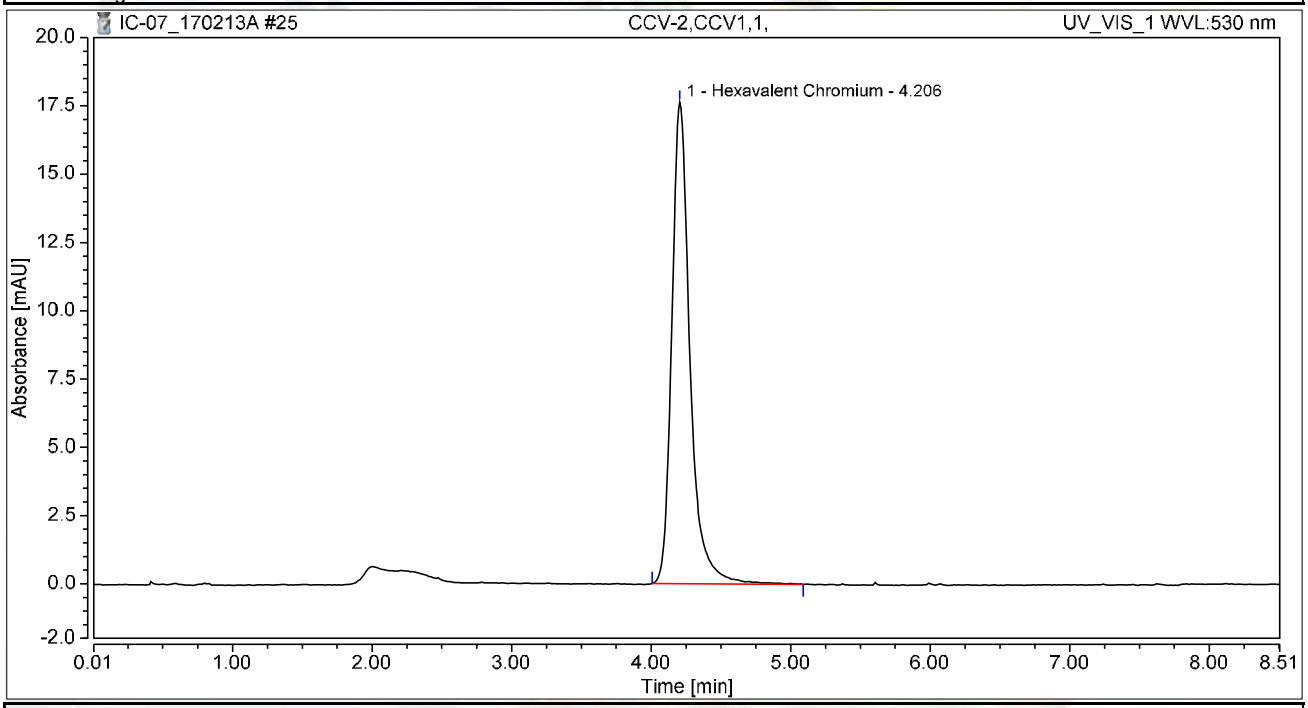
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

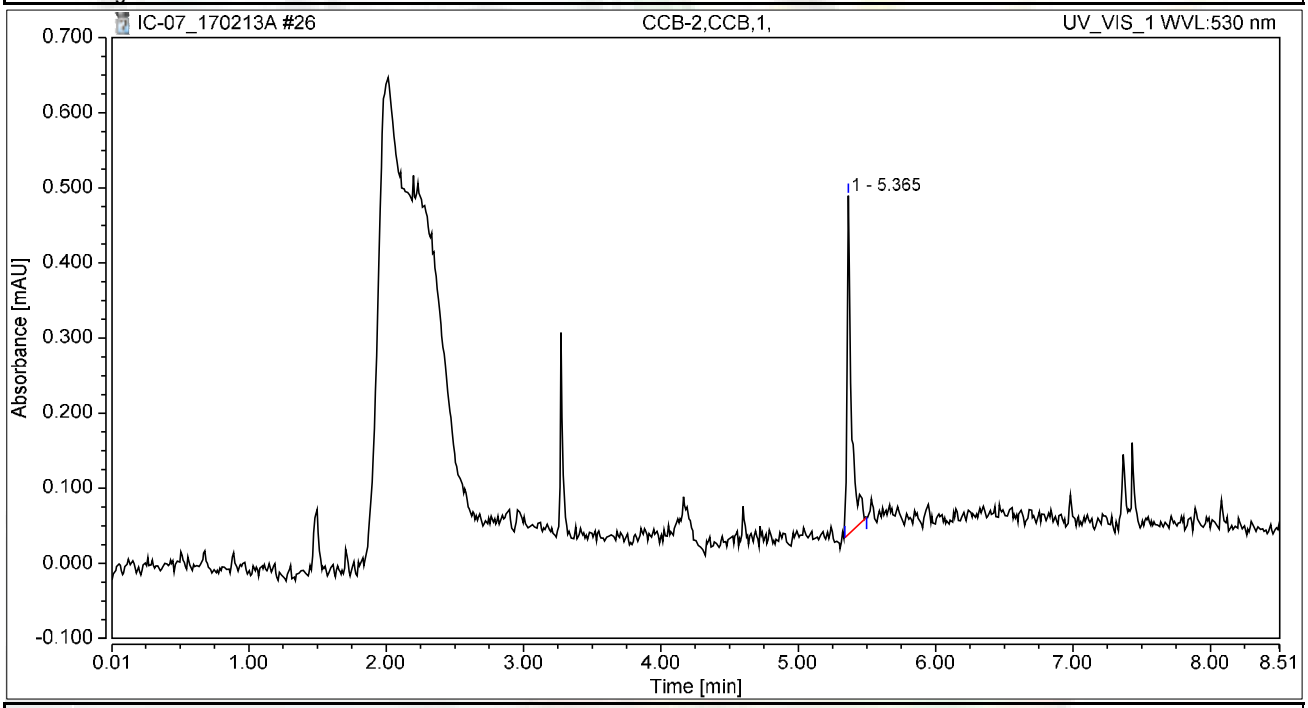
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.659	17.627	100.00	100.00	10.0234
Total:			**2.659**	**17.627**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

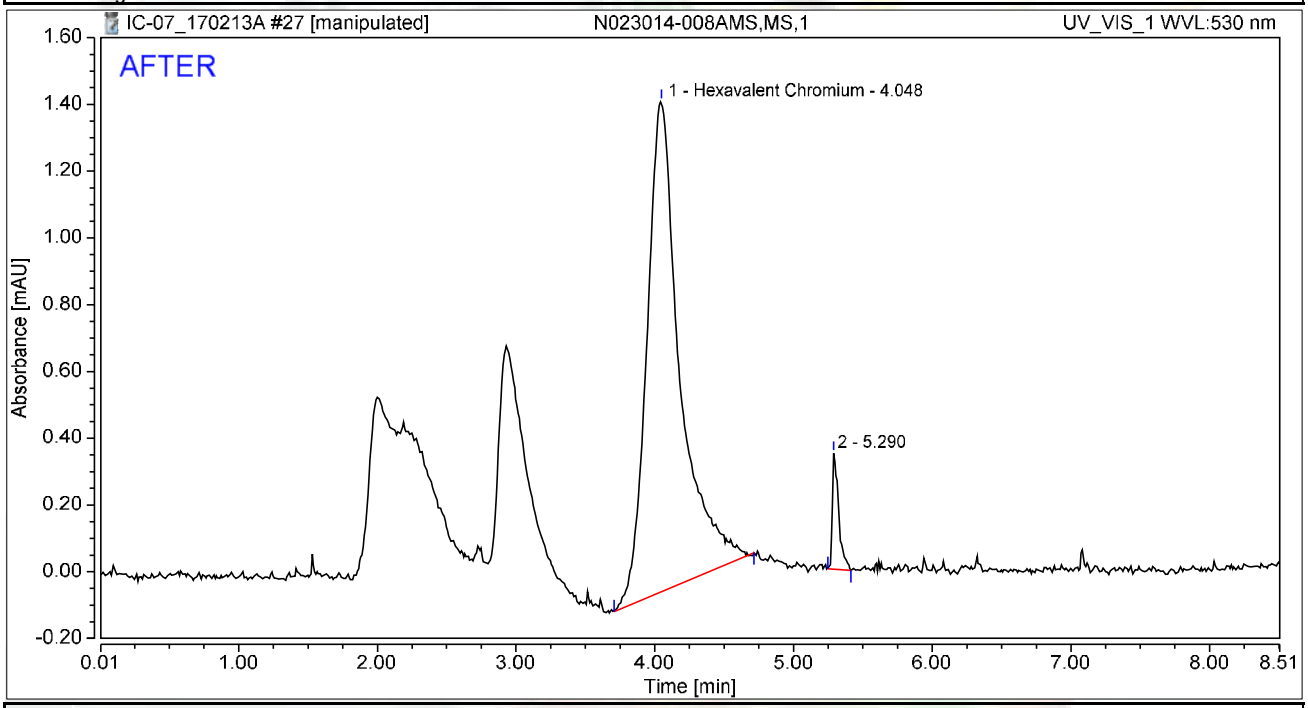
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.365	0.016	0.451	100.00	100.00	n.a.
Total:			**0.016**	**0.451**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.406	1.469	95.67	80.90	1.5295
2		5.290	0.018	0.347	4.33	19.10	n.a.
Total:			**0.424**	**1.816**	**100.00**	**100.00**	

rba 2/19/2017

Reviewed by: Nancy 2/22/2017

My first report/Integration

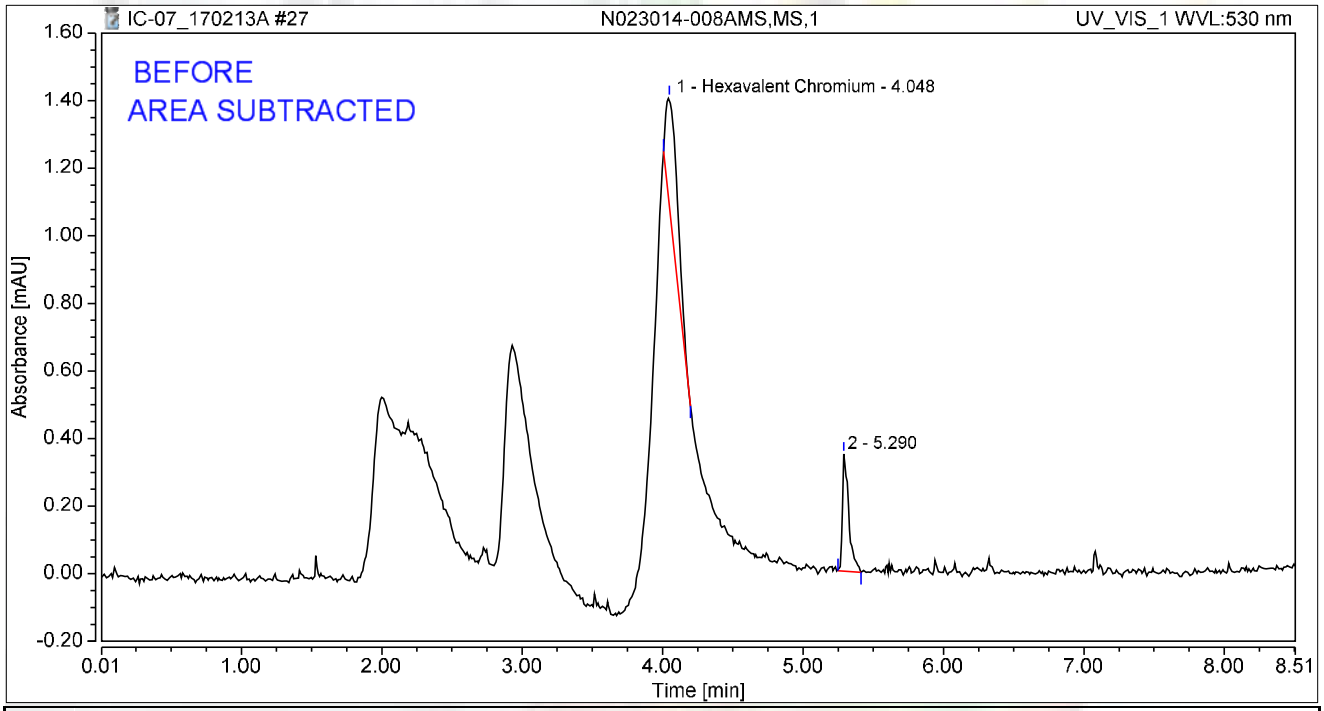
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.035	0.323	65.30	48.20	0.1303
2		5.290	0.018	0.347	34.70	51.80	n.a.
Total:			**0.053**	**0.670**	**100.00**	**100.00**	

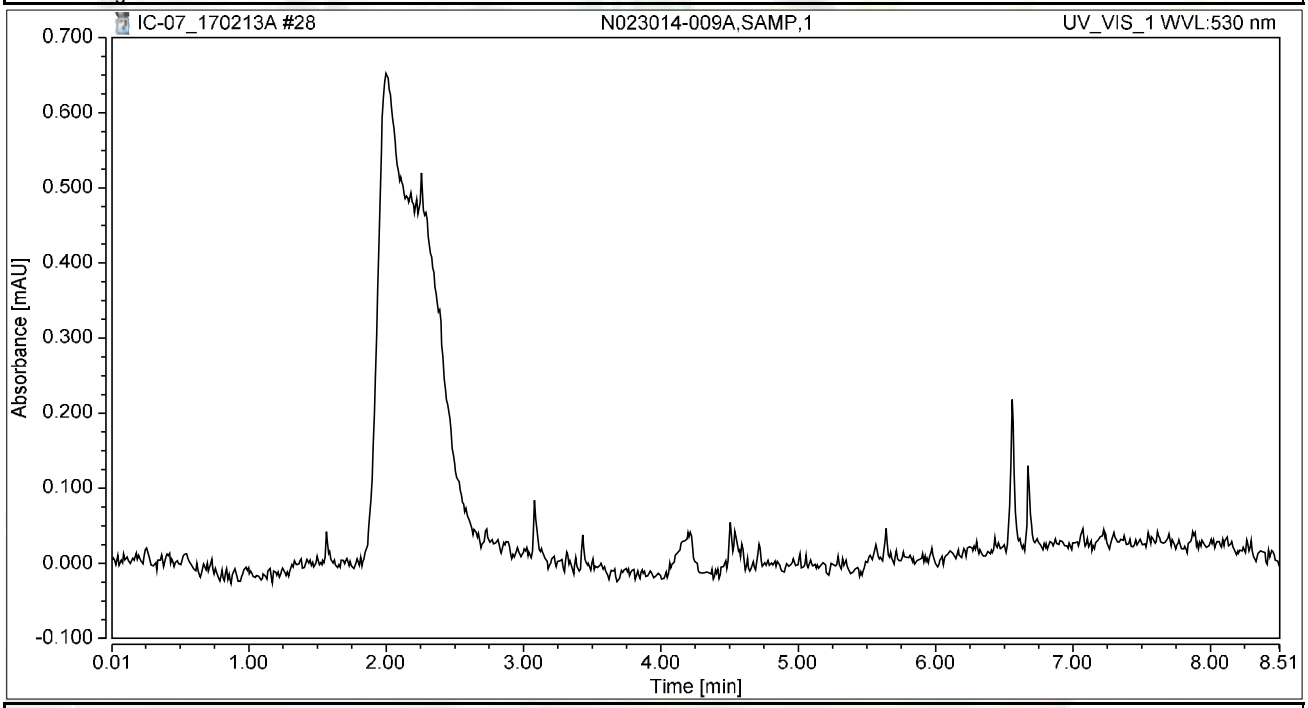
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

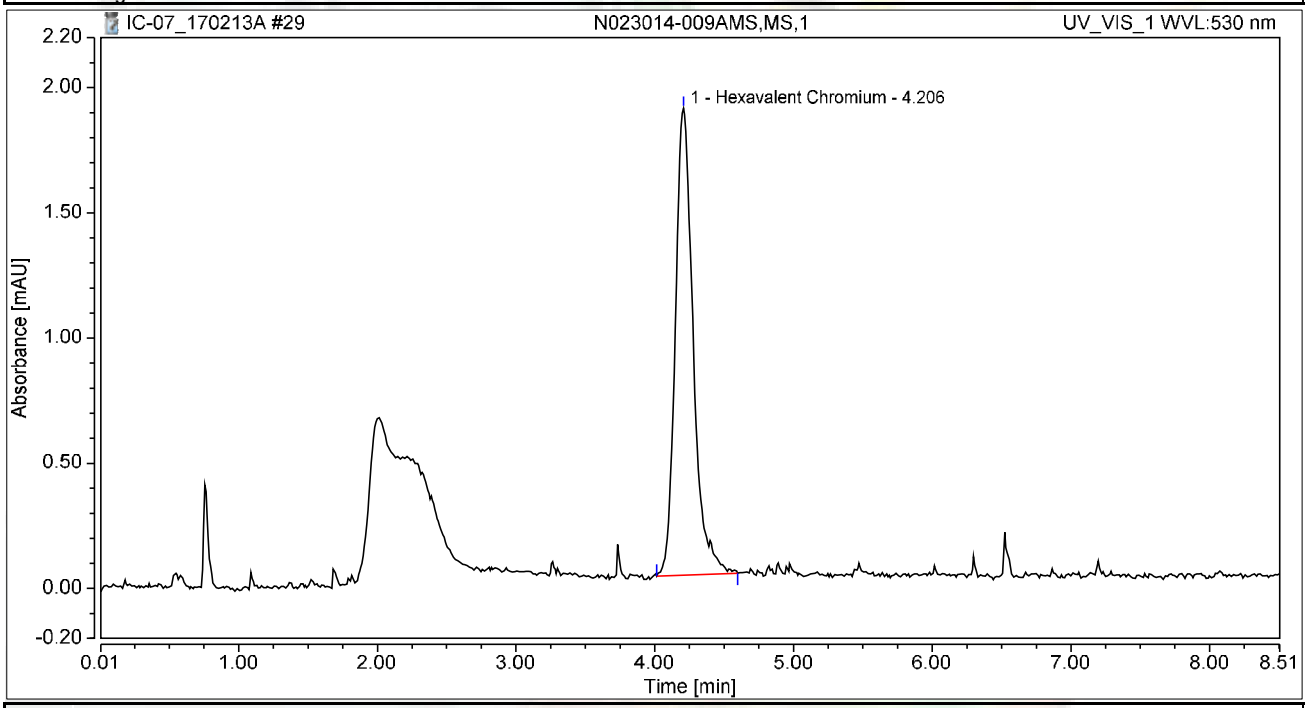
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

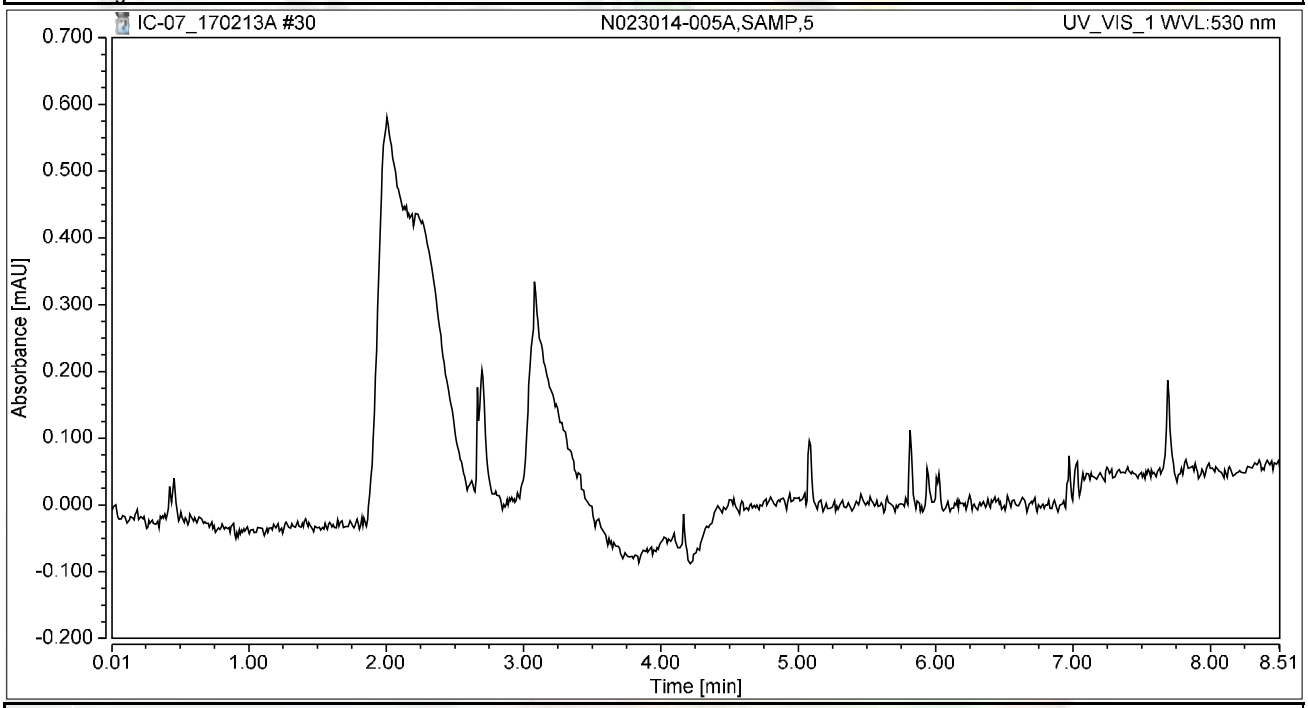
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.278	1.864	100.00	100.00	1.0479
Total:			**0.278**	**1.864**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

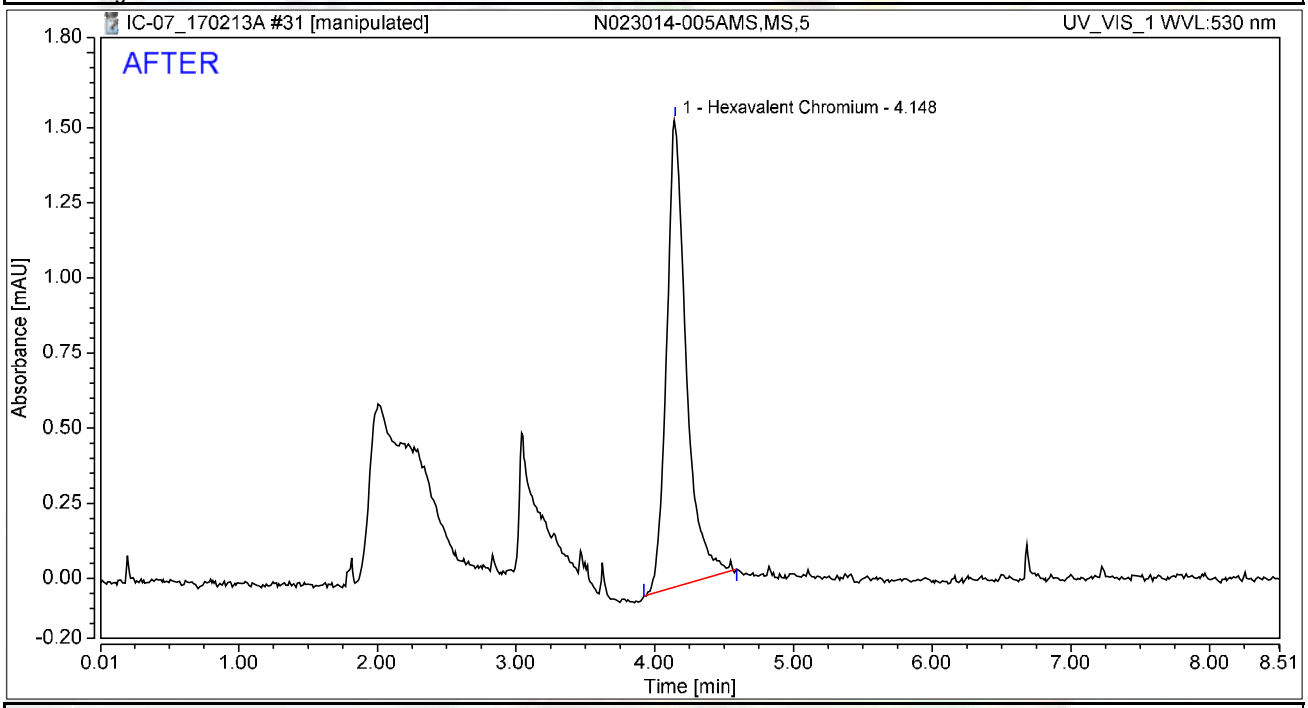
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.255	1.558	100.00	100.00	0.9596
Total:			**0.255**	**1.558**	**100.00**	**100.00**	

rba 2/19/2017

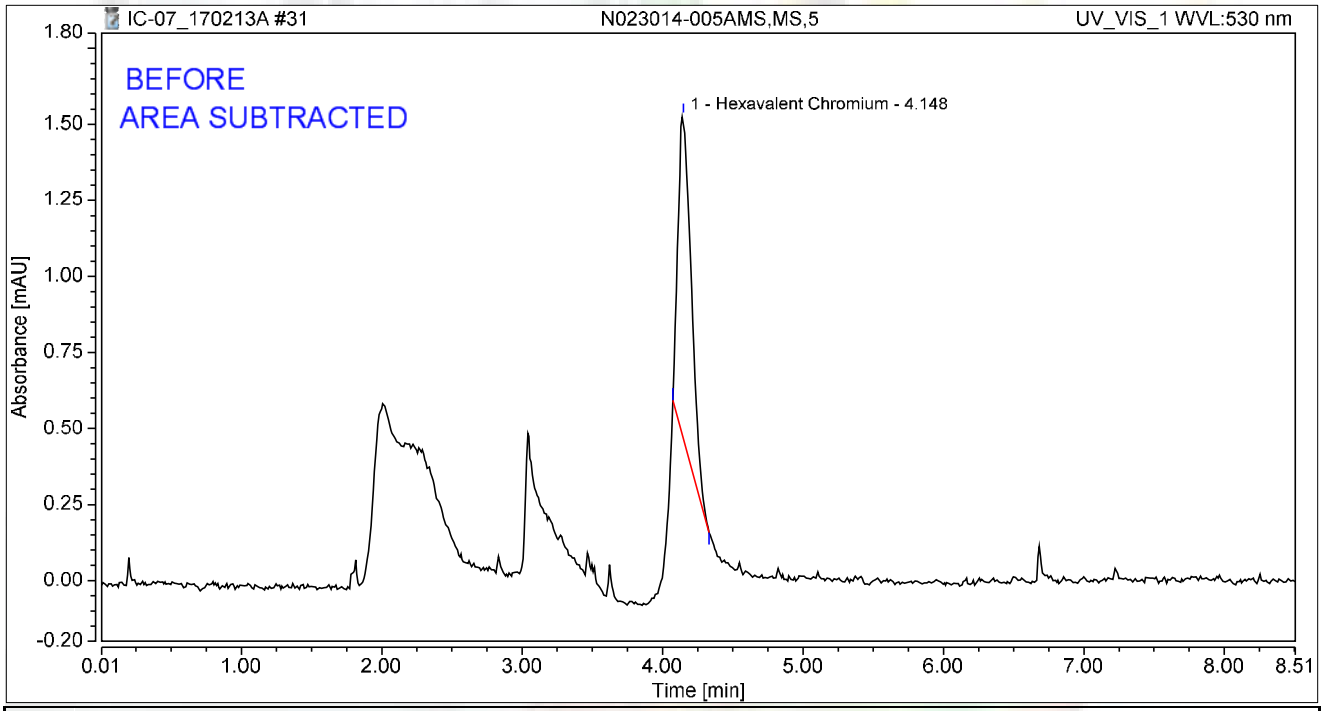
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.117	1.063	100.00	100.00	0.4399
Total:			**0.117**	**1.063**	**100.00**	**100.00**	

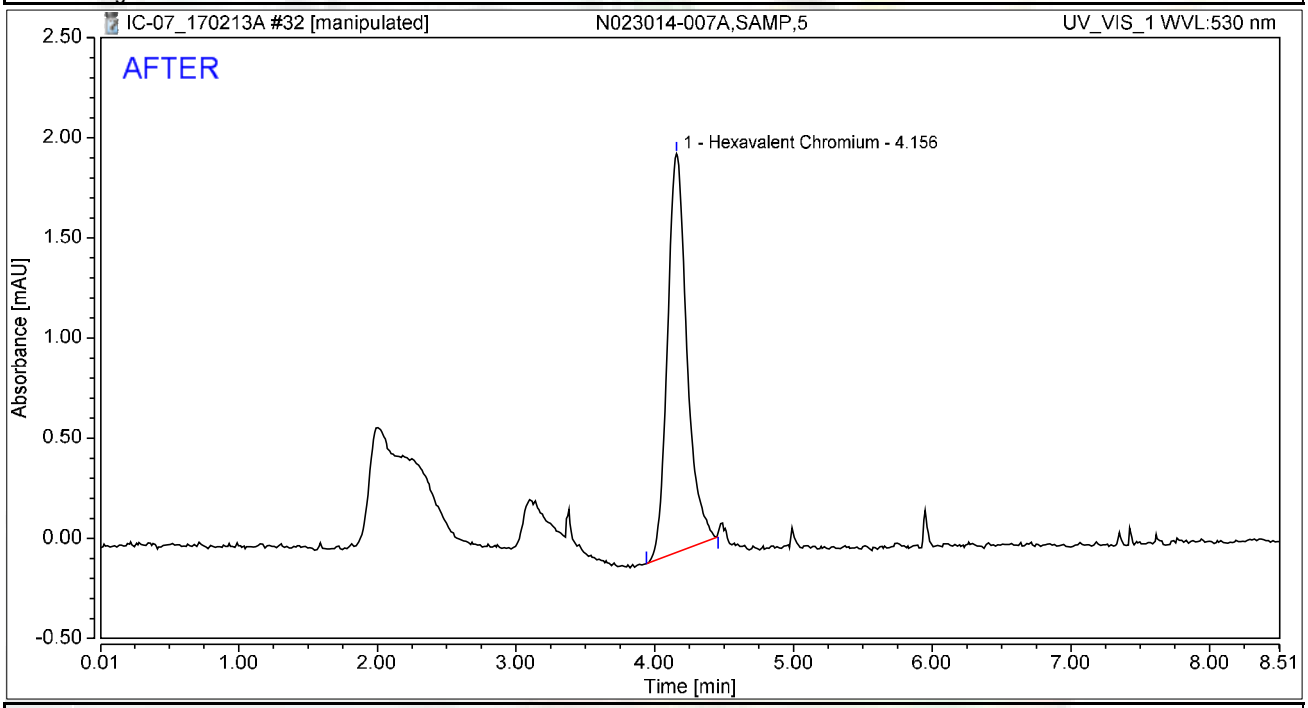
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.324	1.991	100.00	100.00	1.2208
Total:			**0.324**	**1.991**	**100.00**	**100.00**	

rba 2/19/2017

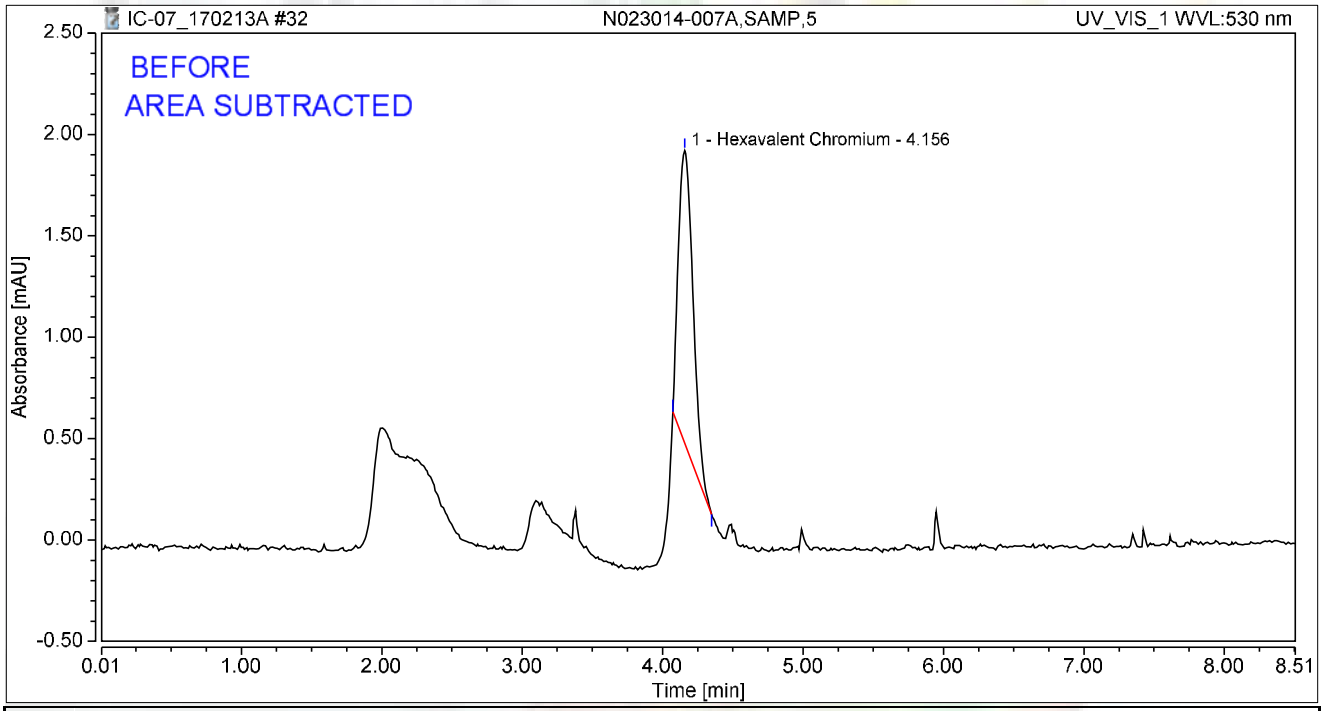
Reviewed
by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.175	1.442	100.00	100.00	0.6594
Total:			**0.175**	**1.442**	**100.00**	**100.00**	

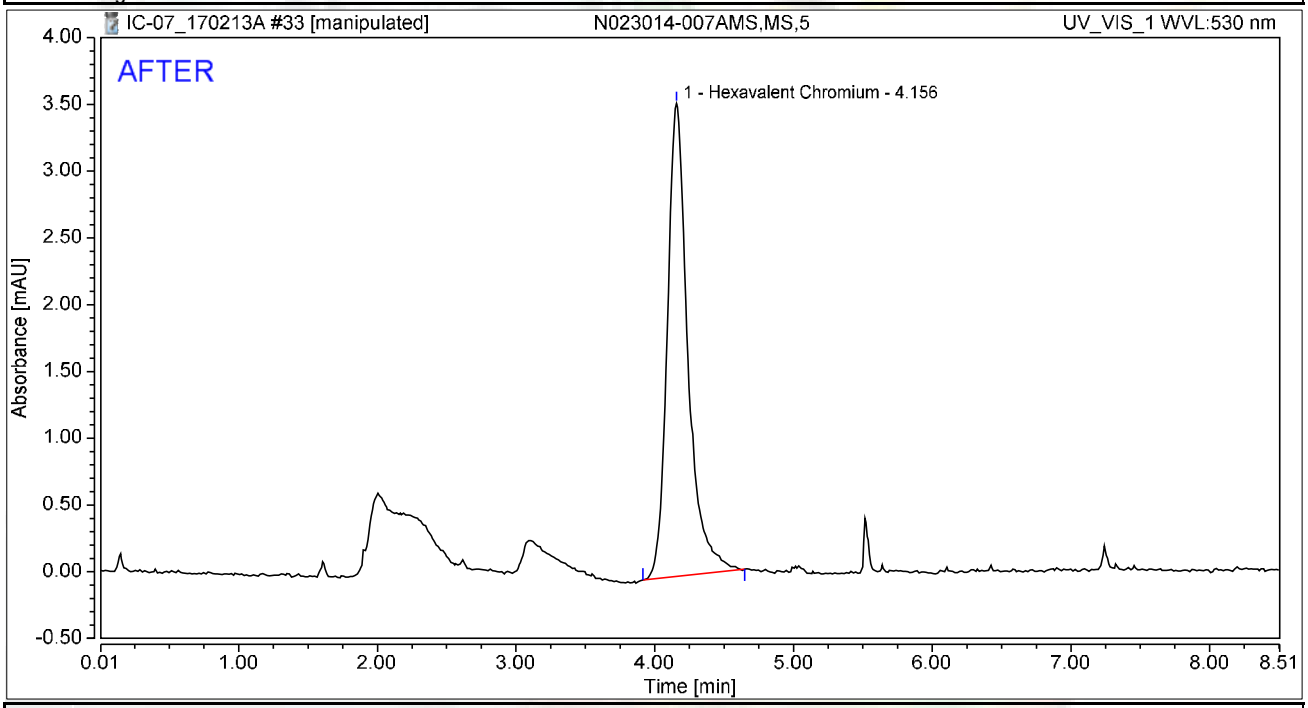
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.608	3.541	100.00	100.00	2.2927
Total:			**0.608**	**3.541**	**100.00**	**100.00**	

rba 2/19/2017

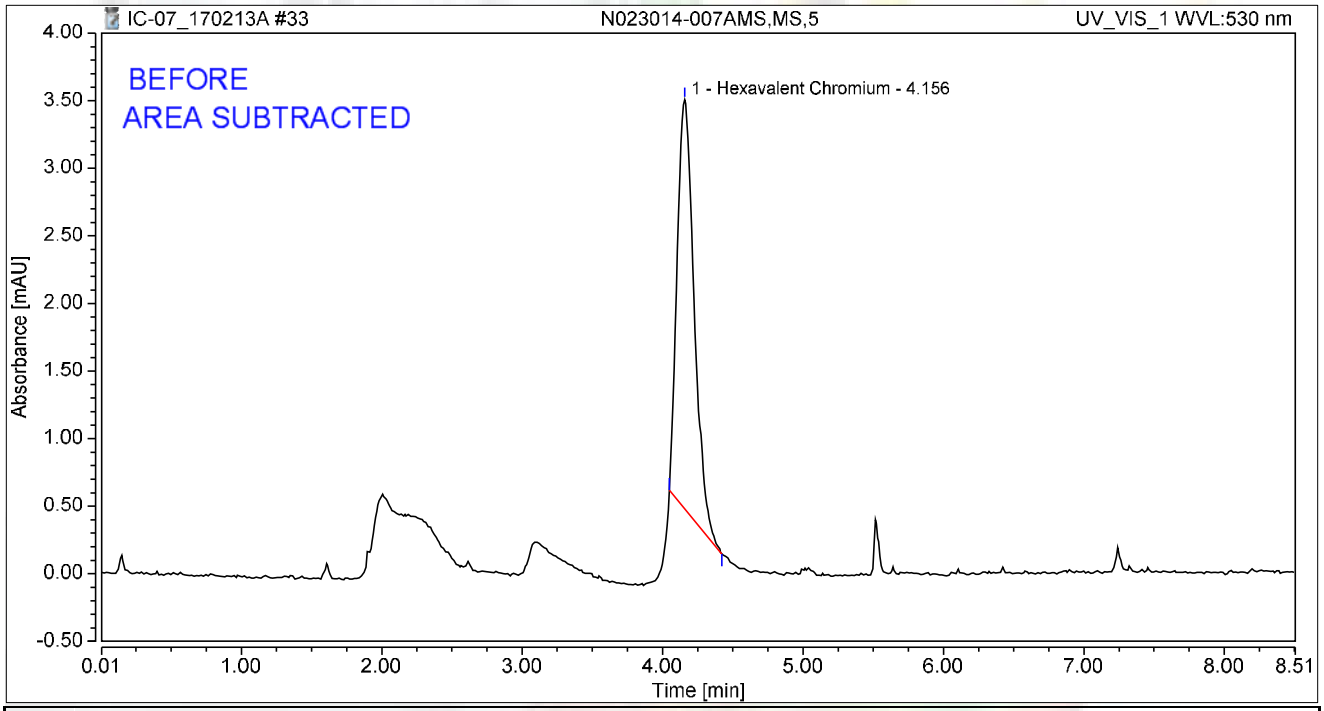
Reviewed
by Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.423	3.023	100.00	100.00	1.5943
Total:			**0.423**	**3.023**	**100.00**	**100.00**	

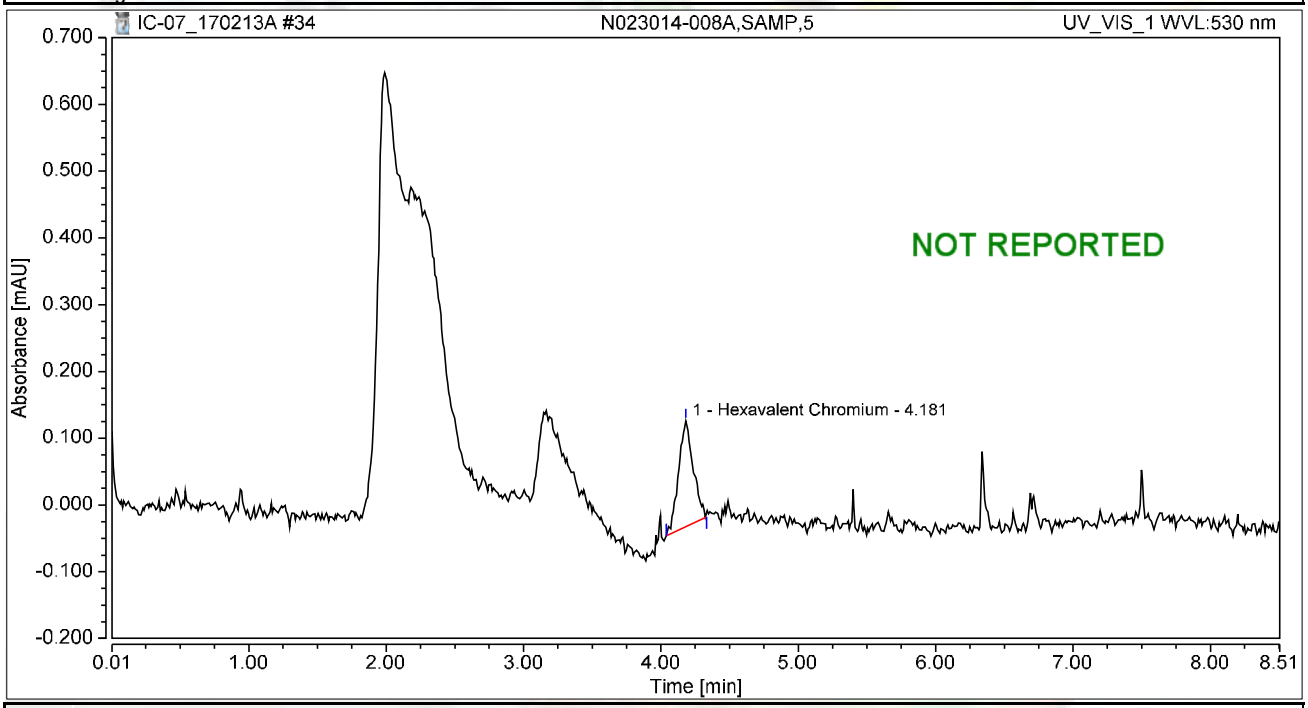
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

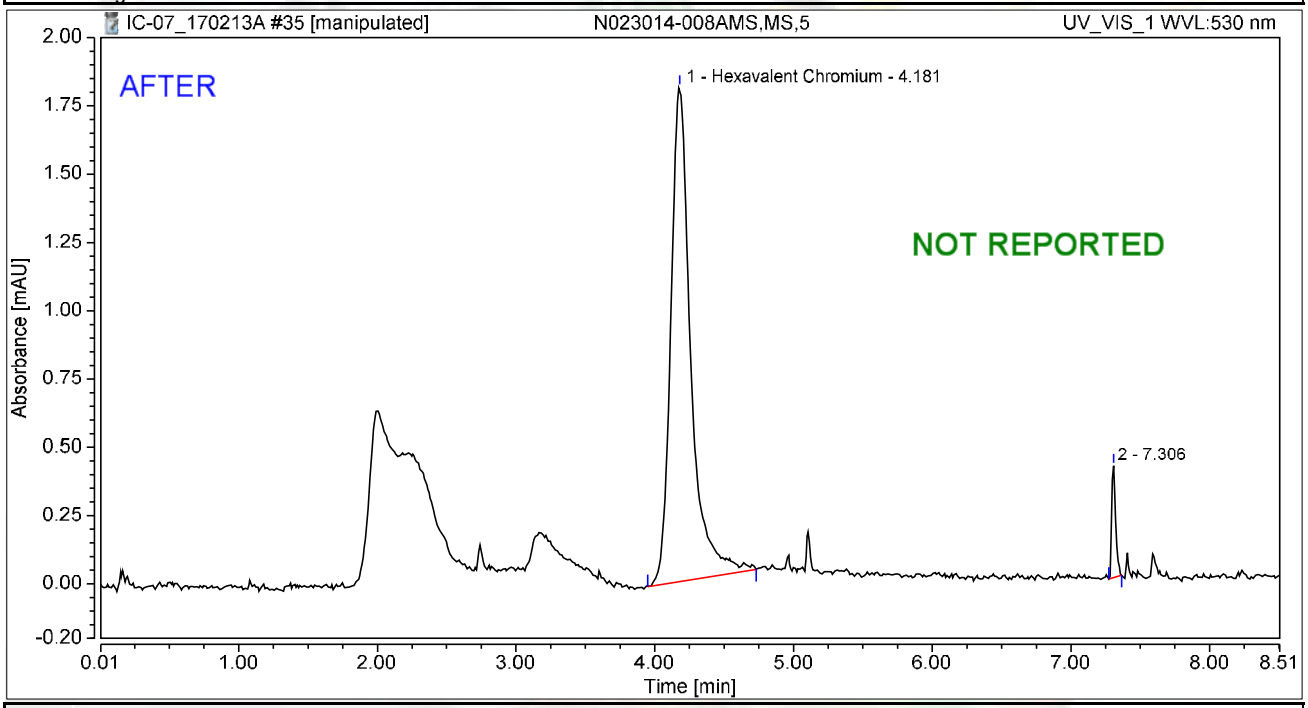
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.020	0.159	100.00	100.00	0.0743
Total:			**0.020**	**0.159**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.302	1.810	95.59	81.51	1.1404
2		7.306	0.014	0.411	4.41	18.49	n.a.
Total:			**0.316**	**2.220**	**100.00**	**100.00**	

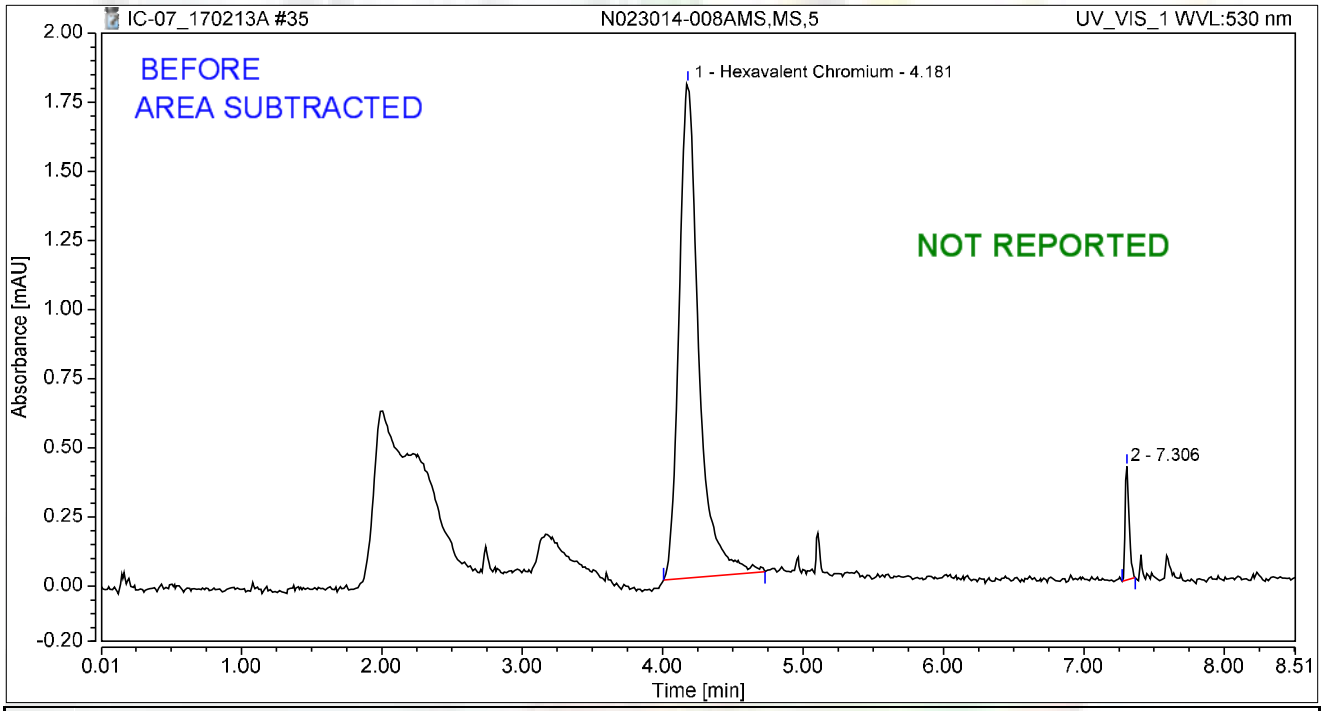
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023014-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.293	1.790	95.45	81.34	1.1029
2		7.306	0.014	0.411	4.55	18.66	n.a.
Total:			**0.306**	**2.200**	**100.00**	**100.00**	

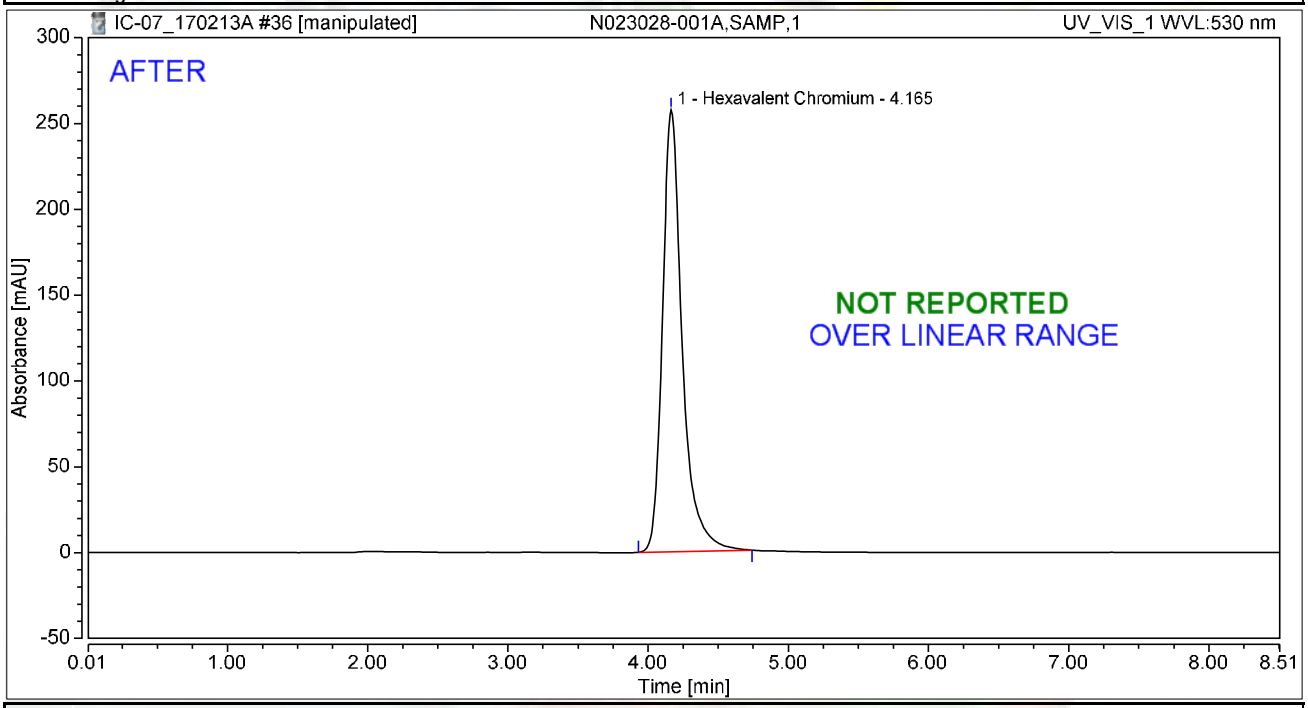
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	41.882	257.416	100.00	100.00	157.8977
Total:			**41.882**	**257.416**	**100.00**	**100.00**	

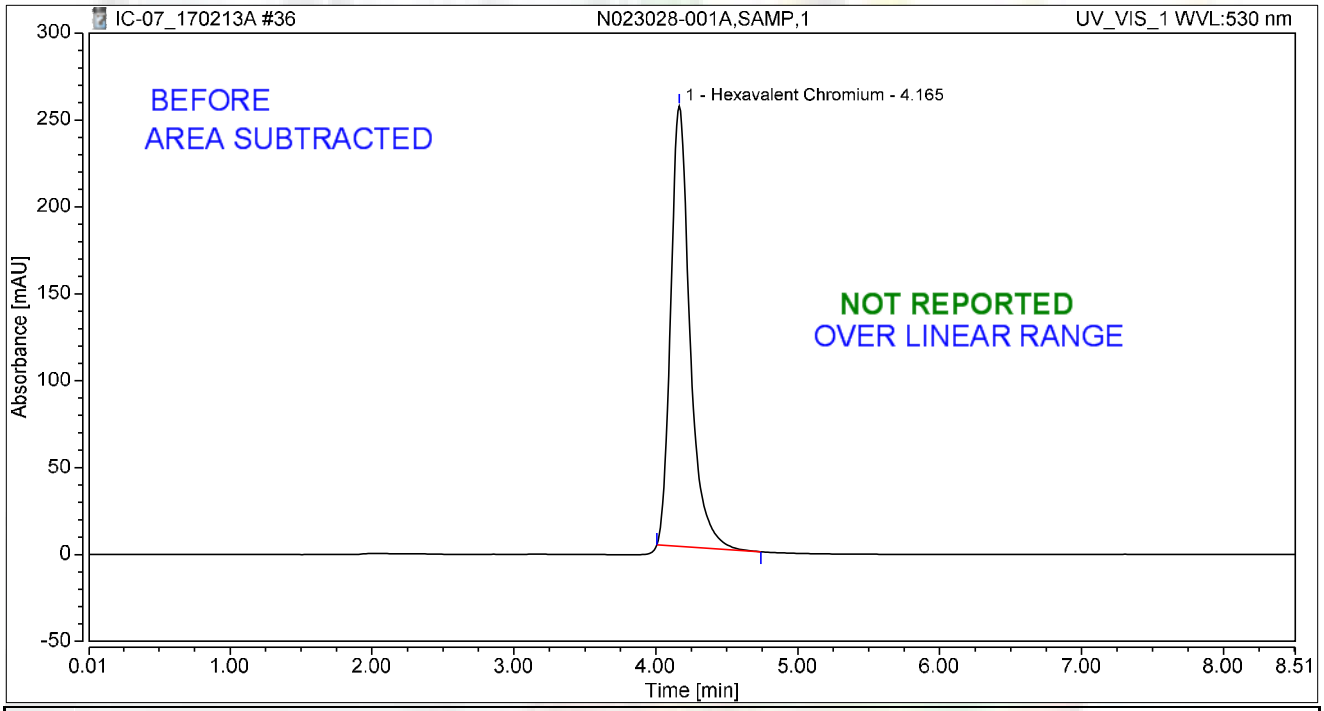
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	39.856	253.304	100.00	100.00	150.2598
Total:			**39.856**	**253.304**	**100.00**	**100.00**	

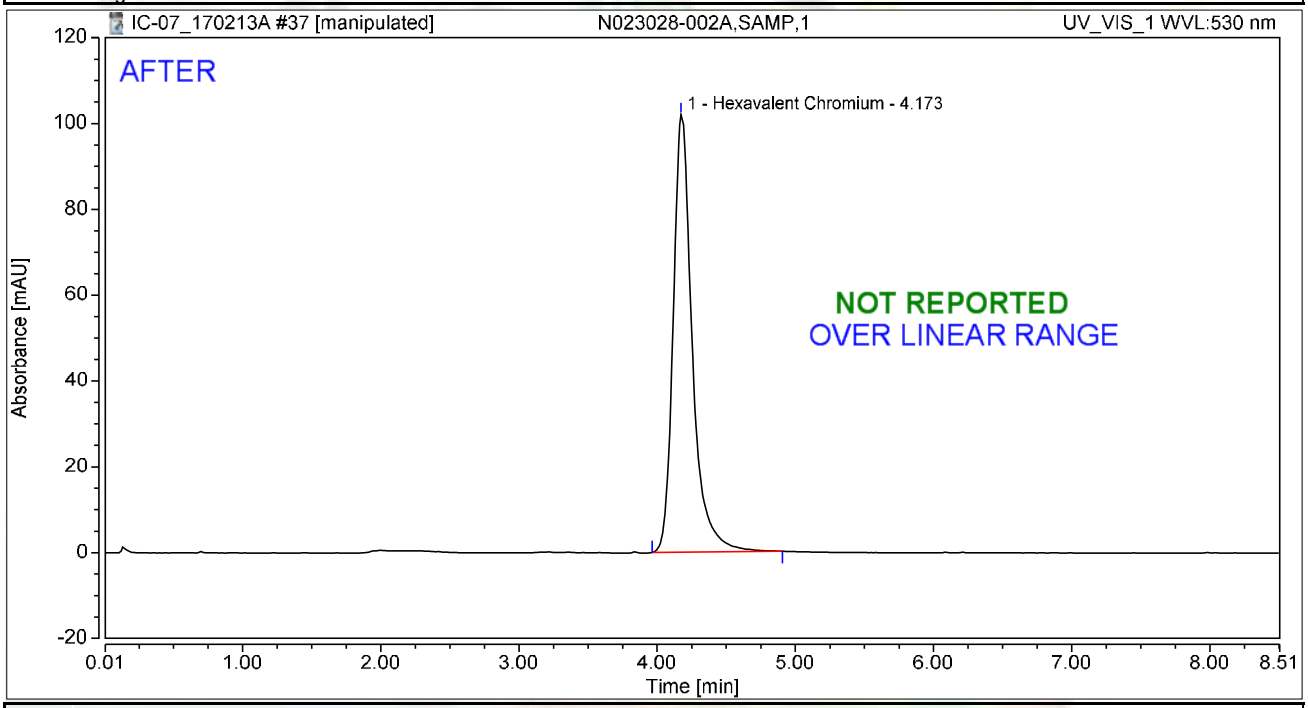
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	16.328	101.921	100.00	100.00	61.5562
Total:			**16.328**	**101.921**	**100.00**	**100.00**	

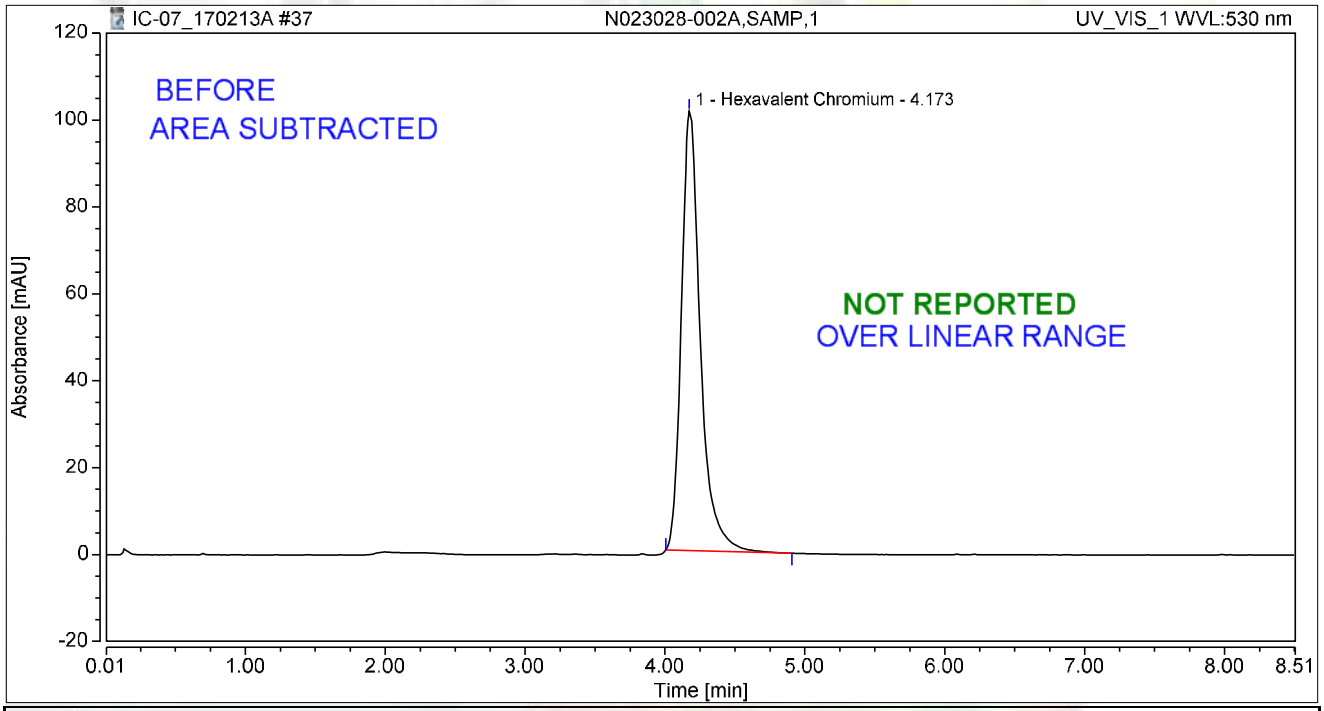
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	15.878	101.131	100.00	100.00	59.8597
Total:			**15.878**	**101.131**	**100.00**	**100.00**	

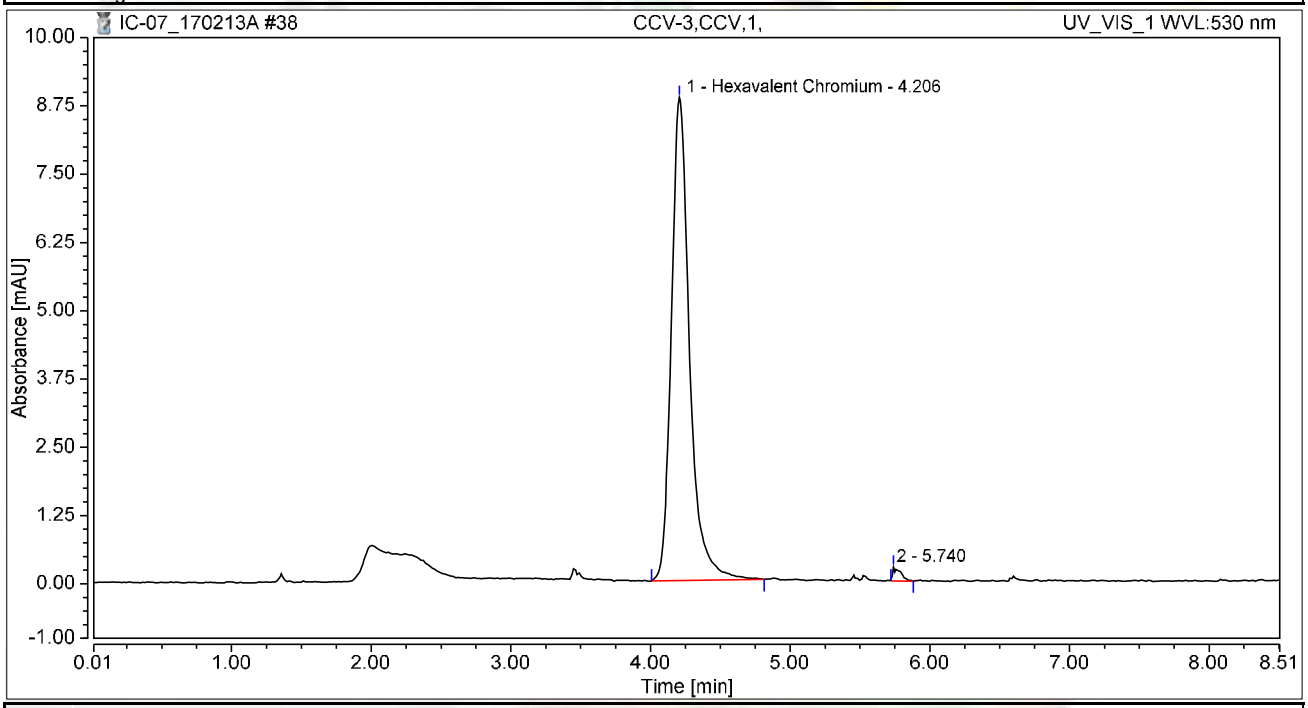
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

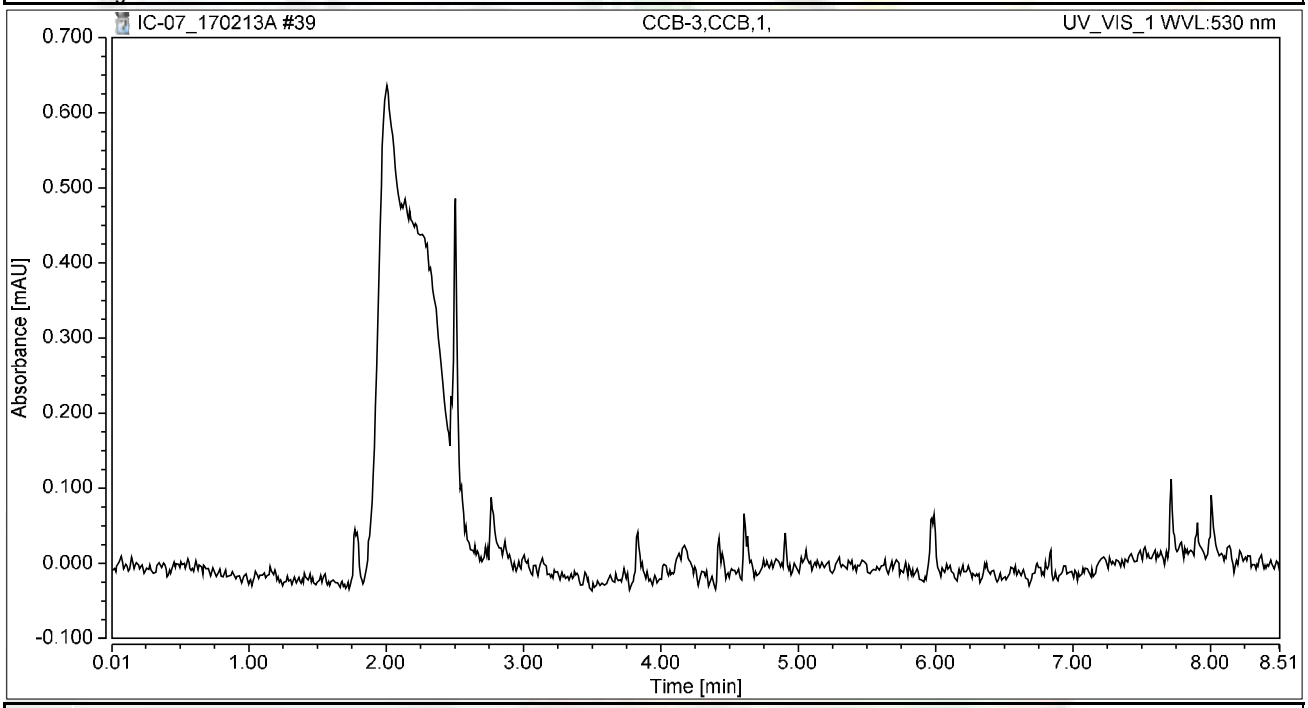
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.330	8.840	98.82	97.19	5.0150
2		5.740	0.016	0.255	1.18	2.81	n.a.
Total:			**1.346**	**9.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

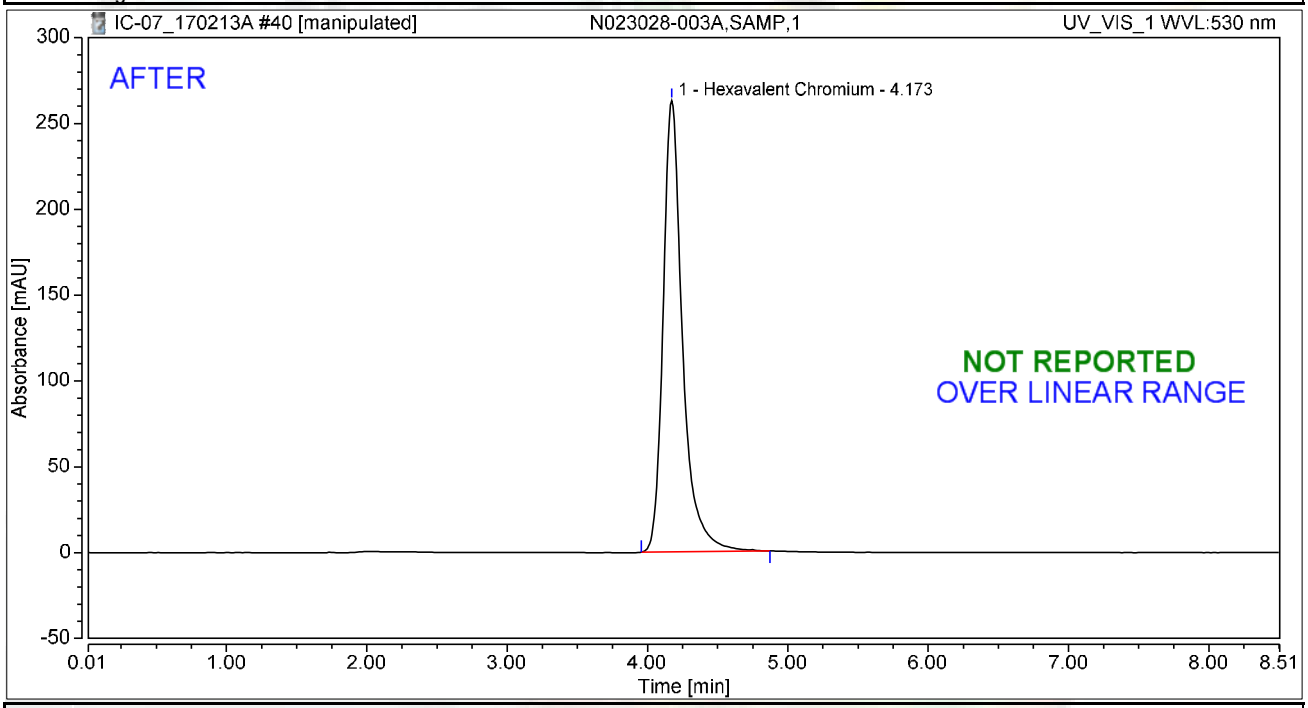
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	42.267	262.958	100.00	100.00	159.3499
Total:			**42.267**	**262.958**	**100.00**	**100.00**	

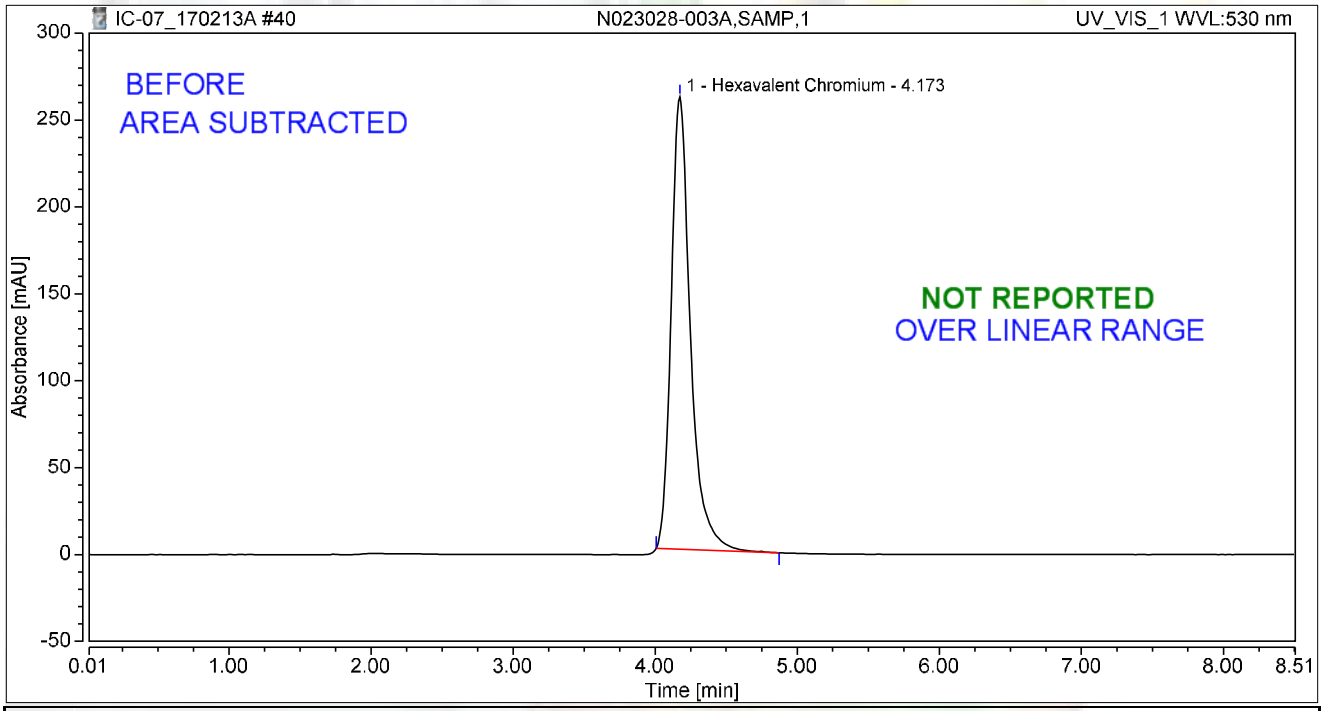
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	40.816	260.353	100.00	100.00	153.8787
Total:			**40.816**	**260.353**	**100.00**	**100.00**	

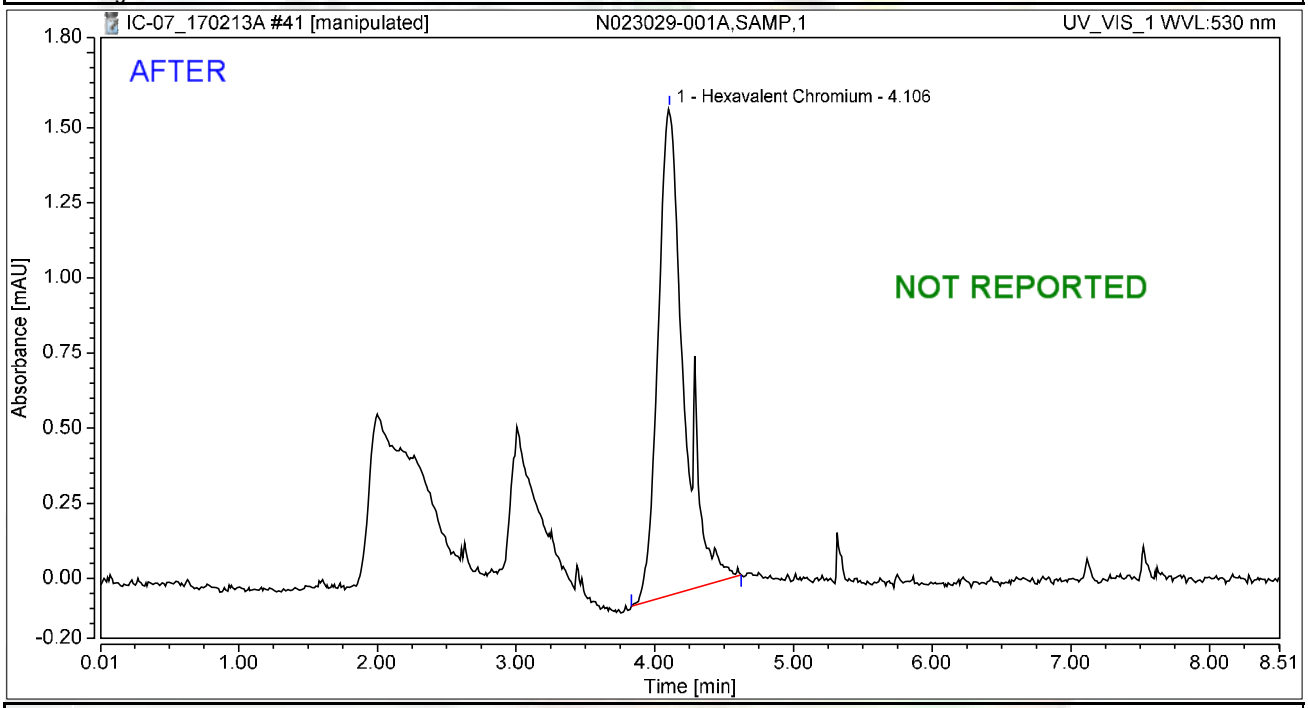
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.351	1.623	100.00	100.00	1.3249
Total:			**0.351**	**1.623**	**100.00**	**100.00**	

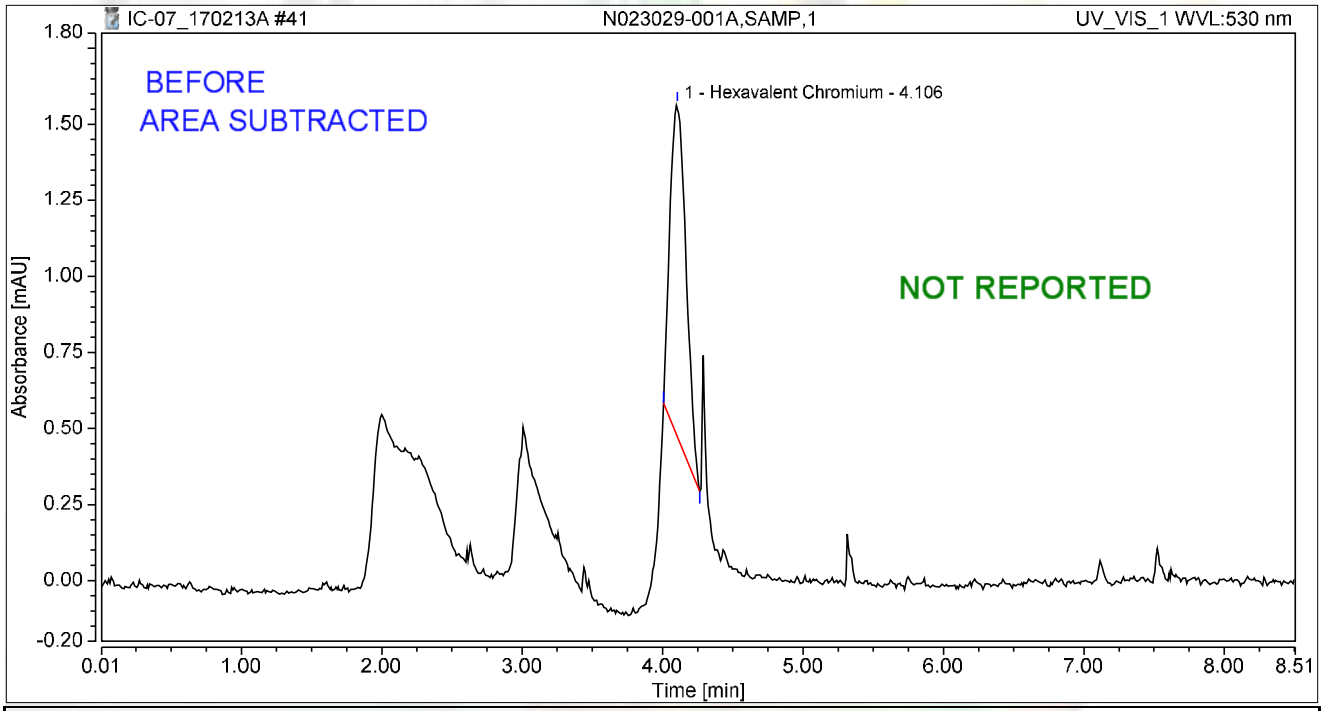
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.146	1.096	100.00	100.00	0.5507
Total:			**0.146**	**1.096**	**100.00**	**100.00**	

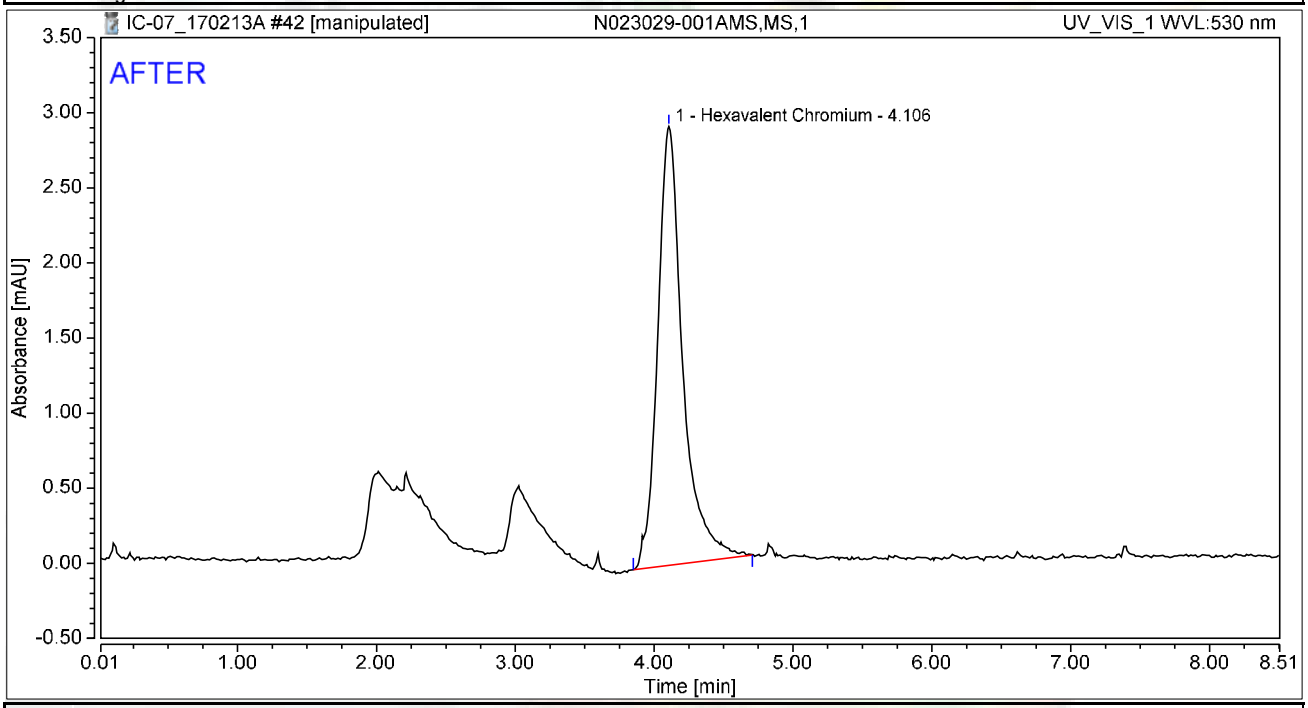
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.612	2.922	100.00	100.00	2.3057
Total:			**0.612**	**2.922**	**100.00**	**100.00**	

rba 2/19/2017

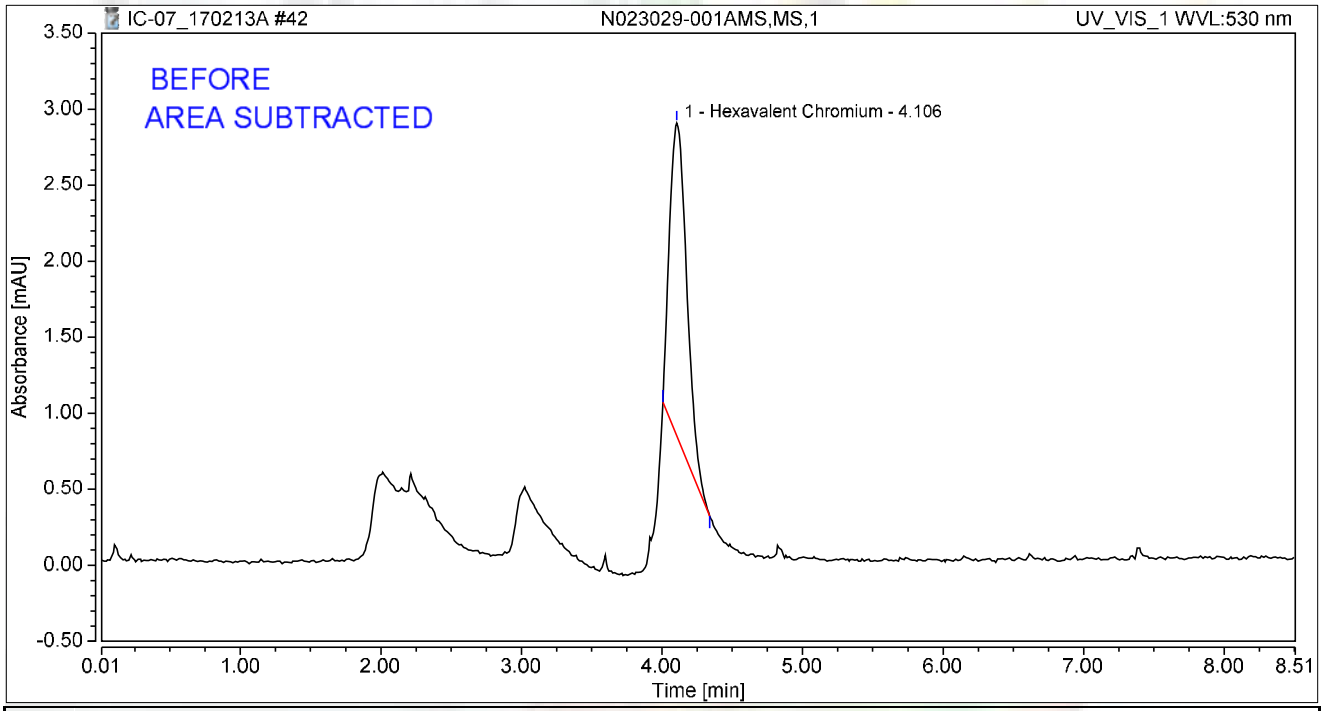
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.294	2.059	100.00	100.00	1.1091
Total:			**0.294**	**2.059**	**100.00**	**100.00**	

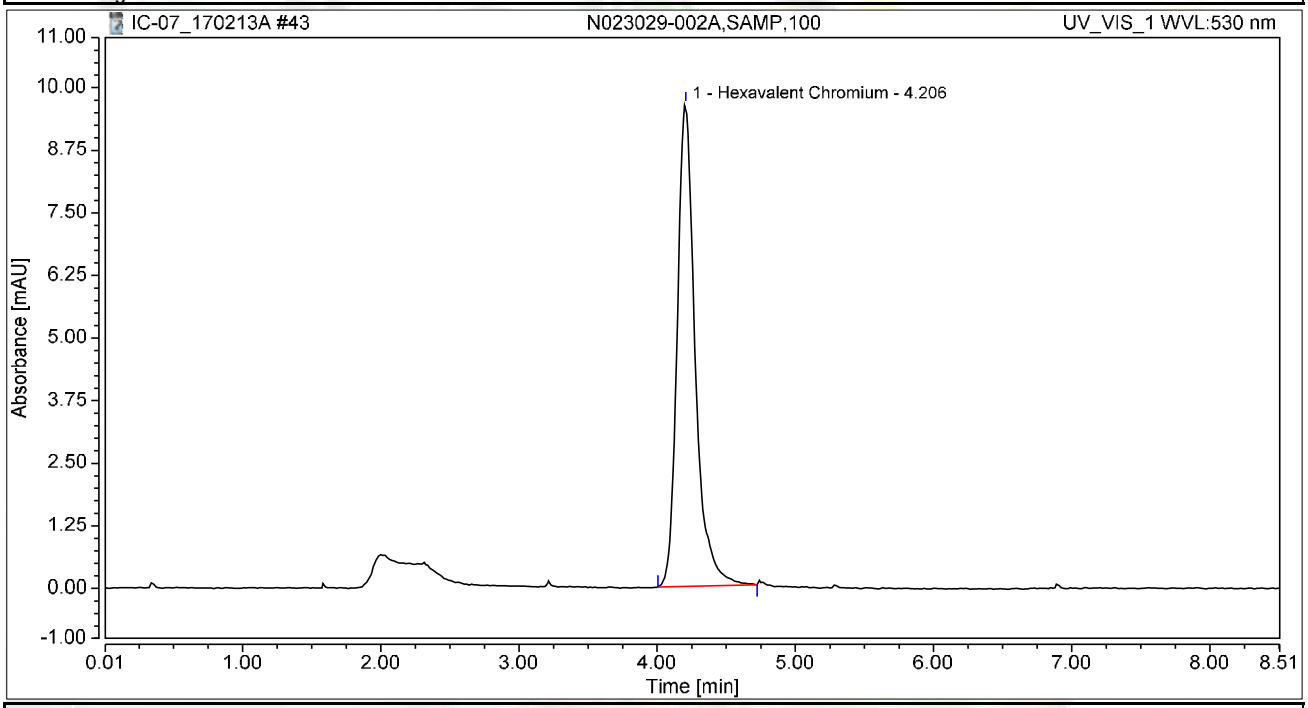
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-002A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

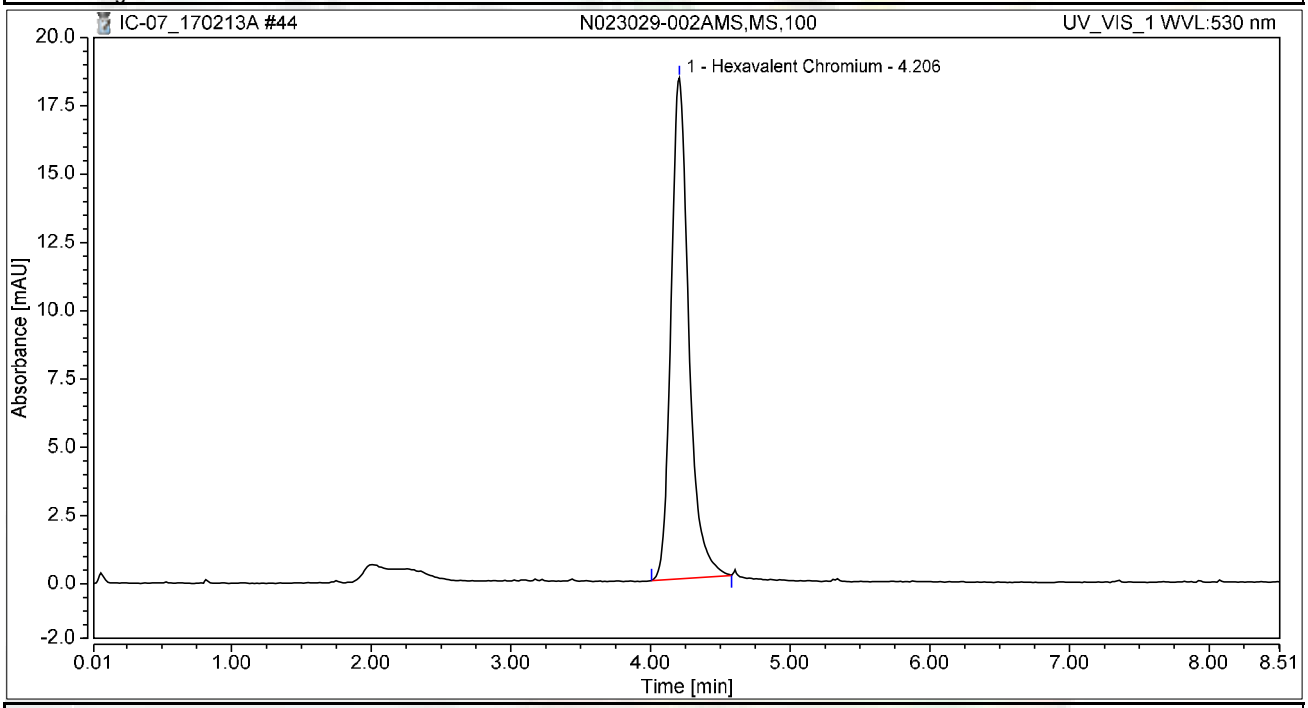
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.450	9.637	100.00	100.00	5.4662
Total:			**1.450**	**9.637**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-002AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

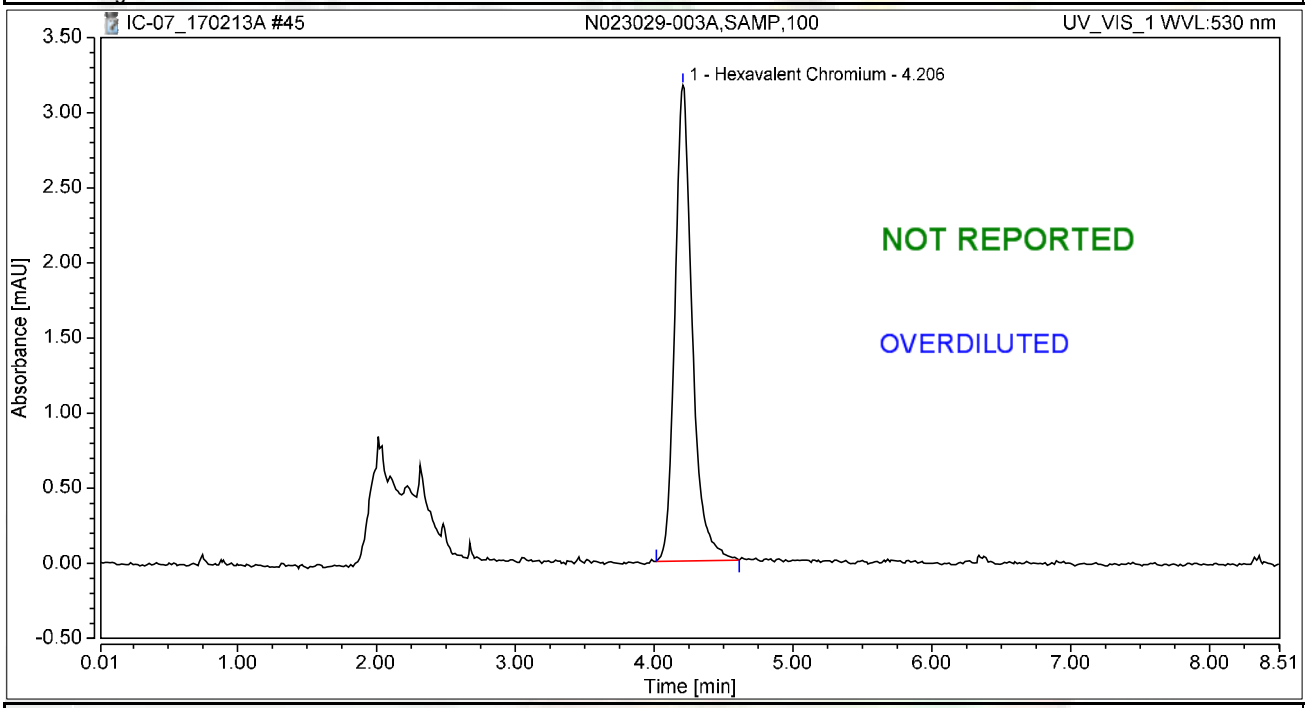
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.708	18.346	100.00	100.00	10.2097
Total:			**2.708**	**18.346**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

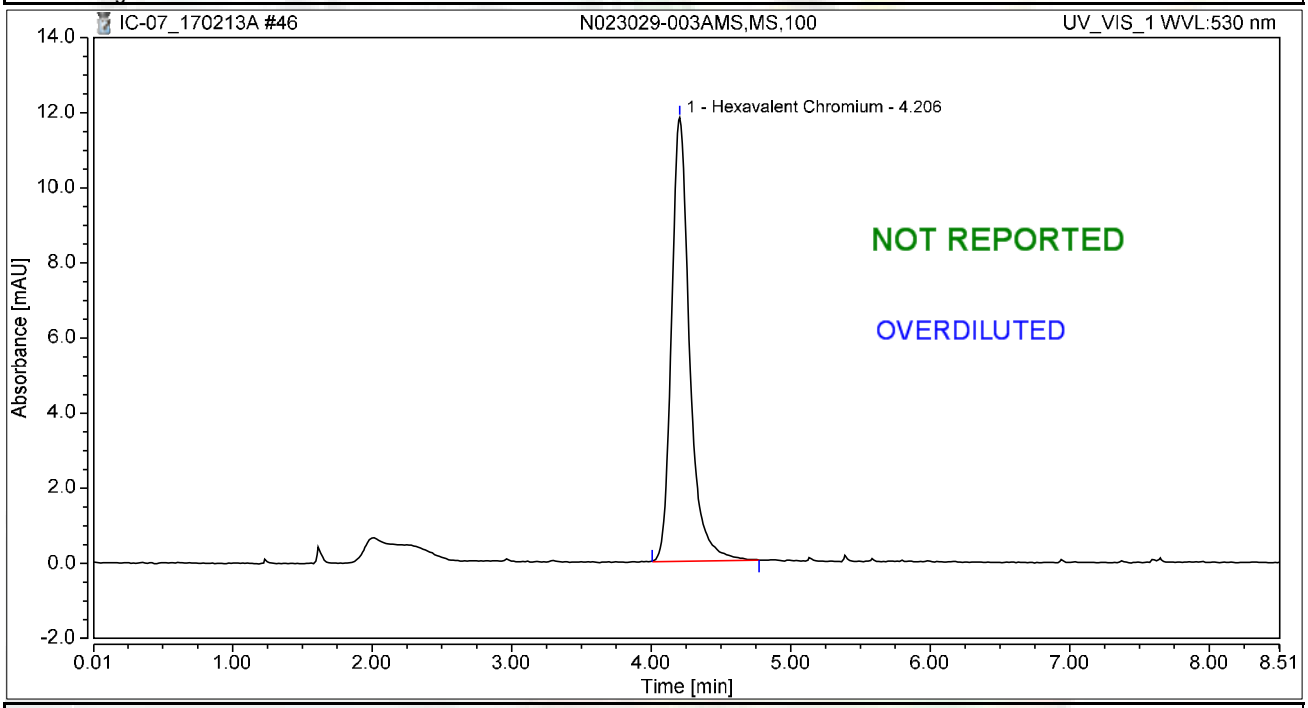
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.458	3.168	100.00	100.00	1.7278
Total:			**0.458**	**3.168**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

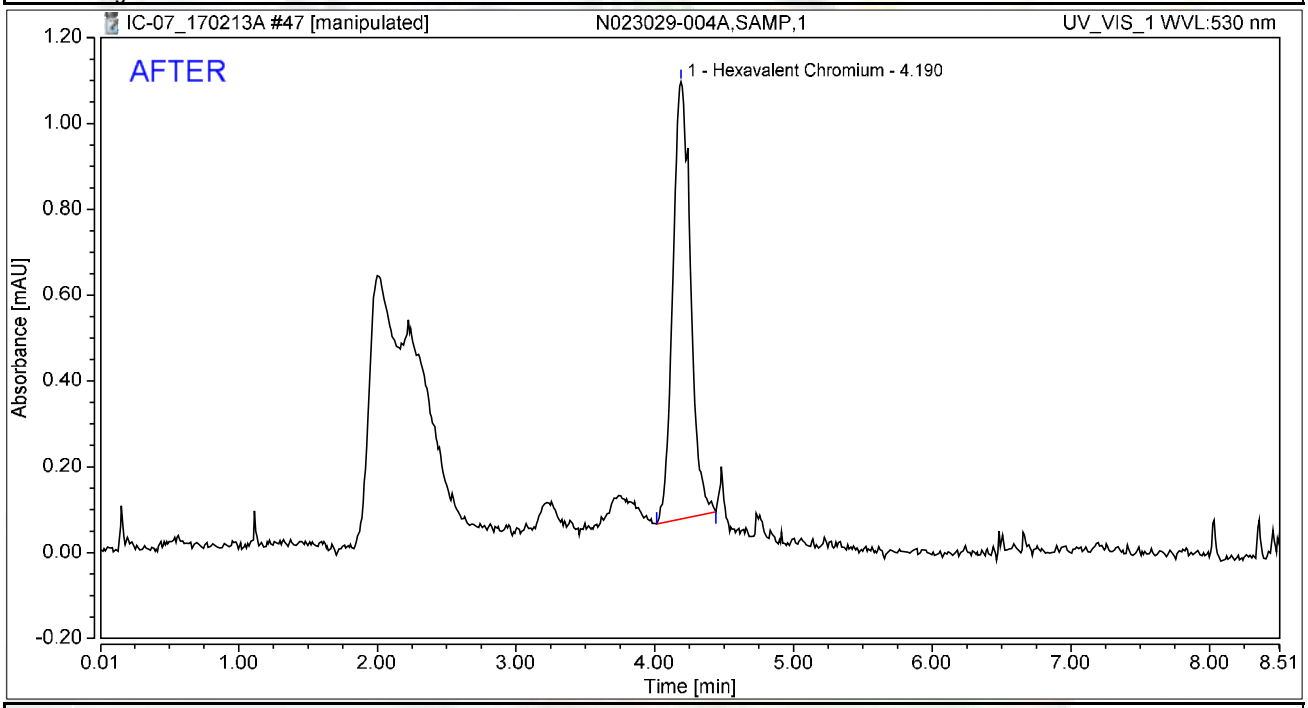
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.772	11.815	100.00	100.00	6.6805
Total:			**1.772**	**11.815**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.151	1.019	100.00	100.00	0.5703
Total:			**0.151**	**1.019**	**100.00**	**100.00**	

rba 2/19/2017

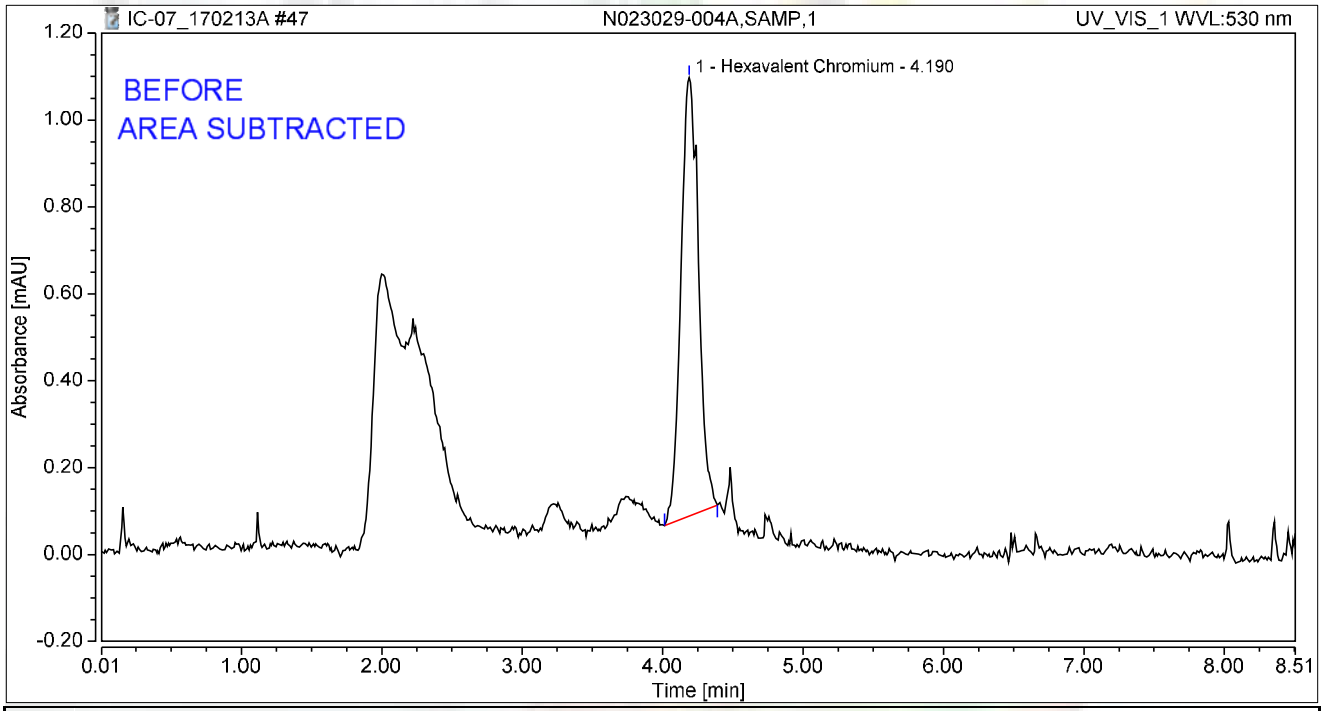
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.146	1.009	100.00	100.00	0.5518
Total:			**0.146**	**1.009**	**100.00**	**100.00**	

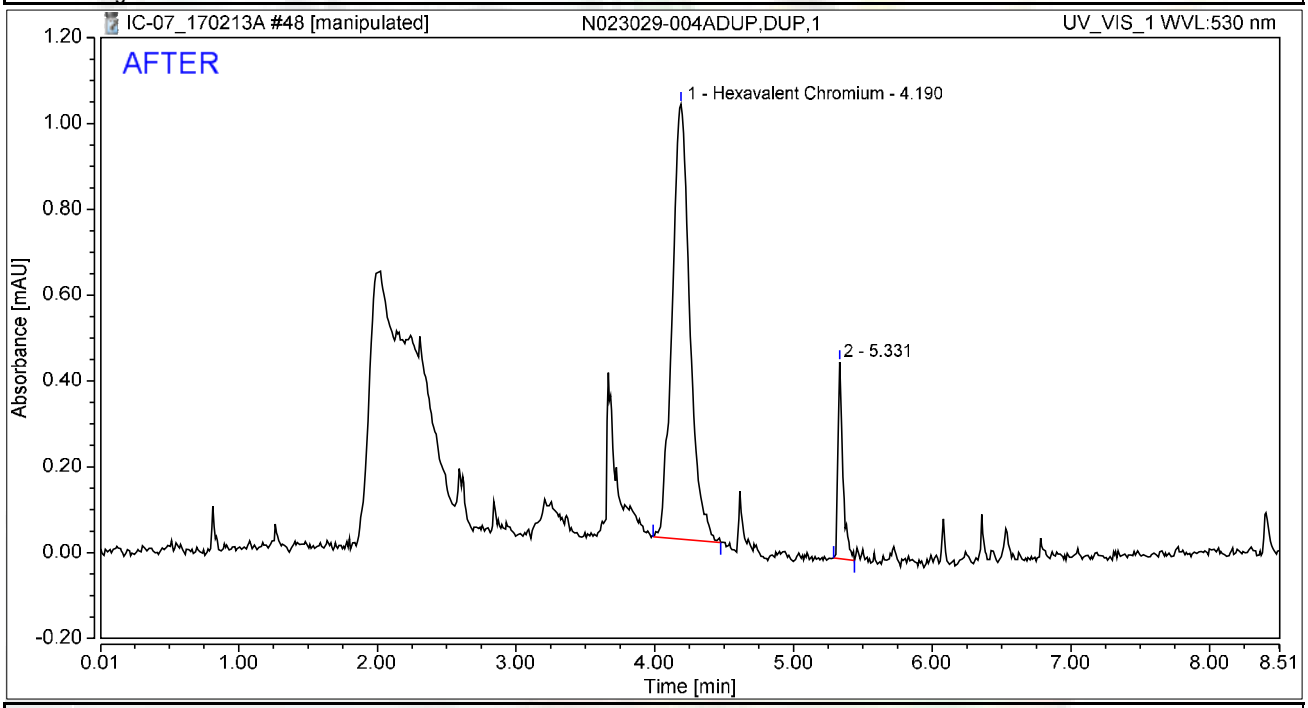
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.150	1.014	88.52	68.88	0.5648
2		5.331	0.019	0.458	11.48	31.12	n.a.
Total:			**0.169**	**1.472**	**100.00**	**100.00**	

rba 2/19/2017

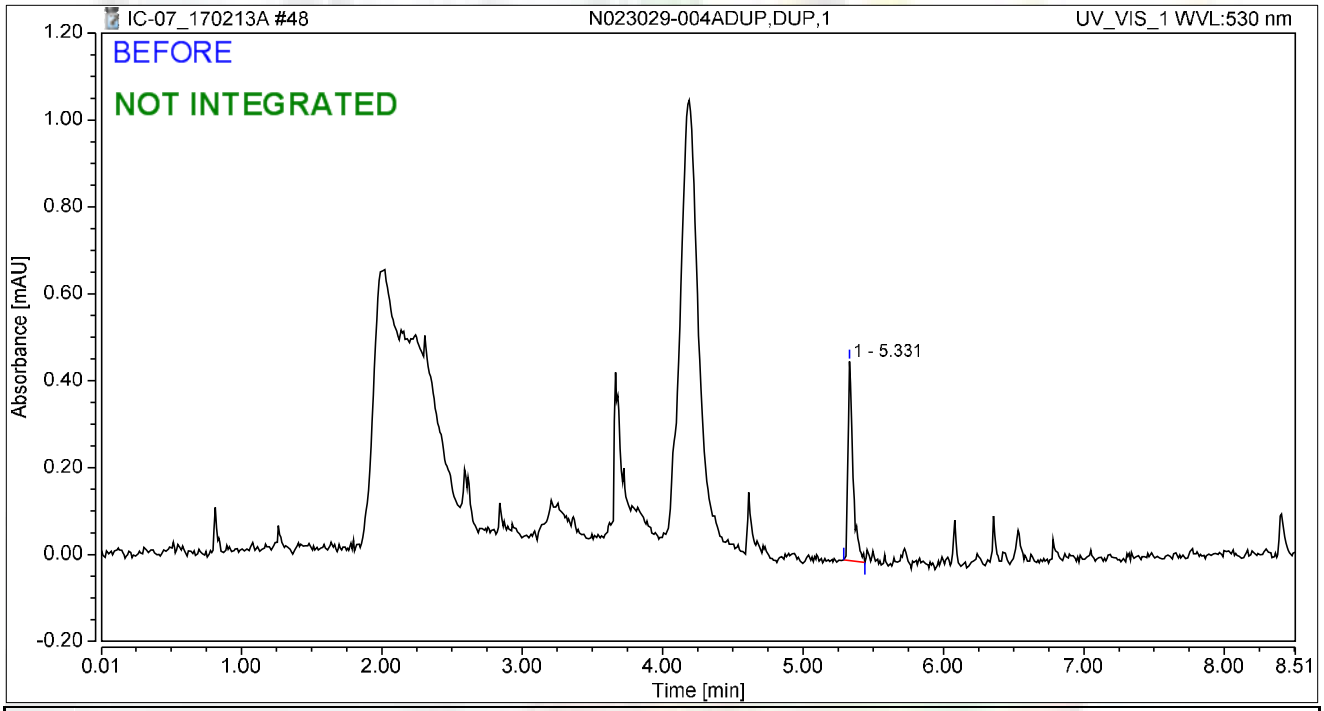
Reviewed by: Dionex 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.331	0.019	0.458	100.00	100.00	n.a.
Total:			**0.019**	**0.458**	**100.00**	**100.00**	

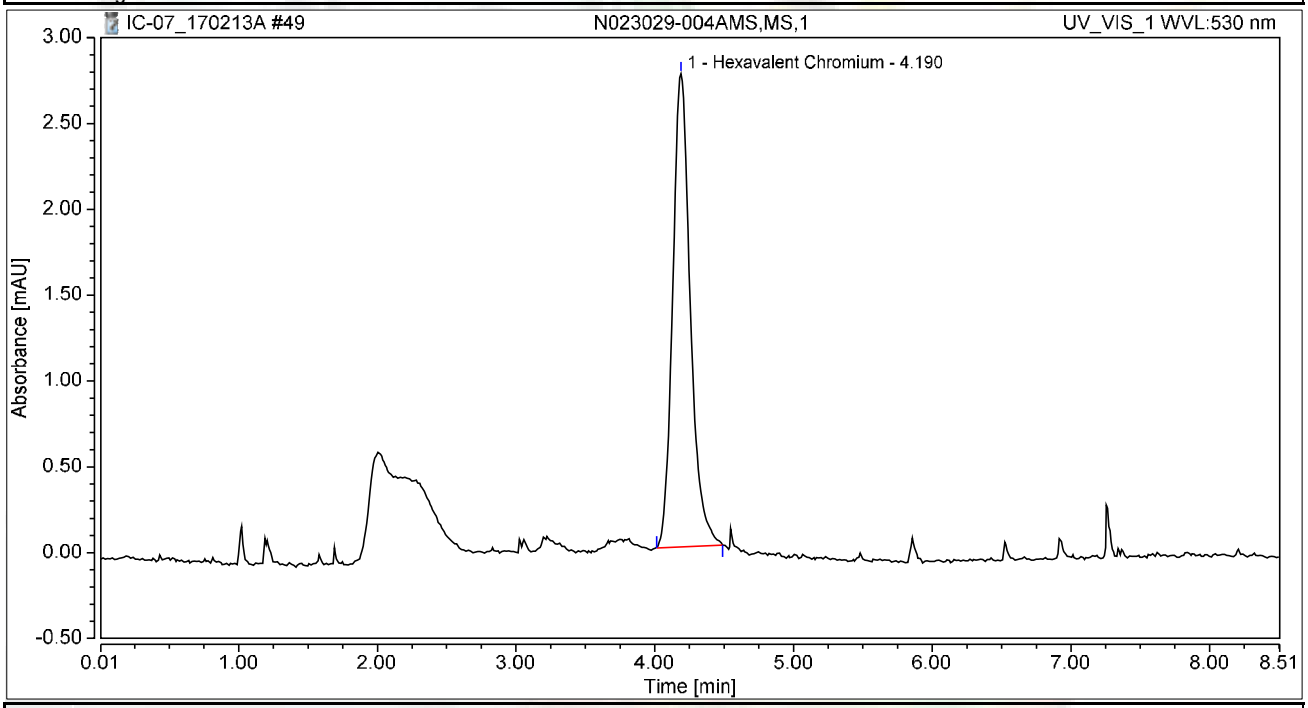
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

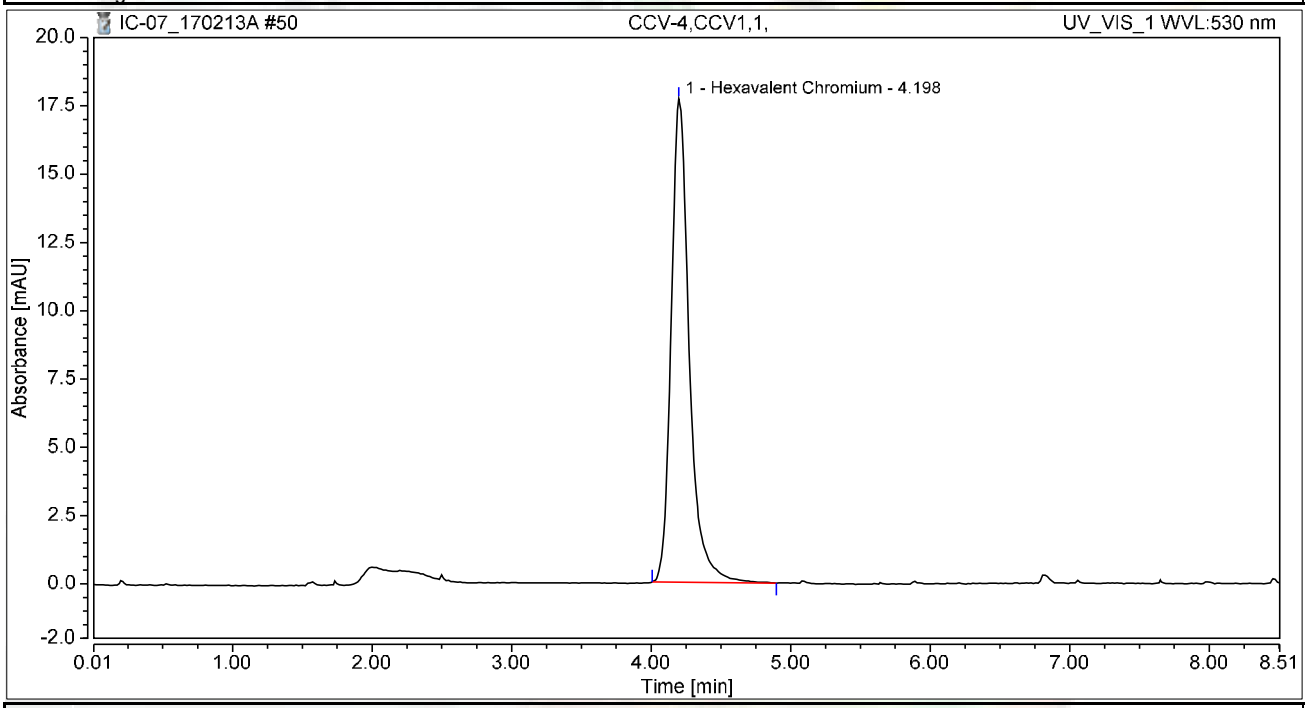
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.407	2.756	100.00	100.00	1.5332
Total:			**0.407**	**2.756**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

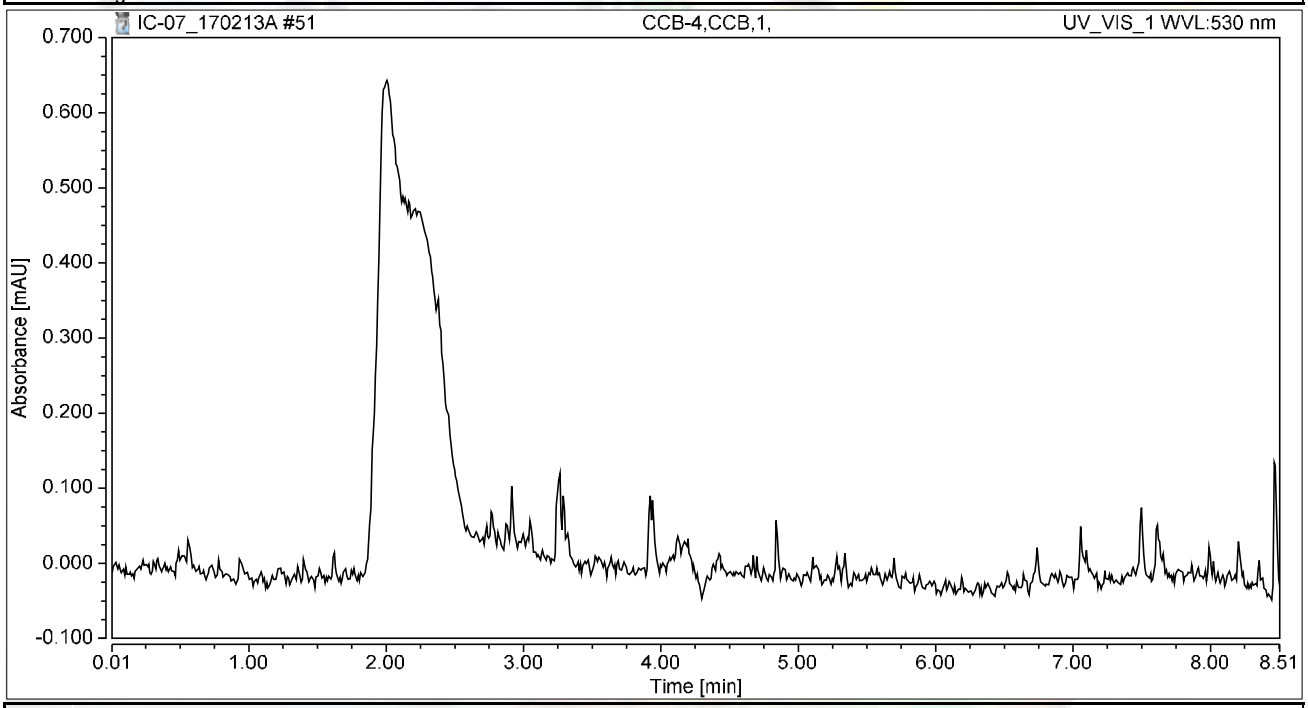
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.664	17.698	100.00	100.00	10.0432
Total:			**2.664**	**17.698**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

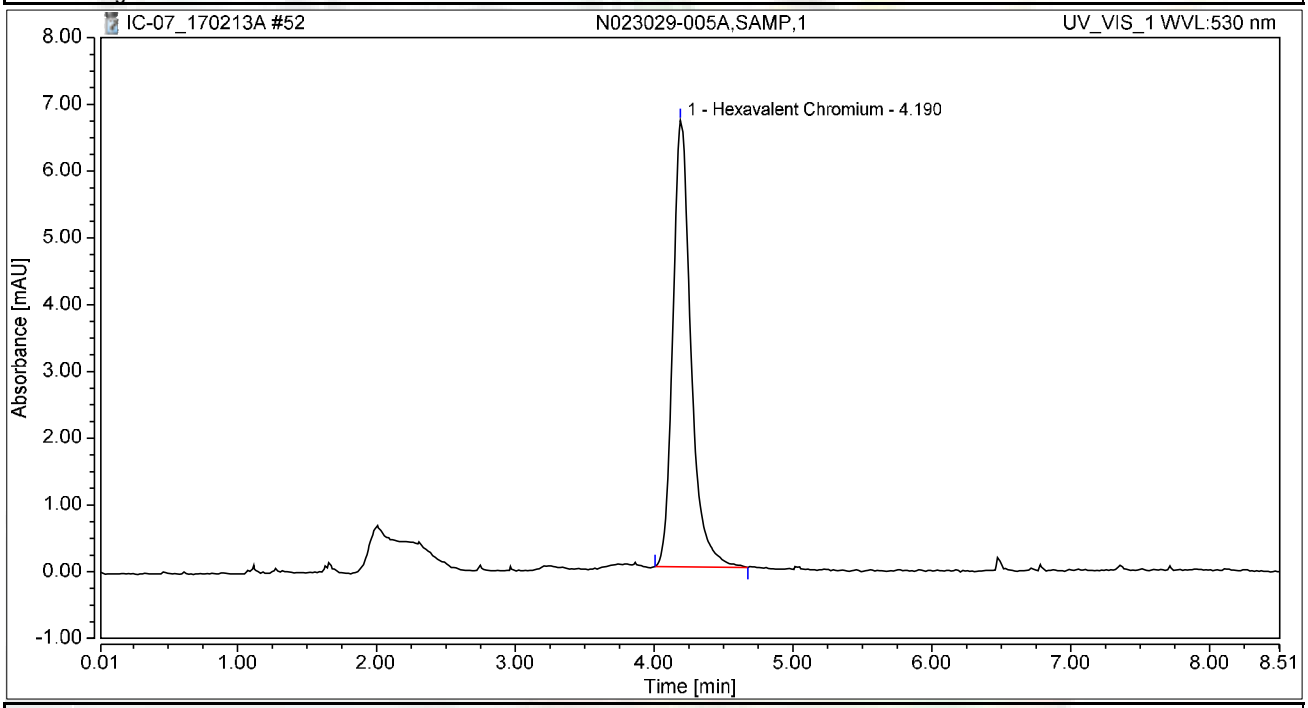
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

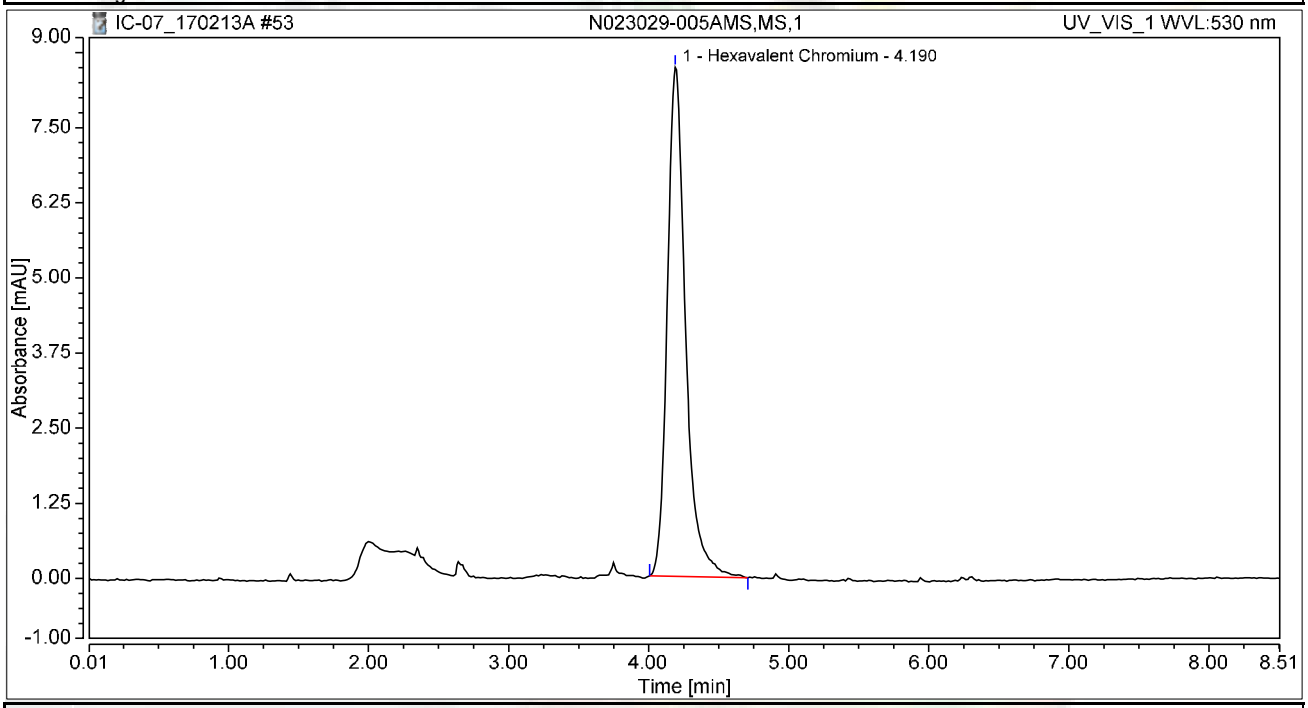
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.012	6.684	100.00	100.00	3.8166
Total:			**1.012**	**6.684**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

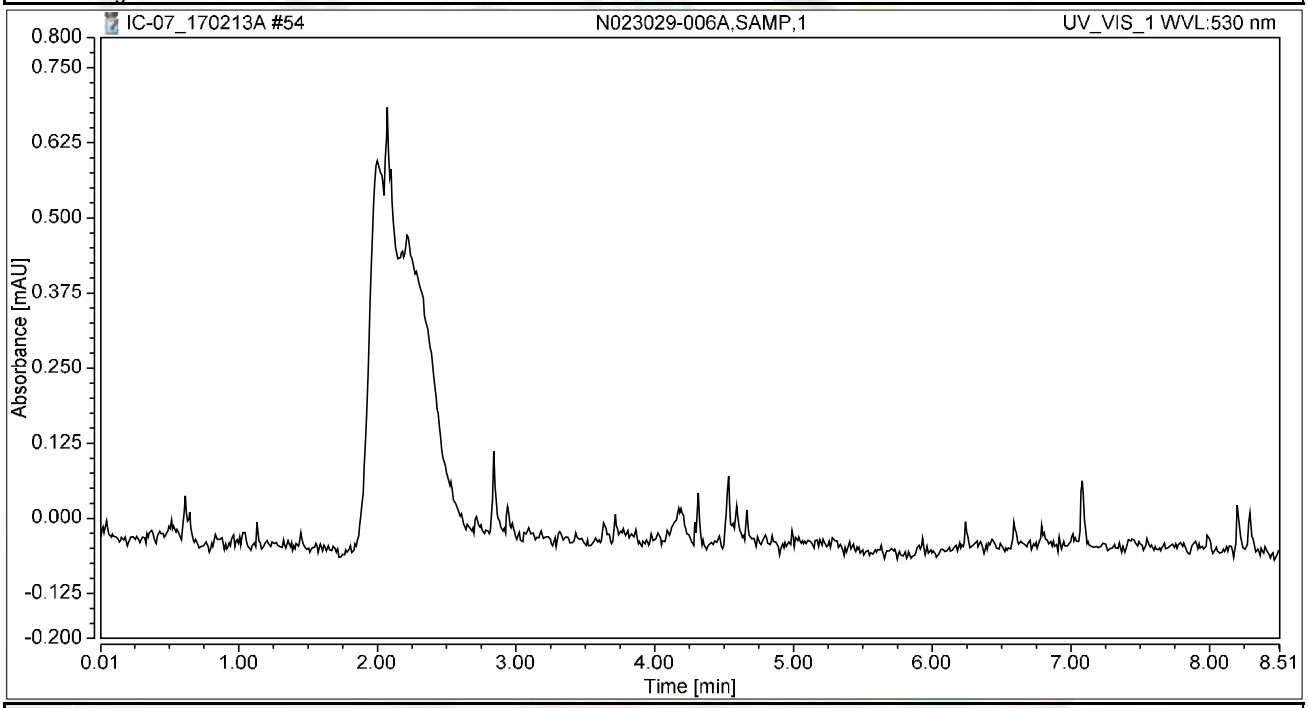
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.285	8.473	100.00	100.00	4.8448
Total:			**1.285**	**8.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

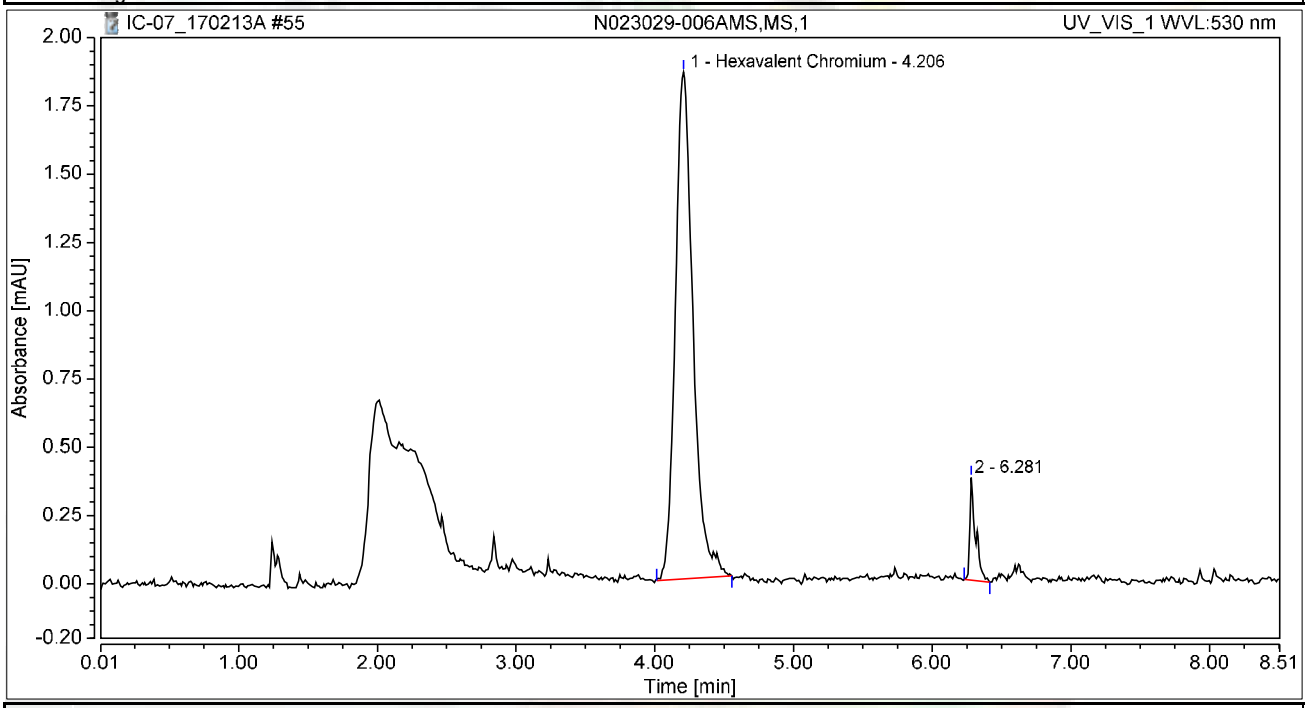
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

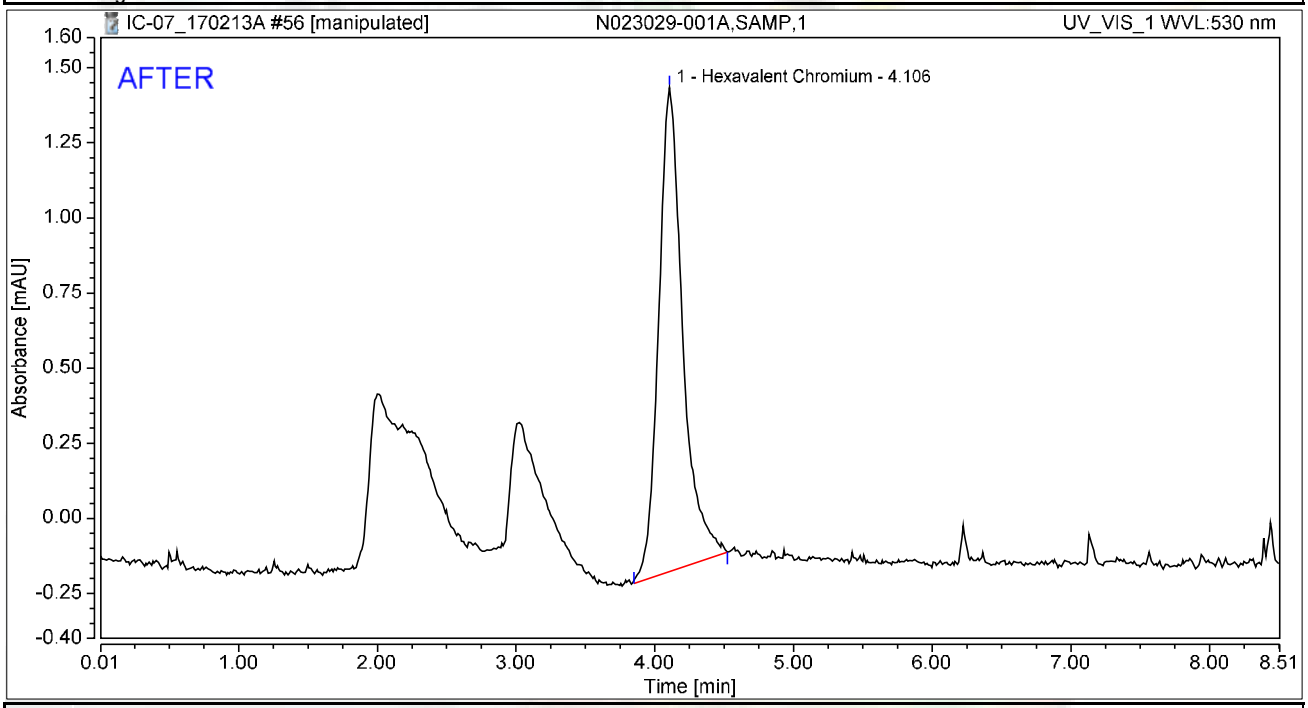
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.274	1.855	93.90	83.20	1.0323
2		6.281	0.018	0.375	6.10	16.80	n.a.
Total:			**0.292**	**2.230**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.326	1.612	100.00	100.00	1.2274
Total:			**0.326**	**1.612**	**100.00**	**100.00**	

rba 2/19/2017

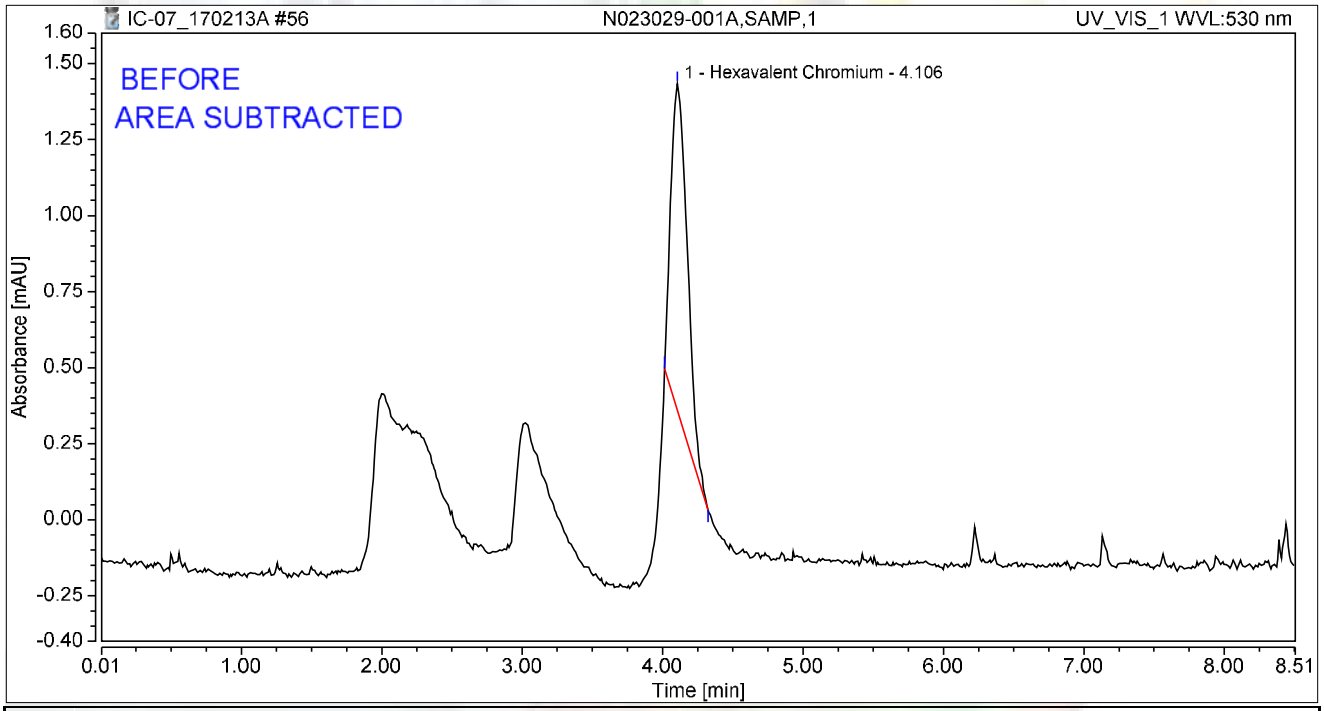
Reviewed by: Nancy 2/22/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023029-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.147	1.075	100.00	100.00	0.5531
Total:			**0.147**	**1.075**	**100.00**	**100.00**	

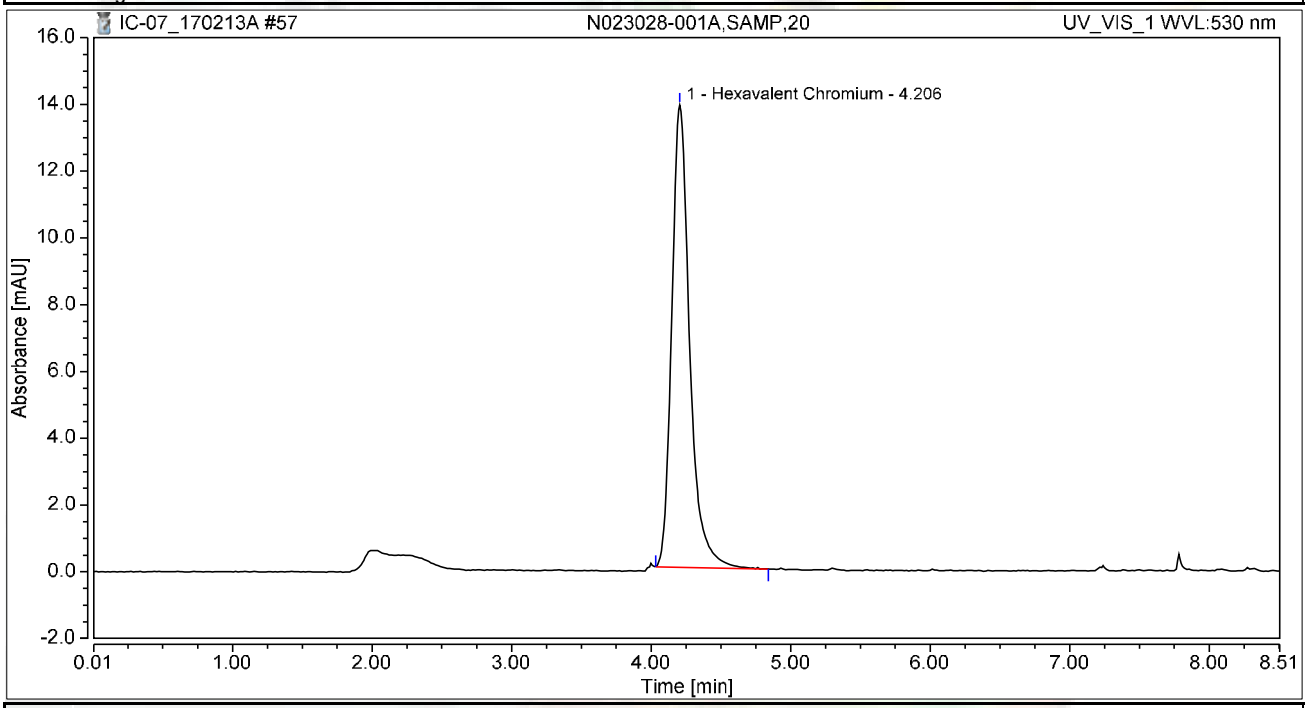
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

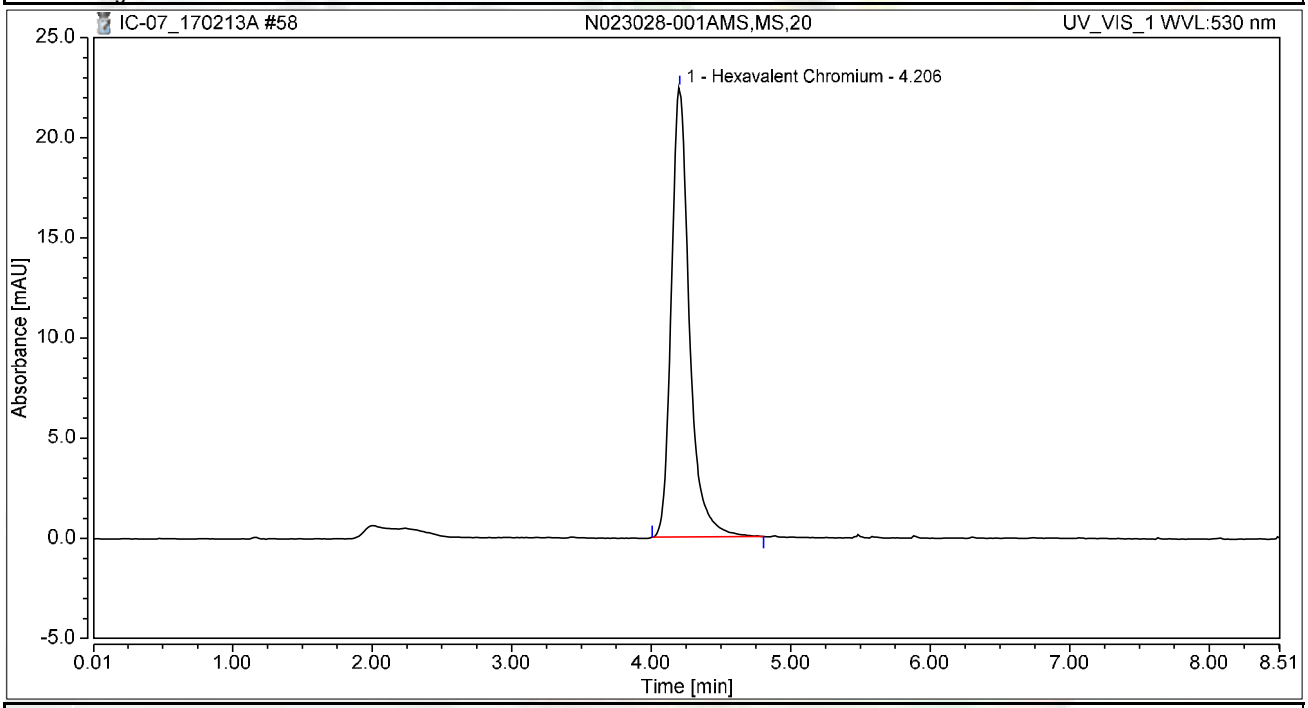
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.063	13.858	100.00	100.00	7.7773
Total:			**2.063**	**13.858**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-001AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

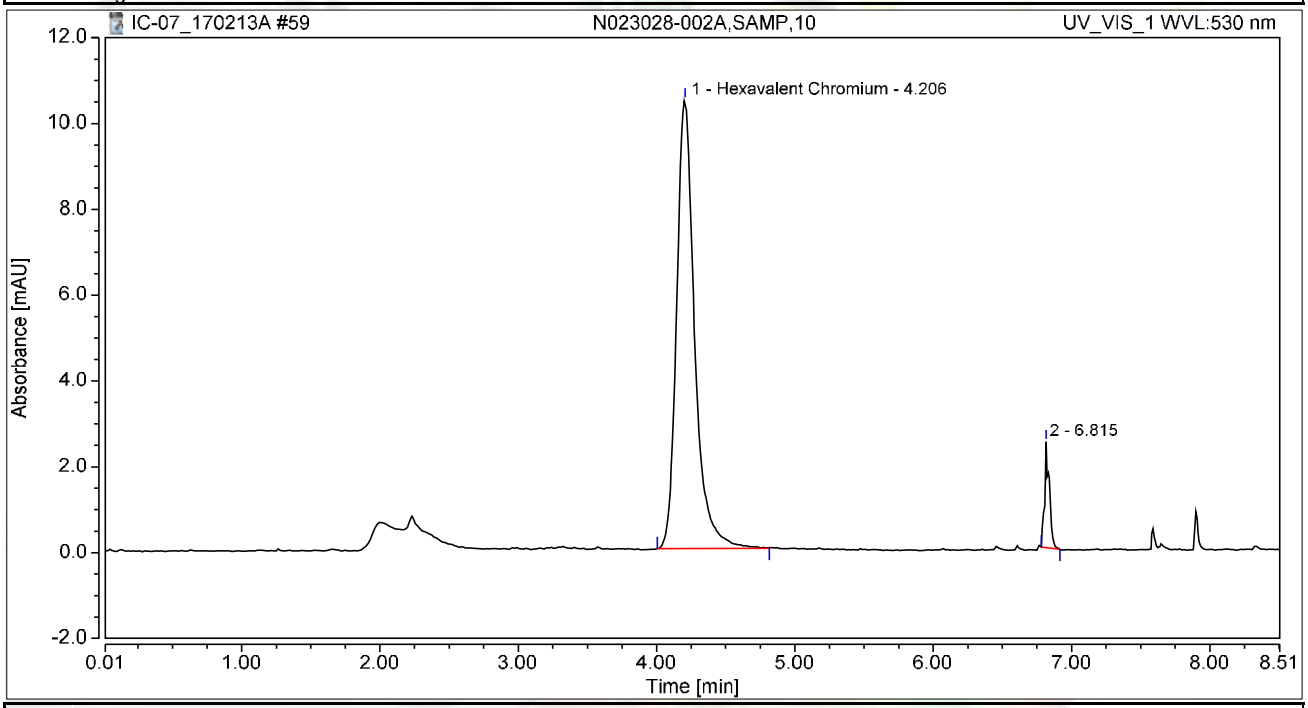
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.372	22.439	100.00	100.00	12.7136
Total:			**3.372**	**22.439**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002A,SAMP,10**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

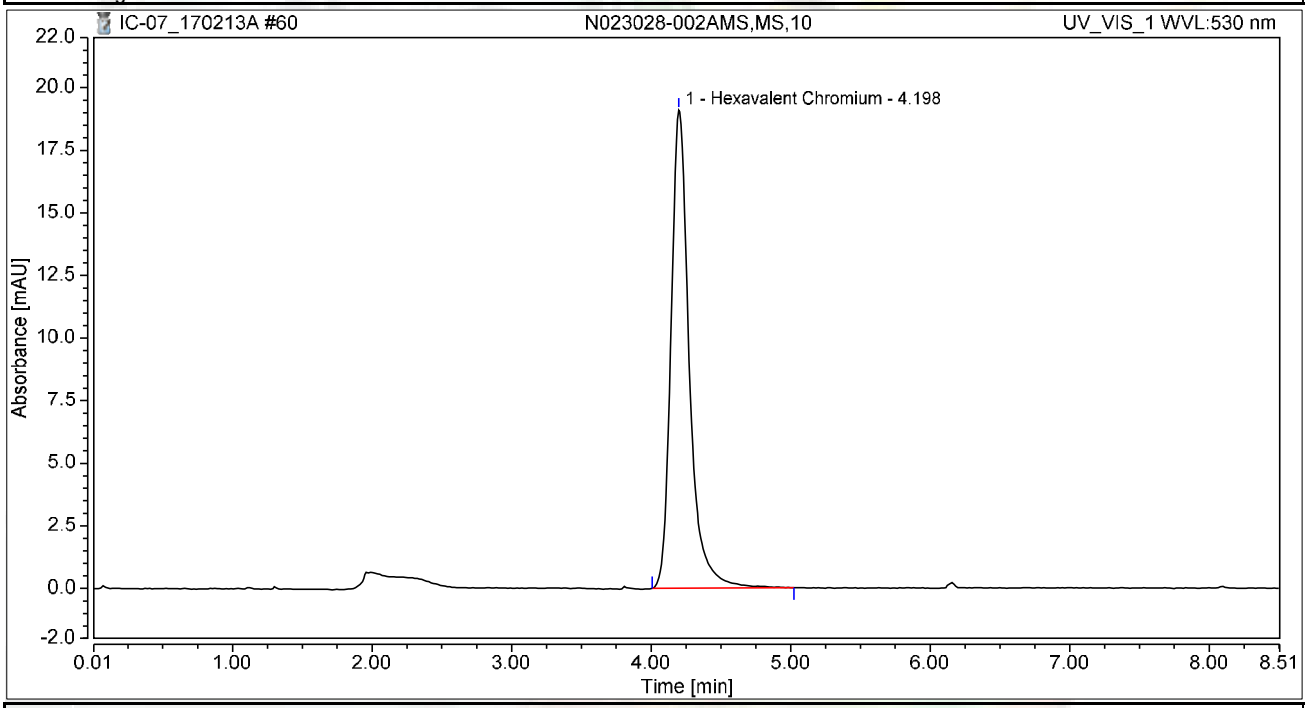
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.581	10.448	94.18	80.91	5.9615
2		6.815	0.098	2.465	5.82	19.09	n.a.
Total:			**1.679**	**12.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-002AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

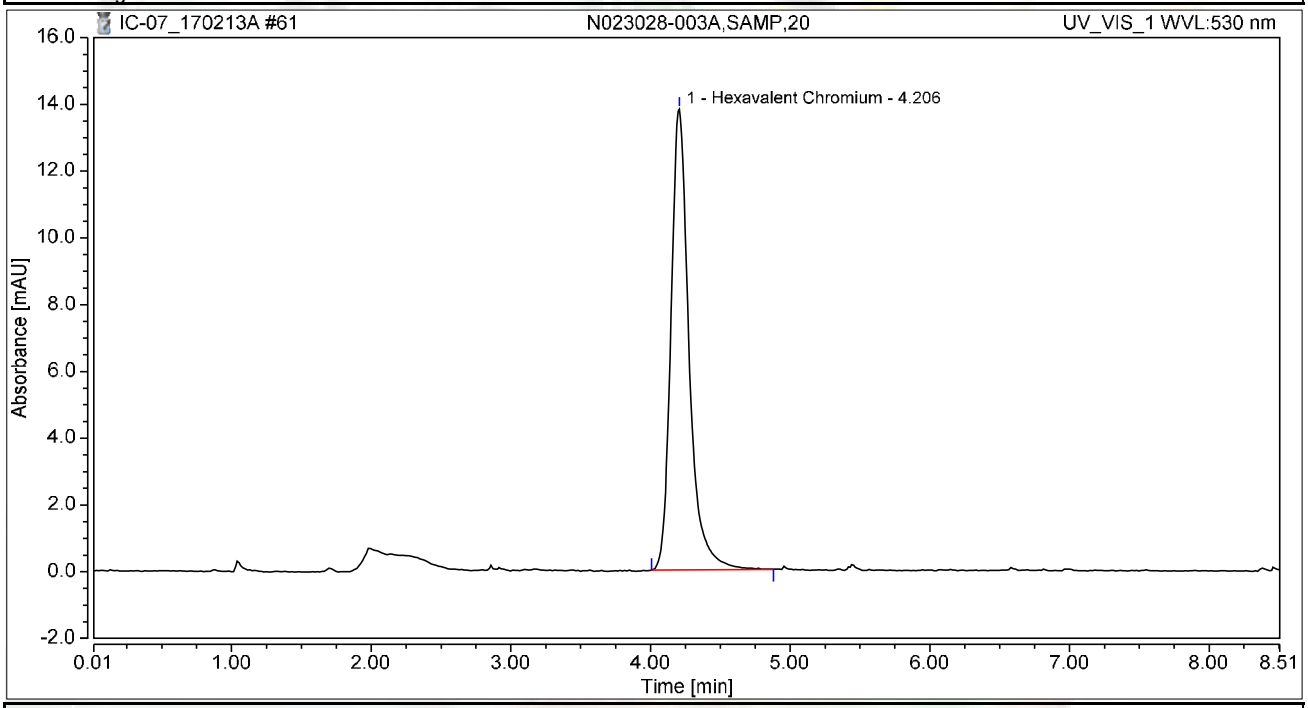
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.904	19.104	100.00	100.00	10.9465
Total:			**2.904**	**19.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

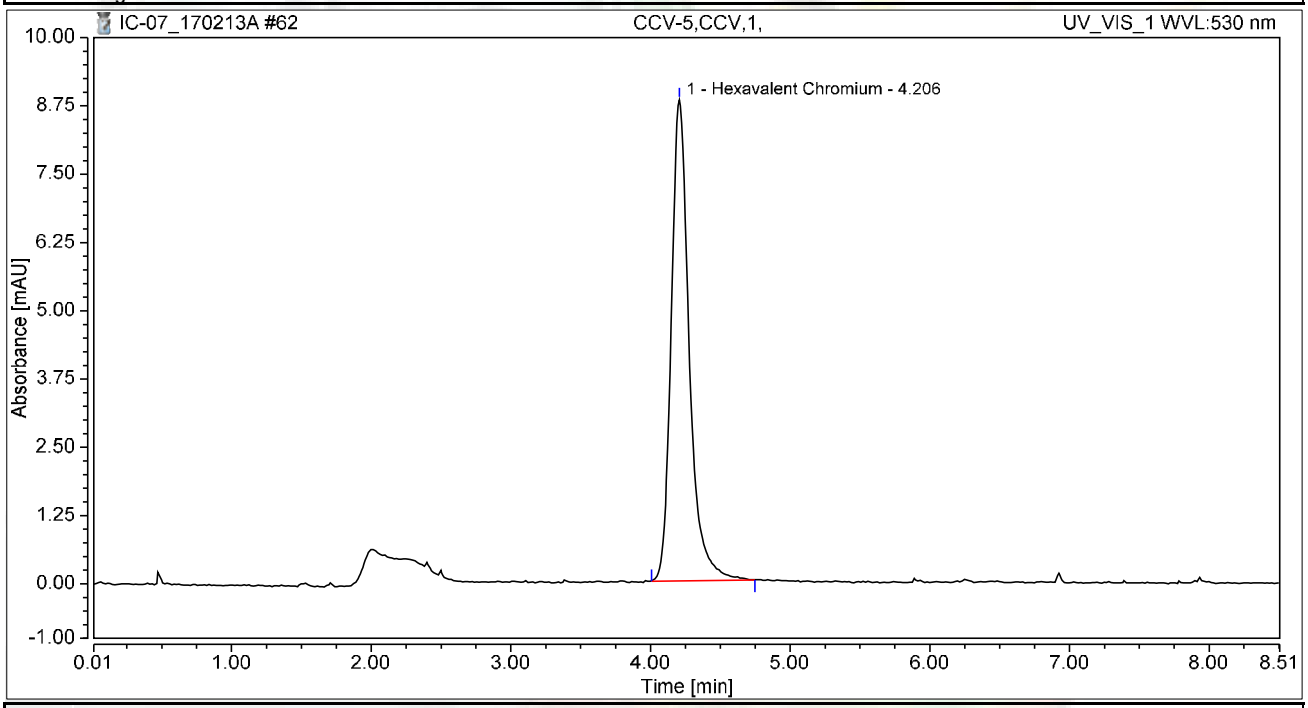
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.079	13.810	100.00	100.00	7.8393
Total:			**2.079**	**13.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

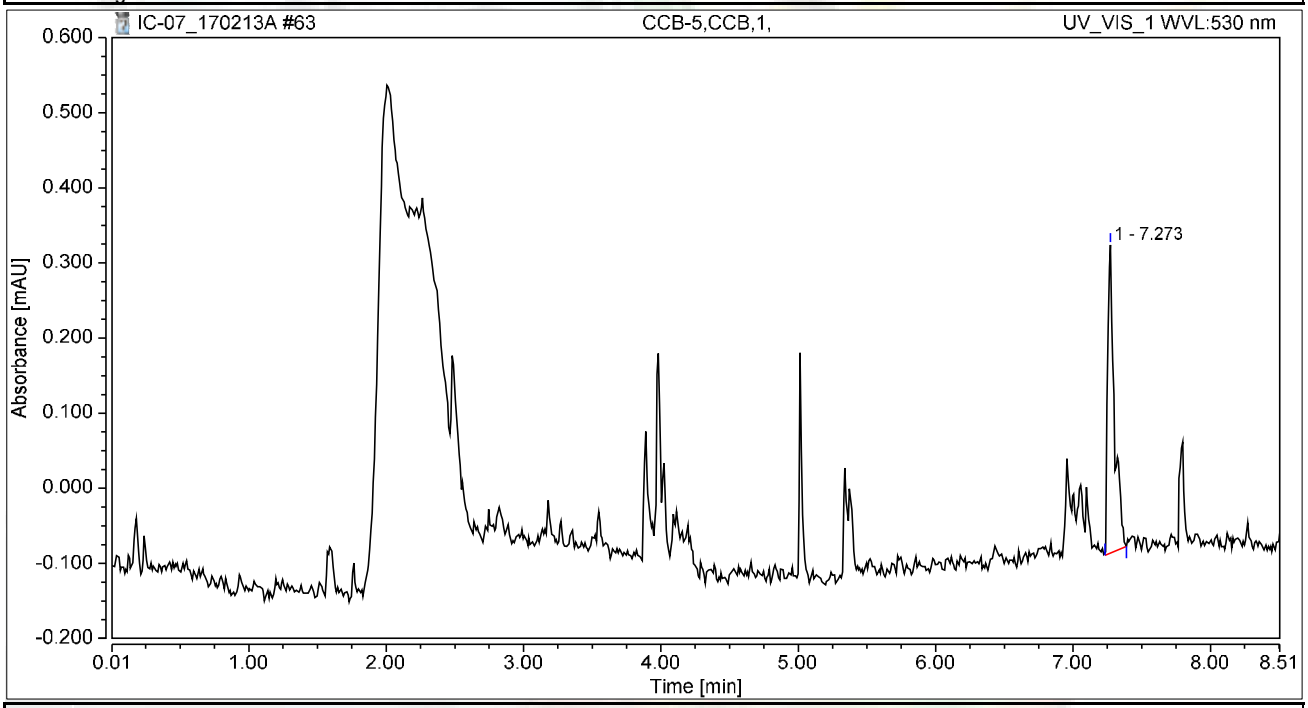
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.317	8.810	100.00	100.00	4.9652
Total:			**1.317**	**8.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

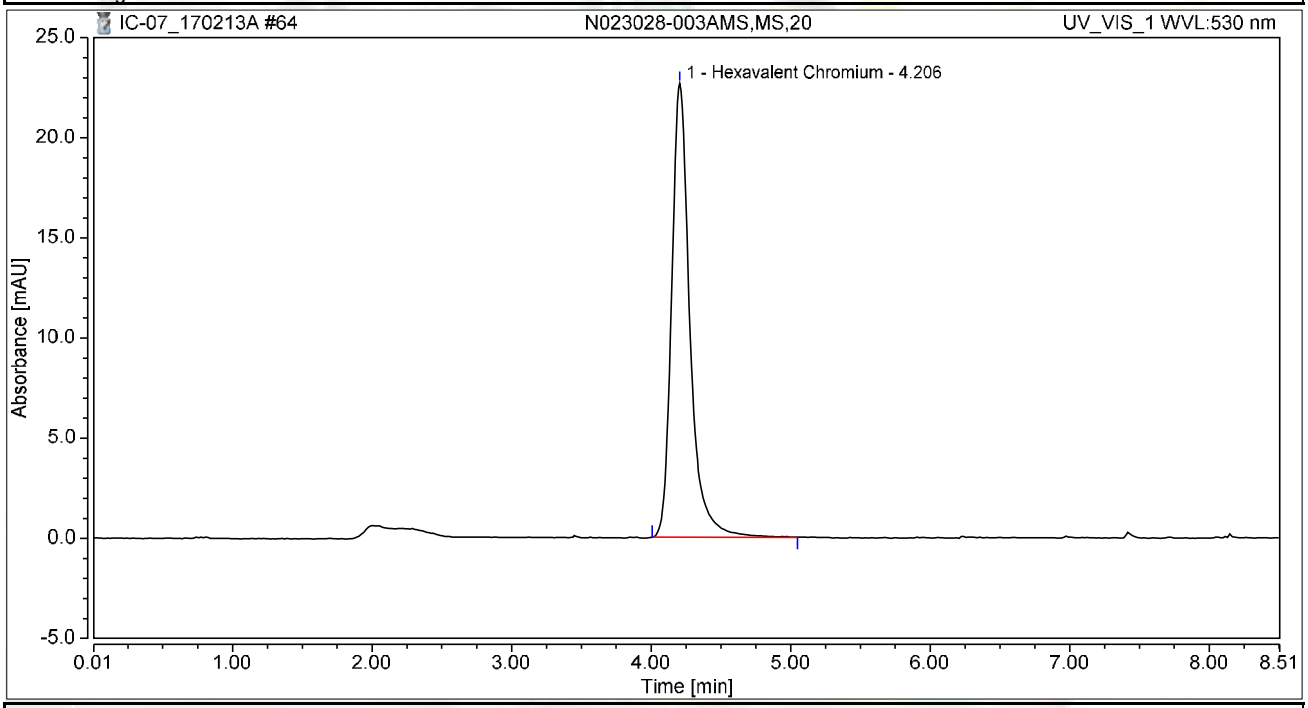
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.273	0.023	0.410	100.00	100.00	n.a.
Total:			**0.023**	**0.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023028-003AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

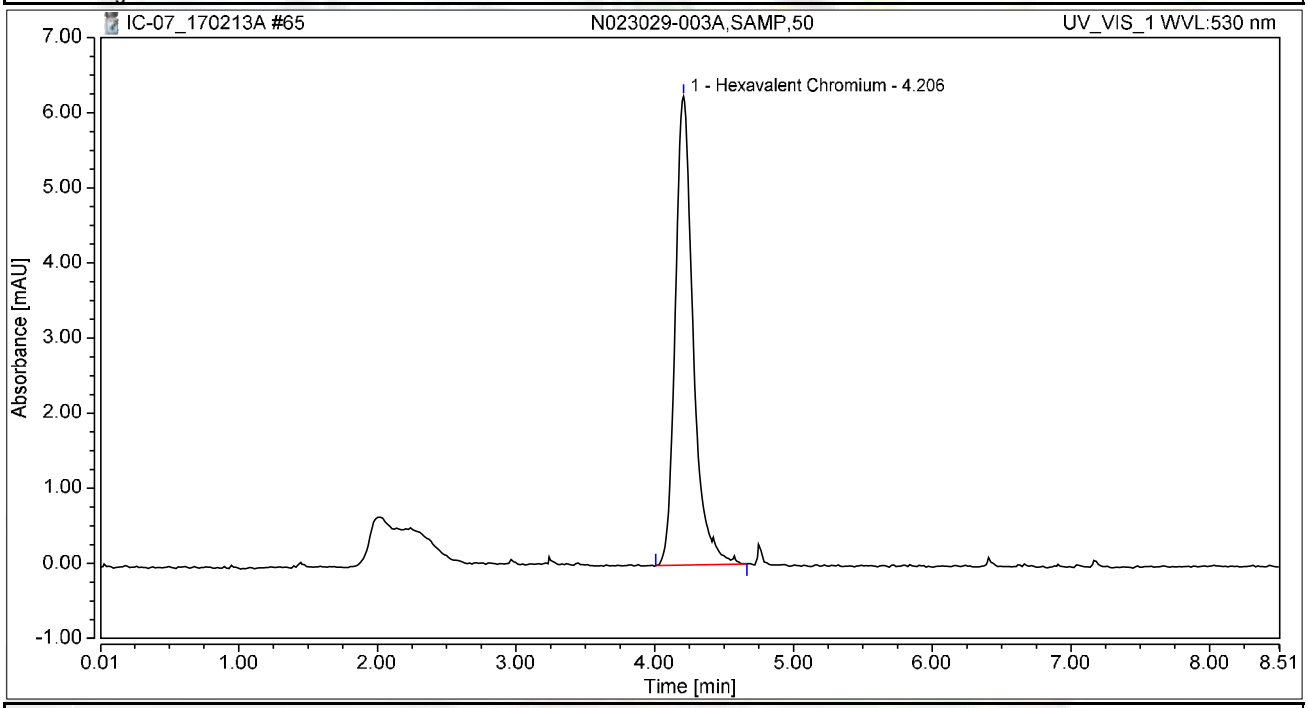
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.439	22.661	100.00	100.00	12.9651
Total:			**3.439**	**22.661**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003A,SAMP,50**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

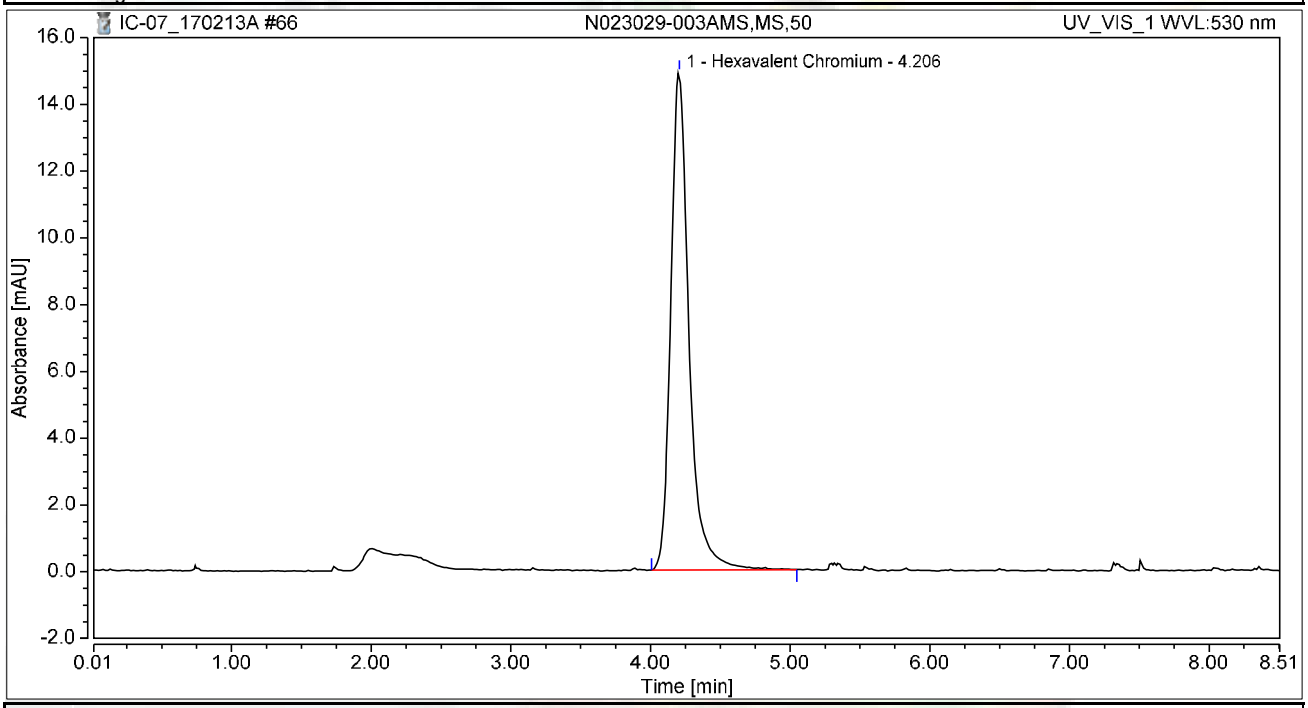
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.933	6.242	100.00	100.00	3.5179
Total:			**0.933**	**6.242**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023029-003AMS,MS,50**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

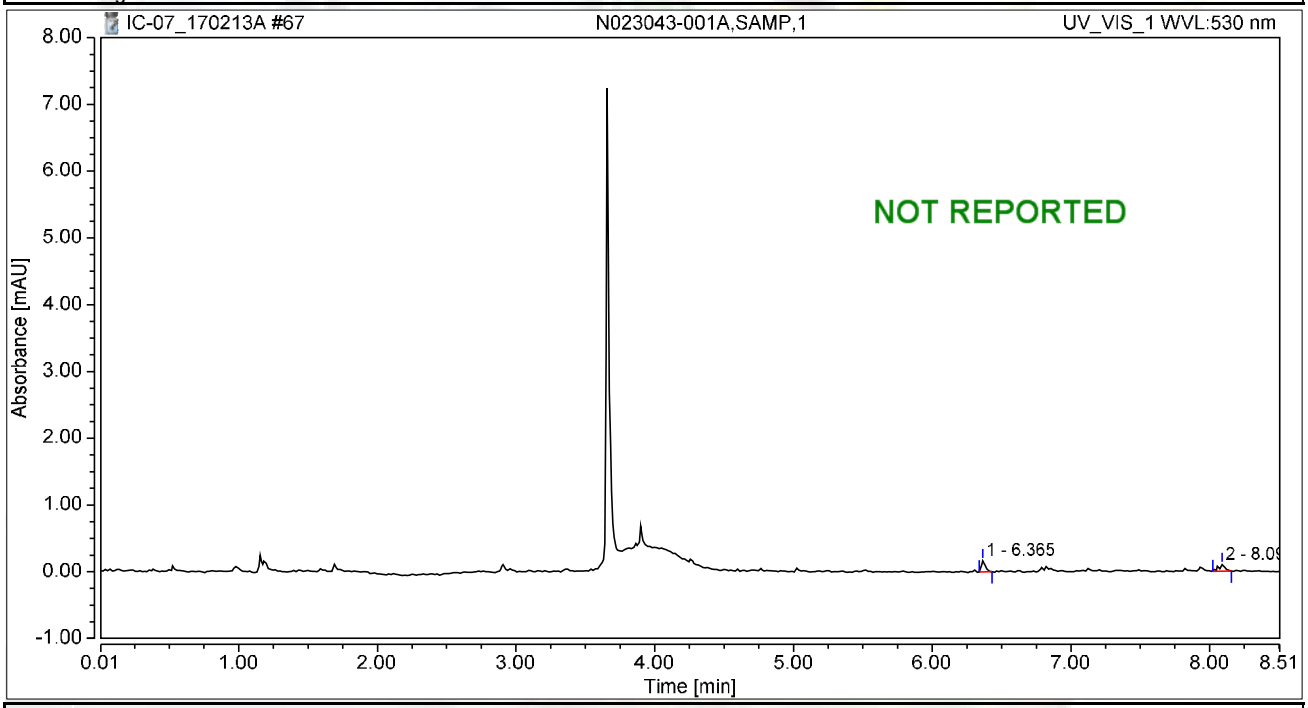
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.260	14.910	100.00	100.00	8.5208
Total:			**2.260**	**14.910**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

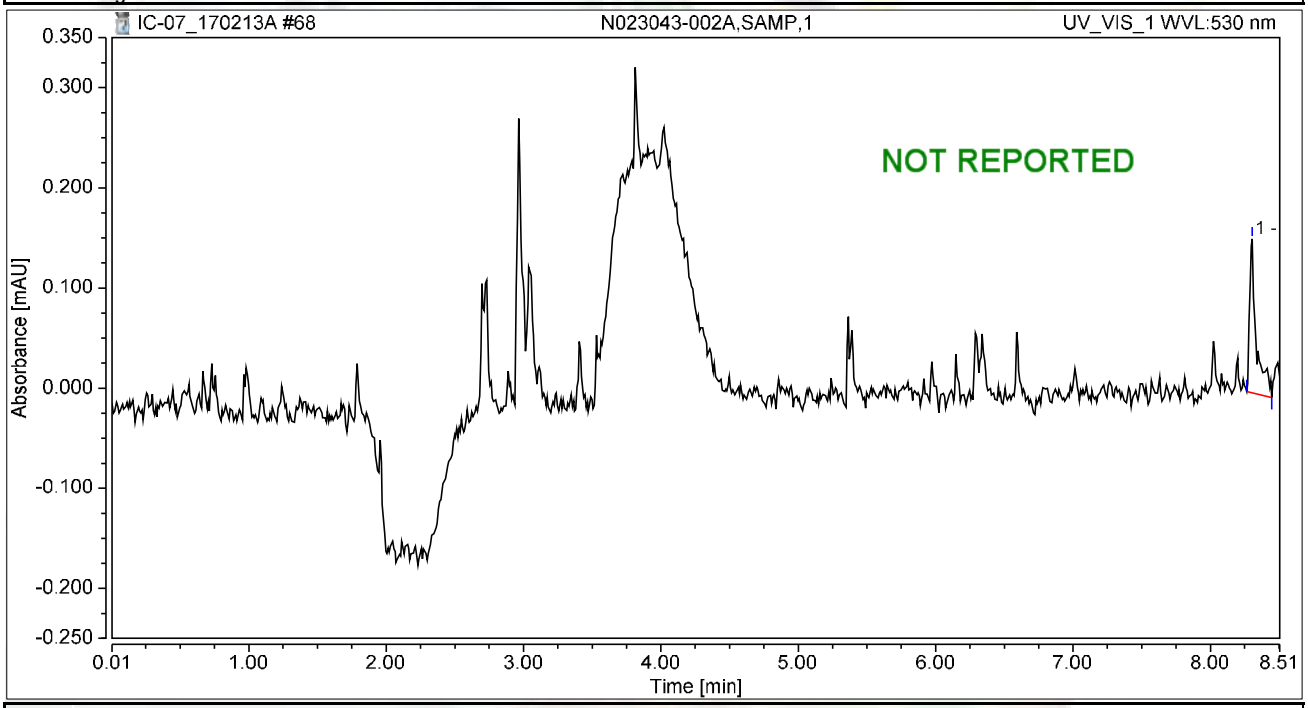
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.365	0.005	0.163	49.52	62.92	n.a.
2		8.090	0.005	0.096	50.48	37.08	n.a.
Total:			**0.010**	**0.259**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

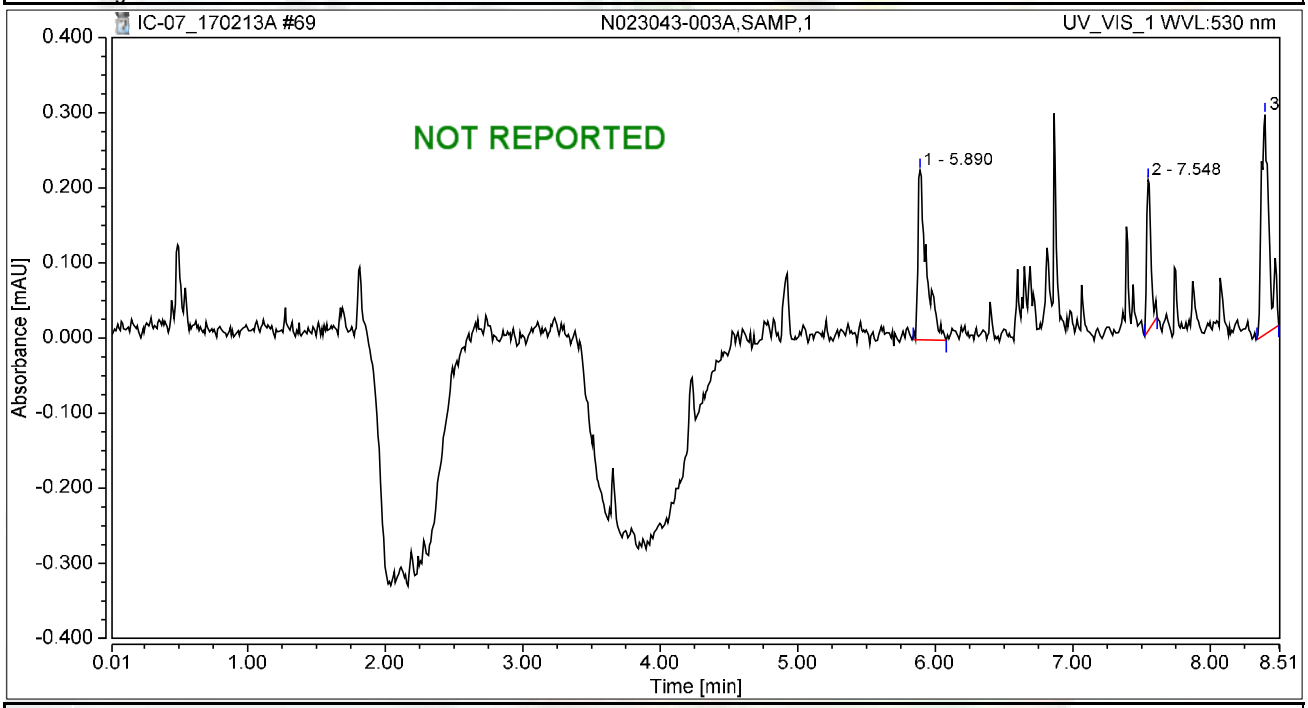
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.306	0.009	0.154	100.00	100.00	n.a.
Total:			**0.009**	**0.154**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023043-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

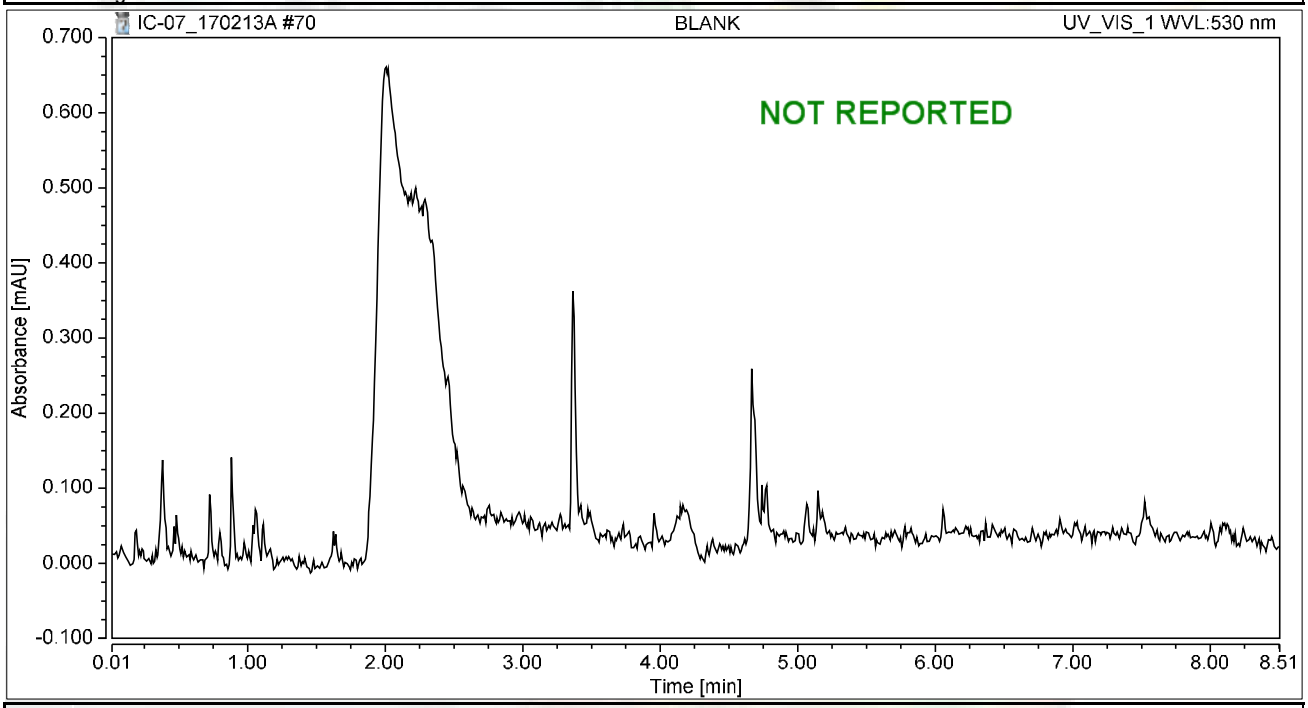
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.890	0.016	0.225	38.02	31.38	n.a.
2		7.548	0.007	0.201	17.57	27.96	n.a.
3		8.398	0.019	0.292	44.41	40.66	n.a.
Total:			**0.042**	**0.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

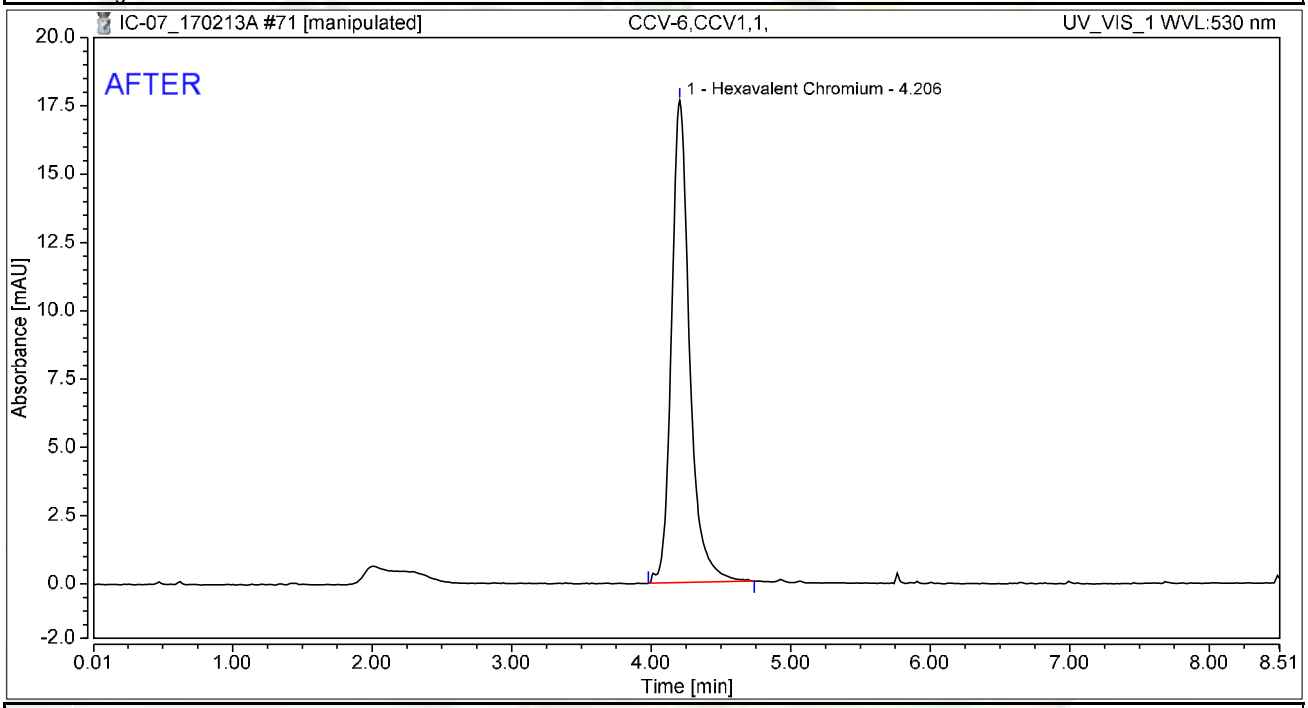
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.659	17.665	100.00	100.00	10.0261
Total:			**2.659**	**17.665**	**100.00**	**100.00**	

rba 2/19/2017

Reviewed by: Nancy 2/22/2017

My first report/Integration

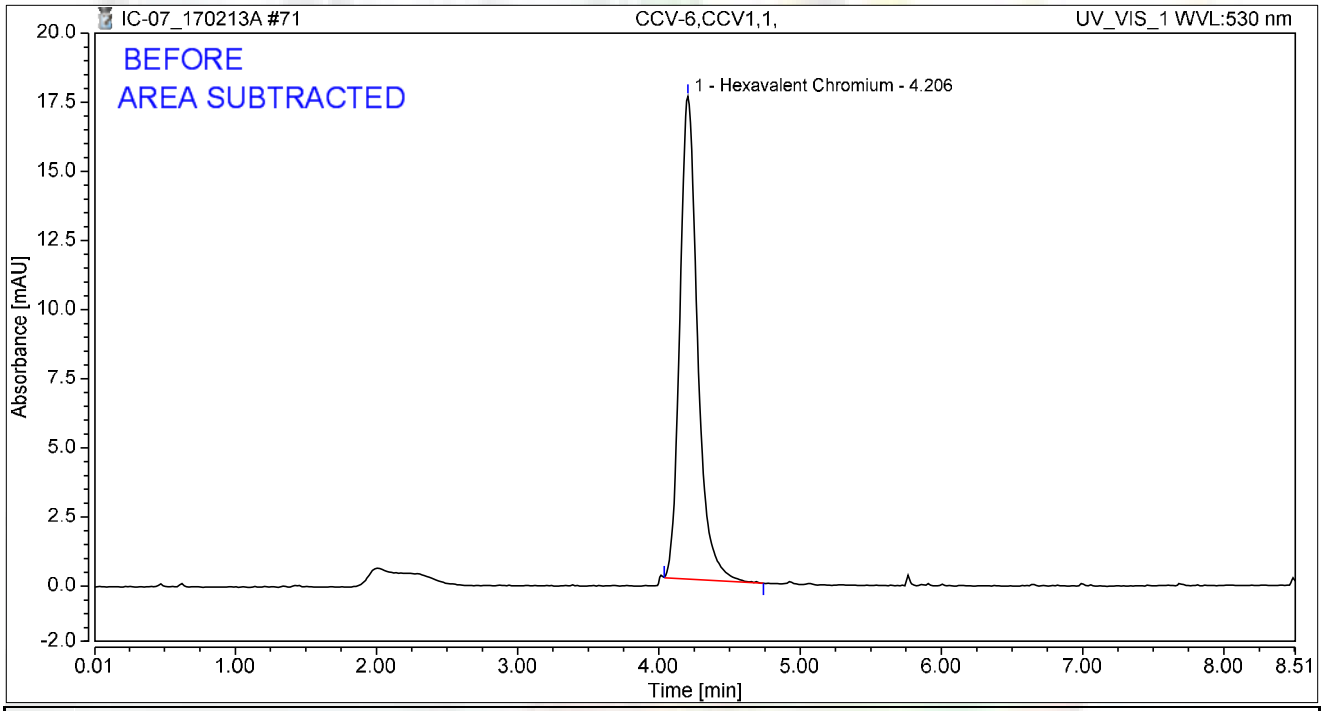
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.550	17.457	100.00	100.00	9.6154
Total:			**2.550**	**17.457**	**100.00**	**100.00**	

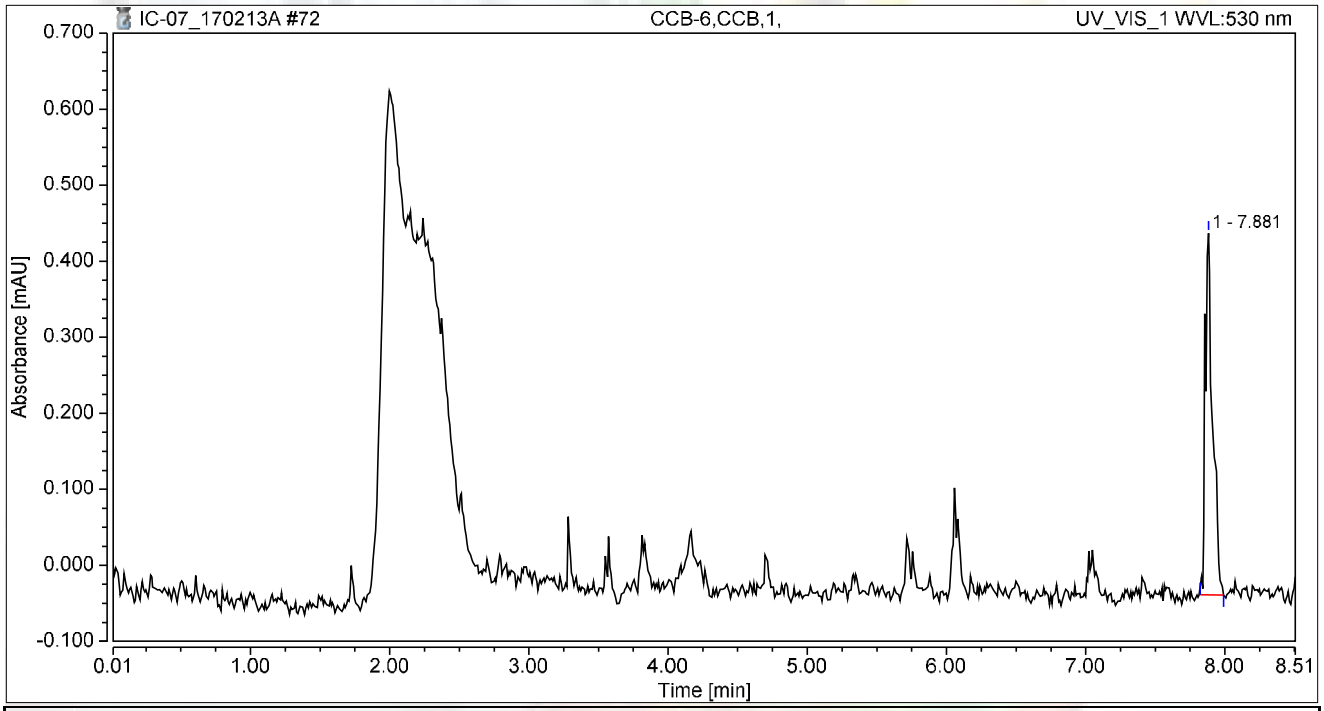
rba 2/19/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Feb/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.881	0.029	0.476	100.00	100.00	n.a.
Total:			**0.029**	**0.476**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113434 **Analyst:** LSR

ASSET #: N023028 **Date Analyzed:** 2/10/2017

Method: EPA 2320

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/14/2017

2nd Level Reviewer 2/24/2017 Date:

SAMPLE CALCULATION

Sample ID: **N023028-001C @ pH 7.63**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.0 mL)

= **0.02273 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.15) (0.02273 N) (1) * 1000

= 139.7895 mg/**L**

Reporting results in two significant figures,

= **140 mg/L** as CaCO3

Julia Ramit 2/14/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02273 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.15 mL) (0.02273) (1) * 1000

= 139.7895 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **139.7895 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **140 mg/L**

Julia Ramit 2/14/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.73	50	0.00	0.05	MBLK
LCS-1	8.54	50	0.05	4.55	LCS
N023007-001A	7.94	50	0.00	7.80	SAMP
N023007-002A	7.74	50	0.00	7.95	SAMP
N023007-003A	7.94	50	0.00	7.85	SAMP
N023011-002F	7.08	50	0.00	13.40	SAMP
N023011-004F	6.98	50	0.00	17.05	SAMP
N023011-006F	6.97	50	0.00	10.90	SAMP
N023011-009F	7.75	50	0.00	18.00	SAMP
N023011-011F	6.32	50	0.00	2.00	SAMP
N023012-001F	7.41	50	0.00	9.35	SAMP
N023012-002F	7.21	50	0.00	13.30	SAMP
N023012-011F	7.02	50	0.00	10.30	SAMP
N023012-012F	7.40	50	0.00	17.20	SAMP
N023028-001C	7.63	50	0.00	6.15	SAMP
N023028-002C	7.55	50	0.00	4.30	SAMP
N023028-003C	7.52	50	0.00	5.60	SAMP
N023040-003F	7.15	50	0.00	13.40	SAMP
N023040-004F	6.86	50	0.00	19.60	SAMP
N023040-006F	7.17	50	0.00	26.20	SAMP
N023028-001CDUP	7.63	50	0.00	6.10	DUP
N023028-002CMS	8.25	50	0.00	8.75	MS
N023028-002CMSD	8.25	50	0.00	8.70	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11**	ml
N H2SO4	**0.02273**	Normal
Date Analyzed:	**2/10/17**	
Time:	**9:10 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170208A**	

Silia Ramit 2/13/2017

Date Analyzed:	2/10/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	9:10 AM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R170208A							**P > 1/2 T**
									N H2SO4	0.02273	**N**		**P = T**
Sample ID	**Sample Vol/Wt.**	**Sample pH**	**Std. Code**	**Spike Amount**	**Spike Conc.**	**Normality, Titrant**	**Vol. Used to pH 8.3, ml.**	**Vol. Used pH 8.3 to 4.5, ml.**	**Total Vol. Used, ml.**	**DF (50ml/Vsamp.)**	**P Alkalinity**	**T Alkalinity**	**Comments**
MB-1	50	5.73				0.02273	0.00	0.05	0.05	1	0.00	1.14	
LCS-1	50	8.54				0.02273	0.05	4.50	4.55	1	1.14	103.41	
N023007-001A	50	7.94				0.02273	0.00	7.80	7.80	1	0.00	177.27	
N023007-002A	50	7.74				0.02273	0.00	7.95	7.95	1	0.00	180.68	
N023007-003A	50	7.94				0.02273	0.00	7.85	7.85	1	0.00	178.41	
N023011-002F	50	7.08				0.02273	0.00	13.40	13.40	1	0.00	304.55	
N023011-004F	50	6.98				0.02273	0.00	17.05	17.05	1	0.00	387.50	
N023011-006F	50	6.97				0.02273	0.00	10.90	10.90	1	0.00	247.73	
N023011-009F	50	7.75				0.02273	0.00	18.00	18.00	1	0.00	409.09	
N023011-011F	50	6.32				0.02273	0.00	2.00	2.00	1	0.00	45.45	
N023012-001F	50	7.41				0.02273	0.00	9.35	9.35	1	0.00	212.50	
N023012-002F	50	7.21				0.02273	0.00	13.30	13.30	1	0.00	302.27	
N023012-011F	50	7.02				0.02273	0.00	10.30	10.30	1	0.00	234.09	
N023012-012F	50	7.4				0.02273	0.00	17.20	17.20	1	0.00	390.91	
N023028-001C	50	7.63				0.02273	0.00	6.15	6.15	1	0.00	139.77	
N023028-002C	50	7.55				0.02273	0.00	4.30	4.30	1	0.00	97.73	
N023028-003C	50	7.52				0.02273	0.00	5.60	5.60	1	0.00	127.27	
N023040-003F	50	7.15				0.02273	0.00	13.40	13.40	1	0.00	304.55	
N023040-004F	50	6.86				0.02273	0.00	19.60	19.60	1	0.00	445.45	
N023040-006F	50	7.17				0.02273	0.00	26.20	26.20	1	0.00	595.45	
N023028-001CDU	50	7.63				0.02273	0.00	6.10	6.10	1	0.00	138.64	
N023028-002CMS	50	8.25				0.02273	0.00	8.75	8.75	1	0.00	198.86	
N023028-002CMS	50	8.25				0.02273	0.00	8.70	8.70	1	0.00	197.73	

Julia Ramit 2/13/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	2/10/17
Time:	9:10 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.14	1.14	1.14		P = 0
LCS-1	0.00	2.27	101.14	103.41	103.41		P < 1/2 T
N023007-001A	0.00	0.00	177.27	177.27	177.27		P = 0
N023007-002A	0.00	0.00	180.68	180.68	180.68		P = 0
N023007-003A	0.00	0.00	178.41	178.41	178.41		P = 0
N023011-002F	0.00	0.00	304.55	304.55	304.55		P = 0
N023011-004F	0.00	0.00	387.50	387.50	387.50		P = 0
N023011-006F	0.00	0.00	247.73	247.73	247.73		P = 0
N023011-009F	0.00	0.00	409.09	409.09	409.09		P = 0
N023011-011F	0.00	0.00	45.45	45.45	45.45		P = 0
N023012-001F	0.00	0.00	212.50	212.50	212.50		P = 0
N023012-002F	0.00	0.00	302.27	302.27	302.27		P = 0
N023012-011F	0.00	0.00	234.09	234.09	234.09		P = 0
N023012-012F	0.00	0.00	390.91	390.91	390.91		P = 0
N023028-001C	0.00	0.00	139.77	139.77	139.77		P = 0
N023028-002C	0.00	0.00	97.73	97.73	97.73		P = 0
N023028-003C	0.00	0.00	127.27	127.27	127.27		P = 0
N023040-003F	0.00	0.00	304.55	304.55	304.55		P = 0
N023040-004F	0.00	0.00	445.45	445.45	445.45		P = 0
N023040-006F	0.00	0.00	595.45	595.45	595.45		P = 0
N023028-001CDUP	0.00	0.00	138.64	138.64	138.64		P = 0
N023028-002CMS	0.00	0.00	198.86	198.86	198.86		P = 0
N023028-002CMSD	0.00	0.00	197.73	197.73	197.73		P = 0

Julia Ramit 2/13/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 2/10/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 2/10/17
Time Analyzed: 910
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: -
Sulfuric Acid: R170208A
Sodium Bicarbonate: CINV-150601A

pH meter CALIBRATION
SLOPE: 98%
pH 4 - 4.05 CINV - 161025B
7 - 7.02 161025A
10 - 10.05 161214B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.68	1WST170208A	5mL	0.05N	-	-	11.0	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.0227272727
	#2		10.67				-	-	11.0			
1)	MBLIC	50mL	5.73	-	-	-	0.02273	0	0.05	50/50		
2)	LCS		8.54	1WST170208B	1mL	0.05N		0.05	4.55			
3)	N023007-001A		7.94	-	-	-		0	7.80			
4)	2A		7.74	-	-	-		0	7.95			
5)	3A		7.94	-	-	-		0	7.85			
6)	N023011-002F		7.08	-	-	-		0	13.40			
7)	4F		6.98	-	-	-		0	17.05			
8)	6F		6.97	-	-	-		0	10.90			
9)	9F		7.75	-	-	-		0	18.0			
10)	11F		6.32	-	-	-		0	2.0			
11)	N023012-1F		7.41	-	-	-		0	9.35			
12)	2F		7.21	-	-	-		0	13.30			
13)	11F		7.02	-	-	-		0	10.30			
14)	12F		7.40	-	-	-		0	17.20			
15)	N023028-1C		7.63	-	-	-		0	6.15		$P = \frac{(V\ pH\ 8.3)(N_{H_2SO_4})(50,000)}{VSX}$	
16)	2C		7.55	-	-	-		0	4.30			
17)	3C		7.52	-	-	-		0	5.60			
18)	N023040-3F		7.15	-	-	-		0	13.40			
19)	4F		6.86	-	-	-		0	19.60		$T = \frac{(V\ pH\ 4.5)(N_{H_2SO_4})(50,000)}{VSX}$	
20)	6F		7.17	-	-	-		0	26.20			
	~~MS~~ N023028-1CDUP		7.63	-	-	-		0	6.10			
	~~MSD~~ 2CMS		8.25	1WST170208B	1mL	0.05N		0	8.75			
	~~LCS~~ 2CMSD		8.25					0	8.70			

Julia Ramit 2/13/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113515
ASSET #: N022999 / N023028

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/13/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/15/2017

2nd Level Reviewer 2/20/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N023028-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 4.9086 * 50

= 245.43

Reporting result in two significant values,

Sulfate, mg/L = 250

rba **2/17/2017**

ANALYSIS RUN LOG

Sequence: IC-08_170118A
Operator: IC-05
Printed: 1/19/2017 12:43:32 AM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 21

Created: 1/18/2017 9:10:16 AM by IC-05
Last Update: 1/18/2017 2:25:54 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170118	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170118	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170118	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170118	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170118	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170118	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
11	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
13	N022701-001C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
14	N022702-003D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
15	N022702-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
16	N022702-011D,SAMP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
17	N022702-003DMS,MS,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
18	N022702-003DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
19	N022702-010DDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_170118	Finished
20	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
21	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished

rba 1/21/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 21
Created: 1/18/2017 9:10:16 AM by IC-05
Last Update: 1/18/2017 2:25:54 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	1/18/2017 9:10:59 AM	BLANK
2	BLANK,BLANK,1	1/18/2017 9:26:16 AM	BLANK
3	Std - 0	1/18/2017 9:41:34 AM	iBLANK
4	Std - 1	1/18/2017 10:05:28 AM	STD-LOW
5	Std - 2	1/18/2017 10:20:46 AM	STD
6	Std - 3	1/18/2017 10:36:04 AM	STD
7	Std - 4	1/18/2017 10:51:22 AM	STD
8	Std - 5	1/18/2017 11:06:40 AM	STD-HIGH
9	ICV,ICV,1	1/18/2017 11:27:22 AM	ICV
10	ICB,ICB,1	1/18/2017 11:42:40 AM	ICB
11	LCS-H2O,LCS,1	1/18/2017 11:57:57 AM	LCS
12	MB-H2O,MBLK,1	1/18/2017 12:13:15 PM	METHOD BLANK
13	N022701-001C,SAMP,2	1/18/2017 12:31:49 PM	SAMP,5>10mL
14	N022702-003D,SAMP,5	1/18/2017 12:47:07 PM	SAMP,2>10mL
15	N022702-010D,SAMP,5	1/18/2017 1:02:24 PM	SAMP,2>10mL
16	N022702-011D,SAMP,5	1/18/2017 1:17:42 PM	SAMP,2>10mL
17	N022702-003DMS,MS,5	1/18/2017 1:33:01 PM	MS,2>10mL
18	N022702-003DMSD,MSD,5	1/18/2017 1:48:19 PM	MSD,2>10mL
19	N022702-010DDUP,DUP,5	1/18/2017 2:03:36 PM	DUP,2>10mL
20	CCV-2,CCV,1	1/18/2017 2:26:00 PM	CCV
21	CCB-2,CCB,1	1/18/2017 2:41:17 PM	CCB

Sequence: IC-08_170213A
Operator: IC-05
Printed: 2/14/2017 6:14:38 PM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59

Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170118	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170118	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170118	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170118	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170118	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170118	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
14	N022999-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
15	N022999-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
16	N022999-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170118	Finished
17	N022999-002C,SAMP,100	Unknown	1000.0	Anions Default	Anions_170118	Finished
18	N022999-003C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
19	N022999-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
20	N023028-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
21	N023028-002C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
24	N023028-003C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
25	N022999-001CMS,MS,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
26	N022999-001CMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
27	N022999-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
28	N022999-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
29	N023028-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
30	N023028-001CDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
31	N023028-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
32	N023028-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
33	N023028-002C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
36	N023028-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
37	N023028-003C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
38	N023028-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
39	N023028-002CMS,MS,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
40	N023028-002CMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_170118	Finished
41	N023028-003CDUP,DUP,2	Unknown	1000.0	Anions Default	Anions_170118	Finished

rba 2/15/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	1/18/2017 9:10:59 AM	BLANK
2	BLANK,BLANK,1	1/18/2017 9:26:16 AM	BLANK
3	Std - 0	1/18/2017 9:41:34 AM	iBLANK
4	Std - 1	1/18/2017 10:05:28 AM	STD-LOW
5	Std - 2	1/18/2017 10:20:46 AM	STD
6	Std - 3	1/18/2017 10:36:04 AM	STD
7	Std - 4	1/18/2017 10:51:22 AM	STD
8	Std - 5	1/18/2017 11:06:40 AM	STD-HIGH
9	BLANK,BLANK,1	2/13/2017 8:23:20 AM	BLANK
10	CCV-1,CCV,1	2/13/2017 8:38:38 AM	CCV
11	CCB-1,CCB,1	2/13/2017 9:13:12 AM	CCB
12	MB-H2O,MBLK,1	2/13/2017 9:28:30 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/13/2017 9:43:48 AM	LCS
14	N022999-001C,SAMP,200	2/13/2017 10:08:10 AM	SAMP,0.05>10mL
15	N022999-001C,SAMP,50	2/13/2017 10:23:28 AM	SAMP,0.2>10mL
16	N022999-002C,SAMP,500	2/13/2017 10:38:46 AM	SAMP,0.02>10mL
17	N022999-002C,SAMP,100	2/13/2017 10:54:04 AM	SAMP,0.1>10mL
18	N022999-003C,SAMP,200	2/13/2017 11:09:22 AM	SAMP,0.05>10mL
19	N022999-003C,SAMP,50	2/13/2017 11:24:40 AM	SAMP,0.2>10mL
20	N023028-001C,SAMP,1	2/13/2017 11:39:58 AM	SAMP,10mL
21	N023028-002C,SAMP,2	2/13/2017 11:55:16 AM	SAMP,5>10mL
22	CCV-2,CCV,1	2/13/2017 12:10:34 PM	CCV
23	CCB-2,CCB,1	2/13/2017 12:25:52 PM	CCB
24	N023028-003C,SAMP,2	2/13/2017 12:41:10 PM	SAMP,5>10mL
25	N022999-001CMS,MS,200	2/13/2017 12:56:28 PM	MS,0.05>10mL
26	N022999-001CMSD,MSD,200	2/13/2017 1:11:46 PM	MSD,0.05>10mL
27	N022999-001CMS,MS,50	2/13/2017 1:27:04 PM	MS,0.2>10mL
28	N022999-001CMSD,MSD,50	2/13/2017 1:42:22 PM	MSD,0.2>10mL
29	N023028-001C,SAMP,200	2/13/2017 1:57:40 PM	SAMP,0.05>10mL
30	N023028-001CDUP,DUP,200	2/13/2017 2:12:58 PM	DUP,0.05>10mL
31	N023028-001C,SAMP,50	2/13/2017 2:28:15 PM	SAMP,0.2>10mL
32	N023028-001CDUP,DUP,50	2/13/2017 2:43:33 PM	DUP,0.2>10mL
33	N023028-002C,SAMP,200	2/13/2017 2:58:51 PM	SAMP,0.05>10mL
34	CCV-3,CCV,1	2/13/2017 3:14:09 PM	CCV
35	CCB-3,CCB,1	2/13/2017 3:29:27 PM	CCB
36	N023028-002C,SAMP,50	2/13/2017 3:44:44 PM	SAMP,0.2>10mL
37	N023028-003C,SAMP,200	2/13/2017 4:00:03 PM	SAMP,0.05>10mL
38	N023028-003C,SAMP,50	2/13/2017 4:15:21 PM	SAMP,0.2>10mL
39	N023028-002CMS,MS,2	2/13/2017 4:30:39 PM	MS,5>10mL
40	N023028-002CMSD,MSD,2	2/13/2017 4:45:57 PM	MSD,.5>10mL
41	N023028-003CDUP,DUP,2	2/13/2017 5:01:15 PM	DUP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N023087-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
43	N023088-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
44	N023079-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
45	N023080-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
48	N023080-001BDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
49	N023081-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
50	N023081-001BMS,MS,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
51	N023081-001BMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
52	N023082-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
53	N023083-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
54	N023084-001B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
55	N023028-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
56	N023028-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170118	Finished
57	N023028-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170118	Finished
58	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_170118	Finished
59	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_170118	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 59
Created: 2/13/2017 8:23:00 AM by IC-05
Last Update: 2/13/2017 5:31:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N023087-001B,SAMP,1	2/13/2017 5:28:14 PM	SAMP,10mL
43	N023088-001B,SAMP,1	2/13/2017 5:43:32 PM	SAMP,10mL
44	N023079-001B,SAMP,1	2/13/2017 5:58:50 PM	SAMP,10mL
45	N023080-001B,SAMP,1	2/13/2017 6:14:08 PM	SAMP,10mL
46	CCV-4,CCV,1	2/13/2017 6:29:25 PM	CCV
47	CCB-4,CCB,1	2/13/2017 6:44:44 PM	CCB
48	N023080-001BDUP,DUP,1	2/13/2017 7:00:02 PM	DUP,10mL
49	N023081-001B,SAMP,1	2/13/2017 7:15:20 PM	SAMP,10mL
50	N023081-001BMS,MS,1	2/13/2017 7:30:37 PM	MS,10mL
51	N023081-001BMSD,MSD,1	2/13/2017 7:45:55 PM	MSD,10mL
52	N023082-001B,SAMP,1	2/13/2017 8:01:14 PM	SAMP,10mL
53	N023083-001B,SAMP,1	2/13/2017 8:16:32 PM	SAMP,10mL
54	N023084-001B,SAMP,1	2/13/2017 8:31:50 PM	SAMP,10mL
55	N023028-001C,SAMP,1	2/13/2017 8:47:07 PM	SAMP,10mL
56	N023028-001C,SAMP,200	2/13/2017 9:02:25 PM	SAMP,0.05>10mL
57	N023028-001C,SAMP,50	2/13/2017 9:17:43 PM	SAMP,0.2>10mL
58	CCV-5,CCV,1	2/13/2017 9:33:01 PM	CCV
59	CCB-5,CCB,1	2/13/2017 9:48:19 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 1/18/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0692	0.1386	0.2791	0.7337	1.5435	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 1/18/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0525	0.2137	0.4226	1.1035	2.2903	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 1/18/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0035	0.0147	0.0304	0.0775	0.1570	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.282	0.10	1.250	0	103	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.142	0.10	1.250	0	91.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.173	0.10	1.250	0	93.8	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.181	0.10	1.250	0	94.5	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.203	0.10	1.250	0	96.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.203	0.10	1.250	0	96.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.024	0.50	2.000	0	101	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.011	0.50	2.000	0	101	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.048	0.50	2.000	0	102	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.049	0.50	2.000	0	102	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.063	0.50	2.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.068	0.50	2.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.998	0.50	4.000	0	99.9	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.978	0.50	4.000	0	99.5	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.011	0.50	4.000	0	100	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.015	0.50	4.000	0	100	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.044	0.50	4.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCV** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.007	0.50	4.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **ICB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **1/18/2017** SeqNo: **2566117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.168	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.157	0.50									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.155	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.156	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **ICB**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **1/18/2017**	SeqNo: **2566162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-1	**CCB**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCB**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-2	**CCB**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCB**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.242	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCB**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.219	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-4	**CCB**	**300_W_SO4P**	**mg/L**		**113515**
Client ID: **CCB**	Batch ID: **R113515**	TestNo: **EPA 300.0**		Analysis Date: **2/13/2017**	SeqNo: **2566181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.223	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **113515**
Client ID: **CCB** Batch ID: **R113515** TestNo: **EPA 300.0** Analysis Date: **2/13/2017** SeqNo: **2566184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.047	
CCV-2	Chloride	4.044	
CCV-3	Chloride	4.044	
CCV-4	Chloride	4.044	
CCV-5	Chloride	4.047	
	Average	4.045	
	Applied RT Window	3.845 - 4.245	
MB-R113515_CL	Chloride	4.043	PASS
LCS-R113515_CL	Chloride	4.047	PASS
N022999-001CMS	Chloride	4.047	PASS
N022999-001CMSD	Chloride	4.047	PASS
N023028-001C	Chloride	4.044	PASS
N023028-001CDUP	Chloride	4.043	PASS
N023028-002C	Chloride	4.044	PASS
N023028-003C	Chloride	4.044	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name	Retention Time		Evaluation
CCV-1	Bromide	5.457	
CCV-2	Bromide	5.454	
CCV-3	Bromide	5.454	
CCV-4	Bromide	5.454	
CCV-5	Bromide	5.453	
	Average	5.454	
	Applied RT Window	5.254 - 5.654	
MB-R113515_BR	Bromide	N.A.	N.A.
LCS-R113515_BR	Bromide	5.457	PASS
N023028-001C	Bromide	5.457	PASS
N023028-002C	Bromide	5.453	PASS
N023028-003C	Bromide	5.453	PASS
N023028-002CMS	Bromide	5.457	PASS
N023028-002CMSD	Bromide	5.457	PASS
N023028-003CDUP	Bromide	5.453	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/13/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.404	
CCV-2	Sulfate	9.397	
CCV-3	Sulfate	9.397	
CCV-4	Sulfate	9.390	
CCV-5	Sulfate	9.390	
	Average	9.396	
	Applied RT Window	9.196 - 9.596	
MB-R113515_SO4	Sulfate	N.A.	N.A.
LCS-R113515_SO4	Sulfate	9.404	PASS
N022999-001CMS	Sulfate	9.400	PASS
N022999-001CMSD	Sulfate	9.397	PASS
N023028-001C	Sulfate	9.397	PASS
N023028-001CDUP	Sulfate	9.393	PASS
N023028-002C	Sulfate	9.394	PASS
N023028-003C	Sulfate	9.394	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

MDL/LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 5/26/2016
Analyst: Quennie B. Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Compound	MDL	LOD Spike Conc., mg/L	LOD actual Conc., mg/L	PQL Spike Conc., mg/L	PQL actual Conc., mg/L	%Recovery
Fluoride	**0.0174**	0.035	0.072	0.100	0.122	**122**
Chloride	**0.0194**	0.050	0.146	0.500	0.538	**108**
Nitrite	**0.0205**	0.030	0.063	0.050	0.060	**120**
Bromide	**0.0359**	0.100	0.077	0.200	0.239	**120**
Nitrate	**0.0130**	0.030	0.061	0.050	0.066	**132**
Phosphate	**0.0325**	0.050	0.074	0.100	0.132	**132**
Sulfate	**0.0655**	0.150	0.269	0.500	0.662	**132**

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113631 **Analyst:** REB

ASSET #: N023028 **Date Analyzed:** 2/19/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 02/23/17 Date:

2nd Level Reviewer 2/24/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023028-001D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 1.1242*10

= 11.242 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 11

RB 02/23/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

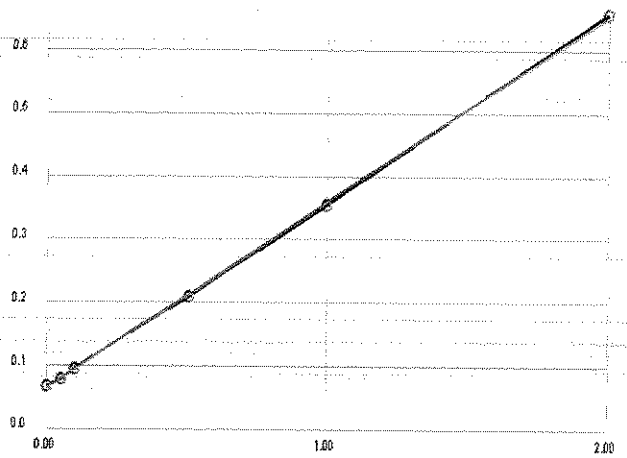
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.295x + 0.0646
Correlation	.999893



Calibrant	Energy	Set	Conc
1	0.0682	0.0000	0.0122
2	0.0797	0.0500	0.0511
3	0.0944	0.1000	0.1010
4	0.2102	0.5000	0.4934
5	0.3542	1.0000	0.9815
6	0.6579	2.0000	2.0108

Notes:

2% CuSO4- R170125C
R1 Buffer- R170125D
R2 Coloring reagent- R170125E

STD 1°- ISST160817E
STD 2°- ISST160211J

RJB 02/23/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.512	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCV** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.528	0.050	0.5000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ICB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **CCB** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-19-2017 23:28
Time end: 02-20-2017 02:09

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	01:32:10	0.0149		0.0690
2	<BLANK>	01:33:10	0.0139		0.0687
3	<CAL1>	01:34:05	0.0122	[0]	0.0682
4	<CAL2>	01:35:07	0.0511	[0.05]	0.0797
5	<CAL3>	01:36:02	0.1010	[0.1]	0.0944
6	<CAL4>	01:36:56	0.4934	[0.5]	0.2102
7	<CAL5>	01:37:58	0.9815	[1]	0.3542
8	<CAL6>	01:38:53	2.0108	[2]	0.6579
9	,BLANK,BLANK,1,	01:39:47	0.0769		0.0873
10	,ICV,ICV,1,	01:40:49	0.4992		0.2119
11	,ICB,ICB,1,	01:41:44	0.0145		0.0689
12	,MB-H2O,MBLK,1,	01:42:40	0.0111		0.0679
13	,LCS-H2O,LCS,1,	01:43:40	0.4958		0.2109
14	,N022985-004C,SAMP,1,	01:44:36	0.1850		0.1192
15	,N022985-004CDUP,DUP,1,	01:45:31	0.1816		0.1182
16	,N022985-004CMS,MS,1,	01:46:33	0.6910		0.2685
17	,N022985-004CMSD,MSD,1,	01:47:27	0.6754		0.2639
18	,N023014-002C,SAMP,50,	01:48:23	0.6422		0.2541
19	,N023014-003C,SAMP,20,	01:49:24	0.4701		0.2033
20	,N023014-004C,SAMP,10,	01:50:18	1.2198		0.4245
21	,BLANK,BLANK,1	01:51:14	0.0257		0.0722
22	,CCV-1,CCV,1,	01:52:15	0.5124		0.2158
23	,CCB-1,CCB,1,	01:53:11	0.0081		0.0670
24	,N023028-001D,SAMP,10,	01:53:59	1.1242		0.3963
25	,N023028-002D,SAMP,10,	01:54:42	0.5755		0.2344
26	,N023028-003D,SAMP,10,	01:55:30	1.0693		0.3801

RJB 02/23/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N023029-001C,SAMP,1,	01:56:14	1.0642		0.3786
28	,N023029-002C,SAMP,5,	01:56:56	0.9629		0.3487
29	,N023029-003C,SAMP,20,	01:57:45	0.8093		0.3034
30	,N023029-004C,SAMP,1,	01:58:29	1.8542		0.6117
31	,N023029-005C,SAMP,1,	01:59:11	1.5651		0.5264
32	,N023107-001D,SAMP,1,	02:00:00	0.4955		0.2108
33	,BLANK,BLANK,1	02:00:42	0.0128		0.0684
34	,CCV-2,CCV,1,	02:01:26	0.5277		0.2203
35	,CCB-2,CCB,1,	02:02:14	0.0033		0.0656
36	,N023107-002D,SAMP,1,	02:02:57	0.3474		0.1671
37	,N023107-003D,SAMP,1,	02:03:47	0.3185		0.1586
38	,N023107-004D,SAMP,5,	02:04:29	0.4890		0.2089
39	,BLANK,BLANK,1	02:05:12	0.0067		0.0666
40	,CCV-3,CCV,1,	02:06:00	0.5277		0.2203
41	,CCV-3,CCV,1, not used	02:06:43	0.5121		0.2157
42	,CCB-3,CCB,1,	02:07:25	0.0040		0.0658

RJB 02/23/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/19/17
Time Analyzed: 11:28 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170125D
Color reagent: R170125E
2% Copper Sulfate: R170125C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023028-001D		8.02						
2)	N023028-002D		7.94						
3)	N023028-003D		7.54						
4)	N023029-001C		8.87						
5)	N023029-002C		8.36						
6)	N023029-003C		8.43						
7)	N023029-004C		8.98						
8)	N023029-005C		8.76						
9)	N023107-001D		8.60						
10)	N023107-002D		8.66						
11)	N023107-003D		7.41						
12)	N023107-004D		7.76						
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 02/23/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61303 **Instrument ID:** ICP-02
ASSET #: N023028 **Analyst:** CEI
Method: **Date Analyzed:** 2/17/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N023028-001B PS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/24/2017 Date: —

2nd Level Reviewer 2/24/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61303 **Instrument ID:** ICP-02
ASSET #: N023028 **Analyst:** CEI
Method: **Date Analyzed:** 2/20/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N023028-002B PS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/24/2017 Date: —
2nd Level Reviewer 2/24/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023028-001B** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 0.76021 * 1 * (25/25) * 1000

Boron , ug/L = 760.21

Reporting results in two significant figures,

Boron , ug/L = 760

% RSD SUMMARY

RSD SUMMARY: 170217C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.56	15	PASS
Standard1	ICAL	1	B	0.1	0.47	15	PASS
Standard3	ICAL	1	B	1	1.55	15	PASS
Standard4	ICAL	1	B	2.5	1.081	15	PASS
Standard5	ICAL	1	B	3.75	0.8	15	PASS
Standard6	ICAL	1	B	5	0.99	15	PASS
Standard7	ICAL	1	B	10	0.61	15	PASS
ICV	ICV	1	B	5.079	0.86	15	PASS
ICB	ICB	1	B	0.052	10.43	15	PASS
LLICV	CCV1	1	B	0.12	0.98	20	PASS
LLICV	CCV1	1	B	0.11	2.072	20	PASS
ICSA1	ICSA	1	B	0.0012	90.43	15	<PQL
ICSAB1	ICSAB	1	B	1.1	0.45	15	PASS
MB-61303	MBLK	1	B	0.039	10.5	15	PASS
LCS1-61303	LCS	1	B	4.61	1.18	15	PASS
CCV1	CCV	1	B	5.0031	0.55	15	PASS
CCB1	CCB	1	B	0.046	13.091	15	PASS
N023028-001B	SAMP	1	B	0.76	0.84	15	PASS
N023028-001B	SAMP	5	B	0.17	1.091	15	PASS
N023028-001B-PS	PS	1	B	5.58	1.2	15	PASS
N023028-001B-MS1	MS	1	B	5.62	0.42	15	PASS
N023028-001B-MSD1	MSD	1	B	5.65	0.93	15	PASS
N023028-002B	SAMP	1	B	0.5	0.18	15	PASS
N023028-003B	SAMP	1	B	0.87	0.48	15	PASS
CCV2	CCV	1	B	5.097	0.96	15	PASS
CCB2	CCB	1	B	0.048	12.48	15	PASS
LLCCV1	CCV2	1	B	0.13	1.21	20	PASS
ICSA2	ICSA	1	B	0.052	5.023	15	PASS
ICSAB2	ICSAB	1	B	1.14	0.51	15	PASS
CalBlk	IBLK	1	Ca	0	4.084	15	PASS
Standard1	ICAL	1	Ca	0.2	11.49	15	PASS
Standard2	ICAL	1	Ca	1	5.12	15	PASS
Standard3	ICAL	1	Ca	2	0.76	15	PASS
Standard4	ICAL	1	Ca	5	0.94	15	PASS
Standard5	ICAL	1	Ca	7.5	0.26	15	PASS
Standard6	ICAL	1	Ca	10	0.48	15	PASS
Standard7	ICAL	1	Ca	20	0.33	15	PASS
ICV	ICV	1	Ca	10.14	0.7	15	PASS
ICB	ICB	1	Ca	-0.04	19.0092	15	<PQL
LLICV	CCV1	1	Ca	0.19	8.54	20	PASS
LLICV	CCV1	1	Ca	0.18	15.56	20	PASS
ICSA1	ICSA	1	Ca	514.59	0.077	15	PASS

RSD SUMMARY: 170217C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Ca	526.28	0.12	15	PASS
MB-61303	MBLK	1	Ca	-0.029	147.4	15	<PQL
LCS1-61303	LCS	1	Ca	9.12	0.33	15	PASS
CCV1	CCV	1	Ca	10	0.27	15	PASS
CCB1	CCB	1	Ca	-0.04	152.23	15	<PQL
N023028-001B	SAMP	1	Ca	110.95	0.35	15	PASS
N023028-001B	SAMP	5	Ca	22.35	0.25	15	PASS
N023028-001B-PS	PS	1	Ca	124.44	0.65	15	PASS
N023028-001B-MS1	MS	1	Ca	120.23	0.66	15	PASS
N023028-001B-MSD1	MSD	1	Ca	121.33	0.54	15	PASS
N023028-002B	SAMP	1	Ca	115.95	0.94	15	PASS
N023028-003B	SAMP	1	Ca	118.34	0.64	15	PASS
CCV2	CCV	1	Ca	9.99	1.15	15	PASS
CCB2	CCB	1	Ca	-0.026	49.35	15	<PQL
LLCCV1	CCV2	1	Ca	0.18	15.56	20	PASS
ICSA2	ICSA	1	Ca	507.77	0.2	15	PASS
ICSAB2	ICSAB	1	Ca	520.9	0.066	15	PASS
CalBlk	IBLK	1	Fe	0	1877.74	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.52	15	PASS
Standard2	ICAL	1	Fe	0.05	0.51	15	PASS
Standard3	ICAL	1	Fe	2	1.16	15	PASS
Standard4	ICAL	1	Fe	5	0.15	15	PASS
Standard5	ICAL	1	Fe	7.5	0.17	15	PASS
Standard6	ICAL	1	Fe	10	0.25	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	10.17	0.23	15	PASS
ICB	ICB	1	Fe	-0.0041	19.36	15	<PQL
LLICV	CCV1	1	Fe	0.018	1.96	20	PASS
LLICV	CCV1	1	Fe	0.017	7.58	20	PASS
ICSA1	ICSA	1	Fe	202.58	0.85	15	PASS
ICSAB1	ICSAB	1	Fe	186.92	0.48	15	PASS
MB-61303	MBLK	1	Fe	-0.0044	17.72	15	<PQL
LCS1-61303	LCS	1	Fe	0.1	0.3	15	PASS
CCV1	CCV	1	Fe	10.13	0.25	15	PASS
CCB1	CCB	1	Fe	-0.0042	14.24	15	PASS
N023028-001B	SAMP	1	Fe	-0.0031	18.21	15	<PQL
N023028-001B	SAMP	5	Fe	0.0042	32.42	15	<PQL
N023028-001B-PS	PS	1	Fe	0.097	0.53	15	PASS
N023028-001B-MS1	MS	1	Fe	0.096	1.097	15	PASS
N023028-001B-MSD1	MSD	1	Fe	0.097	0.85	15	PASS
N023028-002B	SAMP	1	Fe	-0.0022	19.33	15	<PQL
N023028-003B	SAMP	1	Fe	0.00061	103.86	15	<PQL

RSD SUMMARY: 170217C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV2	CCV	1	Fe	10.33	0.25	15	PASS
CCB2	CCB	1	Fe	-0.0049	11.42	15	PASS
LLCCV1	CCV2	1	Fe	0.017	1.51	20	PASS
ICSA2	ICSA	1	Fe	189.76	1	15	PASS
ICSAB2	ICSAB	1	Fe	191.21	0.47	15	PASS
CalBlk	IBLK	1	Mg	0	6.18	15	PASS
Standard1	ICAL	1	Mg	0.1	0.46	15	PASS
Standard2	ICAL	1	Mg	1	0.67	15	PASS
Standard3	ICAL	1	Mg	2	1.091	15	PASS
Standard4	ICAL	1	Mg	5	0.17	15	PASS
Standard5	ICAL	1	Mg	7.5	0.19	15	PASS
Standard6	ICAL	1	Mg	10	0.27	15	PASS
Standard7	ICAL	1	Mg	20	0.12	15	PASS
ICV	ICV	1	Mg	10.12	0.16	15	PASS
ICB	ICB	1	Mg	-0.0099	5.76	15	PASS
LLICV	CCV1	1	Mg	0.1	0.88	20	PASS
LLICV	CCV1	1	Mg	0.093	1.3	20	PASS
ICSA1	ICSA	1	Mg	511.99	0.96	15	PASS
ICSAB1	ICSAB	1	Mg	518.41	0.47	15	PASS
MB-61303	MBLK	1	Mg	-0.0086	12.11	15	PASS
LCS1-61303	LCS	1	Mg	9.38	0.3	15	PASS
CCV1	CCV	1	Mg	9.91	0.27	15	PASS
CCB1	CCB	1	Mg	-0.0096	8.74	15	PASS
N023028-001B	SAMP	1	Mg	27.87	0.37	15	PASS
N023028-001B	SAMP	5	Mg	5.9	0.73	15	PASS
N023028-001B-PS	PS	1	Mg	37.73	0.38	15	PASS
N023028-001B-MS1	MS	1	Mg	37.066	0.38	15	PASS
N023028-001B-MSD1	MSD	1	Mg	37.38	0.18	15	PASS
N023028-002B	SAMP	1	Mg	18.79	0.039	15	PASS
N023028-003B	SAMP	1	Mg	17.81	0.11	15	PASS
CCV2	CCV	1	Mg	10.19	0.063	15	PASS
CCB2	CCB	1	Mg	-0.0085	3.69	15	PASS
LLCCV1	CCV2	1	Mg	0.094	1.069	20	PASS
ICSA2	ICSA	1	Mg	511.08	1.038	15	PASS
ICSAB2	ICSAB	1	Mg	526.68	0.55	15	PASS

RSD SUMMARY: 170220B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	24.83	15	<PQL
Standard1	ICAL	1	Na	0.1	4.68	15	PASS
Standard2	ICAL	1	Na	1	1.18	15	PASS
Standard3	ICAL	1	Na	5	0.21	15	PASS
Standard4	ICAL	1	Na	10	0.87	15	PASS
Standard5	ICAL	1	Na	20	0.93	15	PASS
Standard6	ICAL	1	Na	40	0.23	15	PASS
ICV	ICV	1	Na	9.99	0.34	15	PASS
ICB	ICB	1	Na	0.009	88.8	15	<PQL
ICSA1	ICSA	1	Na	0.0031	257.89	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.15	15	PASS
MB-61303	MBLK	1	Na	-0.0016	451.42	15	<PQL
LCS2-61303	LCS	1	Na	19.66	0.33	15	PASS
N023028-001B	SAMP	25	Na	17.72	0.67	15	PASS
N023028-002B	SAMP	10	Na	29.48	0.23	15	PASS
N023028-003B	SAMP	25	Na	15.65	0.19	15	PASS
N023028-002B	SAMP	50	Na	-43.58	38.61	15	<PQL
N023028-002B-PS	PS	10	Na	31.99	3.21	15	PASS
N023028-002B-MS2	MS	10	Na	31.89	0.45	15	PASS
N023028-002B-MSD2	MSD	10	Na	32.62	0.18	15	PASS
N023028-002B	SAMP	50	Na	5.89	0.014	15	PASS
CCV1	CCV	1	Na	10.53	0.24	15	PASS
CCB1	CCB	1	Na	0.0006	676.11	15	<PQL
ICSA2	ICSA	1	Na	0.0033	211.65	15	<PQL
ICSAB2	ICSAB	1	Na	9.96	0.19	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170217C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/17/2017	04:30:33 PM
2	Standard1	ICAL	1	02/17/2017	04:34:37 PM
3	Standard2	ICAL	1	02/17/2017	04:39:10 PM
4	Standard3	ICAL	1	02/17/2017	04:43:42 PM
5	Standard4	ICAL	1	02/17/2017	04:48:16 PM
6	Standard5	ICAL	1	02/17/2017	04:53:25 PM
7	Standard6	ICAL	1	02/17/2017	04:58:30 PM
8	Standard7	ICAL	1	02/17/2017	05:03:37 PM
9	ICV	ICV	1	02/17/2017	05:08:16 PM
1	ICB	ICB	1	02/17/2017	05:13:24 PM
2	LLICV	CCV1	1	02/17/2017	05:24:53 PM
2	LLICV	CCV1	1	02/17/2017	05:28:25 PM
4	ICSA1	ICSA	1	02/17/2017	05:32:58 PM
5	ICSAB1	ICSAB	1	02/17/2017	05:39:52 PM
38	MB-61251	MBLK	1	02/17/2017	05:45:10 PM
38	MB-61251	MBLK	1	02/17/2017	05:54:42 PM
39	LCS1-61251	LCS	1	02/17/2017	05:58:45 PM
40	N023002-005B	SAMP	1	02/17/2017	06:04:25 PM
41	N023002-005B	SAMP	5	02/17/2017	06:08:57 PM
42	N023002-005B-PS	PS	1	02/17/2017	06:12:59 PM
43	N023002-005B-MS1	MS	1	02/17/2017	06:18:33 PM
44	N023002-005B-MSD1	MSD	1	02/17/2017	06:24:07 PM
45	MB-61303	MBLK	1	02/17/2017	06:29:41 PM
46	LCS1-61303	LCS	1	02/17/2017	06:34:20 PM
7	CCV1	CCV	1	02/17/2017	06:39:55 PM
1	CCB1	CCB	1	02/17/2017	06:45:02 PM
47	N023028-001B	SAMP	1	02/17/2017	06:49:48 PM
48	N023028-001B	SAMP	5	02/17/2017	06:54:54 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	N023028-001B-PS	PS	1	02/17/2017	06:58:46 PM
50	N023028-001B-MS1	MS	1	02/17/2017	07:03:54 PM
51	N023028-001B-MSD1	MSD	1	02/17/2017	07:08:59 PM
52	N023028-002B	SAMP	1	02/17/2017	07:14:05 PM
53	N023028-003B	SAMP	1	02/17/2017	07:19:09 PM
7	CCV2	CCV	1	02/17/2017	07:24:13 PM
1	CCB2	CCB	1	02/17/2017	07:29:21 PM
2	LLCCV1	CCV2	1	02/17/2017	07:33:52 PM
4	ICSA2	ICSA	1	02/17/2017	07:38:25 PM
5	ICSAB2	ICSAB	1	02/17/2017	07:44:09 PM

INJECTION LOG: 170220B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161209A,0.025<50mL
Standard2	MWST-161209A,0.25<50mL
Standard3	MWST-161209A,1.25<50mL
Standard4	MWST-161209A,2.5<50mL
Standard5	MWST-161209A,5<50mL
Standard6	MWST-161209A,10<50mL
ICV	MWST-161209B
CCV	MWST-161209A,2.5<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161209C
Int. Std. (Sc):	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/20/2017	01:55:22 PM
26	Standard1	ICAL	1	02/20/2017	01:58:42 PM
27	Standard2	ICAL	1	02/20/2017	02:01:59 PM
28	Standard3	ICAL	1	02/20/2017	02:05:16 PM
29	Standard4	ICAL	1	02/20/2017	02:09:04 PM
30	Standard5	ICAL	1	02/20/2017	02:12:52 PM
31	Standard6	ICAL	1	02/20/2017	02:16:41 PM
32	ICV	ICV	1	02/20/2017	02:19:33 PM
1	ICB	ICB	1	02/20/2017	02:23:23 PM
33	ICSA1	ICSA	1	02/20/2017	02:26:40 PM
34	ICSAB1	ICSAB	1	02/20/2017	02:29:59 PM
62	MB-61303	MBLK	1	02/20/2017	02:33:50 PM
63	LCS2-61303	LCS	1	02/20/2017	02:37:09 PM
64	N023028-001B	SAMP	25	02/20/2017	02:41:01 PM
65	N023028-002B	SAMP	10	02/20/2017	02:44:21 PM
66	N023028-003B	SAMP	25	02/20/2017	02:47:41 PM
67	N023028-002B	SAMP	50	02/20/2017	02:51:00 PM
68	N023028-002B-PS	PS	10	02/20/2017	02:56:50 PM
69	N023028-002B-MS2	MS	10	02/20/2017	03:00:40 PM
70	N023028-002B-MSD2	MSD	10	02/20/2017	03:03:59 PM
67	N023028-002B	SAMP	50	02/20/2017	03:07:49 PM
29	CCV1	CCV	1	02/20/2017	03:11:08 PM
1	CCB1	CCB	1	02/20/2017	03:14:57 PM
33	ICSA2	ICSA	1	02/20/2017	03:18:14 PM
34	ICSAB2	ICSAB	1	02/20/2017	03:21:33 PM
74	MB-61330	MBLK	1	02/20/2017	03:35:18 PM
75	LCS2-61330	LCS	1	02/20/2017	03:38:37 PM
76	N023002-005B	SAMP	1	02/20/2017	03:42:31 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
77	N023002-005B	SAMP	5	02/20/2017	03:45:51 PM
78	N023002-005B-PS	PS	1	02/20/2017	03:49:10 PM
79	N023002-005B-MS	MS	1	02/20/2017	03:53:01 PM
80	N023002-005B-MSD	MSD	1	02/20/2017	03:56:52 PM
81	N022631-005A	SAMP	1	02/20/2017	04:00:44 PM
82	N022631-009A	SAMP	1	02/20/2017	04:04:04 PM
83	N022736-006A	SAMP	1	02/20/2017	04:08:54 PM
29	CCV2	CCV	1	02/20/2017	04:12:44 PM
1	CCB2	CCB	1	02/20/2017	04:16:33 PM
84	N022736-009A	SAMP	1	02/20/2017	04:19:50 PM
85	N022631-005A	SAMP	5	02/20/2017	04:23:09 PM
86	N022631-009A	SAMP	5	02/20/2017	04:26:30 PM
87	N022736-006A	SAMP	5	02/20/2017	04:30:19 PM
88	N022736-006A	SAMP	10	02/20/2017	04:33:38 PM
89	N022736-009A	SAMP	2	02/20/2017	04:36:58 PM
29	CCV3	CCV	1	02/20/2017	04:40:18 PM
29	CCV3	CCV	1	02/20/2017	04:45:54 PM
1	CCB3	CCB	1	02/20/2017	04:49:43 PM
33	ICSA3	ICSA	1	02/20/2017	04:53:01 PM
34	ICSAB3	ICSAB	1	02/20/2017	04:56:20 PM
90	N022631-005A	SAMP	1	02/20/2017	05:07:11 PM
91	N022631-009A	SAMP	1	02/20/2017	05:10:30 PM
92	N022736-006A	SAMP	1	02/20/2017	05:15:20 PM
93	N022736-009A	SAMP	1	02/20/2017	05:19:09 PM
94	N022736-006A	SAMP	5	02/20/2017	05:22:29 PM
29	CCV4	CCV	1	02/20/2017	05:25:49 PM
1	CCB4	CCB	1	02/20/2017	05:29:38 PM
33	ICSA4	ICSA	1	02/20/2017	05:31:32 PM
34	ICSAB4	ICSAB	1	02/20/2017	05:34:27 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/17/2017 12:00:00**
Prep End Date: **2/17/2017 6:00:00 P**

Reviewed/ Date: 2/24/2017
Initials/ Date: 2/24/2017

Prep Batch **61303** Prep Code: **3010_W_DISS** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.9**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-61303	Aqueous		25	☐	0	0	25	1.000		
LCS2-61303	Aqueous		25	☐	0	0	25	1.000		
MB-61303	Aqueous		25	☐	0	0	25	1.000		
N023028-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8742	HYDROCHLORIC ACID
8749	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170217C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	02/17/2017	04:30:33 PM	B	249.677	12680	0.00	mg/L	
Standard1	02/17/2017	04:34:37 PM	B	249.677	6835	0.1000	mg/L	
Standard3	02/17/2017	04:43:42 PM	B	249.677	66277	1.000	mg/L	
Standard4	02/17/2017	04:48:16 PM	B	249.677	167160	2.500	mg/L	
Standard5	02/17/2017	04:53:25 PM	B	249.677	250356	3.750	mg/L	
Standard6	02/17/2017	04:58:30 PM	B	249.677	339970	5.000	mg/L	
Standard7	02/17/2017	05:03:37 PM	B	249.677	676169	10.000	mg/L	1.0000
Magnesium								
CalBlk	02/17/2017	04:30:33 PM	Mg	279.079	303	0.00	mg/L	
Standard1	02/17/2017	04:34:37 PM	Mg	279.079	1625	0.1000	mg/L	
Standard2	02/17/2017	04:39:10 PM	Mg	279.079	14810	1.000	mg/L	
Standard3	02/17/2017	04:43:42 PM	Mg	279.079	30928	2.000	mg/L	
Standard4	02/17/2017	04:48:16 PM	Mg	279.079	76641	5.000	mg/L	
Standard5	02/17/2017	04:53:25 PM	Mg	279.079	114740	7.500	mg/L	
Standard6	02/17/2017	04:58:30 PM	Mg	279.079	154111	10.000	mg/L	
Standard7	02/17/2017	05:03:37 PM	Mg	279.079	304121	20.000	mg/L	1.0000
Calcium								
CalBlk	02/17/2017	04:30:33 PM	Ca	227.546	-185	0.00	mg/L	
Standard1	02/17/2017	04:34:37 PM	Ca	227.546	76	0.2000	mg/L	
Standard2	02/17/2017	04:39:10 PM	Ca	227.546	383	1.000	mg/L	
Standard3	02/17/2017	04:43:42 PM	Ca	227.546	782	2.000	mg/L	
Standard4	02/17/2017	04:48:16 PM	Ca	227.546	1914	5.000	mg/L	
Standard5	02/17/2017	04:53:25 PM	Ca	227.546	2869	7.500	mg/L	
Standard6	02/17/2017	04:58:30 PM	Ca	227.546	3841	10.000	mg/L	
Standard7	02/17/2017	05:03:37 PM	Ca	227.546	7511	20.000	mg/L	0.9999
Iron								
CalBlk	02/17/2017	04:30:33 PM	Fe	273.953	-1	0.00	mg/L	
Standard1	02/17/2017	04:34:37 PM	Fe	273.953	671	0.0200	mg/L	
Standard2	02/17/2017	04:39:10 PM	Fe	273.953	2447	0.050	mg/L	
Standard3	02/17/2017	04:43:42 PM	Fe	273.953	65291	2.000	mg/L	
Standard4	02/17/2017	04:48:16 PM	Fe	273.953	160952	5.000	mg/L	
Standard5	02/17/2017	04:53:25 PM	Fe	273.953	239988	7.500	mg/L	
Standard6	02/17/2017	04:58:30 PM	Fe	273.953	322763	10.000	mg/L	
Standard7	02/17/2017	05:03:37 PM	Fe	273.953	633606	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170220B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	02/20/2017	01:55:22 PM	Na	589.594	-34	0.00	mg/L	
Standard1	02/20/2017	01:58:42 PM	Na	589.594	300	0.1000	mg/L	
Standard2	02/20/2017	02:01:59 PM	Na	589.594	2671	1.000	mg/L	
Standard3	02/20/2017	02:05:16 PM	Na	589.594	12481	5.000	mg/L	
Standard4	02/20/2017	02:09:04 PM	Na	589.594	25278	10.000	mg/L	
Standard5	02/20/2017	02:12:52 PM	Na	589.594	48651	20.000	mg/L	
Standard6	02/20/2017	02:16:41 PM	Na	589.594	98888	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICV** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5078.455	100	5000	0	102	90	110				
Calcium	10144.720	500	10000	0	101	90	110				
Iron	10170.742	20	10000	0	102	90	110				
Magnesium	10119.615	100	10000	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	110.346	100	100.0	0	110	80	120				
Calcium	180.118	500	200.0	0	90.1	80	120				
Iron	16.835	20	20.00	0	84.2	80	120				
Magnesium	92.880	100	100.0	0	92.9	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **CCV** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5003.062	100	5000	0	100	90	110				
Calcium	9996.483	500	10000	0	100	90	110				
Iron	10131.027	20	10000	0	101	90	110				
Magnesium	9908.622	100	10000	0	99.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **CCV** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5097.198	100	5000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **CCV** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9994.335	500	10000	0	99.9	90	110				
Iron	10326.166	20	10000	0	103	90	110				
Magnesium	10190.038	100	10000	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	127.051	100	100.0	0	127	70	130				
Calcium	183.014	500	200.0	0	91.5	70	130				
Iron	17.106	20	20.00	0	85.5	70	130				
Magnesium	93.968	100	100.0	0	94.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICV	SampType:	ICV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113645
Client ID:	ICV	Batch ID:	R113645	TestNo:	EPA 6010B			Analysis Date:	2/20/2017	SeqNo:	2573959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9993.217	500	10000	0	99.9	90	110				

Sample ID	CCV1	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113645
Client ID:	CCV	Batch ID:	R113645	TestNo:	EPA 6010B			Analysis Date:	2/20/2017	SeqNo:	2573973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10534.400	500	10000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICB** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	51.677	100									
Calcium	-39.658195	500									
Iron	-4.113854	20									
Magnesium	-9.935707	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **CCB** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	46.089	100									
Calcium	-40.36497	500									
Iron	-4.234395	20									
Magnesium	-9.649258	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **CCB** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	47.667	100									
Calcium	-25.838481	500									
Iron	-4.886593	20									
Magnesium	-8.521659	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICB	SampType:	ICB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113645
Client ID:	ICB	Batch ID:	R113645	TestNo:	EPA 6010B			Analysis Date:	2/20/2017	SeqNo:	2573960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	8.994	500									

Sample ID	CCB1	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113645
Client ID:	CCB	Batch ID:	R113645	TestNo:	EPA 6010B			Analysis Date:	2/20/2017	SeqNo:	2573974

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.595	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICSA** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570350**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	518648.700	50	500000	0	104	80	120				
Boron	1.226	100									
Calcium	514587.487	500	500000	0	103	80	120				
Iron	202581.138	20	200000	0	101	80	120				
Magnesium	511989.576	100	500000	0	102	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICSAB** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	534755.818	50	500000	0	107	80	120				
Boron	1102.278	100	1000	0	110	80	120				
Calcium	526277.873	500	500000	0	105	80	120				
Iron	186916.949	20	200000	0	93.5	80	120				
Magnesium	518408.327	100	500000	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICSA** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	542869.233	50	500000	0	109	80	120				
Boron	52.082	100									
Calcium	507766.723	500	500000	0	102	80	120				
Iron	189762.541	20	200000	0	94.9	80	120				
Magnesium	511082.468	100	500000	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ICSAB** Batch ID: **R113594** TestNo: **EPA 6010B** Analysis Date: **2/17/2017** SeqNo: **2570375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	553250.618	50	500000	0	111	80	120				
Boron	1135.010	100	1000	0	114	80	120				
Calcium	520900.889	500	500000	0	104	80	120				
Iron	191214.234	20	200000	0	95.6	80	120				
Magnesium	526681.919	100	500000	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113645**
Client ID: **ICSA** Batch ID: **R113645** TestNo: **EPA 6010B** Analysis Date: **2/20/2017** SeqNo: **2573961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.064	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113645**
Client ID: **ICSAB** Batch ID: **R113645** TestNo: **EPA 6010B** Analysis Date: **2/20/2017** SeqNo: **2573962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9995.638	500	10000	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113645**
Client ID: **ICSA** Batch ID: **R113645** TestNo: **EPA 6010B** Analysis Date: **2/20/2017** SeqNo: **2573975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.330	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113645**
Client ID: **ICSAB** Batch ID: **R113645** TestNo: **EPA 6010B** Analysis Date: **2/20/2017** SeqNo: **2573976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9962.561	500	10000	0	99.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170217C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.78	65-125	PASS
Standard2	ICAL	1	1.077	107.72	65-125	PASS
Standard3	ICAL	1	1.0001	100.01	65-125	PASS
Standard4	ICAL	1	0.99	99.24	65-125	PASS
Standard5	ICAL	1	1.041	104.07	65-125	PASS
Standard6	ICAL	1	0.98	98.077	65-125	PASS
Standard7	ICAL	1	0.97	97.33	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	0.99	99.24	65-125	PASS
LLICV	CCV1	1	1.0067	100.67	65-125	PASS
LLICV	CCV1	1	1.0034	100.34	65-125	PASS
ICSA1	ICSA	1	1.12	111.95	65-125	PASS
ICSAB1	ICSAB	1	0.9	90.27	65-125	PASS
MB-61303	MBLK	1	1.0034	100.34	65-125	PASS
LCS1-61303	LCS	1	1.05	104.95	65-125	PASS
CCV1	CCV	1	0.98	98.49	65-125	PASS
CCB1	CCB	1	1.001	100.1	65-125	PASS
N023028-001B	SAMP	1	0.95	94.61	65-125	PASS
N023028-001B	SAMP	5	0.97	97.004	65-125	PASS
N023028-001B-PS	PS	1	0.98	97.62	65-125	PASS
N023028-001B-MS1	MS	1	0.96	95.66	65-125	PASS
N023028-001B-MSD1	MSD	1	0.95	95.27	65-125	PASS
N023028-002B	SAMP	1	0.99	99.32	65-125	PASS
N023028-003B	SAMP	1	0.97	96.91	65-125	PASS
CCV2	CCV	1	0.99	98.8	65-125	PASS
CCB2	CCB	1	1.0048	100.48	65-125	PASS
LLCCV1	CCV2	1	1.0099	100.99	65-125	PASS
ICSA2	ICSA	1	0.97	96.91	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.21	65-125	PASS

INTERNAL STANDARD: 170220B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1	99.92	65-125	PASS
Standard3	ICAL	1	1.0038	100.38	65-125	PASS
Standard4	ICAL	1	1	99.91	65-125	PASS
Standard5	ICAL	1	0.99	99.43	65-125	PASS
Standard6	ICAL	1	1	99.95	65-125	PASS
ICV	ICV	1	1.0004	100.04	65-125	PASS
ICB	ICB	1	1.0024	100.24	65-125	PASS
ICSA1	ICSA	1	0.99	99.39	65-125	PASS
ICSAB1	ICSAB	1	1.0097	100.97	65-125	PASS
MB-61303	MBLK	1	0.99	98.7	65-125	PASS
LCS2-61303	LCS	1	1.064	106.44	65-125	PASS
N023028-001B	SAMP	25	1.003	100.3	65-125	PASS
N023028-002B	SAMP	10	1.0089	100.89	65-125	PASS
N023028-003B	SAMP	25	1.022	102.19	65-125	PASS
N023028-002B	SAMP	50	0.00041	0.041	65-125	NR!
N023028-002B-PS	PS	10	1.035	103.49	65-125	PASS
N023028-002B-MS2	MS	10	1.028	102.79	65-125	PASS
N023028-002B-MSD2	MSD	10	1.03	102.99	65-125	PASS
N023028-002B	SAMP	50	1.033	103.28	65-125	PASS
CCV1	CCV	1	1.036	103.58	65-125	PASS
CCB1	CCB	1	1.024	102.4	65-125	PASS
ICSA2	ICSA	1	1.027	102.66	65-125	PASS
ICSAB2	ICSAB	1	1.032	103.17	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023028
Test Method: EPA 6010
Analysis Date: 2/17/2017

Matrix: Groundwater
Batch No.: 61303

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B & Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023028-001B DT 5X	Boron	ug/L	854.8443	NA	760.2053	12.45%	10
N023028-001B DT 5X	Calcium	ug/L	111751.1	PASS	110952.4	0.72%	10
N023028-001B DT 5X	Iron	ug/L	20.85362	NA	0		10
N023028-001B DT 5X	Magnesium	ug/L	29518.11	PASS	27873.84	5.90%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023028
Test Method: EPA 6010
Analysis Date: 2/20/2017

Matrix: Groundwater
Batch No.: 61303

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023028-002B DT 50X	Sodium	ug/L	294573.2	PASS	294814.8	0.08%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N023028-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113594**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/17/2017** SeqNo: **2570366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5581.397	100	5000	760.2	96.4	80	120				
Calcium	124442.920	500	10000	111000	135	80	120				S
Iron	96.690	20	100.0	0	96.7	80	120				
Magnesium	37732.590	100	10000	27870	98.6	80	120				

Sample ID **N023028-002B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113645**
Client ID: **ZZZZZZ** Batch ID: **61303** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/20/2017** SeqNo: **2573969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	319937.088	5000	20000	294800	126	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.050**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	0.010	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	0.10	OK,meets criteria

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61257 **Instrument ID:** ICPMS-02
ASSET #: N023028 **Analyst:** CEI
Method: **Date Analyzed:** 2/19/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.
%Rec of Mo in N022998-001B PS/MS/MSD & Mn in N022998-001B PS failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 2/22/2017 Date:
2nd Level Reviewer 2/22/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023028-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 151.734 * 1 * (25/25)

Chromium , ug/L = 151.734

Reporting results in two significant figures,

Chromium , ug/L = 150

% RSD SUMMARY

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	20.47	15	<PQL	0.14	14.46	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	2.29	15	PASS	0.53	5.75	15	PASS
Std3-5/50 ppb	ICAL	1	5.066	2.55	15	PASS	5.08	3.5	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.068	15	PASS	10.15	1.7	15	PASS
Std5-20/200 ppb	ICAL	1	20.04	0.63	15	PASS	19.81	1.037	15	PASS
Std6-40/400 ppb	ICAL	1	40.099	1.058	15	PASS	39.54	1.05	15	PASS
Std7-100/1000 ppb	ICAL	1	101.95	0.34	15	PASS	100.3	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	198.99	1.11	15	PASS	199.95	1.25	15	PASS
ICV	ICV	1	10.22	0.23	15	PASS	102.049	0.74	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.97	1.77	20	PASS	0.52	6.59	20	PASS
ICSA1	ICSA	1	0.13	7.68	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.74	1.53	15	PASS	16.29	0.61	15	PASS
LLICV	CCV1	1	0.96	2.61	20	PASS	0.53	4.74	20	PASS
CCV1	CCV	1	20.058	1.28	15	PASS	20.045	0.93	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.75	1.57	15	PASS	20.16	0.97	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.055	1.27	15	PASS	20.24	1.61	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.28	0.88	15	PASS	20.36	1.18	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.94	2.51	20	PASS	0.53	2.92	20	PASS
ICSA2	ICSA	1	0.12	11.65	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.75	1.25	15	PASS	16.49	2.0089	15	PASS
MB-61257	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61257	LCS	1	10.028	0.32	15	PASS	101.37	1.057	15	PASS
N022998-001B	SAMP	1	18.2	0.45	15	PASS	13.46	1.63	15	PASS
N022998-001B	SAMP	5	3.87	1.44	15	PASS	2.89	1.71	15	PASS
N022998-001B	SAMP	25	0.79	4.0028	15	PASS	0.58	3.29	15	PASS
N022998-001B-PS	PS	1	26.4	2.86	15	PASS	88.49	1.48	15	PASS
N022998-001B-PS	PS	5	5.65	1.64	15	PASS	20.17	1.26	15	PASS
CCV5	CCV	1	19.67	1.53	15	PASS	20.14	0.98	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N022998-001B-MS	MS	1	26.16	1.45	15	PASS	92.71	0.61	15	PASS
N022998-001B-MS	MS	5	5.69	1.19	15	PASS	20.53	0.52	15	PASS
N022998-001B-MSD	MSD	1	26.14	1.052	15	PASS	93.11	0.14	15	PASS
N022998-001B-MSD	MSD	5	5.73	2.053	15	PASS	20.52	0.4	15	PASS
N022998-002B	SAMP	1	3.96	2.33	15	PASS	342.96	0.88	15	PASS
N022998-002B	SAMP	5	0.85	4.15	15	PASS	76.92	0.28	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	<0.000	N/A	15	<PQL	802.74	1.22	15	PASS
N022998-003B	SAMP	5	<0.000	N/A	15	<PQL	182.43	0.99	15	PASS
N022998-004B	SAMP	1	108.64	0.99	15	PASS	24.14	1.25	15	PASS
N022998-004B	SAMP	5	23.65	1.18	15	PASS	5.22	0.37	15	PASS
CCV6	CCV	1	20.028	0.6	15	PASS	20.18	0.43	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N023014-001B	SAMP	1	31342.31	0.95	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	5	6796.93	0.34	15	PASS	<0.000	N/A	15	<PQL
N023014-001B	SAMP	250	149.93	1.25	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	1	30172.12	0.76	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	5	6694.081	0.43	15	PASS	<0.000	N/A	15	<PQL
N023014-002B	SAMP	250	147.24	2.22	15	PASS	<0.000	N/A	15	<PQL
N023014-003B	SAMP	1	479.73	1.27	15	PASS	4.35	0.66	15	PASS
N023014-003B	SAMP	5	109.62	0.76	15	PASS	0.93	2.6	15	PASS
N023014-004B	SAMP	1	173.94	1.44	15	PASS	111.58	0.56	15	PASS
N023014-004B	SAMP	5	38.64	1.045	15	PASS	24.13	1.21	15	PASS
CCV7	CCV	1	20.74	1.92	15	PASS	20.2	2.6	15	PASS
CCB7	CCB	1	0.66	13.57	15	PASS	<0.000	N/A	15	<PQL
N023014-005B	SAMP	1	0.63	9.13	15	PASS	12.95	1.066	15	PASS
N023014-005B	SAMP	5	0.39	13.64	15	PASS	2.84	1.98	15	PASS
N023014-006B	SAMP	1	29.18	1.73	15	PASS	1.72	1.056	15	PASS
N023014-006B	SAMP	5	6.74	1.65	15	PASS	0.38	5.18	15	PASS
N023014-007B	SAMP	1	6.66	1.23	15	PASS	8.99	0.77	15	PASS
N023014-007B	SAMP	5	1.66	2.37	15	PASS	1.96	2.47	15	PASS
N023014-008B	SAMP	1	0.32	14.91	15	PASS	97.054	1.17	15	PASS
N023014-008B	SAMP	5	0.2	14.82	15	PASS	21.45	0.94	15	PASS
N023028-001B	SAMP	1	151.73	0.51	15	PASS	<0.000	N/A	15	<PQL
N023028-001B	SAMP	5	33.045	1.051	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	19.98	1.11	15	PASS	20.1	1.93	15	PASS
CCB8	CCB	1	0.17	13.71	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.13	3.31	20	PASS	0.54	10.16	20	PASS
ICSA3	ICSA	1	0.29	9.028	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.33	0.26	15	PASS	16.45	0.3	15	PASS
N023028-002B	SAMP	1	59.51	1.099	15	PASS	<0.000	N/A	15	<PQL
N023028-002B	SAMP	5	12.81	0.72	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	1	152.72	0.74	15	PASS	<0.000	N/A	15	<PQL
N023028-003B	SAMP	5	33.66	1.32	15	PASS	<0.000	N/A	15	<PQL
N023029-001B	SAMP	1	1.67	1.27	15	PASS	1.45	2.0014	15	PASS
N023029-001B	SAMP	5	0.39	1.4	15	PASS	0.2	9.29	15	PASS
N023029-002B	SAMP	1	508.63	0.77	15	PASS	0.58	10.14	15	PASS
N023029-002B	SAMP	5	112.12	1.25	15	PASS	0.085	15.4	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	164.62	1.19	15	PASS	0.96	1.0045	15	PASS
N023029-003B	SAMP	5	36.081	0.99	15	PASS	0.2	5.35	15	PASS
CCV9	CCV	1	20.14	1.64	15	PASS	20.28	1.58	15	PASS
CCB9	CCB	1	0.077	7.3	15	PASS	<0.000	N/A	15	<PQL
N023029-004B	SAMP	1	0.82	1.6	15	PASS	119.74	1.096	15	PASS
N023029-004B	SAMP	5	0.21	3.19	15	PASS	26	1.58	15	PASS
N023029-005B	SAMP	1	3.62	0.41	15	PASS	114.94	0.38	15	PASS
N023029-005B	SAMP	5	0.75	6.05	15	PASS	23.44	2.3	15	PASS
CCV10	CCV	1	19.91	0.65	15	PASS	20.25	1.7	15	PASS
CCB10	CCB	1	0.061	16.073	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.044	1.092	20	PASS	0.53	1.79	20	PASS
ICSA4	ICSA	1	0.22	4.077	15	PASS	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.34	1.39	15	PASS	16.57	1.13	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.8	15	PASS	0.11	29.1	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.77	15	PASS	0.45	33.3	15	<PQL
Std3-5/50 ppb	ICAL	1	5.076	3.25	15	PASS	4.82	0.66	15	PASS
Std4-10/100 ppb	ICAL	1	10.066	0.73	15	PASS	10.023	3.87	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	1.47	15	PASS	19.99	0.48	15	PASS
Std6-40/400 ppb	ICAL	1	40.28	0.72	15	PASS	40.22	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	100.051	0.89	15	PASS	101.45	1.0022	15	PASS
Std8-200/2000 ppb	ICAL	1	199.93	0.59	15	PASS	199.24	0.51	15	PASS
ICV	ICV	1	10.11	0.95	15	PASS	9.77	2.24	15	PASS
ICB	ICB	1	0.02	31.72	15	<PQL	0.025	72.42	15	<PQL
LLICV	CCV1	1	0.12	13.87	20	PASS	0.5	11.16	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.035	103.21	15	<PQL
ICSAB1	ICSAB	1	19.91	2.18	15	PASS	17.31	1.83	15	PASS
LLICV	CCV1	1	0.12	7.0089	20	PASS	0.46	13.79	20	PASS
CCV1	CCV	1	19.98	0.14	15	PASS	18.74	2.86	15	PASS
CCB1	CCB	1	0.017	86.51	15	<PQL	0.015	113.87	15	<PQL
CCV2	CCV	1	19.75	0.43	15	PASS	19.048	1.086	15	PASS
CCB2	CCB	1	0.003	168.15	15	<PQL	0.019	45.75	15	<PQL
CCV3	CCV	1	20.1	0.92	15	PASS	19.013	3.24	15	PASS
CCB3	CCB	1	0.014	43.41	15	<PQL	0.021	28.41	15	<PQL
CCV4	CCV	1	19.58	0.81	15	PASS	19.36	0.76	15	PASS
CCB4	CCB	1	0.017	34.39	15	<PQL	0.019	83.45	15	<PQL
LLCCV1	CCV2	1	0.085	21.56	20	<PQL	0.5	16.024	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.018	73.29	15	<PQL
ICSAB2	ICSAB	1	19.56	1.083	15	PASS	17.53	0.18	15	PASS
MB-61257	MBLK	1	0.002	392.28	15	<PQL	0.011	77.62	15	<PQL
LCS-61257	LCS	1	10.0097	1.3	15	PASS	9.61	2.47	15	PASS
N022998-001B	SAMP	1	1.95	1.74	15	PASS	0.56	22.076	15	NR!
N022998-001B	SAMP	5	0.42	3.37	15	PASS	0.086	67.16	15	<PQL
N022998-001B	SAMP	25	0.088	19.5	15	<PQL	0.048	49.046	15	<PQL
N022998-001B-PS	PS	1	10.59	1.46	15	PASS	8.67	3.64	15	PASS
N022998-001B-PS	PS	5	2.34	5.13	15	PASS	1.74	6.65	15	PASS
CCV5	CCV	1	20.033	0.82	15	PASS	18.52	1.57	15	PASS
CCB5	CCB	1	0.015	60.54	15	<PQL	0.03	16.99	15	<PQL
N022998-001B-MS	MS	1	10.79	2.2	15	PASS	8.81	3.27	15	PASS
N022998-001B-MS	MS	5	2.31	1.95	15	PASS	1.88	5.53	15	PASS
N022998-001B-MSD	MSD	1	10.8	0.25	15	PASS	8.46	1.72	15	PASS
N022998-001B-MSD	MSD	5	2.3	0.85	15	PASS	1.66	0.52	15	PASS
N022998-002B	SAMP	1	1.4	5.21	15	PASS	1.15	20.6	15	NR!
N022998-002B	SAMP	5	0.3	4.84	15	PASS	0.2	15.68	15	<PQL

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	3.58	1.92	15	PASS	0.032	49.73	15	<PQL
N022998-003B	SAMP	5	0.76	7.59	15	PASS	0.017	63.73	15	<PQL
N022998-004B	SAMP	1	9.78	2.59	15	PASS	0.92	10.16	15	PASS
N022998-004B	SAMP	5	2.11	1.32	15	PASS	0.23	26.16	15	<PQL
CCV6	CCV	1	20.059	0.77	15	PASS	19.45	1.31	15	PASS
CCB6	CCB	1	0.016	40.45	15	<PQL	0.021	80.62	15	<PQL
N023014-001B	SAMP	1	2.58	1.81	15	PASS	15.7	2.64	15	PASS
N023014-001B	SAMP	5	0.53	5.76	15	PASS	3.11	5.81	15	PASS
N023014-001B	SAMP	250	0.013	36.4	15	<PQL	0.061	40.056	15	<PQL
N023014-002B	SAMP	1	2.43	4.2	15	PASS	15.038	2.52	15	PASS
N023014-002B	SAMP	5	0.5	8.081	15	PASS	2.91	2.8	15	PASS
N023014-002B	SAMP	250	0.0093	92.14	15	<PQL	0.058	31.42	15	<PQL
N023014-003B	SAMP	1	2.083	4.7	15	PASS	6.075	5.91	15	PASS
N023014-003B	SAMP	5	0.44	0.87	15	PASS	1.33	14.71	15	PASS
N023014-004B	SAMP	1	0.6	6.9	15	PASS	7.59	2.77	15	PASS
N023014-004B	SAMP	5	0.13	18.93	15	NR!	1.51	7.057	15	PASS
CCV7	CCV	1	19.96	0.84	15	PASS	18.54	1.15	15	PASS
CCB7	CCB	1	0.012	34.94	15	<PQL	0.013	100.08	15	<PQL
N023014-005B	SAMP	1	5.88	3.2	15	PASS	2.16	9.49	15	PASS
N023014-005B	SAMP	5	1.27	4.1	15	PASS	0.48	8.46	15	PASS
N023014-006B	SAMP	1	1.61	0.49	15	PASS	3.64	4.64	15	PASS
N023014-006B	SAMP	5	0.33	7.96	15	PASS	0.86	10.72	15	PASS
N023014-007B	SAMP	1	13.52	1.84	15	PASS	0.2	14.95	15	PASS
N023014-007B	SAMP	5	2.9	3.77	15	PASS	0.069	30.99	15	<PQL
N023014-008B	SAMP	1	7.15	0.96	15	PASS	0.045	38.78	15	<PQL
N023014-008B	SAMP	5	1.62	3.9	15	PASS	0.012	125.17	15	<PQL
N023028-001B	SAMP	1	1.69	2.079	15	PASS	4.56	3.75	15	PASS
N023028-001B	SAMP	5	0.34	9.11	15	PASS	1.096	8.31	15	PASS
CCV8	CCV	1	19.64	1.4	15	PASS	18.77	2.33	15	PASS
CCB8	CCB	1	0.013	54.19	15	<PQL	0.012	164.84	15	<PQL
LLCCV2	CCV2	1	0.1	23.85	20	FAILED	0.47	7.6	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.011	29.047	15	<PQL
ICSAB3	ICSAB	1	19.52	0.36	15	PASS	16.79	3.33	15	PASS
N023028-002B	SAMP	1	1.41	4.66	15	PASS	4.069	2.67	15	PASS
N023028-002B	SAMP	5	0.3	2.71	15	PASS	0.84	8.72	15	PASS
N023028-003B	SAMP	1	2.64	2.95	15	PASS	5.4	3.0036	15	PASS
N023028-003B	SAMP	5	0.56	1.32	15	PASS	1.18	9.92	15	PASS
N023029-001B	SAMP	1	1.36	5.064	15	PASS	0.77	5.22	15	PASS
N023029-001B	SAMP	5	0.27	5.2	15	PASS	0.18	27.71	15	<PQL
N023029-002B	SAMP	1	1.27	3.071	15	PASS	3.64	9.83	15	PASS
N023029-002B	SAMP	5	0.29	9.31	15	PASS	0.74	9.095	15	PASS

%RSD of As in LLCCV2 failed > 20%> However %Rec of LLCCV2 passed criteria.

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	2.15	2.2	15	PASS	12.32	2.027	15	PASS
N023029-003B	SAMP	5	0.43	2.46	15	PASS	2.52	5.83	15	PASS
CCV9	CCV	1	19.84	1	15	PASS	19.031	1.048	15	PASS
CCB9	CCB	1	0.012	49.24	15	<PQL	0.0053	59.8	15	<PQL
N023029-004B	SAMP	1	8.59	4.17	15	PASS	0.86	3.064	15	PASS
N023029-004B	SAMP	5	1.82	4.23	15	PASS	0.18	7.59	15	PASS
N023029-005B	SAMP	1	8.45	2.76	15	PASS	0.54	4.94	15	PASS
N023029-005B	SAMP	5	1.66	4.82	15	PASS	0.096	33.54	15	<PQL
CCV10	CCV	1	19.98	0.99	15	PASS	18.81	0.34	15	PASS
CCB10	CCB	1	0.018	19.83	15	<PQL	0.011	162.083	15	<PQL
LLCCV3	CCV2	1	0.12	8.13	20	PASS	0.5	25.64	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.013	89.38	15	<PQL
ICSAB4	ICSAB	1	19.41	0.77	15	PASS	16.67	3.18	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	7.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	7.37	15	PASS
Std3-5/50 ppb	ICAL	1	4.89	0.72	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	2.59	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	0.95	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.055	15	PASS
Std7-100/1000 ppb	ICAL	1	99.79	0.99	15	PASS
Std8-200/2000 ppb	ICAL	1	200	0.63	15	PASS
ICV	ICV	1	10.59	0.71	15	PASS
ICB	ICB	1	0.21	0.086	15	PASS
LLICV	CCV1	1	0.57	7.071	20	PASS
ICSA1	ICSA	1	0.091	5.95	15	PASS
ICSAB1	ICSAB	1	23.25	1.24	15	PASS
LLICV	CCV1	1	0.61	1.15	20	PASS
CCV1	CCV	1	19.91	0.79	15	PASS
CCB1	CCB	1	0.13	14.25	15	PASS
CCV2	CCV	1	19.82	0.82	15	PASS
CCB2	CCB	1	0.11	2.27	15	PASS
CCV3	CCV	1	19.83	0.92	15	PASS
CCB3	CCB	1	0.12	12.3	15	PASS
CCV4	CCV	1	19.64	1.39	15	PASS
CCB4	CCB	1	0.1	8.84	15	PASS
LLCCV1	CCV2	1	0.51	3.018	20	PASS
ICSA2	ICSA	1	0.051	22.61	15	<PQL
ICSAB2	ICSAB	1	23.32	0.79	15	PASS
MB-61257	MBLK	1	0.044	13.53	15	PASS
LCS-61257	LCS	1	10.075	1.13	15	PASS
N022998-001B	SAMP	1	213.39	0.7	15	PASS
N022998-001B	SAMP	5	39.15	0.76	15	PASS
N022998-001B	SAMP	25	7.6	1.35	15	PASS
N022998-001B-PS	PS	1	232.25	1.28	15	PASS
N022998-001B-PS	PS	5	42.36	0.7	15	PASS
CCV5	CCV	1	19.54	0.24	15	PASS
CCB5	CCB	1	0.22	0.38	15	PASS
N022998-001B-MS	MS	1	224.83	0.4	15	PASS
N022998-001B-MS	MS	5	42.29	0.33	15	PASS
N022998-001B-MSD	MSD	1	221.63	0.6	15	PASS
N022998-001B-MSD	MSD	5	42.2	1.41	15	PASS
N022998-002B	SAMP	1	27.17	1.1	15	PASS
N022998-002B	SAMP	5	5.15	2.048	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N022998-003B	SAMP	1	68.99	0.75	15	PASS
N022998-003B	SAMP	5	13.049	0.98	15	PASS
N022998-004B	SAMP	1	82.74	0.78	15	PASS
N022998-004B	SAMP	5	15.62	1.89	15	PASS
CCV6	CCV	1	19.91	1.16	15	PASS
CCB6	CCB	1	0.14	8.88	15	PASS
N023014-001B	SAMP	1	52.2	1.74	15	PASS
N023014-001B	SAMP	5	9.9	1.88	15	PASS
N023014-001B	SAMP	250	0.27	7.76	15	PASS
N023014-002B	SAMP	1	50.74	0.32	15	PASS
N023014-002B	SAMP	5	9.72	1.32	15	PASS
N023014-002B	SAMP	250	0.27	5.91	15	PASS
N023014-003B	SAMP	1	33.89	0.95	15	PASS
N023014-003B	SAMP	5	6.52	0.7	15	PASS
N023014-004B	SAMP	1	32.38	1.75	15	PASS
N023014-004B	SAMP	5	6.21	1.85	15	PASS
CCV7	CCV	1	19.81	2.55	15	PASS
CCB7	CCB	1	0.12	3.36	15	PASS
N023014-005B	SAMP	1	66.039	0.76	15	PASS
N023014-005B	SAMP	5	12.36	2.28	15	PASS
N023014-006B	SAMP	1	26.23	1.56	15	PASS
N023014-006B	SAMP	5	5.045	2.18	15	PASS
N023014-007B	SAMP	1	84.15	1.03	15	PASS
N023014-007B	SAMP	5	15.88	1.55	15	PASS
N023014-008B	SAMP	1	50.94	0.78	15	PASS
N023014-008B	SAMP	5	9.63	1.88	15	PASS
N023028-001B	SAMP	1	3.88	2.23	15	PASS
N023028-001B	SAMP	5	0.75	1.17	15	PASS
CCV8	CCV	1	19.88	0.53	15	PASS
CCB8	CCB	1	0.11	3.69	15	PASS
LLCCV2	CCV2	1	0.55	4.31	20	PASS
ICSA3	ICSA	1	0.056	13.68	15	PASS
ICSAB3	ICSAB	1	23.3	0.55	15	PASS
N023028-002B	SAMP	1	6.12	2.2	15	PASS
N023028-002B	SAMP	5	1.15	5.57	15	PASS
N023028-003B	SAMP	1	22.39	1.1	15	PASS
N023028-003B	SAMP	5	4.26	1.15	15	PASS
N023029-001B	SAMP	1	19.65	1.02	15	PASS
N023029-001B	SAMP	5	3.77	1.3	15	PASS
N023029-002B	SAMP	1	13.78	0.38	15	PASS
N023029-002B	SAMP	5	2.68	2.68	15	PASS

PERCENT RSD SUMMARY: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N023029-003B	SAMP	1	75.34	0.81	15	PASS
N023029-003B	SAMP	5	14.23	1.67	15	PASS
CCV9	CCV	1	20.057	1.19	15	PASS
CCB9	CCB	1	0.12	8.9	15	PASS
N023029-004B	SAMP	1	45.28	1.12	15	PASS
N023029-004B	SAMP	5	8.6	1.38	15	PASS
N023029-005B	SAMP	1	46.46	0.82	15	PASS
N023029-005B	SAMP	5	8.66	1.19	15	PASS
CCV10	CCV	1	20.08	1.11	15	PASS
CCB10	CCB	1	0.12	7	15	PASS
LLCCV3	CCV2	1	0.53	5.22	20	PASS
ICSA4	ICSA	1	0.059	9.72	15	PASS
ICSAB4	ICSAB	1	22.98	2.0032	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219001.D	RINSE	RINSE	1	02/19/17 2:00 PM
A0219002.D	Cal Blank	IBLK	1	02/19/17 2:06 PM
A0219003.D	Std1-0.1/1 ppb	ICAL	1	02/19/17 2:11 PM
A0219004.D	Std2-0.5/5 ppb	ICAL	1	02/19/17 2:17 PM
A0219005.D	Std3-5/50 ppb	ICAL	1	02/19/17 2:22 PM
A0219006.D	Std4-10/100 ppb	ICAL	1	02/19/17 2:28 PM
A0219007.D	Std5-20/200 ppb	ICAL	1	02/19/17 2:33 PM
A0219008.D	Std6-40/400 ppb	ICAL	1	02/19/17 2:39 PM
A0219009.D	Std7-100/1000 ppb	ICAL	1	02/19/17 2:45 PM
A0219010.D	Std8-200/2000 ppb	ICAL	1	02/19/17 2:50 PM
A0219011.D	ICV	ICV	1	02/19/17 2:57 PM
A0219012.D	ICB	ICB	1	02/19/17 3:02 PM
A0219013.D	LLICV	CCV1	1	02/19/17 3:08 PM
A0219014.D	ICSA1	ICSA	1	02/19/17 3:13 PM
A0219015.D	ICSAB1	ICSAB	1	02/19/17 3:19 PM
A0219016.D	LLICV	CCV1	1	02/19/17 3:24 PM
A0219017.D	MB-61298	MBLK	1	02/19/17 3:30 PM
A0219018.D	LCS-61298	LCS	1	02/19/17 3:35 PM
A0219019.D	N023063-001B	SAMP	1	02/19/17 3:41 PM
A0219020.D	N023063-001B	SAMP	5	02/19/17 3:46 PM
A0219021.D	N023063-001B-PS	PS	1	02/19/17 3:52 PM
A0219022.D	N023063-001B-MS	MS	1	02/19/17 3:57 PM
A0219023.D	N023063-001B-MSD	MSD	1	02/19/17 4:03 PM
A0219024.D	N022985-001B	SAMP	5	02/19/17 4:08 PM
A0219025.D	N022985-003B	SAMP	5	02/19/17 4:14 PM
A0219026.D	N022985-004B	SAMP	5	02/19/17 4:19 PM
A0219027.D	CCV1	CCV	1	02/19/17 4:25 PM
A0219028.D	CCB1	CCB	1	02/19/17 4:30 PM
A0219029.D	MB-61302	MBLK	1	02/19/17 4:36 PM
A0219030.D	LCS-61302	LCS	1	02/19/17 4:41 PM
A0219031.D	N023107-001C	SAMP	1	02/19/17 4:47 PM
A0219032.D	N023107-001C	SAMP	5	02/19/17 4:53 PM
A0219033.D	N023107-001C-PS	PS	1	02/19/17 4:58 PM
A0219034.D	N023107-001C-MS	MS	1	02/19/17 5:04 PM
A0219035.D	N023107-001C-MSD	MSD	1	02/19/17 5:09 PM
A0219036.D	N023107-002C	SAMP	1	02/19/17 5:15 PM
A0219037.D	N023107-003C	SAMP	1	02/19/17 5:20 PM
A0219038.D	N023107-004C	SAMP	1	02/19/17 5:26 PM
A0219039.D	CCV2	CCV	1	02/19/17 5:31 PM
A0219040.D	CCB2	CCB	1	02/19/17 5:37 PM
A0219041.D	N023137-001A	SAMP	1	02/19/17 5:42 PM
A0219042.D	N023137-002A	SAMP	1	02/19/17 5:48 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219043.D	N023137-003A	SAMP	1	02/19/17 5:53 PM
A0219044.D	N023137-004A	SAMP	1	02/19/17 5:59 PM
A0219045.D	N023138-005A	SAMP	1	02/19/17 6:05 PM
A0219046.D	N023138-006A	SAMP	1	02/19/17 6:10 PM
A0219047.D	N023063-001B	SAMP	25	02/19/17 6:16 PM
A0219048.D	N023063-001B-PS	PS	5	02/19/17 6:21 PM
A0219049.D	N023063-001B-MS	MS	5	02/19/17 6:27 PM
A0219050.D	N023063-001B-MSD	MSD	5	02/19/17 6:32 PM
A0219051.D	CCV3	CCV	1	02/19/17 6:38 PM
A0219052.D	CCB3	CCB	1	02/19/17 6:43 PM
A0219053.D	N022985-003B	SAMP	5	02/19/17 6:49 PM
A0219054.D	N023107-001C	SAMP	25	02/19/17 6:54 PM
A0219055.D	N023107-001C	SAMP	125	02/19/17 7:00 PM
A0219056.D	N023107-001C-PS	PS	25	02/19/17 7:06 PM
A0219057.D	N023107-001C-MS	MS	25	02/19/17 7:11 PM
A0219058.D	N023107-001C-MSD	MSD	25	02/19/17 7:17 PM
A0219059.D	N023107-002C	SAMP	10	02/19/17 7:22 PM
A0219060.D	N023107-003C	SAMP	10	02/19/17 7:28 PM
A0219061.D	N023107-004C	SAMP	5	02/19/17 7:33 PM
A0219062.D	N023137-001A	SAMP	2	02/19/17 7:39 PM
A0219063.D	CCV4	CCV	1	02/19/17 7:44 PM
A0219064.D	CCB4	CCB	1	02/19/17 7:50 PM
A0219065.D	LLCCV1	CCV2	1	02/19/17 7:55 PM
A0219066.D	ICSA2	ICSA	1	02/19/17 8:01 PM
A0219067.D	ICSAB2	ICSAB	1	02/19/17 8:06 PM
A0219068.D	N023137-002A	SAMP	5	02/19/17 9:11 PM
A0219069.D	N023137-003A	SAMP	5	02/19/17 9:16 PM
A0219070.D	N023137-004A	SAMP	5	02/19/17 9:22 PM
A0219071.D	MB-61257	MBLK	1	02/19/17 9:27 PM
A0219072.D	LCS-61257	LCS	1	02/19/17 9:33 PM
A0219073.D	N022998-001B	SAMP	1	02/19/17 9:38 PM
A0219074.D	N022998-001B	SAMP	5	02/19/17 9:44 PM
A0219075.D	N022998-001B	SAMP	25	02/19/17 9:50 PM
A0219076.D	N022998-001B-PS	PS	1	02/19/17 9:56 PM
A0219077.D	N022998-001B-PS	PS	5	02/19/17 10:01 PM
A0219078.D	CCV5	CCV	1	02/19/17 10:08 PM
A0219079.D	CCB5	CCB	1	02/19/17 10:13 PM
A0219080.D	N022998-001B-MS	MS	1	02/19/17 10:18 PM
A0219081.D	N022998-001B-MS	MS	5	02/19/17 10:24 PM
A0219082.D	N022998-001B-MSD	MSD	1	02/19/17 10:29 PM
A0219083.D	N022998-001B-MSD	MSD	5	02/19/17 10:35 PM
A0219084.D	N022998-002B	SAMP	1	02/19/17 10:40 PM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219085.D	N022998-002B	SAMP	5	02/19/17 10:46 PM
A0219086.D	N022998-003B	SAMP	1	02/19/17 10:51 PM
A0219087.D	N022998-003B	SAMP	5	02/19/17 10:57 PM
A0219088.D	N022998-004B	SAMP	1	02/19/17 11:02 PM
A0219089.D	N022998-004B	SAMP	5	02/19/17 11:08 PM
A0219090.D	CCV6	CCV	1	02/19/17 11:13 PM
A0219091.D	CCB6	CCB	1	02/19/17 11:19 PM
A0219092.D	N023014-001B	SAMP	1	02/19/17 11:24 PM
A0219093.D	N023014-001B	SAMP	5	02/19/17 11:30 PM
A0219094.D	N023014-001B	SAMP	250	02/19/17 11:36 PM
A0219095.D	N023014-002B	SAMP	1	02/19/17 11:41 PM
A0219096.D	N023014-002B	SAMP	5	02/19/17 11:47 PM
A0219097.D	N023014-002B	SAMP	250	02/19/17 11:52 PM
A0219098.D	N023014-003B	SAMP	1	02/19/17 11:58 PM
A0219099.D	N023014-003B	SAMP	5	02/20/17 12:03 AM
A0219100.D	N023014-004B	SAMP	1	02/20/17 12:09 AM
A0219101.D	N023014-004B	SAMP	5	02/20/17 12:14 AM
A0219102.D	CCV7	CCV	1	02/20/17 12:20 AM
A0219103.D	CCB7	CCB	1	02/20/17 12:25 AM
A0219104.D	N023014-005B	SAMP	1	02/20/17 12:31 AM
A0219105.D	N023014-005B	SAMP	5	02/20/17 12:36 AM
A0219106.D	N023014-006B	SAMP	1	02/20/17 12:42 AM
A0219107.D	N023014-006B	SAMP	5	02/20/17 12:47 AM
A0219108.D	N023014-007B	SAMP	1	02/20/17 12:53 AM
A0219109.D	N023014-007B	SAMP	5	02/20/17 12:58 AM
A0219110.D	N023014-008B	SAMP	1	02/20/17 1:04 AM
A0219111.D	N023014-008B	SAMP	5	02/20/17 1:09 AM
A0219112.D	N023028-001B	SAMP	1	02/20/17 1:15 AM
A0219113.D	N023028-001B	SAMP	5	02/20/17 1:20 AM
A0219114.D	CCV8	CCV	1	02/20/17 1:26 AM
A0219115.D	CCB8	CCB	1	02/20/17 1:31 AM
A0219116.D	LLCCV2	CCV2	1	02/20/17 1:37 AM
A0219117.D	ICSA3	ICSA	1	02/20/17 1:42 AM
A0219118.D	ICSAB3	ICSAB	1	02/20/17 1:45 AM
A0219119.D	N023028-002B	SAMP	1	02/20/17 1:51 AM
A0219120.D	N023028-002B	SAMP	5	02/20/17 1:59 AM
A0219121.D	N023028-003B	SAMP	1	02/20/17 2:04 AM
A0219122.D	N023028-003B	SAMP	5	02/20/17 2:10 AM
A0219123.D	N023029-001B	SAMP	1	02/20/17 2:15 AM
A0219124.D	N023029-001B	SAMP	5	02/20/17 2:21 AM
A0219125.D	N023029-002B	SAMP	1	02/20/17 2:27 AM
A0219126.D	N023029-002B	SAMP	5	02/20/17 2:32 AM

INJECTION LOG: 170219A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0219127.D	N023029-003B	SAMP	1	02/20/17 2:38 AM
A0219128.D	N023029-003B	SAMP	5	02/20/17 2:43 AM
A0219129.D	CCV9	CCV	1	02/20/17 2:49 AM
A0219130.D	CCB9	CCB	1	02/20/17 2:54 AM
A0219131.D	N023029-004B	SAMP	1	02/20/17 3:00 AM
A0219132.D	N023029-004B	SAMP	5	02/20/17 3:05 AM
A0219133.D	N023029-005B	SAMP	1	02/20/17 3:11 AM
A0219134.D	N023029-005B	SAMP	5	02/20/17 3:16 AM
A0219135.D	CCV10	CCV	1	02/20/17 3:22 AM
A0219136.D	CCB10	CCB	1	02/20/17 3:27 AM
A0219137.D	LLCCV3	CCV2	1	02/20/17 3:33 AM
A0219138.D	ICSA4	ICSA	1	02/20/17 3:38 AM
A0219139.D	ICSAB4	ICSAB	1	02/20/17 3:45 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61257	Aqueous		25	☐	0	0	25	1.000		
MB-61257	Aqueous		25	☐	0	0	25	1.000		
N022998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N022998-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023014-001B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-002B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-003B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-004B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-005B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-006B	Ground Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/14/2017 7:45:09**
Prep End Date: **2/14/2017 12:00:00**

Reviewed/ Date: 2/22/2017
Initials/ Date: 2/22/2017

Prep Batch **61257** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023014-007B	Ground Water	<2	25	☐	0	0	25	1.000		
N023014-008B	Ground Water	<2	25	☐	0	0	25	1.000		
N023028-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023028-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023029-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 19 Feb 2017 01:42:57 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	116854.00	0.00	
24 Mg	777417.00	0.00	
25 Mg	106076.00	0.00	
26 Mg	123494.00	0.00	
59 Co	1235140.00	0.00	
115 In	2298460.00	0.00	
206 Pb	592965.00	0.00	
207 Pb	518468.00	0.00	
208 Pb	1274740.00	0.00	

RSD (%)

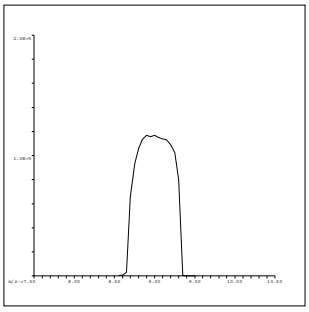
Element	Actual	Required	Flag
9 Be	1.12	5.00	
24 Mg	1.21	5.00	
25 Mg	1.16	5.00	
26 Mg	0.90	5.00	
59 Co	0.32	5.00	
115 In	0.29	5.00	
206 Pb	1.46	5.00	
207 Pb	0.91	5.00	
208 Pb	0.46	5.00	

Ion Ratio

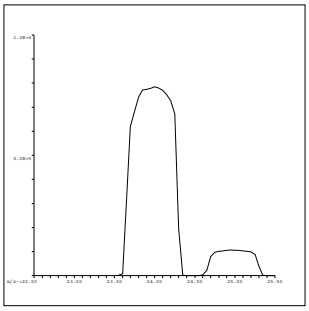
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

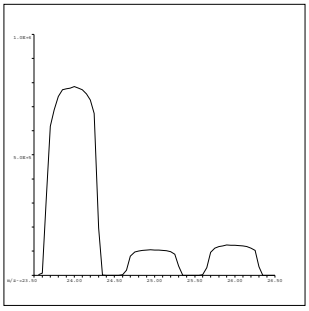
Element	Actual	Required	Flag



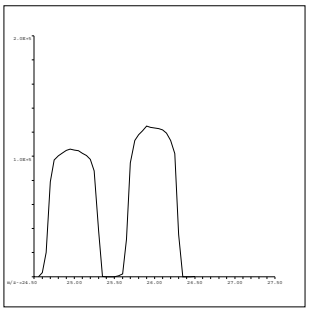
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



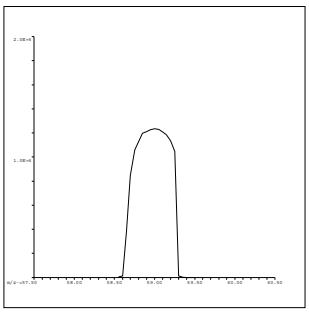
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

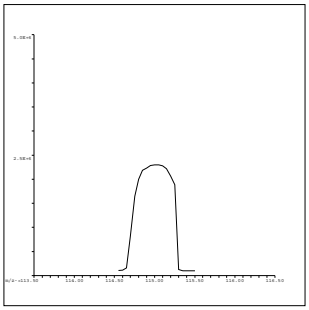


26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

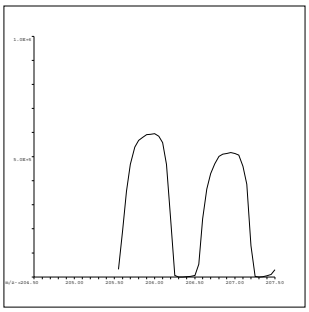


59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

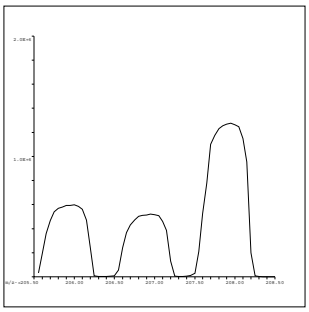
C:\ICPMH\1\7500\qctune.d



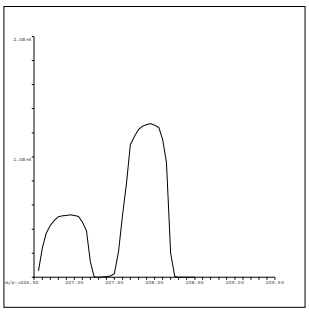
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170219A

Instrument ID: ICPMS-02

Analyte	Data File	A0219002.D	A0219003.D	A0219004.D	A0219005.D	A0219006.D	A0219007.D	A0219008.D	A0219009.D	A0219010.D	
	Acq. Date-Time	02/19/2017 02:06 PM	02/19/2017 02:11 PM	02/19/2017 02:17 PM	02/19/2017 02:22 PM	02/19/2017 02:28 PM	02/19/2017 02:33 PM	02/19/2017 02:39 PM	02/19/2017 02:45 PM	02/19/2017 02:50 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	113178.1		114588.6	113872.3	111751.9	110961.7	108566.7	102144.4	100053	
55 Mn [2]	CPS	382.4		3053.9	25931.1	50434.9	97459.1	189893.9	452690.9	883551.8	1.0000
52 Cr [2]	CPS	1701.2		6757.1	52587	102612.2	197861.8	385693.4	920291.5	1757874.5	0.9999
72 Ge (ISTD) [1]	CPS	110414		110306.7	108093.9	106640.2	108806.3	104974.8	98972.1	96626.3	
78 Se [1]	CPS	1.1		250	2637	5404.5	10995.3	21344.7	50753.6	97318.6	1.0000
72 Ge (ISTD) [2]	CPS	89091.8	90988.6	90684.9	89530.8	87586.8	87134.5	84230.7	81263.6	79698.1	
75 As [2]	CPS	13.8	134.2	528.9	5294.7	10259.3	20124.1	39431.1	94483.8	185164.1	1.0000
103 Rh (ISTD) [2]	CPS	3080409.8		3121173.6	3091363.3	3061200.8	3041671.3	2989323.7	2869890	2816893.8	
95 Mo [2]	CPS	24.4		3440.5	33780.9	66955	140715.2	268543.4	639336.3	1257668.7	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.108	0.10	10.00	0	101	90	110				
Manganese	102.049	0.50	100.0	0	102	90	110				
Molybdenum	10.590	0.50	10.00	0	106	90	110				
Selenium	9.772	0.50	10.00	0	97.7	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Manganese	0.525	0.50	0.5000	0	105	80	120				
Molybdenum	0.573	0.50	0.5000	0	115	80	120				
Selenium	0.502	0.50	0.5000	0	100	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.976	0.10	20.00	0	99.9	90	110				
Manganese	20.045	0.50	20.00	0	100	90	110				
Molybdenum	19.913	0.50	20.00	0	99.6	90	110				
Selenium	18.741	0.50	20.00	0	93.7	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.750	0.10	20.00	0	98.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.156	0.50	20.00	0	101	90	110				
Molybdenum	19.815	0.50	20.00	0	99.1	90	110				
Selenium	19.048	0.50	20.00	0	95.2	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.100	0.10	20.00	0	101	90	110				
Manganese	20.244	0.50	20.00	0	101	90	110				
Molybdenum	19.826	0.50	20.00	0	99.1	90	110				
Selenium	19.013	0.50	20.00	0	95.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.580	0.10	20.00	0	97.9	90	110				
Manganese	20.365	0.50	20.00	0	102	90	110				
Molybdenum	19.643	0.50	20.00	0	98.2	90	110				
Selenium	19.361	0.50	20.00	0	96.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	85.4	70	130				
Manganese	0.528	0.50	0.5000	0	106	70	130				
Molybdenum	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.497	0.50	0.5000	0	99.4	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.033	0.10	20.00	0	100	90	110				
Manganese	20.142	0.50	20.00	0	101	90	110				
Molybdenum	19.543	0.50	20.00	0	97.7	90	110				
Selenium	18.524	0.50	20.00	0	92.6	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.059	0.10	20.00	0	100	90	110				
Manganese	20.184	0.50	20.00	0	101	90	110				
Molybdenum	19.914	0.50	20.00	0	99.6	90	110				
Selenium	19.455	0.50	20.00	0	97.3	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.958	0.10	20.00	0	99.8	90	110				
Manganese	20.196	0.50	20.00	0	101	90	110				
Molybdenum	19.809	0.50	20.00	0	99.0	90	110				
Selenium	18.541	0.50	20.00	0	92.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.636	0.10	20.00	0	98.2	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				
Molybdenum	19.884	0.50	20.00	0	99.4	90	110				
Selenium	18.769	0.50	20.00	0	93.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.538	0.50	0.5000	0	108	70	130				
Molybdenum	0.547	0.50	0.5000	0	109	70	130				
Selenium	0.474	0.50	0.5000	0	94.7	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.844	0.10	20.00	0	99.2	90	110				
Manganese	20.275	0.50	20.00	0	101	90	110				
Molybdenum	20.057	0.50	20.00	0	100	90	110				
Selenium	19.031	0.50	20.00	0	95.2	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.248	0.50	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCV** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.080	0.50	20.00	0	100	90	110				
Selenium	18.809	0.50	20.00	0	94.0	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.123	0.10	0.1000	0	123	70	130				
Manganese	0.531	0.50	0.5000	0	106	70	130				
Molybdenum	0.528	0.50	0.5000	0	106	70	130				
Selenium	0.498	0.50	0.5000	0	99.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.224	1.0	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.968	1.0	1.000	0	96.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.058	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.746	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.055	1.0	20.00	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.280	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.943	1.0	1.000	0	94.3	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.667	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.028	1.0	20.00	0	100	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.736	1.0	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.985	1.0	20.00	0	99.9	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.131	1.0	1.000	0	113	70	130				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.136	1.0	20.00	0	101	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCV** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.044	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.214	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.126	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.112	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.116	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.102	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.221	0.50									
Selenium	0.030	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.143	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.111	0.50									
Selenium	ND	0.50									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **CCB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.122	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB10	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	CCB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.120	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2573389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.664	1.0									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.169	1.0									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **CCB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.077	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB10	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	CCB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.061	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.035	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.913	0.10	20.00	0	99.6	80	120				
Manganese	16.293	0.50	20.00	0	81.5	80	120				
Molybdenum	23.248	0.50	20.00	0	116	80	120				
Selenium	17.309	0.50	20.00	0	86.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.051	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.556	0.10	20.00	0	97.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.492	0.50	20.00	0	82.5	80	120				
Molybdenum	23.324	0.50	20.00	0	117	80	120				
Selenium	17.529	0.50	20.00	0	87.6	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.056	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSAB** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.519	0.10	20.00	0	97.6	80	120				
Manganese	16.455	0.50	20.00	0	82.3	80	120				
Molybdenum	23.302	0.50	20.00	0	117	80	120				
Selenium	16.788	0.50	20.00	0	83.9	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113621**
Client ID: **ICSA** Batch ID: **R113621** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.059	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSA	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ICSAB	Batch ID:	R113621	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573578

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.414	0.10	20.00	0	97.1	80	120				
Manganese	16.568	0.50	20.00	0	82.8	80	120				
Molybdenum	22.979	0.50	20.00	0	115	80	120				
Selenium	16.673	0.50	20.00	0	83.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.133	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.735	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.119	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSAB** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/19/2017** SeqNo: **2572401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.750	1.0	20.00	0	98.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ICSA** Batch ID: **R113617** TestNo: **EPA 6020** Analysis Date: **2/20/2017** SeqNo: **2573415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.286	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSAB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573416

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.326	1.0	20.00	0	96.6	80	120				

Sample ID	ICSA4	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSA	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.223	1.0									

Sample ID	ICSAB4	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113617
Client ID:	ICSAB	Batch ID:	R113617	TestNo:	EPA 6020			Analysis Date:	2/20/2017	SeqNo:	2573437

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.339	1.0	20.00	0	96.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	113178.1	113178.1	100	PASS	70-125	89091.8	89091.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	116237.5	113178.1	102.7	PASS	70-125	90988.6	89091.8	102.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	114588.6	113178.1	101.25	PASS	70-125	90684.9	89091.8	101.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	113872.3	113178.1	100.61	PASS	70-125	89530.8	89091.8	100.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	111751.9	113178.1	98.74	PASS	70-125	87586.8	89091.8	98.31	PASS	70-125
Std5-20/200 ppb	ICAL	1	110961.7	113178.1	98.042	PASS	70-125	87134.5	89091.8	97.8	PASS	70-125
Std6-40/400 ppb	ICAL	1	108566.7	113178.1	95.93	PASS	70-125	84230.7	89091.8	94.54	PASS	70-125
Std7-100/1000 ppb	ICAL	1	102144.4	113178.1	90.25	PASS	70-125	81263.6	89091.8	91.21	PASS	70-125
Std8-200/2000 ppb	ICAL	1	100053	113178.1	88.4	PASS	70-125	79698.1	89091.8	89.46	PASS	70-125
ICV	ICV	1	111945.8	113178.1	98.91	PASS	70-125	91023.2	89091.8	102.17	PASS	70-125
ICB	ICB	1	97797.5	113178.1	86.41	PASS	70-125	80003	89091.8	89.8	PASS	70-125
LLICV	CCV1	1	109056.8	113178.1	96.36	PASS	70-125	89054.8	89091.8	99.96	PASS	70-125
ICSA1	ICSA	1	120040.2	113178.1	106.06	PASS	70-125	87052.1	89091.8	97.71	PASS	70-125
ICSAB1	ICSAB	1	128225.4	113178.1	113.3	PASS	70-125	89454	89091.8	100.41	PASS	70-125
LLICV	CCV1	1	129078.2	113178.1	114.05	PASS	70-125	103291.4	89091.8	115.94	PASS	70-125
CCV1	CCV	1	126930.5	113178.1	112.15	PASS	70-125	98656.9	89091.8	110.74	PASS	70-125
CCB1	CCB	1	118989.4	113178.1	105.13	PASS	70-125	95257.5	89091.8	106.92	PASS	70-125
CCV2	CCV	1	118396.4	113178.1	104.61	PASS	70-125	93631.3	89091.8	105.1	PASS	70-125
CCB2	CCB	1	113808.1	113178.1	100.56	PASS	70-125	91488.1	89091.8	102.69	PASS	70-125
CCV3	CCV	1	118098.2	113178.1	104.35	PASS	70-125	92681.3	89091.8	104.03	PASS	70-125
CCB3	CCB	1	113827.3	113178.1	100.57	PASS	70-125	90707.1	89091.8	101.81	PASS	70-125
CCV4	CCV	1	105409.2	113178.1	93.14	PASS	70-125	85941.5	89091.8	96.46	PASS	70-125
CCB4	CCB	1	102974.3	113178.1	90.98	PASS	70-125	83349.4	89091.8	93.55	PASS	70-125
LLCCV1	CCV2	1	113317.1	113178.1	100.12	PASS	70-125	92848.6	89091.8	104.22	PASS	70-125
ICSA2	ICSA	1	115538.8	113178.1	102.09	PASS	70-125	85119.4	89091.8	95.54	PASS	70-125
ICSAB2	ICSAB	1	127842.7	113178.1	112.96	PASS	70-125	92239	89091.8	103.53	PASS	70-125
MB-61257	MBLK	1	120318.5	113178.1	106.31	PASS	70-125	95132.1	89091.8	106.78	PASS	70-125
LCS-61257	LCS	1	131672.8	113178.1	116.34	PASS	70-125	102643.7	89091.8	115.21	PASS	70-125
N022998-001B	SAMP	1	83691.5	113178.1	73.95	PASS	70-125	50385.5	89091.8	56.55	NR!	70-125
N022998-001B	SAMP	5	122635.2	113178.1	108.36	PASS	70-125	82056.2	89091.8	92.1	PASS	70-125
N022998-001B	SAMP	25	133530.3	113178.1	117.98	PASS	70-125	97457.8	89091.8	109.39	PASS	70-125
N022998-001B-PS	PS	1	95871.9	113178.1	84.71	PASS	70-125	56166.6	89091.8	63.044	NR!	70-125
N022998-001B-PS	PS	5	126434.5	113178.1	111.71	PASS	70-125	85134.4	89091.8	95.56	PASS	70-125
CCV5	CCV	1	94457.5	113178.1	83.46	PASS	70-125	73740.2	89091.8	82.77	PASS	70-125
CCB5	CCB	1	130945.3	113178.1	115.7	PASS	70-125	101654.5	89091.8	114.1	PASS	70-125
N022998-001B-MS	MS	1	89326.7	113178.1	78.93	PASS	70-125	53145.1	89091.8	59.65	NR!	70-125
N022998-001B-MS	MS	5	124575.1	113178.1	110.07	PASS	70-125	84170.3	89091.8	94.48	PASS	70-125
N022998-001B-MSD	MSD	1	93192.3	113178.1	82.34	PASS	70-125	55462	89091.8	62.25	NR!	70-125
N022998-001B-MSD	MSD	5	122847.9	113178.1	108.54	PASS	70-125	83499.9	89091.8	93.72	PASS	70-125
N022998-002B	SAMP	1	115977.4	113178.1	102.47	PASS	70-125	72032.6	89091.8	80.85	PASS	70-125
N022998-002B	SAMP	5	128904.2	113178.1	113.9	PASS	70-125	91492.9	89091.8	102.7	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	99435.5	113178.1	87.86	PASS	70-125	60172.7	89091.8	67.54	NR!	70-125
N022998-003B	SAMP	5	125549.9	113178.1	110.93	PASS	70-125	87902.1	89091.8	98.66	PASS	70-125
N022998-004B	SAMP	1	94041.4	113178.1	83.092	PASS	70-125	56788.6	89091.8	63.74	NR!	70-125
N022998-004B	SAMP	5	124337.8	113178.1	109.86	PASS	70-125	85104.9	89091.8	95.52	PASS	70-125
CCV6	CCV	1	135134	113178.1	119.4	PASS	70-125	105186.4	89091.8	118.07	PASS	70-125
CCB6	CCB	1	127946.8	113178.1	113.05	PASS	70-125	100507.1	89091.8	112.81	PASS	70-125
N023014-001B	SAMP	1	113651.3	113178.1	100.42	PASS	70-125	75635.2	89091.8	84.9	PASS	70-125
N023014-001B	SAMP	5	121947	113178.1	107.75	PASS	70-125	89823.4	89091.8	100.82	PASS	70-125
N023014-001B	SAMP	250	129084.6	113178.1	114.05	PASS	70-125	101769.8	89091.8	114.23	PASS	70-125
N023014-002B	SAMP	1	112662.3	113178.1	99.54	PASS	70-125	75326.4	89091.8	84.55	PASS	70-125
N023014-002B	SAMP	5	118949.2	113178.1	105.1	PASS	70-125	88265	89091.8	99.072	PASS	70-125
N023014-002B	SAMP	250	125956	113178.1	111.29	PASS	70-125	99332.4	89091.8	111.49	PASS	70-125
N023014-003B	SAMP	1	99583.6	113178.1	87.99	PASS	70-125	65100.7	89091.8	73.071	PASS	70-125
N023014-003B	SAMP	5	121973.9	113178.1	107.77	PASS	70-125	88082.8	89091.8	98.87	PASS	70-125
N023014-004B	SAMP	1	120735.8	113178.1	106.68	PASS	70-125	81711.3	89091.8	91.72	PASS	70-125
N023014-004B	SAMP	5	127934.4	113178.1	113.04	PASS	70-125	94909.9	89091.8	106.53	PASS	70-125
CCV7	CCV	1	127357.1	113178.1	112.53	PASS	70-125	99182.7	89091.8	111.33	PASS	70-125
CCB7	CCB	1	121833.7	113178.1	107.65	PASS	70-125	95934.1	89091.8	107.68	PASS	70-125
N023014-005B	SAMP	1	81511.6	113178.1	72.021	PASS	70-125	50290.5	89091.8	56.45	NR!	70-125
N023014-005B	SAMP	5	119172	113178.1	105.3	PASS	70-125	81794.2	89091.8	91.81	PASS	70-125
N023014-006B	SAMP	1	106122.1	113178.1	93.77	PASS	70-125	63668.2	89091.8	71.46	PASS	70-125
N023014-006B	SAMP	5	126426.6	113178.1	111.71	PASS	70-125	88193.9	89091.8	98.99	PASS	70-125
N023014-007B	SAMP	1	90246.2	113178.1	79.74	PASS	70-125	56077.3	89091.8	62.94	NR!	70-125
N023014-007B	SAMP	5	122301.8	113178.1	108.06	PASS	70-125	84868.2	89091.8	95.26	PASS	70-125
N023014-008B	SAMP	1	105806.2	113178.1	93.49	PASS	70-125	69672.8	89091.8	78.2	PASS	70-125
N023014-008B	SAMP	5	126570	113178.1	111.83	PASS	70-125	89110.6	89091.8	100.02	PASS	70-125
N023028-001B	SAMP	1	125727.2	113178.1	111.09	PASS	70-125	86953.4	89091.8	97.6	PASS	70-125
N023028-001B	SAMP	5	129027.2	113178.1	114	PASS	70-125	95809.4	89091.8	107.54	PASS	70-125
CCV8	CCV	1	128876.5	113178.1	113.87	PASS	70-125	102061.1	89091.8	114.56	PASS	70-125
CCB8	CCB	1	121847	113178.1	107.66	PASS	70-125	96874.5	89091.8	108.74	PASS	70-125
LLCCV2	CCV2	1	135093.5	113178.1	119.36	PASS	70-125	105814.2	89091.8	118.77	PASS	70-125
ICSA3	ICSA	1	133390.4	113178.1	117.86	PASS	70-125	96164.7	89091.8	107.94	PASS	70-125
ICSAB3	ICSAB	1	120431.9	113178.1	106.41	PASS	70-125	84497.3	89091.8	94.84	PASS	70-125
N023028-002B	SAMP	1	107802.9	113178.1	95.25	PASS	70-125	78989.2	89091.8	88.66	PASS	70-125
N023028-002B	SAMP	5	119639.9	113178.1	105.71	PASS	70-125	92438.9	89091.8	103.76	PASS	70-125
N023028-003B	SAMP	1	113818.6	113178.1	100.57	PASS	70-125	80173.6	89091.8	89.99	PASS	70-125
N023028-003B	SAMP	5	119079.9	113178.1	105.21	PASS	70-125	90324.8	89091.8	101.38	PASS	70-125
N023029-001B	SAMP	1	105283.5	113178.1	93.025	PASS	70-125	68798.9	89091.8	77.22	PASS	70-125
N023029-001B	SAMP	5	121643.4	113178.1	107.48	PASS	70-125	88207.2	89091.8	99.007	PASS	70-125
N023029-002B	SAMP	1	110047.3	113178.1	97.23	PASS	70-125	73351.7	89091.8	82.33	PASS	70-125
N023029-002B	SAMP	5	124781.9	113178.1	110.25	PASS	70-125	90966.5	89091.8	102.1	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	117803	113178.1	104.09	PASS	70-125	79999.7	89091.8	89.79	PASS	70-125
N023029-003B	SAMP	5	125346.5	113178.1	110.75	PASS	70-125	94758.8	89091.8	106.36	PASS	70-125
CCV9	CCV	1	125149	113178.1	110.58	PASS	70-125	98921.4	89091.8	111.03	PASS	70-125
CCB9	CCB	1	118731.8	113178.1	104.91	PASS	70-125	95396.6	89091.8	107.08	PASS	70-125
N023029-004B	SAMP	1	118602.2	113178.1	104.79	PASS	70-125	86454.5	89091.8	97.04	PASS	70-125
N023029-004B	SAMP	5	120916.7	113178.1	106.84	PASS	70-125	94547.8	89091.8	106.12	PASS	70-125
N023029-005B	SAMP	1	113665.9	113178.1	100.43	PASS	70-125	81379.3	89091.8	91.34	PASS	70-125
N023029-005B	SAMP	5	121044.2	113178.1	106.95	PASS	70-125	93340.3	89091.8	104.77	PASS	70-125
CCV10	CCV	1	120403.9	113178.1	106.38	PASS	70-125	95316.2	89091.8	106.99	PASS	70-125
CCB10	CCB	1	114769.8	113178.1	101.41	PASS	70-125	91727.2	89091.8	102.96	PASS	70-125
LLCCV3	CCV2	1	126677.5	113178.1	111.93	PASS	70-125	101333.3	89091.8	113.74	PASS	70-125
ICSA4	ICSA	1	127664.1	113178.1	112.8	PASS	70-125	92473.7	89091.8	103.8	PASS	70-125
ICSAB4	ICSAB	1	121966.7	113178.1	107.77	PASS	70-125	84537.8	89091.8	94.89	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	110414	110414	100	PASS	70-125	3080409.8	3080409.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	110623.5	110414	100.19	PASS	70-125	3133695.9	3080409.8	101.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	110306.7	110414	99.9	PASS	70-125	3121173.6	3080409.8	101.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	108093.9	110414	97.9	PASS	70-125	3091363.3	3080409.8	100.36	PASS	70-125
Std4-10/100 ppb	ICAL	1	106640.2	110414	96.58	PASS	70-125	3061200.8	3080409.8	99.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	108806.3	110414	98.54	PASS	70-125	3041671.3	3080409.8	98.74	PASS	70-125
Std6-40/400 ppb	ICAL	1	104974.8	110414	95.074	PASS	70-125	2989323.7	3080409.8	97.043	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98972.1	110414	89.64	PASS	70-125	2869890	3080409.8	93.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	96626.3	110414	87.51	PASS	70-125	2816893.8	3080409.8	91.45	PASS	70-125
ICV	ICV	1	109770.5	110414	99.42	PASS	70-125	3182725.6	3080409.8	103.32	PASS	70-125
ICB	ICB	1	97530	110414	88.33	PASS	70-125	2856016.3	3080409.8	92.72	PASS	70-125
LLICV	CCV1	1	108245.1	110414	98.036	PASS	70-125	3153043.3	3080409.8	102.36	PASS	70-125
ICSA1	ICSA	1	101109.7	110414	91.57	PASS	70-125	2794445.7	3080409.8	90.72	PASS	70-125
ICSAB1	ICSAB	1	99923.9	110414	90.5	PASS	70-125	2810672.9	3080409.8	91.24	PASS	70-125
LLICV	CCV1	1	130055.7	110414	117.79	PASS	70-125	3495165.4	3080409.8	113.46	PASS	70-125
CCV1	CCV	1	124959	110414	113.17	PASS	70-125	3262670.8	3080409.8	105.92	PASS	70-125
CCB1	CCB	1	120040.3	110414	108.72	PASS	70-125	3125253.1	3080409.8	101.46	PASS	70-125
CCV2	CCV	1	120769.6	110414	109.38	PASS	70-125	3080994.5	3080409.8	100.02	PASS	70-125
CCB2	CCB	1	116954.4	110414	105.92	PASS	70-125	3064233.6	3080409.8	99.47	PASS	70-125
CCV3	CCV	1	118039.8	110414	106.91	PASS	70-125	3063413.8	3080409.8	99.45	PASS	70-125
CCB3	CCB	1	116273.6	110414	105.31	PASS	70-125	3034069.8	3080409.8	98.5	PASS	70-125
CCV4	CCV	1	104345.7	110414	94.5	PASS	70-125	2917095.9	3080409.8	94.7	PASS	70-125
CCB4	CCB	1	103875.2	110414	94.078	PASS	70-125	2886174.1	3080409.8	93.69	PASS	70-125
LLCCV1	CCV2	1	115487.4	110414	104.59	PASS	70-125	3193504.6	3080409.8	103.67	PASS	70-125
ICSA2	ICSA	1	100654.5	110414	91.16	PASS	70-125	2692887.7	3080409.8	87.42	PASS	70-125
ICSAB2	ICSAB	1	110007.7	110414	99.63	PASS	70-125	2842872.9	3080409.8	92.29	PASS	70-125
MB-61257	MBLK	1	116702.9	110414	105.7	PASS	70-125	3165068.8	3080409.8	102.75	PASS	70-125
LCS-61257	LCS	1	123953.6	110414	112.26	PASS	70-125	3401856.3	3080409.8	110.44	PASS	70-125
N022998-001B	SAMP	1	54232.2	110414	49.12	NR!	70-125	1440984.9	3080409.8	46.78	NR!	70-125
N022998-001B	SAMP	5	92539.5	110414	83.81	PASS	70-125	2455300.7	3080409.8	79.71	PASS	70-125
N022998-001B	SAMP	25	114693.3	110414	103.88	PASS	70-125	2956995.2	3080409.8	95.99	PASS	70-125
N022998-001B-PS	PS	1	59668.8	110414	54.041	NR!	70-125	1530700.5	3080409.8	49.69	NR!	70-125
N022998-001B-PS	PS	5	95765.6	110414	86.73	PASS	70-125	2538616.6	3080409.8	82.41	PASS	70-125
CCV5	CCV	1	89860.9	110414	81.39	PASS	70-125	2548747.2	3080409.8	82.74	PASS	70-125
CCB5	CCB	1	125081.2	110414	113.28	PASS	70-125	3339266.8	3080409.8	108.4	PASS	70-125
N022998-001B-MS	MS	1	56952.3	110414	51.58	NR!	70-125	1490092.9	3080409.8	48.37	NR!	70-125
N022998-001B-MS	MS	5	94731.1	110414	85.8	PASS	70-125	2508287.4	3080409.8	81.43	PASS	70-125
N022998-001B-MSD	MSD	1	57007.3	110414	51.63	NR!	70-125	1557953.4	3080409.8	50.58	NR!	70-125
N022998-001B-MSD	MSD	5	96158.2	110414	87.089	PASS	70-125	2495511.7	3080409.8	81.012	PASS	70-125
N022998-002B	SAMP	1	79566.5	110414	72.062	PASS	70-125	2094891.7	3080409.8	68.007	NR!	70-125
N022998-002B	SAMP	5	107207.5	110414	97.096	PASS	70-125	2772073.4	3080409.8	89.99	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N022998-003B	SAMP	1	65055.9	110414	58.92	NR!	70-125	1734696.2	3080409.8	56.31	NR!	70-125
N022998-003B	SAMP	5	102338.5	110414	92.69	PASS	70-125	2652097.7	3080409.8	86.096	PASS	70-125
N022998-004B	SAMP	1	61089.4	110414	55.33	NR!	70-125	1590566	3080409.8	51.63	NR!	70-125
N022998-004B	SAMP	5	99598.1	110414	90.2	PASS	70-125	2543136.1	3080409.8	82.56	PASS	70-125
CCV6	CCV	1	132014.6	110414	119.56	PASS	70-125	3451492.3	3080409.8	112.05	PASS	70-125
CCB6	CCB	1	125895.3	110414	114.02	PASS	70-125	3333215.3	3080409.8	108.21	PASS	70-125
N023014-001B	SAMP	1	88717.1	110414	80.35	PASS	70-125	2253605.7	3080409.8	73.16	PASS	70-125
N023014-001B	SAMP	5	109229.2	110414	98.93	PASS	70-125	2795474.2	3080409.8	90.75	PASS	70-125
N023014-001B	SAMP	250	126690.5	110414	114.74	PASS	70-125	3283437.3	3080409.8	106.59	PASS	70-125
N023014-002B	SAMP	1	87552	110414	79.29	PASS	70-125	2247324.3	3080409.8	72.96	PASS	70-125
N023014-002B	SAMP	5	106822.8	110414	96.75	PASS	70-125	2755769.5	3080409.8	89.46	PASS	70-125
N023014-002B	SAMP	250	124949	110414	113.16	PASS	70-125	3203868.4	3080409.8	104.01	PASS	70-125
N023014-003B	SAMP	1	75489.2	110414	68.37	NR!	70-125	1909854	3080409.8	62	NR!	70-125
N023014-003B	SAMP	5	104813.9	110414	94.93	PASS	70-125	2682897.6	3080409.8	87.095	PASS	70-125
N023014-004B	SAMP	1	96370.5	110414	87.28	PASS	70-125	2427167	3080409.8	78.79	PASS	70-125
N023014-004B	SAMP	5	116382.3	110414	105.41	PASS	70-125	2894830	3080409.8	93.98	PASS	70-125
CCV7	CCV	1	127308.3	110414	115.3	PASS	70-125	3259577.7	3080409.8	105.82	PASS	70-125
CCB7	CCB	1	120980	110414	109.57	PASS	70-125	3154471.8	3080409.8	102.4	PASS	70-125
N023014-005B	SAMP	1	54768.4	110414	49.6	NR!	70-125	1391496.5	3080409.8	45.17	NR!	70-125
N023014-005B	SAMP	5	94334.2	110414	85.44	PASS	70-125	2414291.3	3080409.8	78.38	PASS	70-125
N023014-006B	SAMP	1	71992.9	110414	65.2	NR!	70-125	1883239.4	3080409.8	61.14	NR!	70-125
N023014-006B	SAMP	5	105256.9	110414	95.33	PASS	70-125	2659160.4	3080409.8	86.32	PASS	70-125
N023014-007B	SAMP	1	62073.3	110414	56.22	NR!	70-125	1558976.9	3080409.8	50.61	NR!	70-125
N023014-007B	SAMP	5	98779.2	110414	89.46	PASS	70-125	2537415.3	3080409.8	82.37	PASS	70-125
N023014-008B	SAMP	1	79070.5	110414	71.61	PASS	70-125	1923421.1	3080409.8	62.44	NR!	70-125
N023014-008B	SAMP	5	108137.3	110414	97.94	PASS	70-125	2715346.6	3080409.8	88.15	PASS	70-125
N023028-001B	SAMP	1	102608.3	110414	92.93	PASS	70-125	2592480.4	3080409.8	84.16	PASS	70-125
N023028-001B	SAMP	5	121131.7	110414	109.71	PASS	70-125	2972250.4	3080409.8	96.49	PASS	70-125
CCV8	CCV	1	128507.4	110414	116.39	PASS	70-125	3275355.3	3080409.8	106.33	PASS	70-125
CCB8	CCB	1	123467.1	110414	111.82	PASS	70-125	3195317.7	3080409.8	103.73	PASS	70-125
LLCCV2	CCV2	1	136373.8	110414	123.51	PASS	70-125	3515155.6	3080409.8	114.11	PASS	70-125
ICSA3	ICSA	1	117668	110414	106.57	PASS	70-125	2899354.2	3080409.8	94.12	PASS	70-125
ICSAB3	ICSAB	1	95685.2	110414	86.66	PASS	70-125	2616310.3	3080409.8	84.93	PASS	70-125
N023028-002B	SAMP	1	100173.1	110414	90.72	PASS	70-125	2376633.9	3080409.8	77.15	PASS	70-125
N023028-002B	SAMP	5	116210.2	110414	105.25	PASS	70-125	2882119	3080409.8	93.56	PASS	70-125
N023028-003B	SAMP	1	98596.8	110414	89.3	PASS	70-125	2412679	3080409.8	78.32	PASS	70-125
N023028-003B	SAMP	5	112973.9	110414	102.32	PASS	70-125	2825190.1	3080409.8	91.71	PASS	70-125
N023029-001B	SAMP	1	80948.6	110414	73.31	PASS	70-125	2030032.3	3080409.8	65.9	NR!	70-125
N023029-001B	SAMP	5	111184.1	110414	100.7	PASS	70-125	2703645.5	3080409.8	87.77	PASS	70-125
N023029-002B	SAMP	1	87330	110414	79.093	PASS	70-125	2123620.9	3080409.8	68.94	NR!	70-125
N023029-002B	SAMP	5	113187.7	110414	102.51	PASS	70-125	2751614.3	3080409.8	89.33	PASS	70-125

INTERNAL STANDARD: 170219A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023029-003B	SAMP	1	95657.3	110414	86.64	PASS	70-125	2374490.4	3080409.8	77.084	PASS	70-125
N023029-003B	SAMP	5	118315.8	110414	107.16	PASS	70-125	2878459.7	3080409.8	93.44	PASS	70-125
CCV9	CCV	1	126961.3	110414	114.99	PASS	70-125	3184420.6	3080409.8	103.38	PASS	70-125
CCB9	CCB	1	120860.1	110414	109.46	PASS	70-125	3107962	3080409.8	100.89	PASS	70-125
N023029-004B	SAMP	1	105005	110414	95.1	PASS	70-125	2621429	3080409.8	85.1	PASS	70-125
N023029-004B	SAMP	5	119095.4	110414	107.86	PASS	70-125	2939954.5	3080409.8	95.44	PASS	70-125
N023029-005B	SAMP	1	100713.2	110414	91.21	PASS	70-125	2534183.3	3080409.8	82.27	PASS	70-125
N023029-005B	SAMP	5	118321.3	110414	107.16	PASS	70-125	2925532.7	3080409.8	94.97	PASS	70-125
CCV10	CCV	1	122655.8	110414	111.09	PASS	70-125	3118022	3080409.8	101.22	PASS	70-125
CCB10	CCB	1	118692.2	110414	107.5	PASS	70-125	3051295.5	3080409.8	99.055	PASS	70-125
LLCCV3	CCV2	1	131425.1	110414	119.03	PASS	70-125	3334095.4	3080409.8	108.24	PASS	70-125
ICSA4	ICSA	1	114636.7	110414	103.82	PASS	70-125	2803239.2	3080409.8	91.002	PASS	70-125
ICSAB4	ICSAB	1	99274.2	110414	89.91	PASS	70-125	2647254	3080409.8	85.94	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023028
Test Method: EPA 6020
Analysis Date: 2/19/2017

Matrix: Groundwater
Batch No.: 61257

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N022998-001B DT 25X	Arsenic	ug/L	2.199986	NA	2.106512	4.44%	10
N022998-001B DT 5X	Chromium	ug/L	19.37169	NA	18.20078	6.43%	10
N022998-001B DT 5X	Manganese	ug/L	14.44354	PASS	13.45814	7.32%	10
N022998-001B DT 25X	Molybdenum	ug/L	190.0634	PASS	195.7282	2.89%	10
N022998-001B DT 25X	Selenium	ug/L	1.197818	NA	0.431914	177.33%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	88.487	0.50	100.0	13.46	75.0	80	120				S

Sample ID	N022998-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113621
Client ID:	ZZZZZZ	Batch ID:	61257	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/19/2017	SeqNo:	2573516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.694	0.50	10.00	2.107	95.9	80	120				
Molybdenum	211.791	2.5	10.00	195.7	161	80	120				S
Selenium	8.691	2.5	10.00	0.4319	82.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023028
Project: PG&E Topock - BCW, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N022998-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.403	1.0	10.00	18.20	82.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

February 24, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023029

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 09, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023029

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N023029-001 and N023029-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N022998-001B-MS and N022998-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *24-Feb-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023029
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023029-001A	MW-63-065-Q117	Groundwater	2/9/2017 8:33:00 AM	2/9/2017	2/24/2017
N023029-001B	MW-63-065-Q117	Groundwater	2/9/2017 8:33:00 AM	2/9/2017	2/24/2017
N023029-001C	MW-63-065-Q117	Groundwater	2/9/2017 8:33:00 AM	2/9/2017	2/24/2017
N023029-002A	MW-62-065-Q117	Groundwater	2/9/2017 9:26:00 AM	2/9/2017	2/24/2017
N023029-002B	MW-62-065-Q117	Groundwater	2/9/2017 9:26:00 AM	2/9/2017	2/24/2017
N023029-002C	MW-62-065-Q117	Groundwater	2/9/2017 9:26:00 AM	2/9/2017	2/24/2017
N023029-003A	MW-69-195-Q117	Groundwater	2/9/2017 10:31:00 AM	2/9/2017	2/24/2017
N023029-003B	MW-69-195-Q117	Groundwater	2/9/2017 10:31:00 AM	2/9/2017	2/24/2017
N023029-003C	MW-69-195-Q117	Groundwater	2/9/2017 10:31:00 AM	2/9/2017	2/24/2017
N023029-004A	MW-38S-SMT-Q117	Groundwater	2/9/2017 11:41:00 AM	2/9/2017	2/24/2017
N023029-004B	MW-38S-SMT-Q117	Groundwater	2/9/2017 11:41:00 AM	2/9/2017	2/24/2017
N023029-004C	MW-38S-SMT-Q117	Groundwater	2/9/2017 11:41:00 AM	2/9/2017	2/24/2017
N023029-005A	MW-38S-Q117	Groundwater	2/9/2017 12:01:00 PM	2/9/2017	2/24/2017
N023029-005B	MW-38S-Q117	Groundwater	2/9/2017 12:01:00 PM	2/9/2017	2/24/2017
N023029-005C	MW-38S-Q117	Groundwater	2/9/2017 12:01:00 PM	2/9/2017	2/24/2017
N023029-006A	MW-704-Q117	Groundwater	2/9/2017 3:20:00 PM	2/9/2017	2/24/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 8:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.2	0.066	0.20		µg/L	1	2/13/2017 05:02 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	2/20/2017 02:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	6.6	20		µg/L	100	2/13/2017 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257**				PrepDate	**2/14/2017**		Analyst: **CEI**
Chromium	560	0.096	5.0		µg/L	5	2/20/2017 02:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 10:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	180	3.3	10		µg/L	50	2/13/2017 06:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	160	0.019	1.0		µg/L	1	2/20/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 11:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	0.57	0.066	0.20		µg/L	1	2/13/2017 03:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	2/20/2017 03:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	3.8	0.066	0.20		µg/L	1	2/13/2017 04:24 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219B** QC Batch: **61257** PrepDate **2/14/2017**							Analyst: **CEI**
Chromium	3.6	0.019	1.0		µg/L	1	2/20/2017 03:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-704-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170213A** QC Batch: **R113519** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/13/2017 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113519** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **PBW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113519** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **LCSW** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **N023014-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.605	1.0	25.00	30.58	100	90	110				

Sample ID **N023014-006AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.416	1.0	25.00	30.58	99.3	90	110	55.60	0.340	20	

Sample ID **N023014-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.530	0.20	1.000	0.4478	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023014-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.048	0.20	1.000	0	105	90	110				

Sample ID **N023014-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.798	1.0	5.000	0	96.0	90	110				

Sample ID **N023014-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.464	1.0	5.000	6.104	107	90	110				

Sample ID **N023029-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.306	0.20	1.000	1.227	108	90	110				

Sample ID **N023029-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1020.970	20	500.0	546.6	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023029-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.565	0.20						0.5703	0.969	20	

Sample ID **N023029-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.533	0.20	1.000	0.5703	96.3	90	110				

Sample ID **N023029-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.845	0.20	1.000	3.817	103	90	110				

Sample ID **N023029-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N023028-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	254.272	4.0	100.0	155.5	98.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023028-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.465	2.0	50.00	59.62	99.7	90	110				

Sample ID **N023028-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.302	4.0	100.0	156.8	103	90	110				

Sample ID **N023029-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113519**
Client ID: **ZZZZZZ** Batch ID: **R113519** TestNo: **EPA 218.6** Analysis Date: **2/13/2017** SeqNo: **2566490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	426.040	10	250.0	175.9	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.028	1.0	10.00	0	100	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.159	1.0	10.00	18.20	79.6	75	125				

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113617**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.143	1.0	10.00	18.20	79.4	75	125	26.16	0.0607	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 8:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170219A** QC Batch: **R113631** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	1.1	0.022	0.050		mg/L	1	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	4.8	0.11	0.25		mg/L	5	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 10:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A** QC Batch: **R113631**				PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	16	0.44	1.0		mg/L	20	2/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 11:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.9	0.022	0.050		mg/L	1	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170219A**	QC Batch: **R113631**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	2/19/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113631** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **PBW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113631** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **LCSW** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	85	115				

Sample ID **N022985-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.182	0.050						0.1850	1.85	20	

Sample ID **N022985-004CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.691	0.050	0.5000	0.1850	101	75	125				

Sample ID **N022985-004CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113631**
Client ID: **ZZZZZZ** Batch ID: **R113631** TestNo: **SM4500-NO3** Analysis Date: **2/19/2017** SeqNo: **2573201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.675	0.050	0.5000	0.1850	98.1	75	125	0.6910	2.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 8:33:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	1.4	0.025	0.10		µg/L	1	2/20/2017 02:15 AM
Manganese	1.5	0.056	0.50		µg/L	1	2/20/2017 02:15 AM
Molybdenum	19	0.19	2.5		µg/L	5	2/20/2017 02:21 AM
Selenium	0.77	0.028	0.50		µg/L	1	2/20/2017 02:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 9:26:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	2/20/2017 02:27 AM
Manganese	0.58	0.056	0.50		µg/L	1	2/20/2017 02:27 AM
Molybdenum	13	0.19	2.5		µg/L	5	2/20/2017 02:32 AM
Selenium	3.6	0.028	0.50		µg/L	1	2/20/2017 02:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 10:31:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	2/20/2017 02:38 AM
Manganese	0.96	0.056	0.50		µg/L	1	2/20/2017 02:38 AM
Molybdenum	75	0.039	0.50		µg/L	1	2/20/2017 02:38 AM
Selenium	12	0.028	0.50		µg/L	1	2/20/2017 02:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 11:41:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate	**2/14/2017**		Analyst: **CEI**
Arsenic	8.6	0.025	0.10		µg/L	1	2/20/2017 03:00 AM
Manganese	120	0.056	0.50		µg/L	1	2/20/2017 03:00 AM
Molybdenum	45	0.039	0.50		µg/L	1	2/20/2017 03:00 AM
Selenium	0.86	0.028	0.50		µg/L	1	2/20/2017 03:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *24-Feb-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q117
Lab Order:	N023029	**Collection Date:**	2/9/2017 12:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023029-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170219C**	QC Batch: **61257**			PrepDate		**2/14/2017**	Analyst: **CEI**
Arsenic	8.4	0.025	0.10		µg/L	1	2/20/2017 03:11 AM
Manganese	110	0.056	0.50		µg/L	1	2/20/2017 03:11 AM
Molybdenum	46	0.039	0.50		µg/L	1	2/20/2017 03:11 AM
Selenium	0.54	0.028	0.50		µg/L	1	2/20/2017 03:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61257** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **PBW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61257** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **LCSW** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.010	0.10	10.00	0	100	85	115				
Manganese	101.371	0.50	100.0	0	101	85	115				
Molybdenum	10.075	0.50	10.00	0	101	85	115				
Selenium	9.607	0.50	10.00	0	96.1	85	115				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.710	0.50	100.0	13.46	79.3	75	125				

Sample ID **N022998-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.548	0.50	10.00	2.107	94.4	75	125				
Molybdenum	211.460	2.5	10.00	195.7	157	75	125				S
Selenium	9.375	2.5	10.00	0.4319	89.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023029
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.113	0.50	100.0	13.46	79.7	75	125	92.71	0.434	20	

Sample ID **N022998-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/14/2017** RunNo: **113621**
Client ID: **ZZZZZZ** Batch ID: **61257** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/19/2017** SeqNo: **2573522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.499	0.50	10.00	2.107	93.9	75	125	11.55	0.420	20	
Molybdenum	210.978	2.5	10.00	195.7	153	75	125	211.5	0.228	20	S
Selenium	8.300	2.5	10.00	0.4319	78.7	75	125	9.375	12.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us
Nevada 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7436 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD / RTNE
Address: Roseville, CA 95661	Email: [illegible]	Address:	Geotracker / RWQCB ✓
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@[illegible].com / P.O.#	Labspec / CalTrans
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200 / Fax:	Others ✓ / LEVEL III
Title: Geologist 1	Phone: 916-786-3302 / Fax:		Specify: RWQCB / LEVEL IV
Signature: [signature] Date: 2/9/17	Sampled By: Jacob Mathwig		Global ID: / Regulatory
			Specify State: CA

I request and authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for [illegible]

Project Name: PG&E Topock - GMP
Project Number: RC000753.801A
Signature: [signature] Date: 2/9/17

Matrix: Ground (x), Sediment, Potable, Soil, NPDES, Other Solid, Surface

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 1.9°C		

Courier: LAB
Tracking No:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	CrVI FF (E218.6) (NH4)2 SO4 NH4 OH 250 mL poly	CrVI FF (E218.6) (NH4)2 SO4 NH4 OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As. HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo. HNO3 500 mL poly	Metals Dissolved (6020AFF) Se. HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr. HNO3 500 mL poly	Metals Dissolved (6020AFF) Mn. HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate. H2SO4 125 mL poly	Calcium. Dissolved (EPA 200.7). HNO3 500 mL poly	IRON. Dissolved (EPA 200.7). HNO3 500 mL poly	Sodium. Dissolved (EPA 200.7) HNO3 500 mL poly	Boron. Dissolved (EPA 200.7). HNO3 500 mL poly	Magnesium. Dissolved (EPA 200.7). HNO3 500 mL poly	Chloride. E300 1000 mL poly	Alkalinity (SM2320B). Total as CaCO3 1000 mL poly	TDS SM2540C 1000 mL poly	Bromide. E300 1000 mL poly	Sulfate. E300 1000 mL poly	Specific conductance 120.1 1000 mL poly	pH (SM4500-HB) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023029 - 01	MW-63-065-Q117	2/9/17	0833		X		X	X	X	X	X	X														E	3	P	BNS	
2	- 02	MW-62-065-Q117	2/9/17	0926		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-69-195-Q117	2/9/17	1031		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-38S-SMT-Q117	2/9/17	1141		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-38S-Q117	2/9/17	1201		X		X	X	X	X	X	X														E	3	P	BNS	
6	- 06	MW-704-Q117	2/9/17	1520		X																					E	1	P	BNS	
7																																
8																																
9																																
10																																
11																																
12																																
13																																
14																																

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	2/9/17 1600	[signature]	2/9/17 1600
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	2/9/17 2240	[signature]	2/9/17 2240

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals, Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Notes:
1. Samples will be disposed in 45 days unless notified to be discharged in 5 days upon submission of final report.
2. Regular TAT is 7 Business days, surcharges will apply for rush analysis.
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35 % 4 Workdays = 20%
3. Custom EDD formats will be an additional 2% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blank and Equipment Blank are billable sample.
6. Asset Laboratories is not responsible for samples collected using improper methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify: B	(NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/9/2017	Workorder:	N023029
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/10/2017

Reviewed By: MBC 2/20/2017

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023029

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023029-001A	MW-63-065-Q117	2/9/2017 8:33:00 AM	2/23/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023029-001B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023029-001C			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023029-002A	MW-62-065-Q117	2/9/2017 9:26:00 AM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023029-002B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023029-002C			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023029-003A	MW-69-195-Q117	2/9/2017 10:31:00 AM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023029-003B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023029-003C			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023029-004A	MW-38S-SMT-Q117	2/9/2017 11:41:00 AM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023029-004B			2/23/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023029-004C			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023029-005A	MW-38S-Q117	2/9/2017 12:01:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

09-Feb-17

WorkOrder: N023029

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 2/9/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023029-005B	MW-38S-Q117	2/9/2017 12:01:00 PM	2/23/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			2/23/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023029-005C			2/23/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023029-006A	MW-704-Q117	2/9/2017 3:20:00 PM	2/23/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023029-007A	FOLDER	2/23/2017	2/23/2017		EDD	RWQCB	☐	☐	☐	LAB
			2/23/2017		Folder	Folder	☐	☐	☐	LAB

March 07, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023177

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *07-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-001A	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001B	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001C	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001D	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001E	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-002A	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002B	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002C	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002D	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002E	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-003A	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003B	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003C	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003D	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003E	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-004A	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004B	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004C	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004D	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004E	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-005A	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005B	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005C	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005D	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005E	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-006A	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006B	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006C	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006D	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-006E	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-007A	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007B	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007C	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007D	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007E	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-008A	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008B	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008C	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008D	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008E	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-009A	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009B	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009C	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009D	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009E	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-010A	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-010B	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-010C	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-011A	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-011B	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-011C	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-012A	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012B	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012C	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012D	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012E	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-013A	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013B	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013C	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-013D	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013E	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-014A	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014B	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014C	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014D	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014E	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-015A	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015B	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015C	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015D	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015E	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023177-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113691**
Client ID: **ZZZZZZ** Batch ID: **R113691** TestNo: **EPA 120.1** Analysis Date: **2/22/2017** SeqNo: **2576182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1318.000	0.10						1314	0.304	10	

Sample ID **N023177-011CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113691**
Client ID: **ZZZZZZ** Batch ID: **R113691** TestNo: **EPA 120.1** Analysis Date: **2/22/2017** SeqNo: **2576184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	985.000	0.10						986.0	0.101	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023177-010CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113690**
Client ID: **ZZZZZZ** Batch ID: **R113690** TestNo: **SM4500-H+B** Analysis Date: **2/22/2017** SeqNo: **2576164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.660	0.10						7.700	0.521	10	H
Temp. at time of pH Analysis	16.900	0.10						17.30	2.34	10	H

Sample ID **N023177-011CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113690**
Client ID: **ZZZZZZ** Batch ID: **R113690** TestNo: **SM4500-H+B** Analysis Date: **2/22/2017** SeqNo: **2576166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.300	0.10						7.310	0.137	10	H
Temp. at time of pH Analysis	17.000	0.10						17.40	2.33	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61347	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	LCSW	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	994.000	10	1000	0	99.4	80	120				

Sample ID	MB-61347	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	PBW	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N023177-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	ZZZZZZ	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61368** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **LCSW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	916.000	10	1000	0	91.6	80	120				

Sample ID **MB-61368** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **PBW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N023177-013DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **ZZZZZZ** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 10:27 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 10:48 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 11:06 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 11:25 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 12:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 12:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 01:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 02:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:18 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 04:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 04:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113718** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **PBW** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113718** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **LCSW** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.997	0.20	5.000	0	99.9	90	110				

Sample ID **N023177-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N023177-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	108	90	110				

Sample ID **N023177-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID **N023177-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110	1.068	1.04	20	

Sample ID **N023177-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N023177-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N023177-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N023177-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N023177-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N023177-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023177-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110				

Sample ID **N023177-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N023178-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID **N023178-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID **N023177-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61362** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.098	1.0									

Sample ID **LCS-61362** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.755	1.0	10.00	0	97.5	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.098	1.0	10.00	0.03886	90.6	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.206	1.0	10.00	0.03886	91.7	75	125	9.098	1.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.50	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113794** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **PBW** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.031	0.050									

Sample ID **LCS-R113794** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **LCSW** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.536	0.050	0.5000	0	107	85	115				

Sample ID **N023173-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050						0.5558	7.99	20	

Sample ID **N023173-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.970	0.050	0.5000	0.5558	82.8	75	125				

Sample ID **N023173-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.029	0.050	0.5000	0.5558	94.6	75	125	0.9698	5.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113934** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **PBW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113934** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **LCSW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N023268-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.819	0.25						2.786	1.14	20	

Sample ID **N023268-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.274	0.25	2.500	2.786	99.5	75	125				

Sample ID **N023268-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.249	0.25	2.500	2.786	98.5	75	125	5.274	0.485	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 10:34 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	2/25/2017 12:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:00 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/25/2017 12:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	78	1.8	20		ug/L	1	2/24/2017 11:05 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/25/2017 12:55 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:09 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	66	1.8	20		ug/L	1	2/25/2017 01:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/25/2017 01:04 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:28 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/25/2017 01:18 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:33 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	55	1.8	20		ug/L	1	2/25/2017 01:23 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**			PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	28	1.8	20		ug/L	1	2/24/2017 11:37 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**			PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	94	1.8	20		ug/L	1	2/25/2017 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C** QC Batch: **61365**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	2/24/2017 11:42 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D** QC Batch: **61364**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	83	1.8	20		ug/L	1	2/25/2017 01:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	43	1.8	20		ug/L	1	2/24/2017 11:47 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	2/25/2017 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	2/25/2017 01:41 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	28	1.8	20		ug/L	1	2/25/2017 01:46 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 12:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	2/25/2017 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61365** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **PBW** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61365** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **LCSW** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	109.657	20	100.0	0	110	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	117.171	20	100.0	9.219	108	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.131	20	100.0	9.219	109	75	125	117.2	0.816	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-61364** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113759**
Client ID: **PBW** Batch ID: **61364** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61364** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113759**
Client ID: **LCSW** Batch ID: **61364** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.823	20	100.0	0	109	85	115				

Sample ID **N023177-001C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61364** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	157.387	20	100.0	53.45	104	75	125				

Sample ID **N023177-001C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61364** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	173.448	20	100.0	53.45	120	75	125	157.4	9.71	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 03:00 PM
Barium	130	0.35	5.0		µg/L	5	3/3/2017 03:05 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:00 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	3/3/2017 03:00 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 03:29 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:29 PM
Manganese	0.89	0.056	0.50		µg/L	1	3/3/2017 03:29 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 03:29 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 03:35 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:35 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:35 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 03:35 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 03:40 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:40 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:40 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 03:40 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 03:57 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:57 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:57 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	3/3/2017 03:57 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:03 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:03 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:03 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 04:03 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 04:08 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:08 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:08 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:08 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:14 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 04:14 PM
Manganese	0.89	0.056	0.50		µg/L	1	3/3/2017 04:14 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 04:14 PM
Selenium	1.8	0.028	0.50		µg/L	1	3/3/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 04:19 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:19 PM
Manganese	0.64	0.056	0.50		µg/L	1	3/3/2017 04:19 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:19 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:36 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:36 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:36 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 04:36 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:41 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:41 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:41 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:41 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 04:47 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 04:47 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:47 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 04:47 PM
Selenium	1.9	0.028	0.50		µg/L	1	3/3/2017 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 05:04 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 05:04 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 05:04 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 05:04 PM
Selenium	1.8	0.028	0.50		µg/L	1	3/3/2017 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61362** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	0.068	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61362** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.020	0.10	10.00	0	100	85	115				
Barium	101.214	1.0	100.0	0	101	85	115				
Manganese	97.718	0.50	100.0	0	97.7	85	115				
Molybdenum	9.586	0.50	10.00	0	95.9	85	115				
Selenium	10.130	0.50	10.00	0	101	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.836	0.10	10.00	2.251	95.8	75	125				
Manganese	90.350	0.50	100.0	0	90.3	75	125				
Molybdenum	16.092	0.50	10.00	5.571	105	75	125				
Selenium	10.879	0.50	10.00	1.561	93.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.939	0.10	10.00	2.251	96.9	75	125	11.84	0.862	20	
Manganese	90.712	0.50	100.0	0	90.7	75	125	90.35	0.400	20	
Molybdenum	15.971	0.50	10.00	5.571	104	75	125	16.09	0.751	20	
Selenium	11.086	0.50	10.00	1.561	95.2	75	125	10.88	1.88	20	

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.296	5.0	100.0	133.1	97.2	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	228.492	5.0	100.0	133.1	95.4	75	125	230.3	0.787	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Nara Tep
Title:	sample tech
Signature:	
Date:	2/21/17

I hereby authorize ASSET Labs to perform the tests indicated below

Project Name:	PG&E Topock - RMP
Project Number:	RC000753.0801

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@cnbgen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Nara Tep
Signature:	
Date:	2/21/17

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify:	RWQCB
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	2-1°C, 2-6°C	

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B): HNO3 Fe (500 mL poly)	Anions (E300.0): Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
2	N023177 - 01	C-R22A-D-0217	2/21/17	1115		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
3	- 02	C-R22A-S-0217	2/21/17	1145		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
4	- 03	C-R27-D-0217	2/21/17	1255		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
5	- 04	C-R27-S-0217	2/21/17	1325		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
	- 05	C-TAZ-D-0217	2/21/17	0845		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
7	- 06	MW-911-Q117	2/21/17	1305		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
8	- 07	C-TAZ-S-0217	2/21/17	0905		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
9		~~R-19-0217~~				X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
10	- 08	R-28-0217	2/21/17	1355		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
11	- 09	R63-0217	2/21/17	1040		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
12		~~RRB-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
13	- 10	SW1-0217	2/21/17	1455		X		X					X	X					E	5	P	BNS	
14	- 11	SW2-0217	2/21/17	1520		X		X					X	X					E	5	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name)	Date/Time:
Nara Tep	2/21/17	Tony Cheng	2/21/17 1600
Tony Cheng	2/21/17 1605	Tony Cheng	2/21/17 1825

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 / Fax:		
Signature: Date: 2/21/17	Sampled By: Nara		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 2/21/17		
Project Number: RC000753 0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
		Regulatory		6. Method of Cooling:	Ice	
Global ID:		Specify State:		Sample Temp:	3.1C	

Courier:

Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023177 - 12	C-BNS-0217	2/21/17	1220		X		X		X	X		X	X			X	X	E	9	P	BNS
2		~~C-CON-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
3		~~C-CON-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
4	- 13	C-I-3-D-0217	2/21/17	0945		X		X		X	X		X	X			X	X	E	9	P	BNS
	- 14	MW-909-Q117	2/21/17	1010		X		X		X	X		X	X			X	X	E	9	P	BNS
6	- 15	C-I-3-S-0217	2/21/17	1000		X		X		X	X		X	X			X	X	E	9	P	BNS
7		~~C-MAR-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
8		~~C-MAR-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
9		~~C-NR1-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
		~~C-NR1-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
11		~~C-NR3-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
12		~~C-NR3-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
13		~~MW-910-Q117~~				X		X		X	X		X	X			X	X	E	9	P	BNS
14		~~C-NR4-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tep	2/21/17	Tony a Lang	2/21/17 1600
Tony a Lang	2/21/17 1825	Tony a Lang	2/21/17 1825

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2017	Workorder:	N023177
Rep sample Temp (Deg C):	2.1/2.6/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/23/2017

Reviewed By: MBC 2/27/2017

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-001A	C-R22A-D-0217	2/21/2017 11:15:00 AM	3/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-001B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-001C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-001D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-001E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-002A	C-R22A-S-0217	2/21/2017 11:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-002B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-002C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-002D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-002D	C-R22A-S-0217	2/21/2017 11:45:00 AM	3/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-002E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-003A	C-R27-D-0217	2/21/2017 12:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-003B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-003C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-003D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-003E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-004A	C-R27-S-0217	2/21/2017 1:25:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-004B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-004B	C-R27-S-0217	2/21/2017 1:25:00 PM	3/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-004C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-004D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-004E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-005A	C-TAZ-D-0217	2/21/2017 8:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-005B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-005C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-005D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-005E	C-TAZ-D-0217	2/21/2017 8:45:00 AM	3/7/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-006A	MW-911-Q117	2/21/2017 1:05:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-006B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-006C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-006D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-006E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-007A	C-TAZ-S-0217	2/21/2017 9:05:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-007B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-007C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-007C	C-TAZ-S-0217	2/21/2017 9:05:00 AM	3/7/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-007D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-007E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-008A	R-28-0217	2/21/2017 1:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-008B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-008C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-008D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-008E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-009A	R63-0217	2/21/2017 10:40:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-009B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-009B	R63-0217	2/21/2017 10:40:00 AM	3/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-009C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-009D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-009E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-010A	SW1-0217	2/21/2017 2:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-010B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-010C			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N023177-011A	SW2-0217	2/21/2017 3:20:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-011B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-011C			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N023177-012A	C-BNS-0217	2/21/2017 12:20:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-012B	C-BNS-0217	2/21/2017 12:20:00 PM	3/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-012C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-012D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-012E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-013A	C-I-3-D-0217	2/21/2017 9:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-013B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-013C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-013D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-013D	C-I-3-D-0217	2/21/2017 9:45:00 AM	3/7/2017	Groundwater	SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-013E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-014A	MW-909-Q117	2/21/2017 10:10:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-014B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-014C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-014D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-014E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-015A	C-I-3-S-0217	2/21/2017 10:00:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-015B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-015B	C-I-3-S-0217	2/21/2017 10:00:00 AM	3/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-015C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-015D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-015E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-016A	FOLDER	3/7/2017	3/7/2017		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N023177

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N023177

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-120
Sample Receiving Items	121-133
List of Analysts	134
Raw Data	
SM 120.1	135-138
SM 4500-H+B	139-143
SM 2540D	144-158
EPA 218.6	159-272
SM 4500_NO3F	273-292
EPA 6010B_Dissolved	293-332
EPA 6010B	333-374
EPA 6020_Dissolved	375-427

March 07, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023177

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

ASSET Laboratories **Date:** *07-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *07-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-001A	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001B	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001C	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001D	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-001E	C-R22A-D-0217	Groundwater	2/21/2017 11:15:00 AM	2/21/2017	3/7/2017
N023177-002A	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002B	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002C	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002D	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-002E	C-R22A-S-0217	Groundwater	2/21/2017 11:45:00 AM	2/21/2017	3/7/2017
N023177-003A	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003B	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003C	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003D	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-003E	C-R27-D-0217	Groundwater	2/21/2017 12:55:00 PM	2/21/2017	3/7/2017
N023177-004A	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004B	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004C	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004D	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-004E	C-R27-S-0217	Groundwater	2/21/2017 1:25:00 PM	2/21/2017	3/7/2017
N023177-005A	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005B	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005C	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005D	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-005E	C-TAZ-D-0217	Groundwater	2/21/2017 8:45:00 AM	2/21/2017	3/7/2017
N023177-006A	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006B	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006C	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-006D	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-006E	MW-911-Q117	Groundwater	2/21/2017 1:05:00 PM	2/21/2017	3/7/2017
N023177-007A	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007B	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007C	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007D	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-007E	C-TAZ-S-0217	Groundwater	2/21/2017 9:05:00 AM	2/21/2017	3/7/2017
N023177-008A	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008B	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008C	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008D	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-008E	R-28-0217	Groundwater	2/21/2017 1:55:00 PM	2/21/2017	3/7/2017
N023177-009A	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009B	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009C	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009D	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-009E	R63-0217	Groundwater	2/21/2017 10:40:00 AM	2/21/2017	3/7/2017
N023177-010A	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-010B	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-010C	SW1-0217	Groundwater	2/21/2017 2:55:00 PM	2/21/2017	3/7/2017
N023177-011A	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-011B	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-011C	SW2-0217	Groundwater	2/21/2017 3:20:00 PM	2/21/2017	3/7/2017
N023177-012A	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012B	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012C	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012D	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-012E	C-BNS-0217	Groundwater	2/21/2017 12:20:00 PM	2/21/2017	3/7/2017
N023177-013A	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013B	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013C	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023177
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023177-013D	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-013E	C-I-3-D-0217	Groundwater	2/21/2017 9:45:00 AM	2/21/2017	3/7/2017
N023177-014A	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014B	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014C	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014D	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-014E	MW-909-Q117	Groundwater	2/21/2017 10:10:00 AM	2/21/2017	3/7/2017
N023177-015A	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015B	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015C	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015D	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017
N023177-015E	C-I-3-S-0217	Groundwater	2/21/2017 10:00:00 AM	2/21/2017	3/7/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_170222D** QC Batch: **R113691** PrepDate Analyst: **LR**							
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170222D**	QC Batch: **R113691**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	2/22/2017 10:40 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023177-010CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113691**
Client ID: **ZZZZZZ** Batch ID: **R113691** TestNo: **EPA 120.1** Analysis Date: **2/22/2017** SeqNo: **2576182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1318.000	0.10						1314	0.304	10	

Sample ID **N023177-011CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113691**
Client ID: **ZZZZZZ** Batch ID: **R113691** TestNo: **EPA 120.1** Analysis Date: **2/22/2017** SeqNo: **2576184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	985.000	0.10						986.0	0.101	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C**	QC Batch: **R113690**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170222C** QC Batch: **R113690**				PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/22/2017 10:10 AM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/22/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023177-010CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113690**
Client ID: **ZZZZZZ** Batch ID: **R113690** TestNo: **SM4500-H+B** Analysis Date: **2/22/2017** SeqNo: **2576164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.660	0.10						7.700	0.521	10	H
Temp. at time of pH Analysis	16.900	0.10						17.30	2.34	10	H

Sample ID **N023177-011CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113690**
Client ID: **ZZZZZZ** Batch ID: **R113690** TestNo: **SM4500-H+B** Analysis Date: **2/22/2017** SeqNo: **2576166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.300	0.10						7.310	0.137	10	H
Temp. at time of pH Analysis	17.000	0.10						17.40	2.33	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170222B**	QC Batch: **61347**				PrepDate	**2/22/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2017 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61347	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	LCSW	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	994.000	10	1000	0	99.4	80	120				

Sample ID	MB-61347	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	PBW	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576124

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N023177-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2017	RunNo:	113689
Client ID:	ZZZZZZ	Batch ID:	61347	TestNo:	SM2540D			Analysis Date:	2/22/2017	SeqNo:	2576126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-61368	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2017	RunNo:	113725
Client ID:	LCSW	Batch ID:	61368	TestNo:	SM2540D			Analysis Date:	2/23/2017	SeqNo:	2577547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	916.000	10	1000	0	91.6	80	120				

Sample ID	MB-61368	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2017	RunNo:	113725
Client ID:	PBW	Batch ID:	61368	TestNo:	SM2540D			Analysis Date:	2/23/2017	SeqNo:	2577548

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N023177-013DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2017	RunNo:	113725
Client ID:	ZZZZZZ	Batch ID:	61368	TestNo:	SM2540D			Analysis Date:	2/23/2017	SeqNo:	2577550

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 10:27 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 10:48 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61362**				PrepDate		**2/23/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 11:06 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 11:25 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 12:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 12:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 01:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 02:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 2:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 02:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:18 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:37 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 03:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 04:34 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170222A** QC Batch: **R113718** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/22/2017 04:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61362** PrepDate **2/23/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113718** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **PBW** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113718** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **LCSW** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.997	0.20	5.000	0	99.9	90	110				

Sample ID **N023177-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N023177-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.075	0.20	1.000	0	108	90	110				

Sample ID **N023177-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID **N023177-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110	1.068	1.04	20	

Sample ID **N023177-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N023177-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N023177-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N023177-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Sample ID **N023177-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.057	0.20	1.000	0	106	90	110				

Sample ID **N023177-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Sample ID **N023177-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110				

Sample ID **N023177-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N023178-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID **N023178-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID **N023177-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023177-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61362** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.098	1.0									

Sample ID **LCS-61362** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.755	1.0	10.00	0	97.5	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.098	1.0	10.00	0.03886	90.6	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.206	1.0	10.00	0.03886	91.7	75	125	9.098	1.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.50	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170227A** QC Batch: **R113794** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	2/27/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113794** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **PBW** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.031	0.050									

Sample ID **LCS-R113794** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **LCSW** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.536	0.050	0.5000	0	107	85	115				

Sample ID **N023173-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050						0.5558	7.99	20	

Sample ID **N023173-001DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.970	0.050	0.5000	0.5558	82.8	75	125				

Sample ID **N023173-001DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ZZZZZZ** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.029	0.050	0.5000	0.5558	94.6	75	125	0.9698	5.90	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113934** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **PBW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113934** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **LCSW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N023268-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.819	0.25						2.786	1.14	20	

Sample ID **N023268-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.274	0.25	2.500	2.786	99.5	75	125				

Sample ID **N023268-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.249	0.25	2.500	2.786	98.5	75	125	5.274	0.485	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 10:34 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	2/25/2017 12:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:00 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	120	1.8	20		ug/L	1	2/25/2017 12:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	78	1.8	20		ug/L	1	2/24/2017 11:05 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	100	1.8	20		ug/L	1	2/25/2017 12:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:09 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	66	1.8	20		ug/L	1	2/25/2017 01:00 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:24 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/25/2017 01:04 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:28 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	2/25/2017 01:18 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:33 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	55	1.8	20		ug/L	1	2/25/2017 01:23 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C** QC Batch: **61365**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	28	1.8	20		ug/L	1	2/24/2017 11:37 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D** QC Batch: **61364**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	94	1.8	20		ug/L	1	2/25/2017 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C** QC Batch: **61365**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	2/24/2017 11:42 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D** QC Batch: **61364**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	83	1.8	20		ug/L	1	2/25/2017 01:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C** QC Batch: **61365**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	43	1.8	20		ug/L	1	2/24/2017 11:47 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D** QC Batch: **61364**				PrepDate		**2/23/2017**	Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	2/25/2017 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	2/25/2017 01:41 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/24/2017 11:56 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	28	1.8	20		ug/L	1	2/25/2017 01:46 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61365**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 12:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61364**				PrepDate	**2/23/2017**	Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	2/25/2017 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61365** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **PBW** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61365** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **LCSW** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	109.657	20	100.0	0	110	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	117.171	20	100.0	9.219	108	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/23/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61365** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/24/2017** SeqNo: **2579029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.131	20	100.0	9.219	109	75	125	117.2	0.816	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-61364	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2017	RunNo:	113759
Client ID:	PBW	Batch ID:	61364	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/25/2017	SeqNo:	2579237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-61364	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2017	RunNo:	113759
Client ID:	LCSW	Batch ID:	61364	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/25/2017	SeqNo:	2579240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.823	20	100.0	0	109	85	115				

Sample ID	N023177-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2017	RunNo:	113759
Client ID:	ZZZZZZ	Batch ID:	61364	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/25/2017	SeqNo:	2579244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	157.387	20	100.0	53.45	104	75	125				

Sample ID	N023177-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2017	RunNo:	113759
Client ID:	ZZZZZZ	Batch ID:	61364	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/25/2017	SeqNo:	2579245

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	173.448	20	100.0	53.45	120	75	125	157.4	9.71	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 03:00 PM
Barium	130	0.35	5.0		µg/L	5	3/3/2017 03:05 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:00 PM
Molybdenum	5.6	0.039	0.50		µg/L	1	3/3/2017 03:00 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 03:29 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:29 PM
Manganese	0.89	0.056	0.50		µg/L	1	3/3/2017 03:29 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 03:29 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 03:35 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:35 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:35 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 03:35 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 03:40 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:40 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:40 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 03:40 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 03:57 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 03:57 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 03:57 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	3/3/2017 03:57 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:03 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:03 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:03 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 04:03 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 04:08 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:08 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:08 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:08 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:14 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 04:14 PM
Manganese	0.89	0.056	0.50		µg/L	1	3/3/2017 04:14 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 04:14 PM
Selenium	1.8	0.028	0.50		µg/L	1	3/3/2017 04:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 04:19 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:19 PM
Manganese	0.64	0.056	0.50		µg/L	1	3/3/2017 04:19 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:19 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 12:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:36 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:36 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:36 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 04:36 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 04:41 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 04:41 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:41 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 04:41 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q117
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 04:47 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 04:47 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 04:47 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 04:47 PM
Selenium	1.9	0.028	0.50		µg/L	1	3/3/2017 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *07-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-0217
Lab Order:	N023177	**Collection Date:**	2/21/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023177-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61362**				PrepDate	**2/23/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 05:04 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 05:04 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 05:04 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 05:04 PM
Selenium	1.8	0.028	0.50		µg/L	1	3/3/2017 05:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61362** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	0.068	0.50									
Molybdenum	0.053	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61362** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.020	0.10	10.00	0	100	85	115				
Barium	101.214	1.0	100.0	0	101	85	115				
Manganese	97.718	0.50	100.0	0	97.7	85	115				
Molybdenum	9.586	0.50	10.00	0	95.9	85	115				
Selenium	10.130	0.50	10.00	0	101	85	115				

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.836	0.10	10.00	2.251	95.8	75	125				
Manganese	90.350	0.50	100.0	0	90.3	75	125				
Molybdenum	16.092	0.50	10.00	5.571	105	75	125				
Selenium	10.879	0.50	10.00	1.561	93.2	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.939	0.10	10.00	2.251	96.9	75	125	11.84	0.862	20	
Manganese	90.712	0.50	100.0	0	90.7	75	125	90.35	0.400	20	
Molybdenum	15.971	0.50	10.00	5.571	104	75	125	16.09	0.751	20	
Selenium	11.086	0.50	10.00	1.561	95.2	75	125	10.88	1.88	20	

Sample ID **N023177-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	230.296	5.0	100.0	133.1	97.2	75	125				

Sample ID **N023177-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	228.492	5.0	100.0	133.1	95.4	75	125	230.3	0.787	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Nara Tep
Title:	sample tech
Signature:	
Date:	2/21/17

I hereby authorize ASSET Labs to perform the tests indicated below

Project Name:	PG&E Topock - RMP
Project Number:	RC000753.0801

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@cnbizen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Nara Tep

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature:	
Date:	2/21/17

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify:	RWQCB
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	2-1°C, 2-6°C	

Courier:

Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Cr	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A dis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B): HNO3 Fe	Anions (E300.0): Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly		3x500mL poly	3x500mL poly	3x500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1		~~C-NR4-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
2	N023177 - 01	C-R22A-D-0217	2/21/17	1115		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
3	- 02	C-R22A-S-0217	2/21/17	1145		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
4	- 03	C-R27-D-0217	2/21/17	1255		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
5	- 04	C-R27-S-0217	2/21/17	1325		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
	- 05	C-TAZ-D-0217	2/21/17	0845		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
7	- 06	MW-911-Q117	2/21/17	1305		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
8	- 07	C-TAZ-S-0217	2/21/17	0905		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
9		~~R-19-0217~~				X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
10	- 08	R-28-0217	2/21/17	1355		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
11	- 09	R63-0217	2/21/17	1040		X		X		X	X		X	X			X	X	E	~~8~~ 9	P	BNS	
12		~~RRB-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
13	- 10	SW1-0217	2/21/17	1455		X		X					X	X					E	5	P	BNS	
14	- 11	SW2-0217	2/21/17	1520		X		X					X	X					E	5	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tep	2/21/17	Tony Cheng	2/21/17 1600
Tony Cheng	2/21/17 1605	Tony Cheng	2/21/17 1825

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 / Fax:		
Signature: / Date: 2/21/17	Sampled By: Nara		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 2/21/17		
Project Number: RC000753 0801			

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
		Regulatory		6. Method of Cooling:	Ice	
Global ID:		Specify State:		Sample Temp:	3.1C	

Courier:

Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023177 - 12	C-BNS-0217	2/21/17	1220		X		X		X	X		X	X			X	X	E	9	P	BNS	
2		~~C-CON-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
3		~~C-CON-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
4	- 13	C-I-3-D-0217	2/21/17	0945		X		X		X	X		X	X			X	X	E	9	P	BNS	
	- 14	MW-909-Q117	2/21/17	1010		X		X		X	X		X	X			X	X	E	9	P	BNS	
6	- 15	C-I-3-S-0217	2/21/17	1000		X		X		X	X		X	X			X	X	E	9	P	BNS	
7		~~C-MAR-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
8		~~C-MAR-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
9		~~C-NR1-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
		~~C-NR1-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
11		~~C-NR3-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
12		~~C-NR3-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
13		~~MW-910-Q117~~				X		X		X	X		X	X			X	X	E	9	P	BNS	
14		~~C-NR4-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Nara Tep	2/21/17	Tony a Lang	2/21/17 1600
Tony a Lang	2/21/17 1825	Tony a Lang	2/21/17 1825

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2017	Workorder:	N023177
Rep sample Temp (Deg C):	2.1/2.6/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/23/2017

Reviewed By: MBC 2/27/2017

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-001A	C-R22A-D-0217	2/21/2017 11:15:00 AM	3/7/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-001B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-001C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-001D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-001E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-002A	C-R22A-S-0217	2/21/2017 11:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-002B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-002C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-002D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-002D	C-R22A-S-0217	2/21/2017 11:45:00 AM	3/7/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-002E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-003A	C-R27-D-0217	2/21/2017 12:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-003B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-003C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-003D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-003E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-004A	C-R27-S-0217	2/21/2017 1:25:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-004B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-004B	C-R27-S-0217	2/21/2017 1:25:00 PM	3/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-004C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-004D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-004E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-005A	C-TAZ-D-0217	2/21/2017 8:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-005B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-005C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-005D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-005E	C-TAZ-D-0217	2/21/2017 8:45:00 AM	3/7/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-006A	MW-911-Q117	2/21/2017 1:05:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-006B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-006C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-006D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-006E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-007A	C-TAZ-S-0217	2/21/2017 9:05:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-007B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-007C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-007C	C-TAZ-S-0217	2/21/2017 9:05:00 AM	3/7/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-007D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-007E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-008A	R-28-0217	2/21/2017 1:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-008B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-008C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-008D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-008E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-009A	R63-0217	2/21/2017 10:40:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-009B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-009B	R63-0217	2/21/2017 10:40:00 AM	3/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-009C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-009D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-009E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-010A	SW1-0217	2/21/2017 2:55:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-010B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-010C			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N023177-011A	SW2-0217	2/21/2017 3:20:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-011B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-011C			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
N023177-012A	C-BNS-0217	2/21/2017 12:20:00 PM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-012B	C-BNS-0217	2/21/2017 12:20:00 PM	3/7/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-012C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-012D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-012E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-013A	C-I-3-D-0217	2/21/2017 9:45:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-013B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-013C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-013D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-013D	C-I-3-D-0217	2/21/2017 9:45:00 AM	3/7/2017	Groundwater	SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-013E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-014A	MW-909-Q117	2/21/2017 10:10:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-014B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-014C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-014D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-014E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-015A	C-I-3-S-0217	2/21/2017 10:00:00 AM	3/7/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023177-015B			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/7/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-17

WorkOrder: N023177

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023177-015B	C-I-3-S-0217	2/21/2017 10:00:00 AM	3/7/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023177-015C			3/7/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023177-015D			3/7/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/7/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/7/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/7/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023177-015E			3/7/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023177-016A	FOLDER	3/7/2017	3/7/2017		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N023177**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6
Lilia Ramit	SM 2540D, SM 4500-H+B, SM 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113691 **Analyst:** LSR

ASSET #: N023177 **Date Analyzed:** 2/22/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/3/2017

2nd Level Reviewer Nancy 3/6/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 2/22/17 1040
Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 mS/cm	CINV - 161025C	10.48 @19.7°C	% Rec: (90-110%)
1413	161214B	1428 @20.3°C	
10043	161220I	10100 @20.5°C	
99938	161220J	98400 @20.5°C	

	Sample ID	Matrix	Reading	Comments
1	N023177-001D	H2O	946 @19.0°C	
2	2D		944 @19.0°C	
3	3D		936 @19.1°C	
4	4D		934 @19.1°C	
5	5D		935 @19.1°C	
6	6D		938 @19.2°C	
7	7D		931 @19.0°C	
8	8D		938 @18.9°C	
9	9DA MR		948 @19.1°C	
10	10C		1314 @19.2°C	
Dup	10C DUP		1318 @18.8°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:
Analyst: CONTD

Standard	Std ID	Reading	Comments
1413 mS/cm	CINV - 160929A	1477 mS/cm @21.0°C	LSR % Rec: (90-110%)
10053	160929D	10580 @21.1°C	
99899	161024A	103900 @21.1°C	

	Sample ID	Matrix	Reading	Comments
1	N023177-011C	H2O	986 @19.3°C	
2	12D		938 @18.9°C	
3	13D		943 @18.7°C	
4	14D		946 @18.8°C	
5	15D		949 @18.9°C	
6	11C DUP		985 @18.9°C	
7				
8				Sukla Ramit
9	1413 mS/cm	CINV - 160929A	1408 @20.7°C	3/3/2017
10	10053	160929D	10540 @20.9°C	
Dup	99899	161024A	103500 @20.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113690 **Instrument ID:** pH meter

ASSET #: N023177 **Analyst:** LSR

Date Analyzed: 2/22/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/3/2017

2nd Level Reviewer 3/6/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/21/17 1510
Analyst: LSP

Standard	Std ID	pH	Comments
Buffer 4	CINW-161025B	4.01 @ 22.2°C	SLOPE: 98.6%
Buffer 7	161025A	7.00 @ 22.3°C	
Buffer 10	161214A	10.04 @ 22.3°C	

	Sample ID	Matrix	pH	Comments
1	N023152-002B	Sludge	7.68 @ 20.7°C	
2	N023153-002B		7.25 @ 20.9°C	
3	N023154-002B		7.52 @ 20.9°C	
4	N023164-001A	Soil	8.33 @ 21.7°C	
5	1A DUP		8.39 @ 21.5°C	
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINW-161010A	7.02 @ 22.9°C	Accept: +/-0.1 pH units from expected value

Date: 2/22/17 1010
Analyst: LSP

Standard	Std ID	pH	Comments
Buffer 4	CINW-161024B	4.02 @ 21.6°C	SLOPE: 98.1%
Buffer 7	161024A	7.04 @ 21.6°C	
Buffer 10	161214A	10.04 @ 21.5°C	

	Sample ID	Matrix	pH	Comments
1	N023177-001D	Liq	8.32 @ 16.9°C	
2	2D		8.41 @ 17.1°C	
3	3D		8.37 @ 17.0°C	
4	4D		8.37 @ 16.9°C	
5	5D		8.35 @ 17.1°C	
6	6D		8.36 @ 17.3°C	
7	7D		8.35 @ 16.9°C	
8	8D		8.35 @ 17.0°C	
9	9D		8.33 @ 17.1°C	Julia Ramit
10	10C		7.70 @ 17.3°C	3/3/2017
Dup	10C DUP		7.66 @ 16.9°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CINW-161010A	7.01 @ 20.8°C	Accept: +/-0.1 pH units from expected value

Logbook #10

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

pH Logbook

Date: 2/22/17 1010
Analyst: LR CAWTD

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.02 @ 21.6°C	SLOPE: 98.1%
Buffer 7	161025A	7.04 @ 21.6°C	
Buffer 10	161214A	10.04 @ 21.5°C	

	Sample ID	Matrix	pH	Comments
1	N023177-011C	H2O	7.31 @ 17.4°C	
2	12D		8.32 @ 17.2°C	
3	13D		8.34 @ 17.1°C	
4	14D		8.36 @ 17.3°C	
5	15D		8.36 @ 17.5°C	
6	11C DUP		7.30 @ 17.0°C	
7				
8				
9				Julia Ramit
10				3/3/2017
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.03 @ 20.1°C	Accept: +/-0.1 pH units from expected value

Date: _____
Analyst: _____

Standard	Std ID	pH	Comments
Buffer 4	CIW-161025B	4.01 @ 22.2°C	
Buffer 7	161025A	7.00 @ 22.3°C	
Buffer 10	161214A	10.03 @ 22.3°C	

	Sample ID	Matrix	pH	Comments
1	N02125-3A	soil	9.16 / 1.25	
2	7A		9.23 / 1.33	
3	7ADUP		8.61 / 1.64	
4	9A		9.03 / 1.25	
5	15A		8.77 / 1.33	
6	24A		9.11 / 1.96	
7	26A		8.23 / 1.65	
8	37A		8.27 / 1.22	
9	44A		8.33 / 1.33	
10	N023164-1A	Solid	9.16 / 1.45	
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CIW-161010A	7.00 @ 22.3°C	Accept: +/-0.1 pH units from expected value

Logbook #10

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61347/61368 **Analyst:** LSR

ASSET #: N023177 **Date Analyzed:** 2/22,2/23/17

Method: EPA 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/2/2017

2nd Level Reviewer Nancy 3/6/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N023177-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4164- 1.4162) *1000000}{100}$$
$$= 2 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 3/2/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2017 9:43:39 A**
Prep End Date: **2/22/2017 3:55:00 P**

Reviewed/ Date: 3/6/2017

Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61347** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61347	Water		100	☐	0	0	100	1.000		
MB-61347	Water		100	☐	0	0	100	1.000		
N023177-001D	Groundwater		100	☐	0	0	100	1.000		
N023177-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-002D	Groundwater		100	☐	0	0	100	1.000		
N023177-003D	Groundwater		100	☐	0	0	100	1.000		
N023177-004D	Groundwater		100	☐	0	0	100	1.000		
N023177-005D	Groundwater		100	☐	0	0	100	1.000		
N023177-006D	Groundwater		100	☐	0	0	100	1.000		
N023177-007D	Groundwater		100	☐	0	0	100	1.000		
N023177-008D	Groundwater		100	☐	0	0	100	1.000		
N023177-009D	Groundwater		100	☐	0	0	100	1.000		
N023177-012D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8834	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170207A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 2/22/2017 9:43:39 A
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch 61347 Prep Code: 160.2_W_PRE Technician: Lilia Ramit

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61347	Water 10-ST170207A		100	☐	0	0	100	1.000		
MB-61347	Water		100	☐	0	0	100	1.000		
N023177-001D	Groundwater		100	☐	0	0	100	1.000		
N023177-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-002D	Groundwater		100	☐	0	0	100	1.000		
N023177-003D	Groundwater		100	☐	0	0	100	1.000		
N023177-004D	Groundwater		100	☐	0	0	100	1.000		
N023177-005D	Groundwater		100	☐	0	0	100	1.000		
N023177-006D	Groundwater		100	☐	0	0	100	1.000		
N023177-007D	Groundwater		100	☐	0	0	100	1.000		
N023177-008D	Groundwater		100	☐	0	0	100	1.000		
N023177-009D	Groundwater		100	☐	0	0	100	1.000		
N023177-012D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8834

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:34**
Prep End Date: **2/23/2017 5:30:00 P**

Reviewed/ Date: 3/6/2017
Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61368** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61368	Water		100	☐	0	0	100	1.000		
MB-61368	Water		100	☐	0	0	100	1.000		
N023177-013D	Groundwater		100	☐	0	0	100	1.000		
N023177-013D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-014D	Groundwater		100	☐	0	0	100	1.000		
N023177-015D	Groundwater		100	☐	0	0	100	1.000		
N023187-012D	Groundwater		100	☐	0	0	100	1.000		
N023187-013D	Groundwater		100	☐	0	0	100	1.000		
N023187-014D	Groundwater		100	☐	0	0	100	1.000		
N023196-002A	Surface Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8834	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170222A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:34**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61368** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit** Prep Factor Units mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61368	Water	IWCT170222A	100	☐	0	0	100	1.000		
MB-61368	Water		100	☐	0	0	100	1.000		
N023177-013D	Groundwater		100	☐	0	0	100	1.000		
N023177-013D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-014D	Groundwater		100	☐	0	0	100	1.000		
N023177-015D	Groundwater		100	☐	0	0	100	1.000		
N023187-012D	Groundwater		100	☐	0	0	100	1.000		
N023187-013D	Groundwater		100	☐	0	0	100	1.000		
N023187-014D	Groundwater		100	☐	0	0	100	1.000		
N023196-002A	Surface Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

SP34

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
7/22/17 943 9	N023174-003A	100	1.4055 1.4054	1.4079 1.4078	
10	4A	100	1.4120 1.4119	1.4129 1.4129	
	MB 61347	100	1.4150 1.4148	1.4147 1.4146	
	LCS 61347	100	1.4091 1.4092	1.5089 1.5086	
11	N023177-001D	100	1.4164 1.4162	1.4165 1.4164	
12	1D Dup	100	1.4066 1.4064	1.4069 1.4066	
13	2D	100	1.3906 1.3905	1.3908 1.3907	
14	3D	100	1.4158 1.4156	1.4157 1.4157	
15	4D	100	1.4108 1.4105	1.4106 1.4108	
16	5D	100	1.4101 1.4098	1.4100 1.4100	

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/22/17 17	N023177-006D	100	1.4201 1.4201	1.4202 1.4202	
18	7D	100	1.4185 1.4186	1.4187 1.4188	
19	8D	100	1.4174 1.4174	1.4176 1.4175	
20	9D	100	1.4161 1.4161	1.4163 1.4164	
21	10D	100	1.4008 1.4007	1.4010 1.4009	

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/22/2017							
MB-61347	100	1.4148	1.4146	-2.0000	1.00	-2	MBLK
LCS-61347	100	1.4092	1.5086	994.0000	1.00	994	LCS
N023177-001D	100	1.4162	1.4164	2.0000	1.00	2	SAMP
N023177-001DDUP	100	1.4064	1.4066	2.0000	1.00	2	DUP
N023177-002D	100	1.3905	1.3907	2.0000	1.00	2	SAMP
N023177-003D	100	1.4156	1.4157	1.0000	1.00	1	SAMP
N023177-004D	100	1.4105	1.4108	3.0000	1.00	3	SAMP
N023177-005D	100	1.4098	1.41	2.0000	1.00	2	SAMP
N023177-006D	100	1.4201	1.4202	1.0000	1.00	1	SAMP
N023177-007D	100	1.4186	1.4188	2.0000	1.00	2	SAMP
N023177-008D	100	1.4174	1.4175	1.0000	1.00	1	SAMP
N023177-009D	100	1.4161	1.4164	3.0000	1.00	3	SAMP
N023177-012D	100	1.4007	1.4009	2.0000	1.00	2	SAMP

Silia Ramit 3/2/2017

TEST (TSS/TDS/TS

SOLIDS RAW DATA

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/17 1016 20	MB G1368	100	1.4125 1.4125	1.4123 1.4124	
22	ICS G1369	100	1.4119 1.4117	1.5033 1.5033	
1	N023177-013D	100	1.4252 1.4257	1.4258 1.4259	
2	13D DUP	100	1.4067 1.4067	1.4070 1.4070	
3	14D	100	1.3984 1.3986	1.3988 1.3987	
4	15D	100	1.4033 1.4033	1.4034 1.4034	
5	N023187-012D	100	1.3914 1.3916	1.3916 1.3916	
6	13D	100	1.4028 1.4027	1.4114 1.4112	
7	14D	100	1.4066 1.4066	1.4069 1.4068	
8	N023196-002A	100	1.4033 1.4035	1.4042 1.4041	

Julia Ramit 3/2/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2017							
MB-61368	100	1.4125	1.4124	-1.0000	1.00	-1	MBLK
LCS-61368	100	1.4117	1.5033	916.0000	1.00	916	LCS
N023177-013D	100	1.4257	1.4259	2.0000	1.00	2	SAMP
N023177-013DDUP	100	1.4067	1.407	3.0000	1.00	3	DUP
N023177-014D	100	1.3986	1.3987	1.0000	1.00	1	SAMP
N023177-015D	100	1.4033	1.4034	1.0000	1.00	1	SAMP
N023187-012D	100	1.3916	1.3916	0.0000	1.00	0	SAMP
N023187-013D	100	1.4027	1.4112	85.0000	1.00	85	SAMP
N023187-014D	100	1.4066	1.4068	2.0000	1.00	2	SAMP
N023196-002A	100	1.4035	1.4041	6.0000	1.00	6	SAMP

Julia Ramit 3/2/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113718
ASSET #: N023177

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/22/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/27/2017

2nd Level Reviewer 3/6/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N023177-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}, \mu g/L = ND}$$

rba **2/27/2017**

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/17 9:08 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/22/17 9:19 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/22/17 9:28 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/17 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/22/17 9:47 AM	Reported
15	MB-R113718	MBLK	1	Hexavalent Chromium	02/22/17 9:57 AM	Reported
16	LCS-R113718	LCS	1	Hexavalent Chromium	02/22/17 10:06 AM	Reported
17	N023177-001A	SAMP	1	Hexavalent Chromium	02/22/17 10:27 AM	Reported
18	N023177-001AMS	MS	1	Hexavalent Chromium	02/22/17 10:38 AM	Reported
19	N023177-002A	SAMP	1	Hexavalent Chromium	02/22/17 10:48 AM	Reported
20	N023177-002AMS	MS	1	Hexavalent Chromium	02/22/17 10:57 AM	Reported
21	N023177-003A	SAMP	1	Hexavalent Chromium	02/22/17 11:06 AM	Reported
22	N023177-003AMS	MS	1	Hexavalent Chromium	02/22/17 11:16 AM	Reported
23	N023177-004A	SAMP	1	Hexavalent Chromium	02/22/17 11:25 AM	Reported
24	N023177-004AMS	MS	1	Hexavalent Chromium	02/22/17 11:35 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/22/17 11:44 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/22/17 11:54 AM	Reported
27	N023177-001AMSD	MSD	1	Hexavalent Chromium	02/22/17 12:03 PM	Reported
28	N023177-002ADUP	DUP	1	Hexavalent Chromium	02/22/17 12:13 PM	Reported
29	N023177-005A	SAMP	1	Hexavalent Chromium	02/22/17 12:22 PM	Reported
30	N023177-005AMS	MS	1	Hexavalent Chromium	02/22/17 12:32 PM	Reported
31	N023177-006A	SAMP	1	Hexavalent Chromium	02/22/17 12:41 PM	Reported
32	N023177-006AMS	MS	1	Hexavalent Chromium	02/22/17 12:51 PM	Reported
33	N023177-007A	SAMP	1	Hexavalent Chromium	02/22/17 1:00 PM	Reported
34	N023177-007AMS	MS	1	Hexavalent Chromium	02/22/17 1:09 PM	Reported
35	N023177-008A	SAMP	1	Hexavalent Chromium	02/22/17 1:19 PM	Reported
36	N023177-008AMS	MS	1	Hexavalent Chromium	02/22/17 1:28 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/22/17 1:38 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/22/17 2:23 PM	Reported
39	N023177-009A	SAMP	1	Hexavalent Chromium	02/22/17 2:39 PM	Reported
40	N023177-009AMS	MS	1	Hexavalent Chromium	02/22/17 2:50 PM	Reported
41	N023177-010A	SAMP	1	Hexavalent Chromium	02/22/17 2:59 PM	Reported
42	N023177-010AMS	MS	1	Hexavalent Chromium	02/22/17 3:09 PM	Reported

INJECTION LOG: 170222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023177-011A	SAMP	1	Hexavalent Chromium	02/22/17 3:18 PM	Reported
44	N023177-011AMS	MS	1	Hexavalent Chromium	02/22/17 3:28 PM	Not Reported
45	N023177-012A	SAMP	1	Hexavalent Chromium	02/22/17 3:37 PM	Reported
46	N023177-012AMS	MS	1	Hexavalent Chromium	02/22/17 3:47 PM	Reported
47	N023177-013A	SAMP	1	Hexavalent Chromium	02/22/17 3:56 PM	Reported
48	N023177-013AMS	MS	1	Hexavalent Chromium	02/22/17 4:05 PM	Reported
49	CCV-4	CCV	1	Hexavalent Chromium	02/22/17 4:15 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/22/17 4:24 PM	Reported
51	N023177-014A	SAMP	1	Hexavalent Chromium	02/22/17 4:34 PM	Reported
52	N023177-014AMS	MS	1	Hexavalent Chromium	02/22/17 4:43 PM	Reported
53	N023177-015A	SAMP	1	Hexavalent Chromium	02/22/17 4:53 PM	Reported
54	N023177-015AMS	MS	1	Hexavalent Chromium	02/22/17 5:02 PM	Not Reported
55	N023178-001A	SAMP	1	Hexavalent Chromium	02/22/17 5:12 PM	Reported
56	N023178-001AMS	MS	1	Hexavalent Chromium	02/22/17 5:21 PM	Reported
57	N023178-002A	SAMP	1	Hexavalent Chromium	02/22/17 5:31 PM	Reported
58	N023178-002AMS	MS	1	Hexavalent Chromium	02/22/17 5:40 PM	Reported
59	N023177-011AMS	MS	1	Hexavalent Chromium	02/22/17 5:51 PM	Reported
60	N023177-015AMS	MS	1	Hexavalent Chromium	02/22/17 6:02 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/22/17 6:11 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/22/17 6:21 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**22/Feb/17 18:51:27**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/22/2017 09:08	Finished	
11	BLANK	2	1000	Unknown		02/22/2017 09:19	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/22/2017 09:28	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2017 09:38	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/22/2017 09:47	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/22/2017 09:57	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/22/2017 10:06	Finished	LCS, IWST-161114D
17	N023177-001A,SAMF	9	1000	Unknown		02/22/2017 10:27	Finished	SAMP, 10mL
18	N023177-001AMS,MS	10	1000	Unknown		02/22/2017 10:38	Finished	MS (1ppb), IWST-161114D,10
19	N023177-002A,SAMF	11	1000	Unknown		02/22/2017 10:48	Finished	SAMP, 10mL
20	N023177-002AMS,MS	12	1000	Unknown		02/22/2017 10:57	Finished	MS (1ppb), IWST-161114D,10
21	N023177-003A,SAMF	13	1000	Unknown		02/22/2017 11:06	Finished	SAMP, 10mL
22	N023177-003AMS,MS	14	1000	Unknown		02/22/2017 11:16	Finished	MS (1ppb), IWST-161114D,10
23	N023177-004A,SAMF	15	1000	Unknown		02/22/2017 11:25	Finished	SAMP, 10mL
24	N023177-004AMS,MS	16	1000	Unknown		02/22/2017 11:35	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/22/2017 11:44	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/22/2017 11:54	Finished	CCB R170123B
27	N023177-001AMSD,M	19	1000	Unknown		02/22/2017 12:03	Finished	MSD (1ppb), IWST-161114D,10
28	N023177-002ADUP,D	20	1000	Unknown		02/22/2017 12:13	Finished	DUP, 10mL
29	N023177-005A,SAMF	21	1000	Unknown		02/22/2017 12:22	Finished	SAMP, 10mL
30	N023177-005AMS,MS	22	1000	Unknown		02/22/2017 12:32	Finished	MS (1ppb), IWST-161114D,10
31	N023177-006A,SAMF	23	1000	Unknown		02/22/2017 12:41	Finished	SAMP, 10mL
32	N023177-006AMS,MS	24	1000	Unknown		02/22/2017 12:51	Finished	MS (1ppb), IWST-161114D,10
33	N023177-007A,SAMF	25	1000	Unknown		02/22/2017 13:00	Finished	SAMP, 10mL
34	N023177-007AMS,MS	26	1000	Unknown		02/22/2017 13:09	Finished	MS (1ppb), IWST-161114D,10
35	N023177-008A,SAMF	27	1000	Unknown		02/22/2017 13:19	Finished	SAMP, 10mL
36	N023177-008AMS,MS	28	1000	Unknown		02/22/2017 13:28	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		02/22/2017 13:38	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		02/22/2017 14:23	Finished	CCB R170123B
39	N023177-009A,SAMF	31	1000	Unknown		02/22/2017 14:39	Finished	SAMP, 10mL
40	N023177-009AMS,MS	32	1000	Unknown		02/22/2017 14:50	Finished	MS (1ppb), IWST-161114D,10
41	N023177-010A,SAMF	33	1000	Unknown		02/22/2017 14:59	Finished	SAMP, 10mL
42	N023177-010AMS,MS	34	1000	Unknown		02/22/2017 15:09	Finished	MS (1ppb), IWST-161114D,10
43	N023177-011A,SAMF	35	1000	Unknown		02/22/2017 15:18	Finished	SAMP, 10mL
44	N023177-011AMS,MS	36	1000	Unknown		02/22/2017 15:28	Finished	MS (1ppb), IWST-161114D,10
45	N023177-012A,SAMF	37	1000	Unknown		02/22/2017 15:37	Finished	SAMP, 10mL
46	N023177-012AMS,MS	38	1000	Unknown		02/22/2017 15:47	Finished	MS (1ppb), IWST-161114D,10
47	N023177-013A,SAMF	39	1000	Unknown		02/22/2017 15:56	Finished	SAMP, 10mL
48	N023177-013AMS,MS	40	1000	Unknown		02/22/2017 16:05	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV,1,	41	1000	Unknown		02/22/2017 16:15	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	42	1000	Unknown		02/22/2017 16:24	Finished	CCB R170123B
51	N023177-014A,SAMF	43	1000	Unknown		02/22/2017 16:34	Finished	SAMP, 10mL
52	N023177-014AMS,MS	44	1000	Unknown		02/22/2017 16:43	Finished	MS (1ppb), IWST-161114D,10
53	N023177-015A,SAMF	45	1000	Unknown		02/22/2017 16:53	Finished	SAMP, 10mL
54	N023177-015AMS,MS	46	1000	Unknown		02/22/2017 17:02	Finished	MS (1ppb), IWST-161114D,10
55	N023178-001A,SAMF	47	1000	Unknown		02/22/2017 17:12	Finished	SAMP, 10mL
56	N023178-001AMS,MS	48	1000	Unknown		02/22/2017 17:21	Finished	MS (1ppb), IWST-161114D,10
57	N023178-002A,SAMF	49	1000	Unknown		02/22/2017 17:31	Finished	SAMP, 10mL
58	N023178-002AMS,MS	50	1000	Unknown		02/22/2017 17:40	Finished	MS (1ppb), IWST-161114D,10
59	N023177-011AMS,MS	1	1000	Unknown		02/22/2017 17:51	Finished	MS (1ppb), IWST-161114D,10
60	N023177-015AMS,MS	2	1000	Unknown		02/22/2017 18:02	Finished	MS (1ppb), IWST-161114D,10

61	CCV-5,CCV,1,	3	1000	Unknown		02/22/2017 18:11	Finished	CCV @5pb, IWST-161114C
62	CCB-5,CCB,1,	4	1000	Unknown		02/22/2017 18:21	Finished	CCB R170123B
63	SHUTDOWN	5	1000	Unknown		02/22/2017 18:30	Finished	
64	Eluent: R170220A	6	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170220B	7	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/21/17
Time Prepared: 0736H / 1554H
Prepared By: RBA

slope: 98.22
pH 4: 4.02 @ 22.0°C
7: 7.01 @ 22.0°C
10: 10.04 @ 22.0°C
LCS: 7.02 @ 22.0°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170220A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023138-005B	9.37	-	~250 ml	250 ml		
2)	6B	9.46	-				
3)	N023161-001A	7.32	9.58			+5 ml R170123B	lab filtered / preserve
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/22/17
Time Prepared: 0911
Prepared By: RBA

Slope: 98.12
pH 4: 4.02 @ 21.6°C
7: 7.04 @ 21.6°C
10: 10.04 @ 21.5°C
LCS: 7.00 @ 21.7°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170220A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023177-001A	9.66	-	~250 ml	~250 ml		1/3
2)	1A	9.67	-				2/3
3)	1A	9.63	-				3/3
4)	2A	9.64	-				1/3
5)	2A	9.57	-				2/3
6)	2A	9.62	-				3/3
7)	3A	9.55	-				1/3
8)	3A	9.60	-				2/3
9)	3A	9.67	-				3/3
10)	4A	9.58	-				1/3
11)	4A	9.63	-				2/3
12)	4A	9.67	-				3/3
13)	5A	9.57	-				1/3
14)	5A	9.61	-				2/3
15)	5A	9.55	-				3/3
	6A	9.54	-				1/3

Logbook No. 12

rba 2/27/2017

Sample Preparation

Date Prepared: 2/22/17
Time Prepared: 0911
Prepared By: RBA

CONTN

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170220A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023177-6A	9.57	–	250 mL	~250 mL		2/3
2)	6A	9.60	–				3/3
3)	7A	9.60	–				1/3
4)	7A	9.57	–				2/3
5)	7A	9.62	–				3/3
6)	8A	9.65	–				1/3
7)	8A	9.60	–				2/3
8)	8A	9.59	–				3/3
9)	9A	9.56	–				1/3
10)	9A	9.59	–				2/3
11)	9A	9.61	–				3/3
12)	10A	9.56	–				1/3
13)	10A	9.55	–				2/3
14)	10A	9.57	–				3/3
15)	11A	9.41	–				1/3
	11A	9.45	–				2/3

Sample Preparation

Date Prepared: 2/22/17
Time Prepared: 0911
Prepared By: RBA

CONTN

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170220A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023177-11A	9.52	–	~250 mL	~250 mL		3/3
2)	12A	9.61	–				1/3
3)	12A	9.63	–				2/3
4)	12A	9.59	–				3/3
5)	13A	9.56	–				1/3
6)	13A	9.61	–				2/3
7)	13A	9.63	–				3/3
8)	14A	9.56	–				1/3
9)	14A	9.62	–				2/3
10)	14A	9.62	–				3/3
11)	15A	9.60	–				1/3
12)	15A	9.53	–				2/3
13)	15A	9.63	–				3/3
14)	N023178-001A	9.68	–				
15)	2A	9.68	–				

Logbook No. 12

rba 2/27/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ICV** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCV** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577395**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.033	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.210	0.20	0.2000	0	105	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ZZZZZZ** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.012	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCV** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCV** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.072	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCV** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.036	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **ICB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113718**
Client ID: **CCB** Batch ID: **R113718** TestNo: **EPA 218.6** Analysis Date: **2/22/2017** SeqNo: **2577443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.198	
CCV-3	4.190	
CCV-4	4.190	
CCV-5	4.198	

Average	4.193
Actual RT Window	4.113 - 4.273
Applied RT Window	3.993 - 4.393

MB-R113718	N.A.	N.A.
LCS-R113718	4.190	PASS
N023177-001A	N.A.	N.A.
N023177-001AMS	4.190	PASS
N023177-002A	N.A.	N.A.
N023177-002AMS	4.181	PASS
N023177-003A	4.073	PASS
N023177-003AMS	4.181	PASS
N023177-004A	N.A.	N.A.
N023177-004AMS	4.190	PASS
N023177-001AMSD	4.190	PASS
N023177-002ADUP	N.A.	N.A.
N023177-005A	N.A.	N.A.
N023177-005AMS	4.190	PASS
N023177-006A	N.A.	N.A.
N023177-006AMS	4.181	PASS
N023177-007A	N.A.	N.A.
N023177-007AMS	4.173	PASS
N023177-008A	N.A.	N.A.
N023177-008AMS	4.190	PASS
N023177-009A	N.A.	N.A.
N023177-009AMS	4.190	PASS
N023177-010A	N.A.	N.A.
N023177-010AMS	4.190	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.198	
CCV-3	4.190	
CCV-4	4.190	
CCV-5	4.198	
Average	4.193	
Actual RT Window	4.113 - 4.273	
Applied RT Window	3.993 - 4.393	
N023177-011A	N.A.	N.A.
N023177-011AMS	4.190	PASS
N023177-012A	N.A.	N.A.
N023177-012AMS	4.190	PASS
N023177-013A	N.A.	N.A.
N023177-013AMS	4.190	PASS
N023177-014A	N.A.	N.A.
N023177-014AMS	4.190	PASS
N023177-015A	N.A.	N.A.
N023177-015AMS	4.190	PASS
N023178-001A	N.A.	N.A.
N023178-001AMS	4.190	PASS
N023178-002A	N.A.	N.A.
N023178-002AMS	4.181	PASS
N023177-011AMS	4.190	PASS
N023177-015AMS	4.190	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

IC7 RBA 2/6/2017 3:25 PM

Nancy 2/14/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

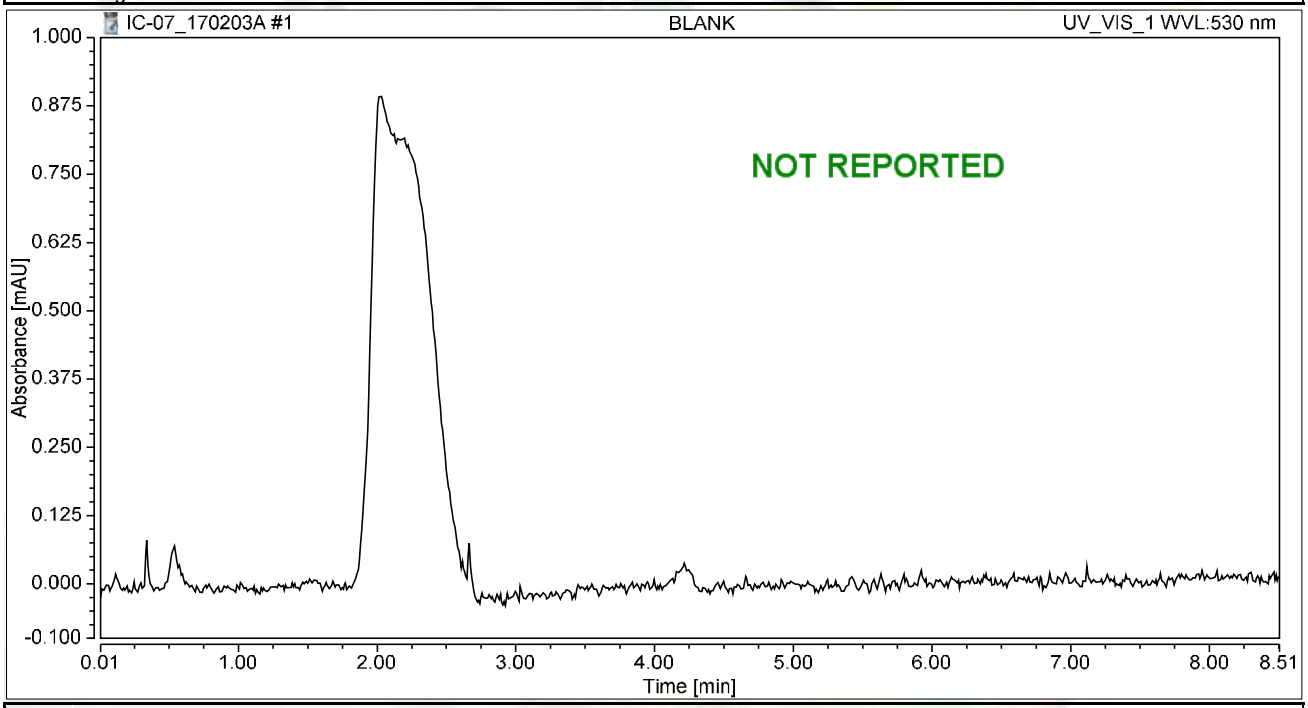
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

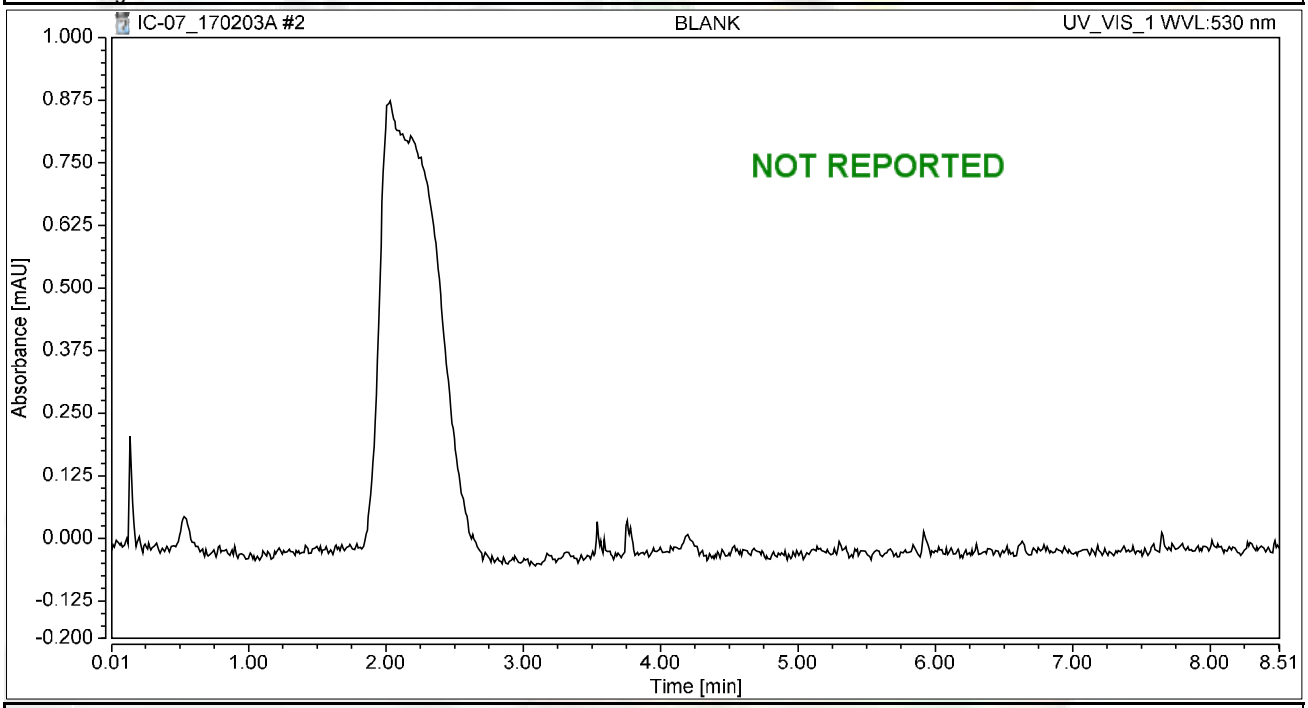
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

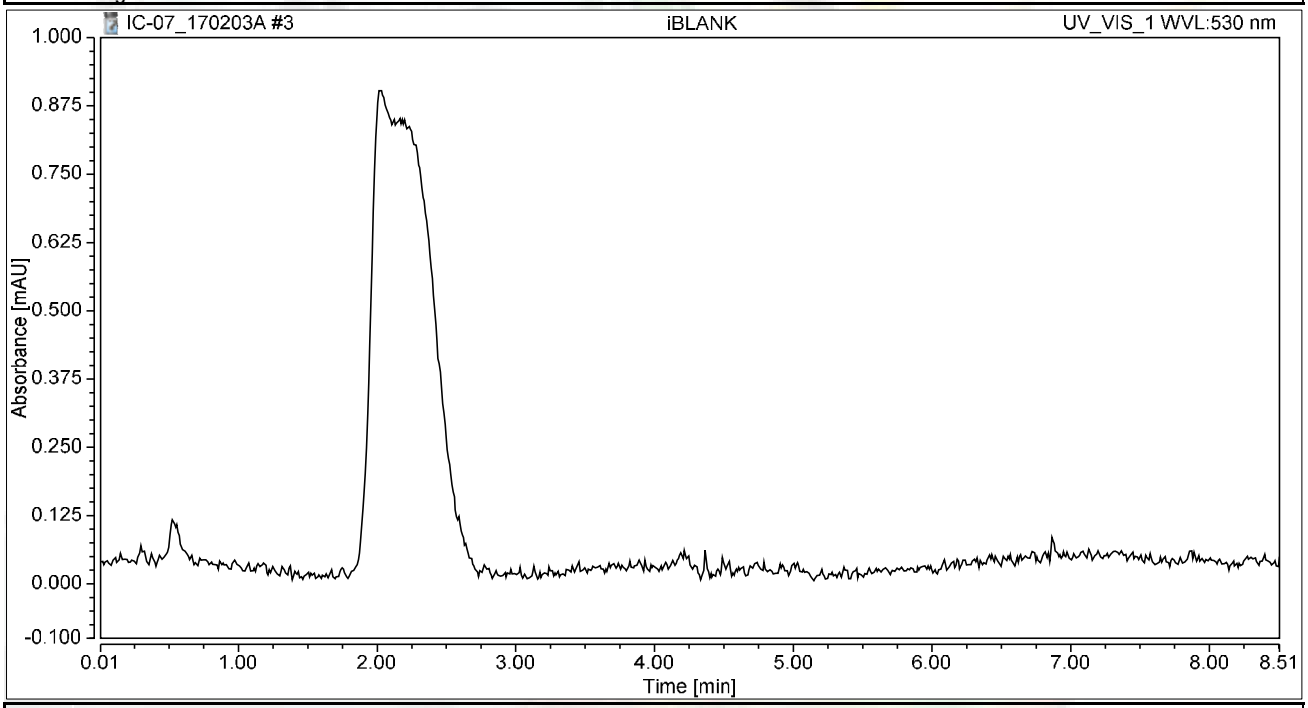
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

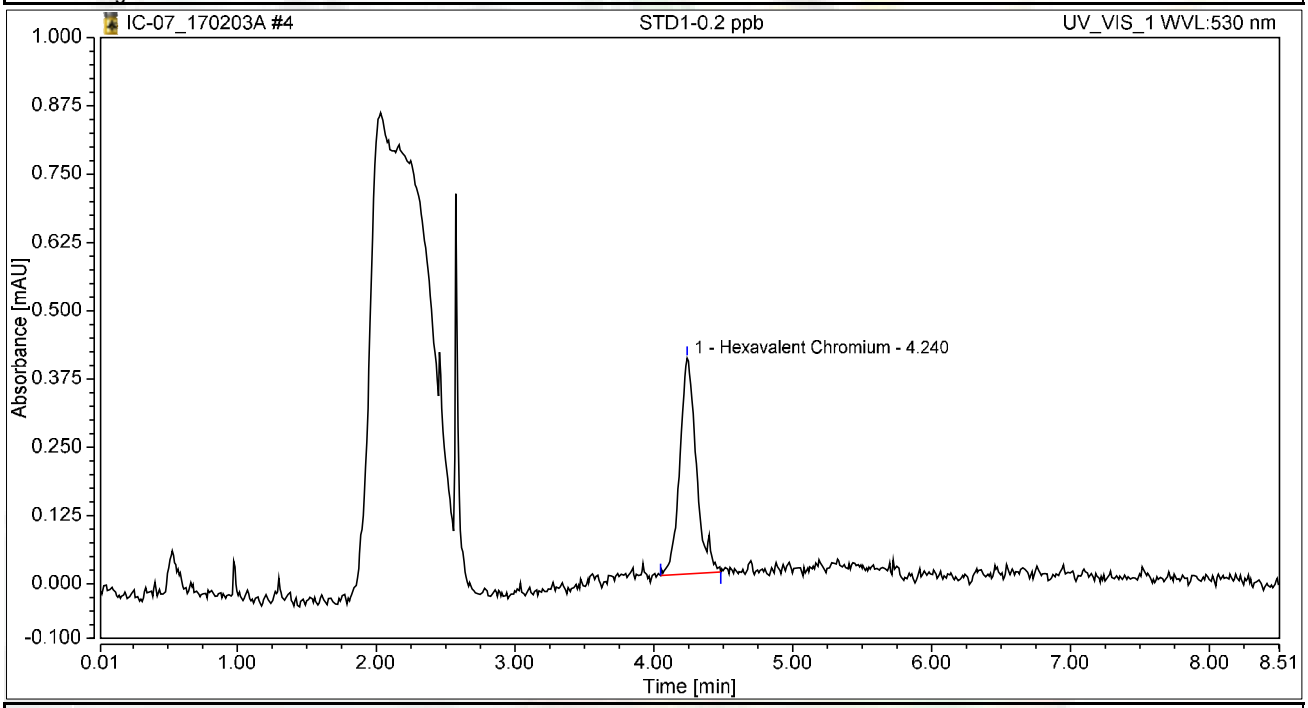
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

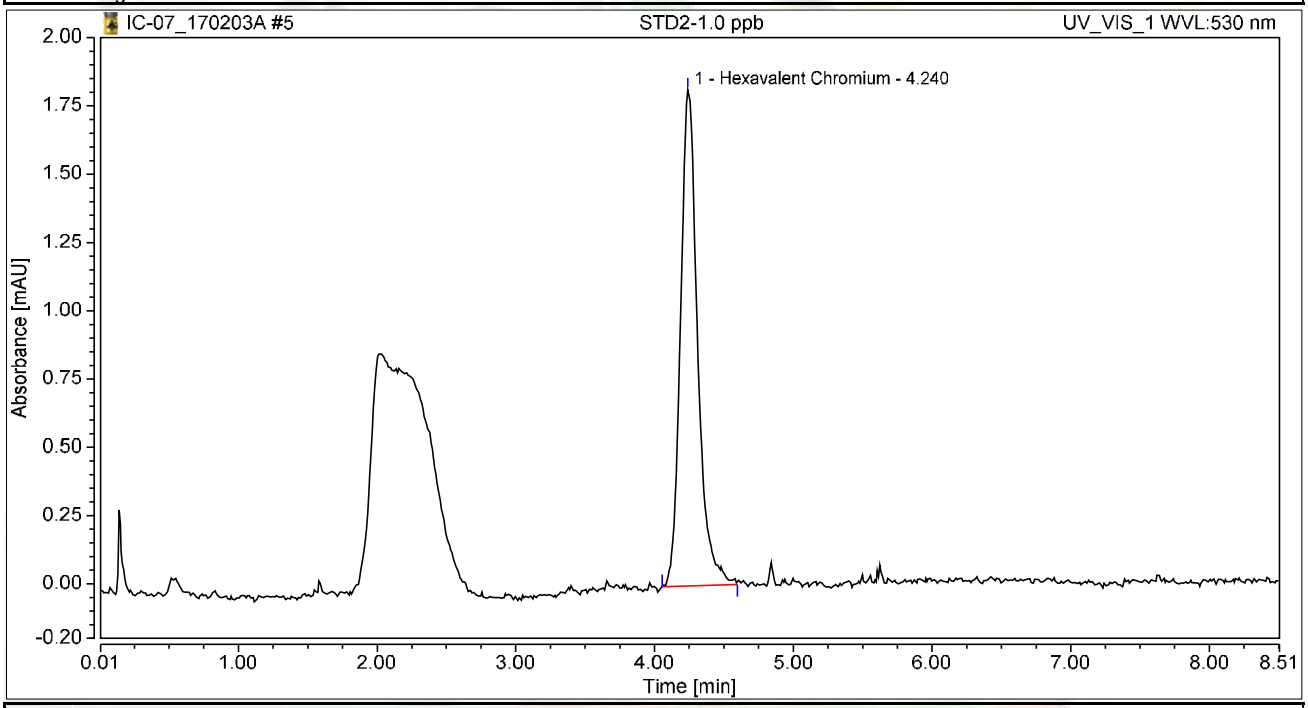
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

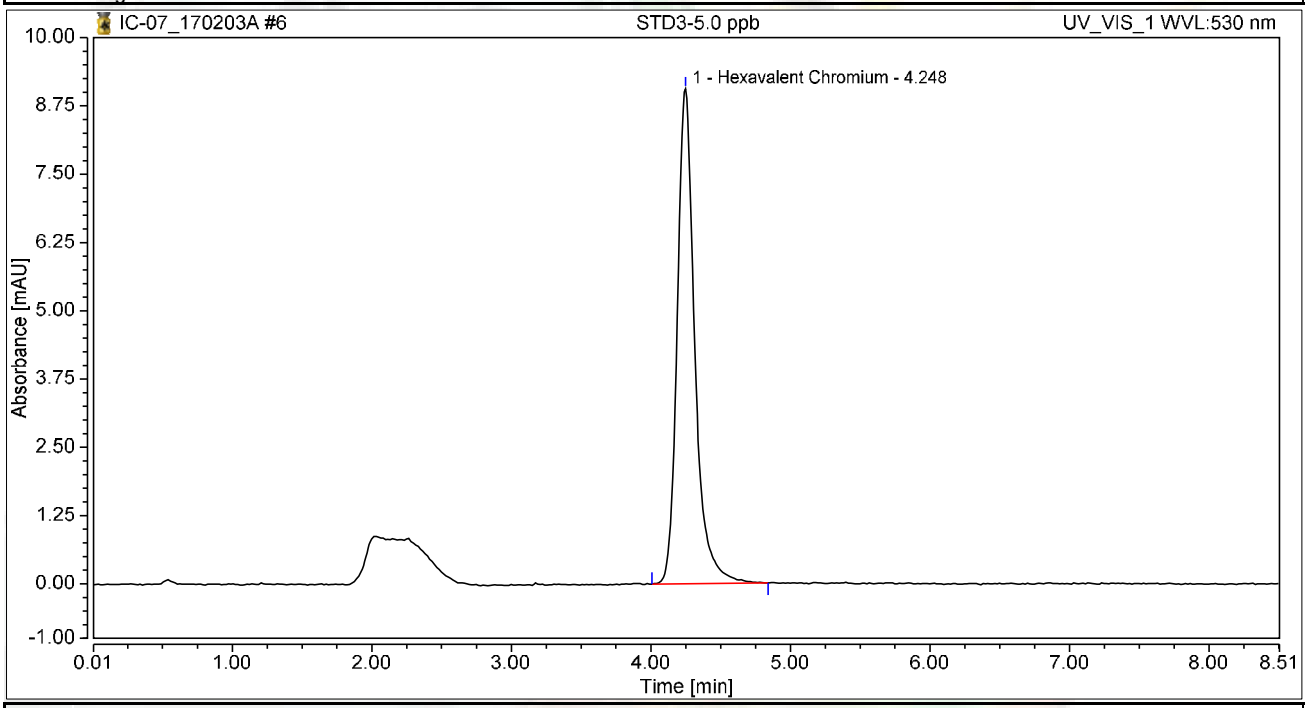
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

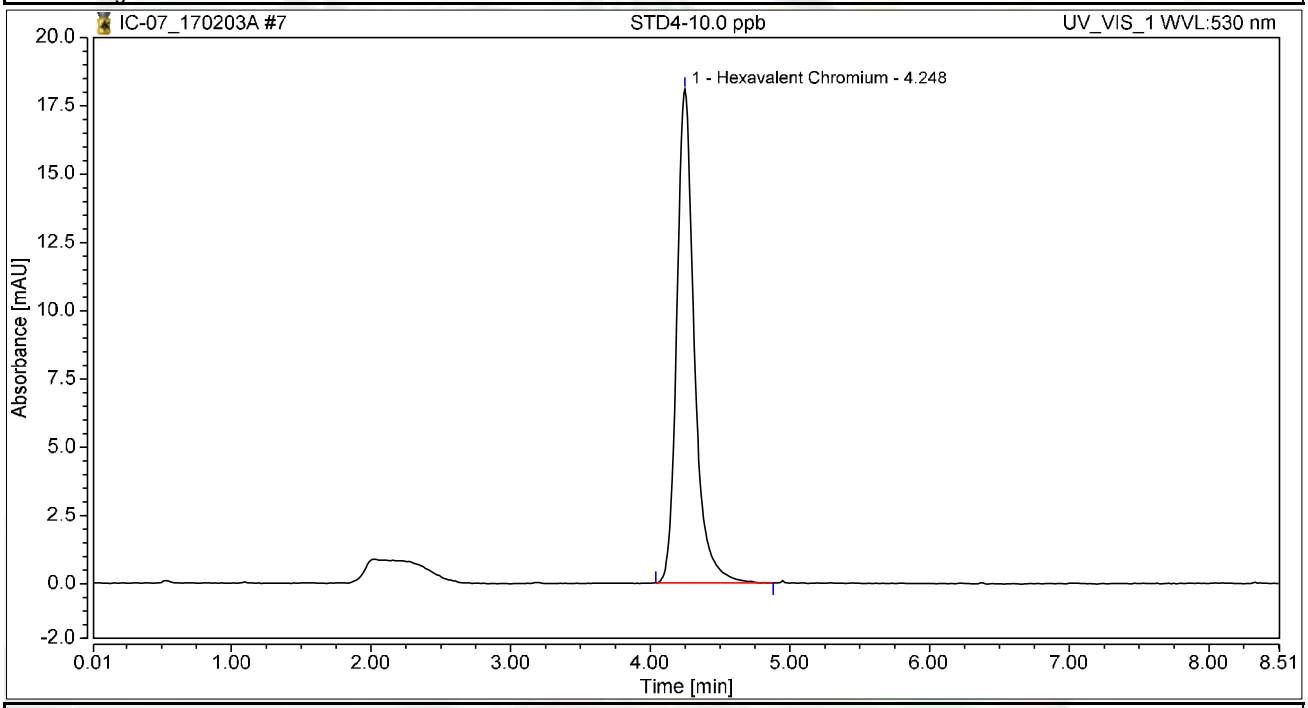
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

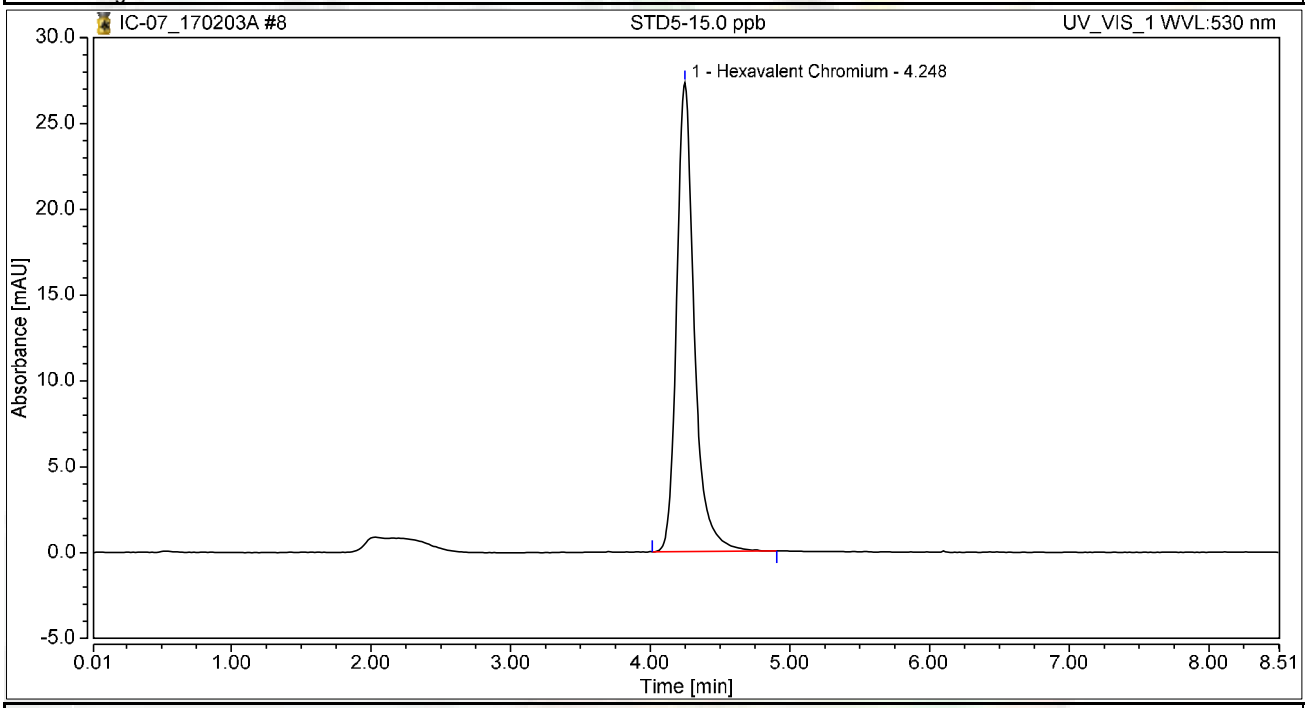
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

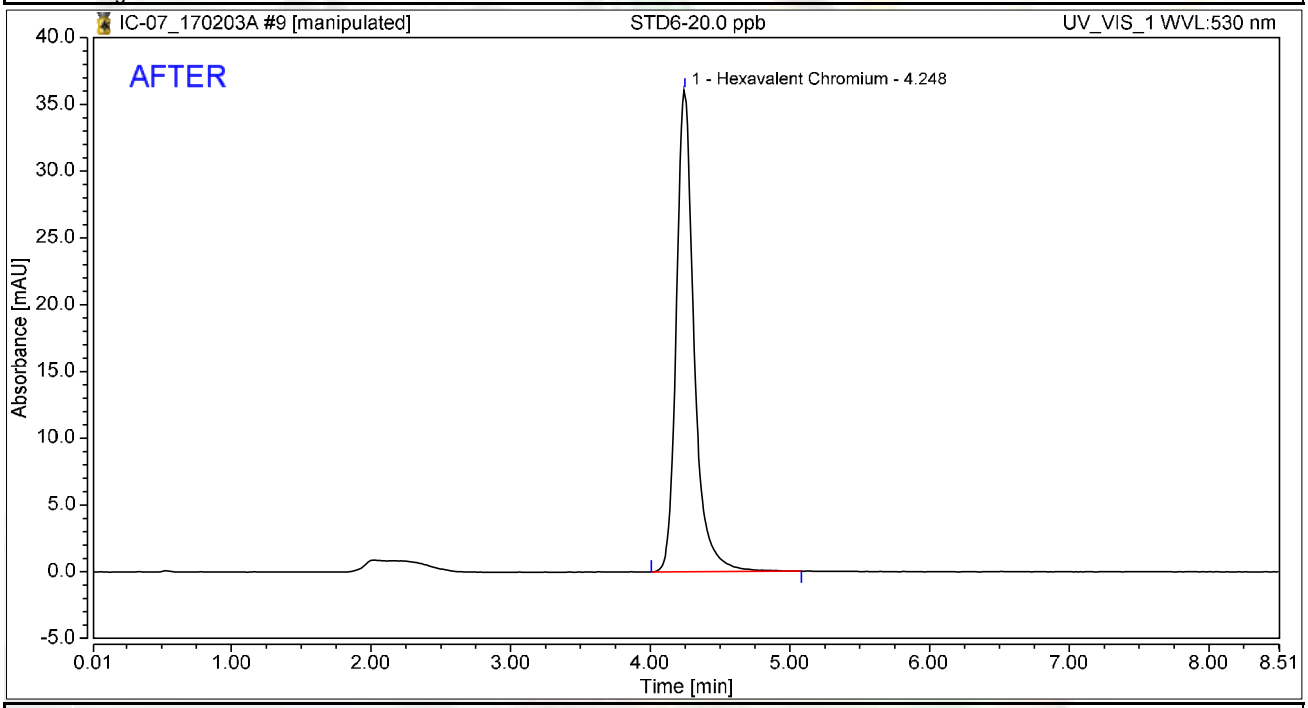
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

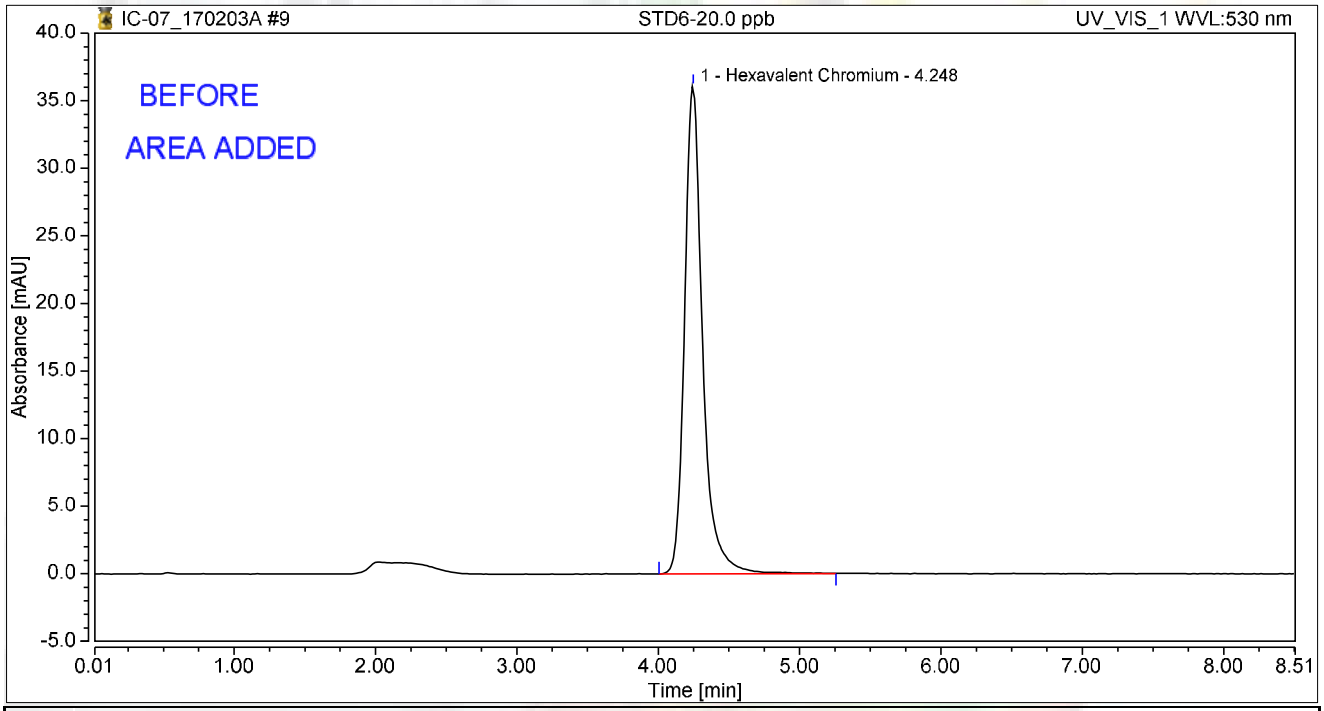
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

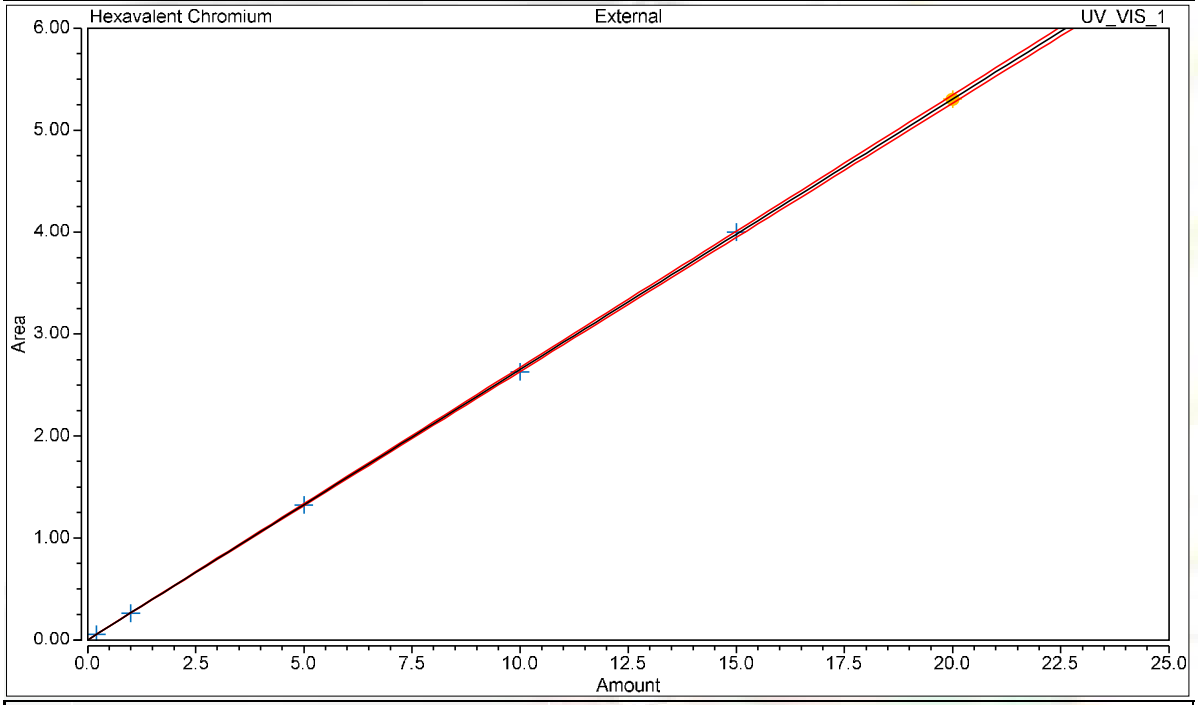
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

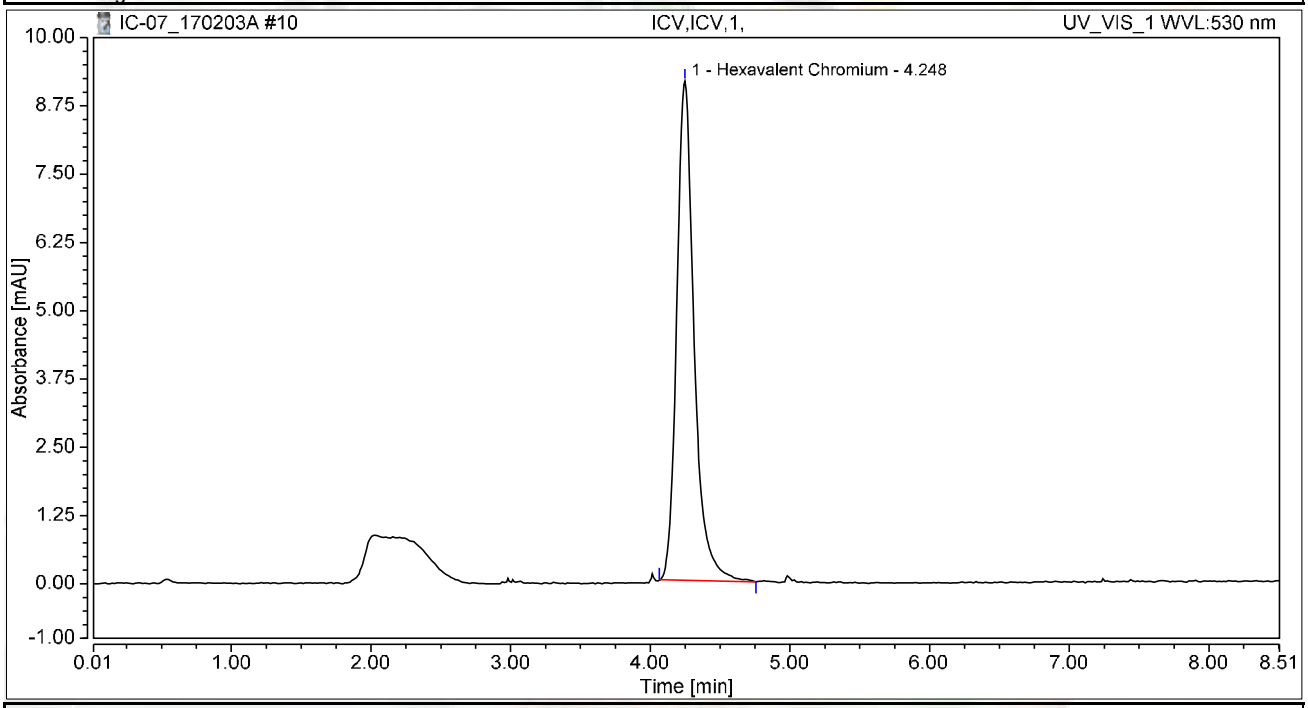
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
	Hexavalent Chromium		UV_VIS_1	VIS_1	UV_VIS_1	
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

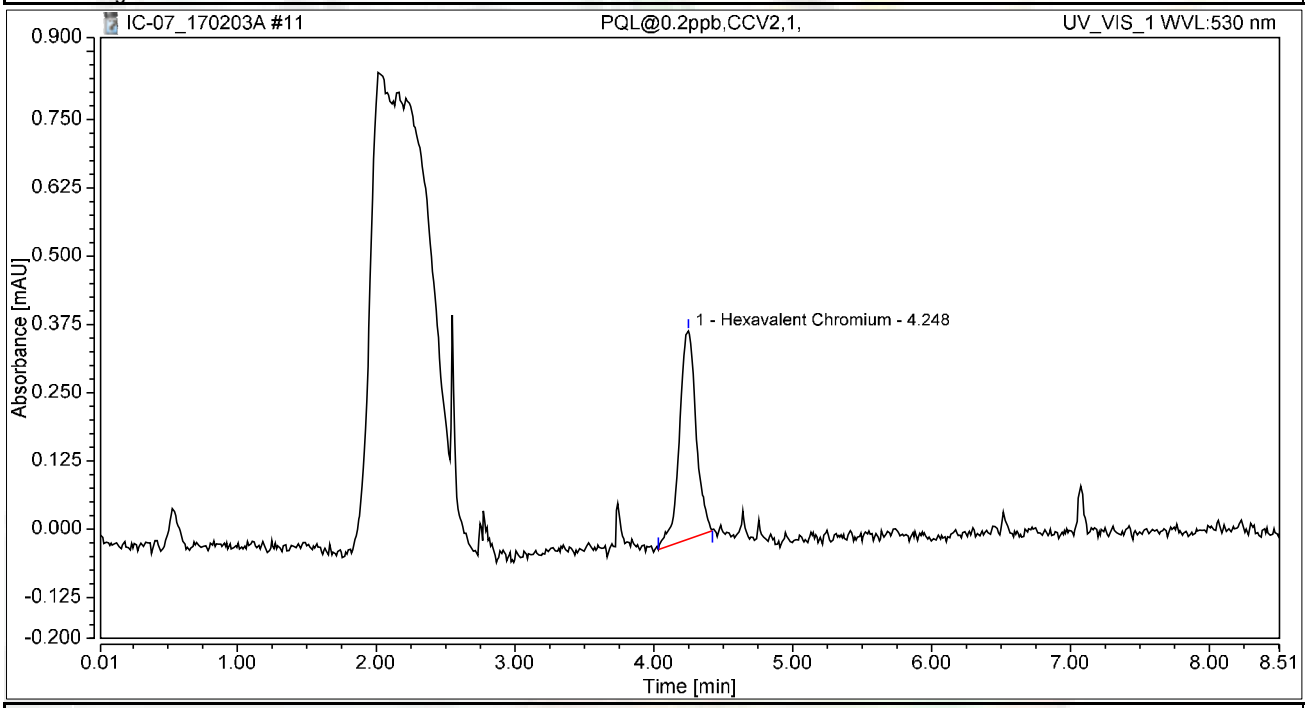
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

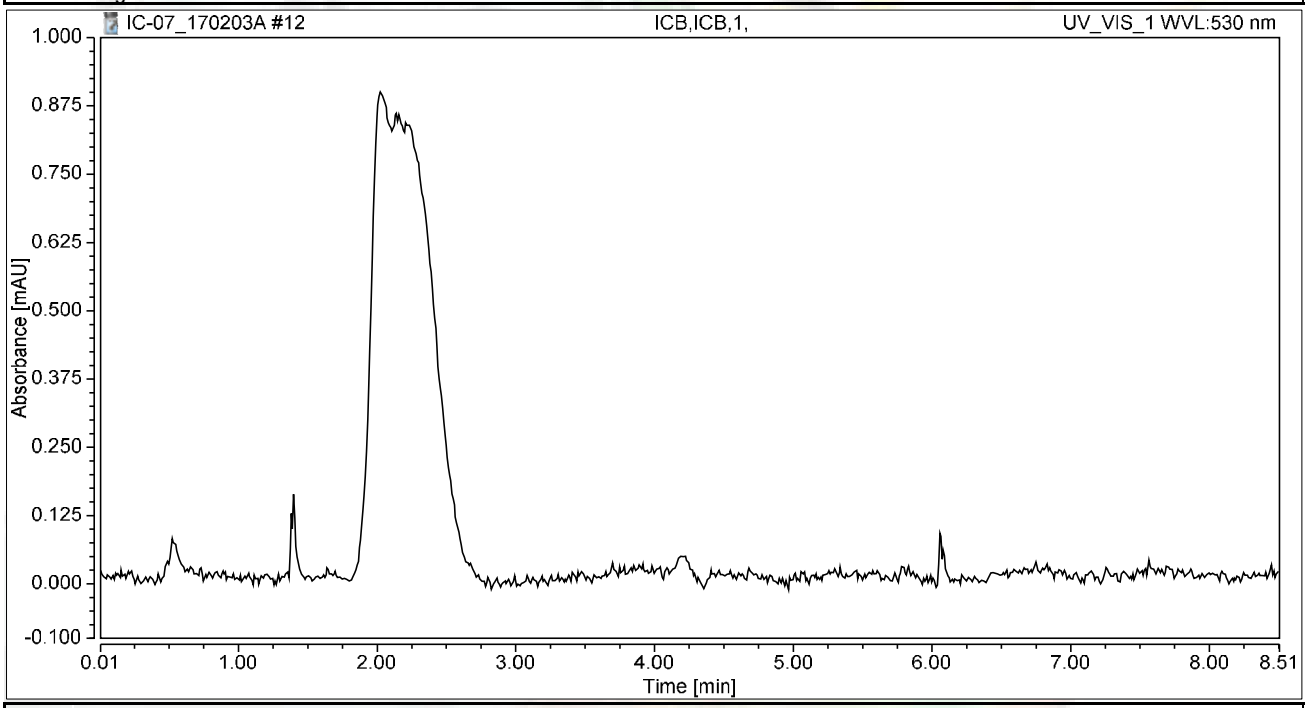
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/17 9:08 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/22/17 9:19 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/22/17 9:28 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/17 9:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/22/17 9:47 AM	Reported
15	MB-R113718	MBLK	1	Hexavalent Chromium	02/22/17 9:57 AM	Reported
16	LCS-R113718	LCS	1	Hexavalent Chromium	02/22/17 10:06 AM	Reported
17	N023177-001A	SAMP	1	Hexavalent Chromium	02/22/17 10:27 AM	Reported
18	N023177-001AMS	MS	1	Hexavalent Chromium	02/22/17 10:38 AM	Reported
19	N023177-002A	SAMP	1	Hexavalent Chromium	02/22/17 10:48 AM	Reported
20	N023177-002AMS	MS	1	Hexavalent Chromium	02/22/17 10:57 AM	Reported
21	N023177-003A	SAMP	1	Hexavalent Chromium	02/22/17 11:06 AM	Reported
22	N023177-003AMS	MS	1	Hexavalent Chromium	02/22/17 11:16 AM	Reported
23	N023177-004A	SAMP	1	Hexavalent Chromium	02/22/17 11:25 AM	Reported
24	N023177-004AMS	MS	1	Hexavalent Chromium	02/22/17 11:35 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/22/17 11:44 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/22/17 11:54 AM	Reported
27	N023177-001AMSD	MSD	1	Hexavalent Chromium	02/22/17 12:03 PM	Reported
28	N023177-002ADUP	DUP	1	Hexavalent Chromium	02/22/17 12:13 PM	Reported
29	N023177-005A	SAMP	1	Hexavalent Chromium	02/22/17 12:22 PM	Reported
30	N023177-005AMS	MS	1	Hexavalent Chromium	02/22/17 12:32 PM	Reported
31	N023177-006A	SAMP	1	Hexavalent Chromium	02/22/17 12:41 PM	Reported
32	N023177-006AMS	MS	1	Hexavalent Chromium	02/22/17 12:51 PM	Reported
33	N023177-007A	SAMP	1	Hexavalent Chromium	02/22/17 1:00 PM	Reported
34	N023177-007AMS	MS	1	Hexavalent Chromium	02/22/17 1:09 PM	Reported
35	N023177-008A	SAMP	1	Hexavalent Chromium	02/22/17 1:19 PM	Reported
36	N023177-008AMS	MS	1	Hexavalent Chromium	02/22/17 1:28 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/22/17 1:38 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/22/17 2:23 PM	Reported
39	N023177-009A	SAMP	1	Hexavalent Chromium	02/22/17 2:39 PM	Reported
40	N023177-009AMS	MS	1	Hexavalent Chromium	02/22/17 2:50 PM	Reported
41	N023177-010A	SAMP	1	Hexavalent Chromium	02/22/17 2:59 PM	Reported
42	N023177-010AMS	MS	1	Hexavalent Chromium	02/22/17 3:09 PM	Reported

rba 2/27/2017

IC7 RBA 2/24/2017 9:59 AM

3/6/2017

INJECTION LOG: 170222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023177-011A	SAMP	1	Hexavalent Chromium	02/22/17 3:18 PM	Reported
44	N023177-011AMS	MS	1	Hexavalent Chromium	02/22/17 3:28 PM	Not Reported
45	N023177-012A	SAMP	1	Hexavalent Chromium	02/22/17 3:37 PM	Reported
46	N023177-012AMS	MS	1	Hexavalent Chromium	02/22/17 3:47 PM	Reported
47	N023177-013A	SAMP	1	Hexavalent Chromium	02/22/17 3:56 PM	Reported
48	N023177-013AMS	MS	1	Hexavalent Chromium	02/22/17 4:05 PM	Reported
49	CCV-4	CCV	1	Hexavalent Chromium	02/22/17 4:15 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/22/17 4:24 PM	Reported
51	N023177-014A	SAMP	1	Hexavalent Chromium	02/22/17 4:34 PM	Reported
52	N023177-014AMS	MS	1	Hexavalent Chromium	02/22/17 4:43 PM	Reported
53	N023177-015A	SAMP	1	Hexavalent Chromium	02/22/17 4:53 PM	Reported
54	N023177-015AMS	MS	1	Hexavalent Chromium	02/22/17 5:02 PM	Not Reported
55	N023178-001A	SAMP	1	Hexavalent Chromium	02/22/17 5:12 PM	Reported
56	N023178-001AMS	MS	1	Hexavalent Chromium	02/22/17 5:21 PM	Reported
57	N023178-002A	SAMP	1	Hexavalent Chromium	02/22/17 5:31 PM	Reported
58	N023178-002AMS	MS	1	Hexavalent Chromium	02/22/17 5:40 PM	Reported
59	N023177-011AMS	MS	1	Hexavalent Chromium	02/22/17 5:51 PM	Reported
60	N023177-015AMS	MS	1	Hexavalent Chromium	02/22/17 6:02 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/22/17 6:11 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/22/17 6:21 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**22/Feb/17 18:51:27**
No. of Injections:	**65**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/22/2017 09:08	Finished	
11	BLANK	2	1000	Unknown		02/22/2017 09:19	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/22/2017 09:28	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2017 09:38	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/22/2017 09:47	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/22/2017 09:57	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/22/2017 10:06	Finished	LCS, IWST-161114D
17	N023177-001A,SAMF	9	1000	Unknown		02/22/2017 10:27	Finished	SAMP, 10mL
18	N023177-001AMS,MS	10	1000	Unknown		02/22/2017 10:38	Finished	MS (1ppb), IWST-161114D,10
19	N023177-002A,SAMF	11	1000	Unknown		02/22/2017 10:48	Finished	SAMP, 10mL
20	N023177-002AMS,MS	12	1000	Unknown		02/22/2017 10:57	Finished	MS (1ppb), IWST-161114D,10
21	N023177-003A,SAMF	13	1000	Unknown		02/22/2017 11:06	Finished	SAMP, 10mL
22	N023177-003AMS,MS	14	1000	Unknown		02/22/2017 11:16	Finished	MS (1ppb), IWST-161114D,10
23	N023177-004A,SAMF	15	1000	Unknown		02/22/2017 11:25	Finished	SAMP, 10mL
24	N023177-004AMS,MS	16	1000	Unknown		02/22/2017 11:35	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	17	1000	Unknown		02/22/2017 11:44	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	18	1000	Unknown		02/22/2017 11:54	Finished	CCB R170123B
27	N023177-001AMSD,M	19	1000	Unknown		02/22/2017 12:03	Finished	MSD (1ppb), IWST-161114D,10
28	N023177-002ADUP,D	20	1000	Unknown		02/22/2017 12:13	Finished	DUP, 10mL
29	N023177-005A,SAMF	21	1000	Unknown		02/22/2017 12:22	Finished	SAMP, 10mL
30	N023177-005AMS,MS	22	1000	Unknown		02/22/2017 12:32	Finished	MS (1ppb), IWST-161114D,10
31	N023177-006A,SAMF	23	1000	Unknown		02/22/2017 12:41	Finished	SAMP, 10mL
32	N023177-006AMS,MS	24	1000	Unknown		02/22/2017 12:51	Finished	MS (1ppb), IWST-161114D,10
33	N023177-007A,SAMF	25	1000	Unknown		02/22/2017 13:00	Finished	SAMP, 10mL
34	N023177-007AMS,MS	26	1000	Unknown		02/22/2017 13:09	Finished	MS (1ppb), IWST-161114D,10
35	N023177-008A,SAMF	27	1000	Unknown		02/22/2017 13:19	Finished	SAMP, 10mL
36	N023177-008AMS,MS	28	1000	Unknown		02/22/2017 13:28	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	29	1000	Unknown		02/22/2017 13:38	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	30	1000	Unknown		02/22/2017 14:23	Finished	CCB R170123B
39	N023177-009A,SAMF	31	1000	Unknown		02/22/2017 14:39	Finished	SAMP, 10mL
40	N023177-009AMS,MS	32	1000	Unknown		02/22/2017 14:50	Finished	MS (1ppb), IWST-161114D,10
41	N023177-010A,SAMF	33	1000	Unknown		02/22/2017 14:59	Finished	SAMP, 10mL
42	N023177-010AMS,MS	34	1000	Unknown		02/22/2017 15:09	Finished	MS (1ppb), IWST-161114D,10
43	N023177-011A,SAMF	35	1000	Unknown		02/22/2017 15:18	Finished	SAMP, 10mL
44	N023177-011AMS,MS	36	1000	Unknown		02/22/2017 15:28	Finished	MS (1ppb), IWST-161114D,10
45	N023177-012A,SAMF	37	1000	Unknown		02/22/2017 15:37	Finished	SAMP, 10mL
46	N023177-012AMS,MS	38	1000	Unknown		02/22/2017 15:47	Finished	MS (1ppb), IWST-161114D,10
47	N023177-013A,SAMF	39	1000	Unknown		02/22/2017 15:56	Finished	SAMP, 10mL
48	N023177-013AMS,MS	40	1000	Unknown		02/22/2017 16:05	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV,1,	41	1000	Unknown		02/22/2017 16:15	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	42	1000	Unknown		02/22/2017 16:24	Finished	CCB R170123B
51	N023177-014A,SAMF	43	1000	Unknown		02/22/2017 16:34	Finished	SAMP, 10mL
52	N023177-014AMS,MS	44	1000	Unknown		02/22/2017 16:43	Finished	MS (1ppb), IWST-161114D,10
53	N023177-015A,SAMF	45	1000	Unknown		02/22/2017 16:53	Finished	SAMP, 10mL
54	N023177-015AMS,MS	46	1000	Unknown		02/22/2017 17:02	Finished	MS (1ppb), IWST-161114D,10
55	N023178-001A,SAMF	47	1000	Unknown		02/22/2017 17:12	Finished	SAMP, 10mL
56	N023178-001AMS,MS	48	1000	Unknown		02/22/2017 17:21	Finished	MS (1ppb), IWST-161114D,10
57	N023178-002A,SAMF	49	1000	Unknown		02/22/2017 17:31	Finished	SAMP, 10mL
58	N023178-002AMS,MS	50	1000	Unknown		02/22/2017 17:40	Finished	MS (1ppb), IWST-161114D,10
59	N023177-011AMS,MS	1	1000	Unknown		02/22/2017 17:51	Finished	MS (1ppb), IWST-161114D,10
60	N023177-015AMS,MS	2	1000	Unknown		02/22/2017 18:02	Finished	MS (1ppb), IWST-161114D,10

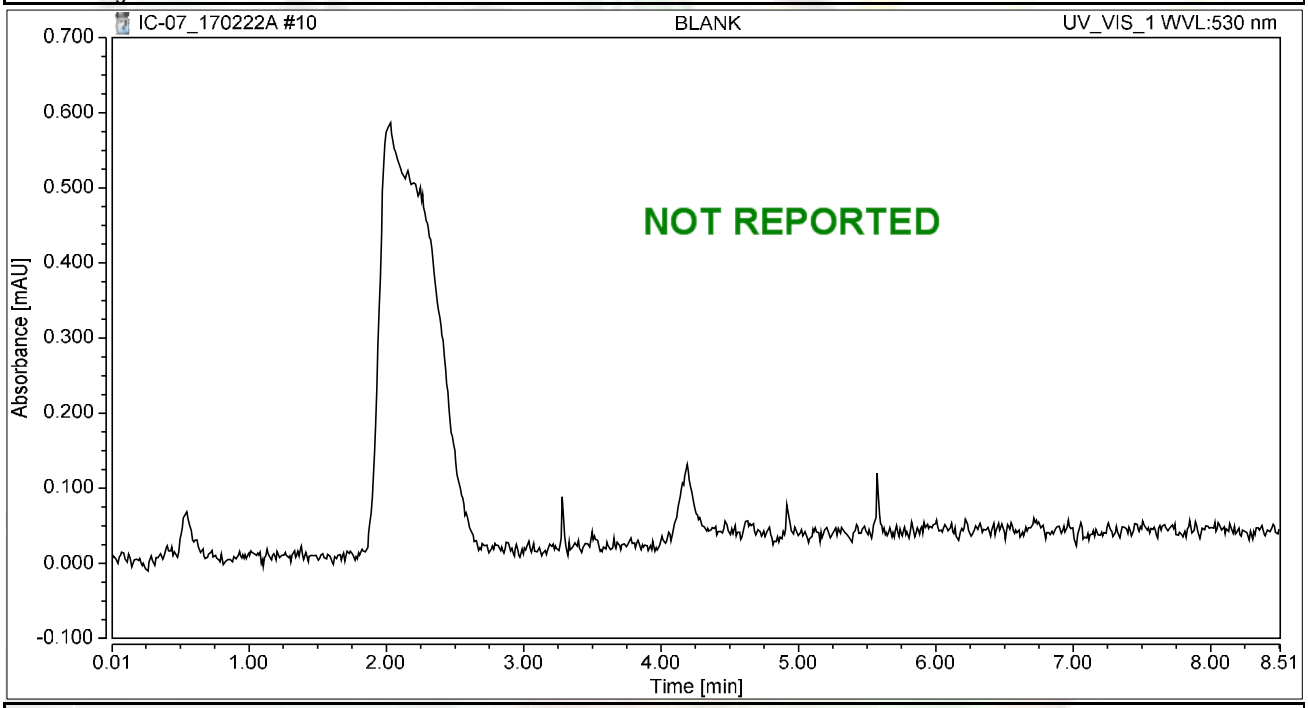
61	CCV-5,CCV,1,	3	1000	Unknown		02/22/2017 18:11	Finished	CCV @5pb, IWST-161114C
62	CCB-5,CCB,1,	4	1000	Unknown		02/22/2017 18:21	Finished	CCB R170123B
63	SHUTDOWN	5	1000	Unknown		02/22/2017 18:30	Finished	
64	Eluent: R170220A	6	1000	Unknown		n.a.	Finished	Eluent
65	PCR: R170220B	7	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

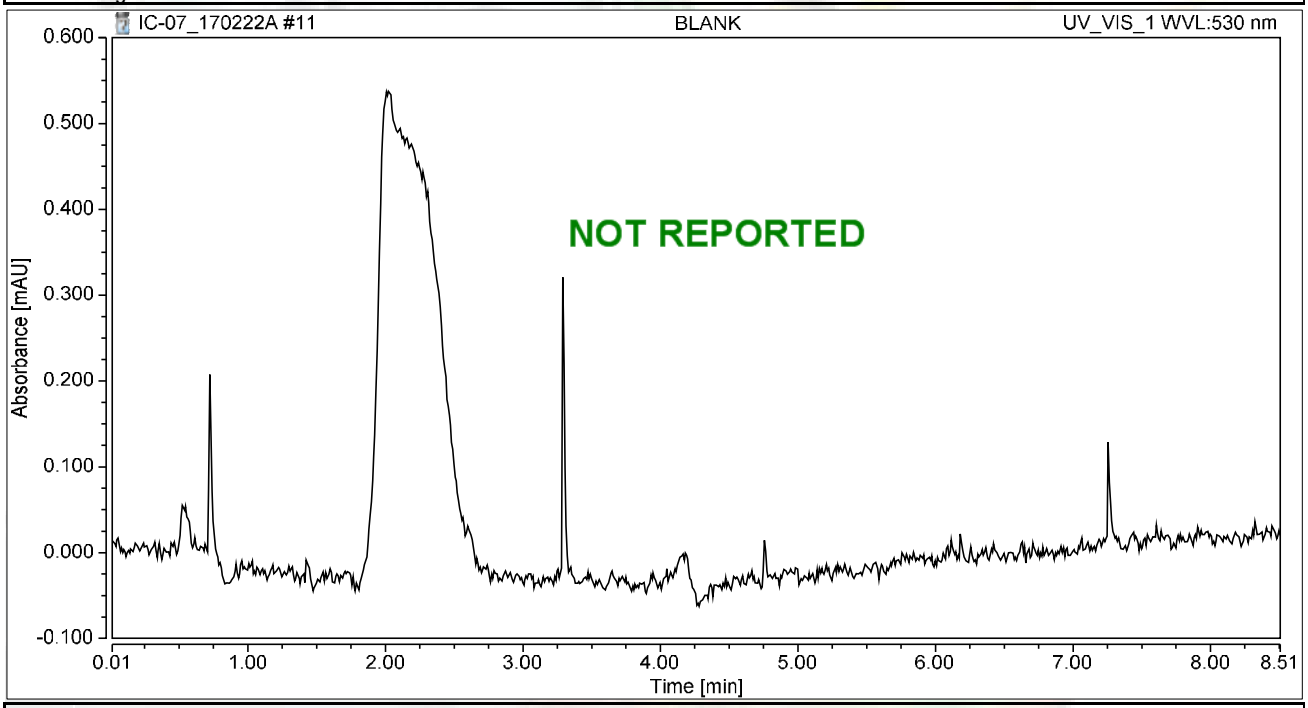
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

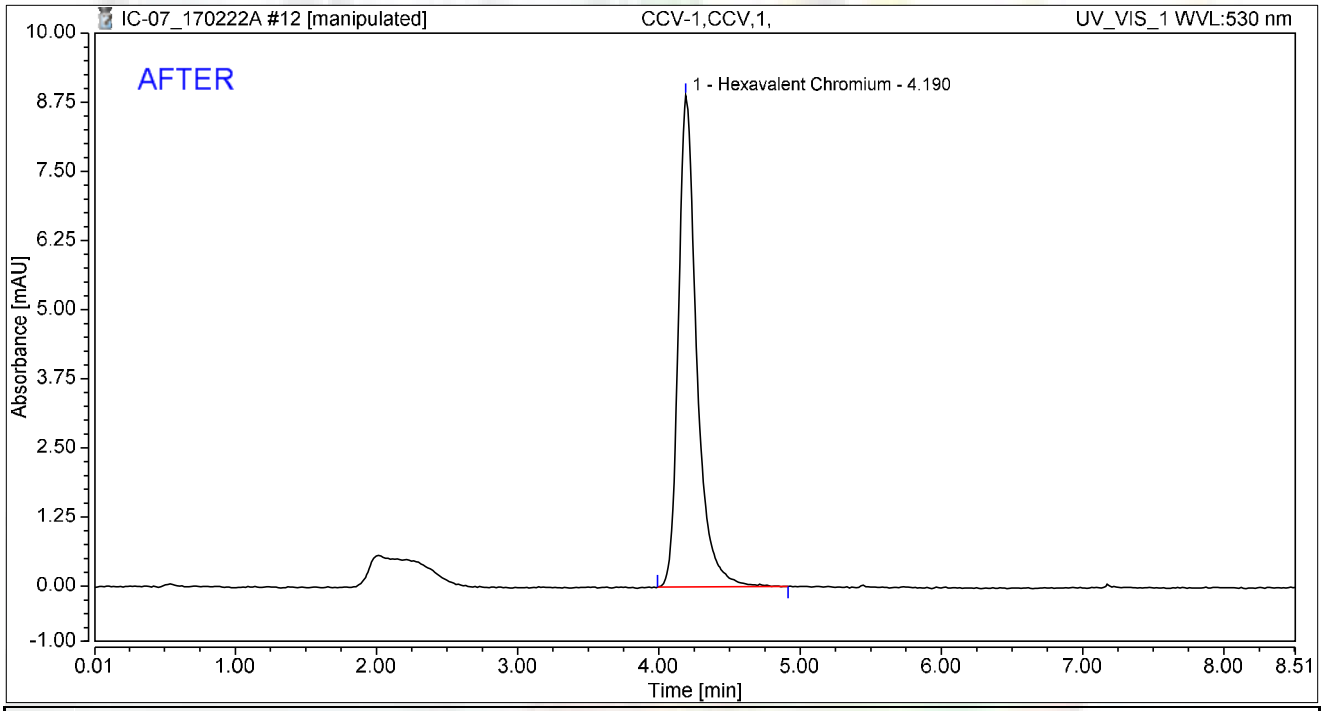
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.335	8.885	100.00	100.00	5.0331
Total:			**1.335**	**8.885**	**100.00**	**100.00**	

rba 2/27/2017

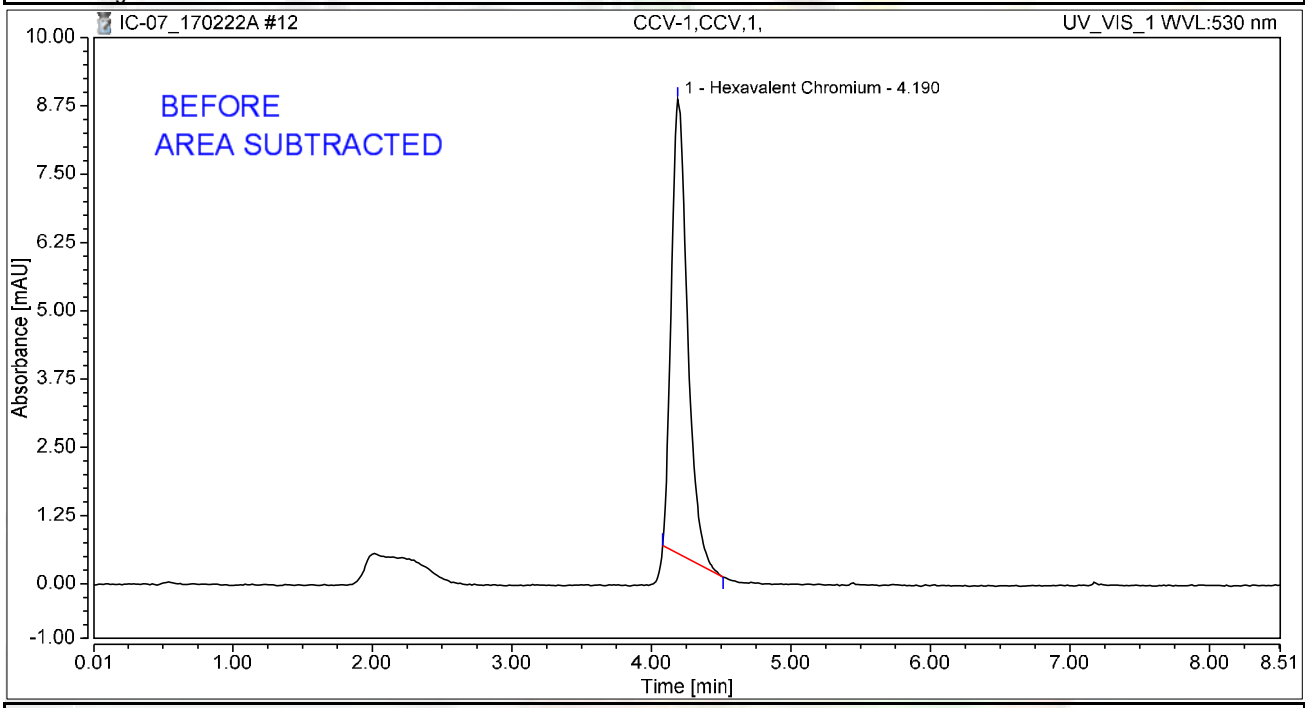
Reviewed by: Dancy 3/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.121	8.310	100.00	100.00	4.2272
Total:			**1.121**	**8.310**	**100.00**	**100.00**	

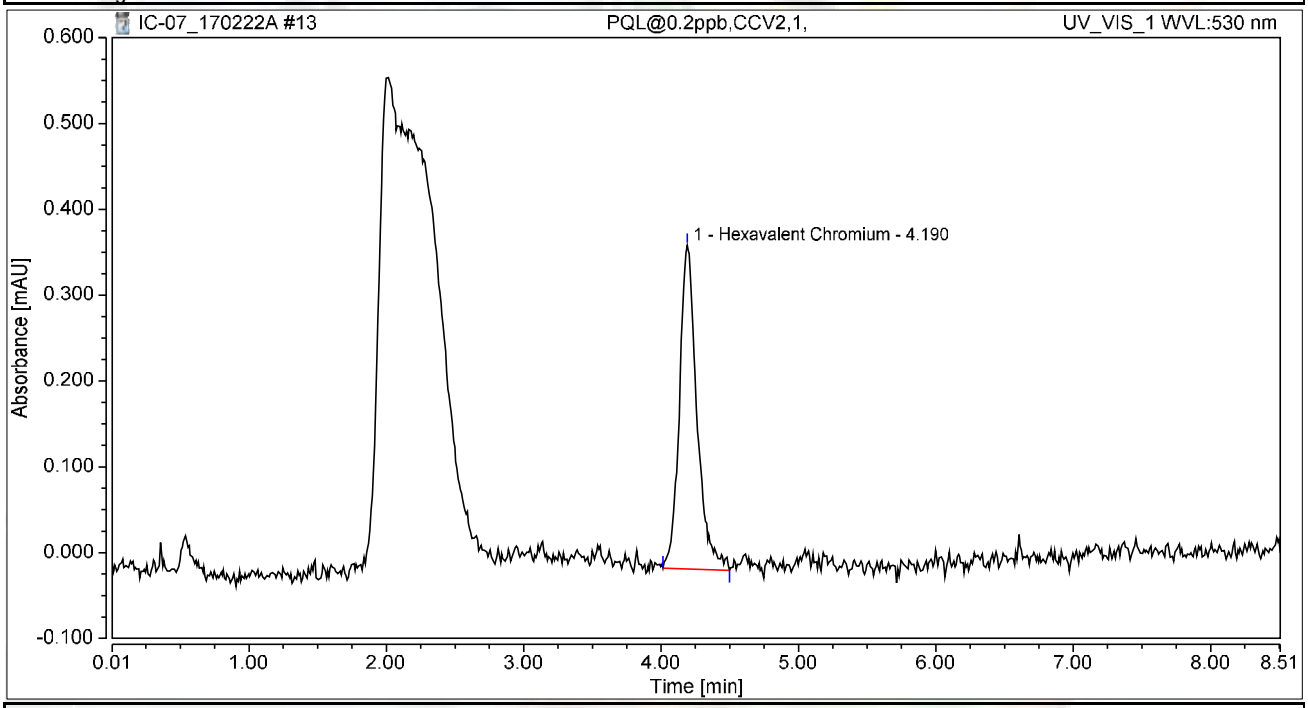
rba 2/27/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

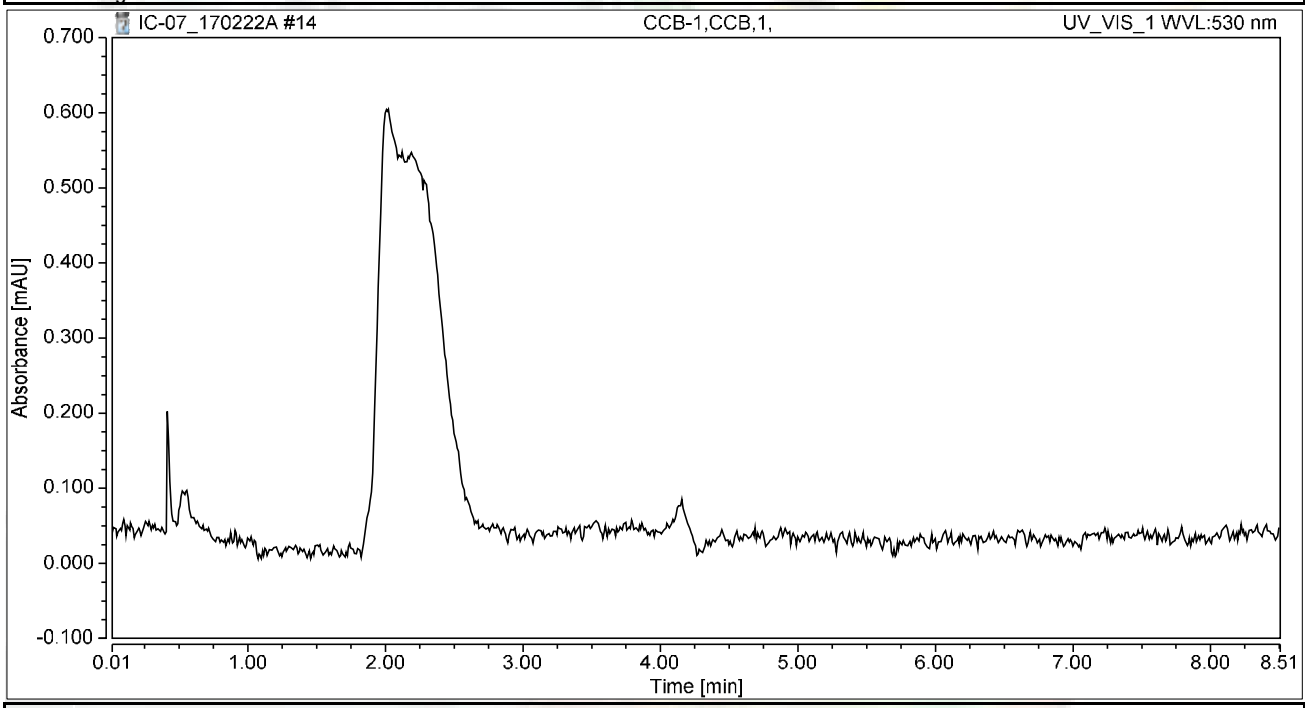
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.056	0.377	100.00	100.00	0.2099
Total:			**0.056**	**0.377**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

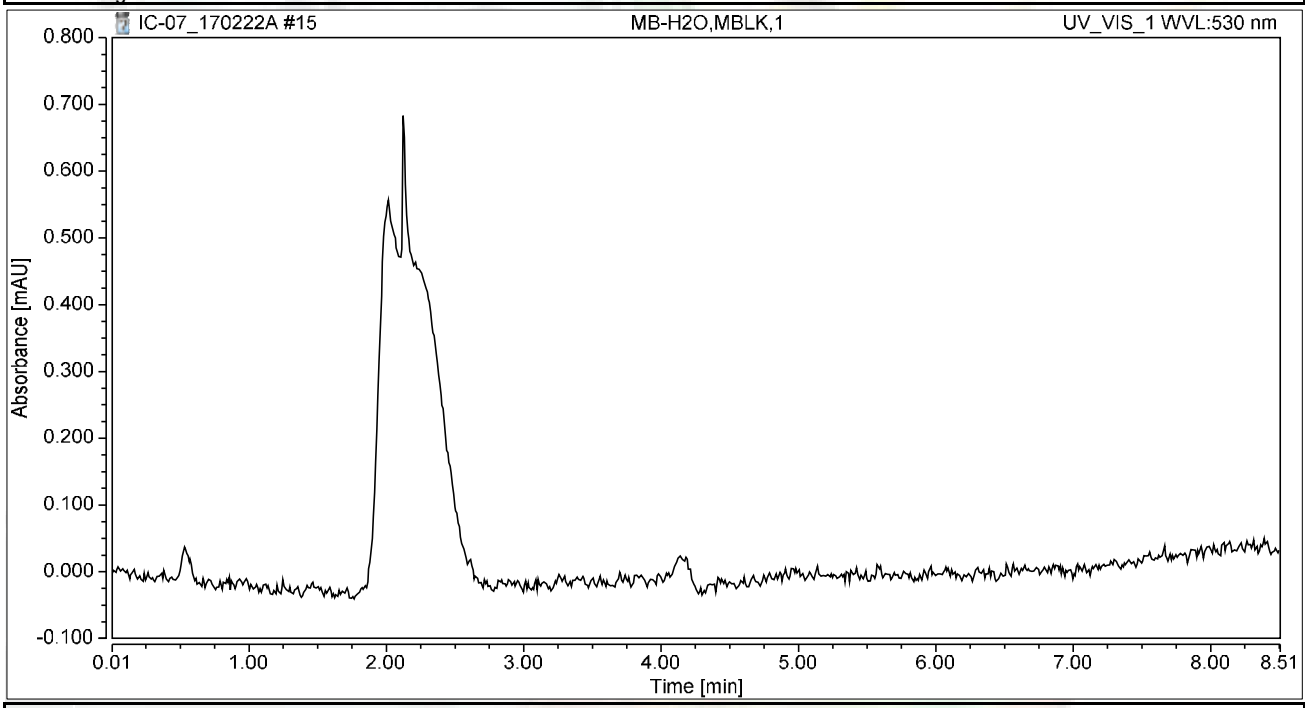
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

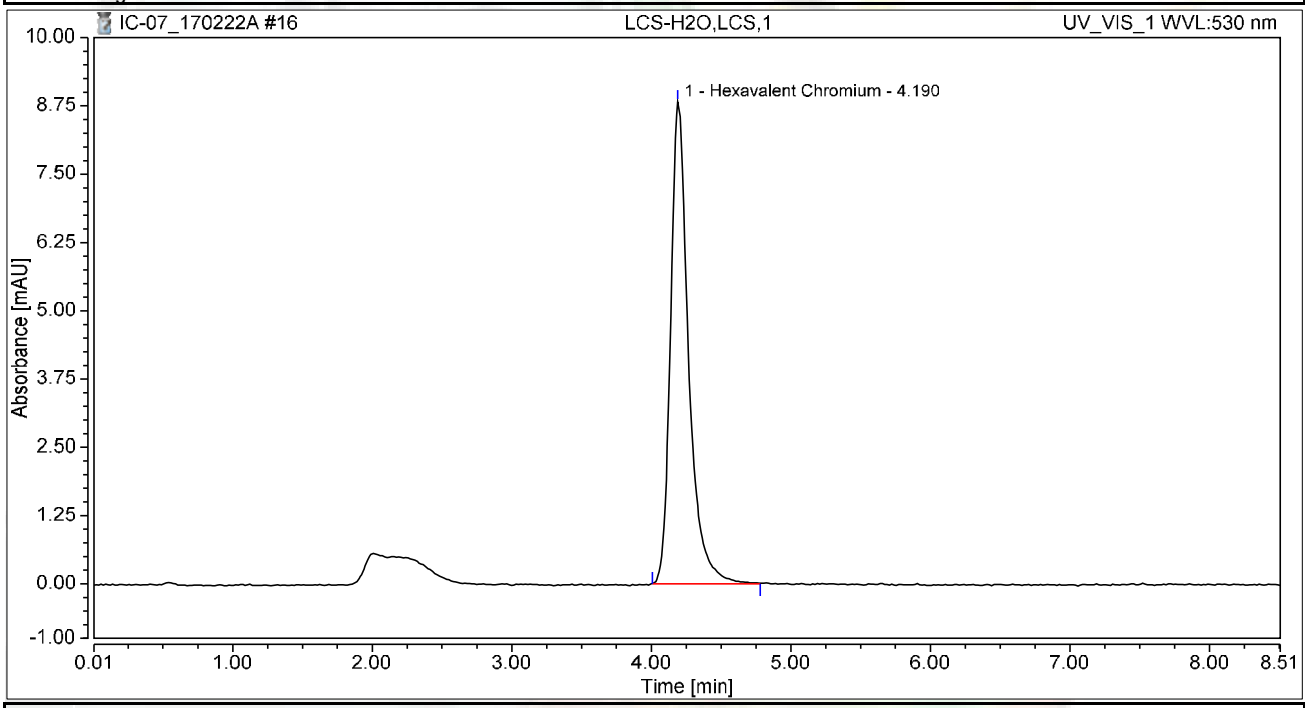
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

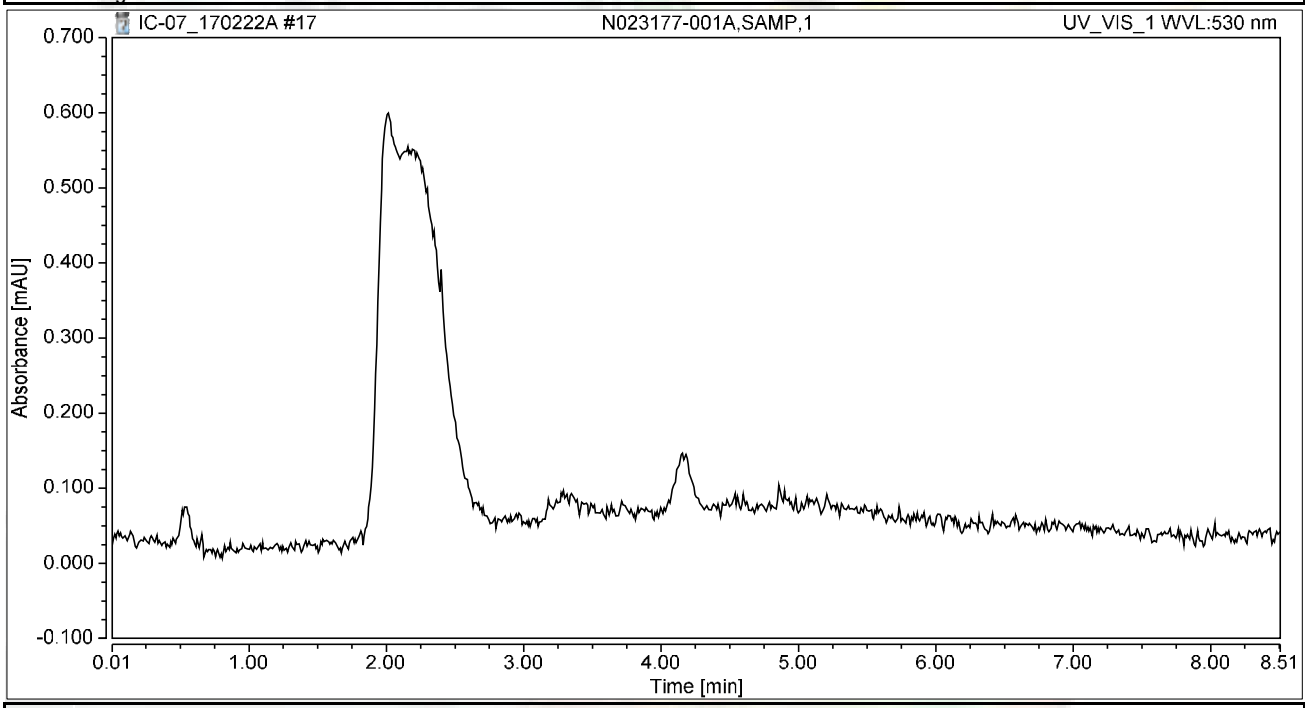
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.325	8.822	100.00	100.00	4.9970
Total:			**1.325**	**8.822**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

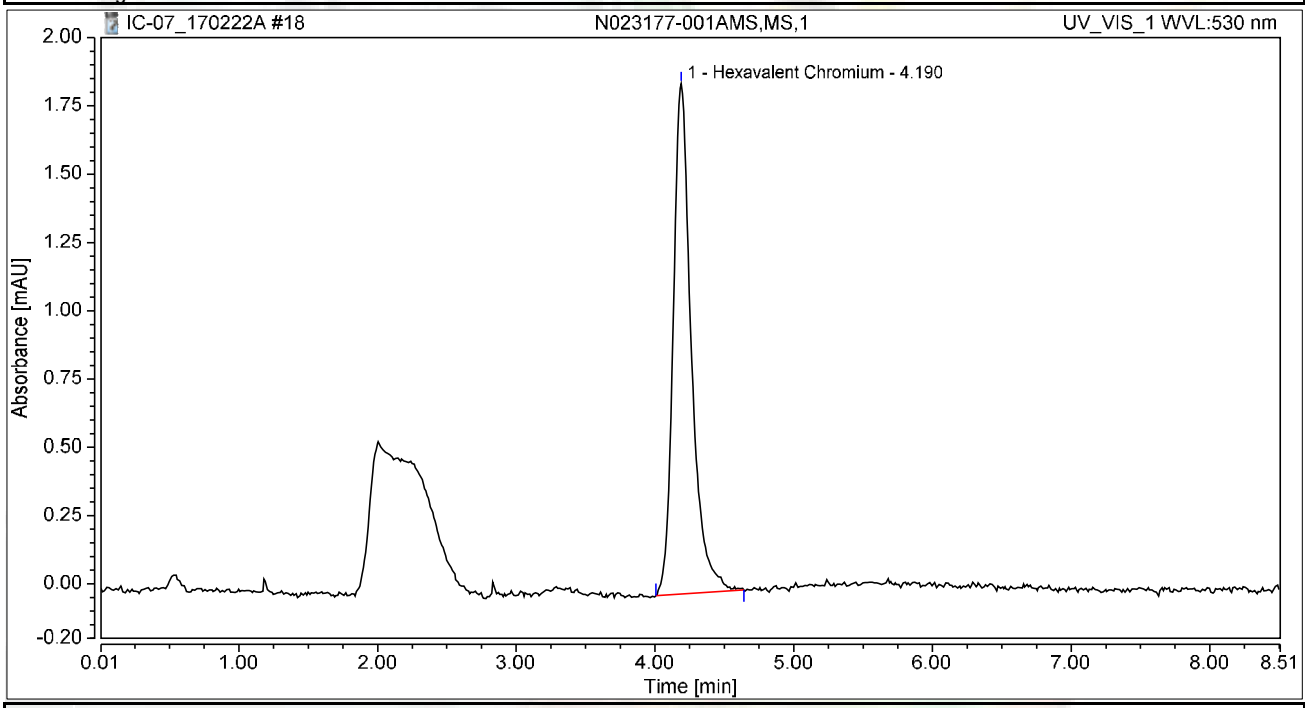
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

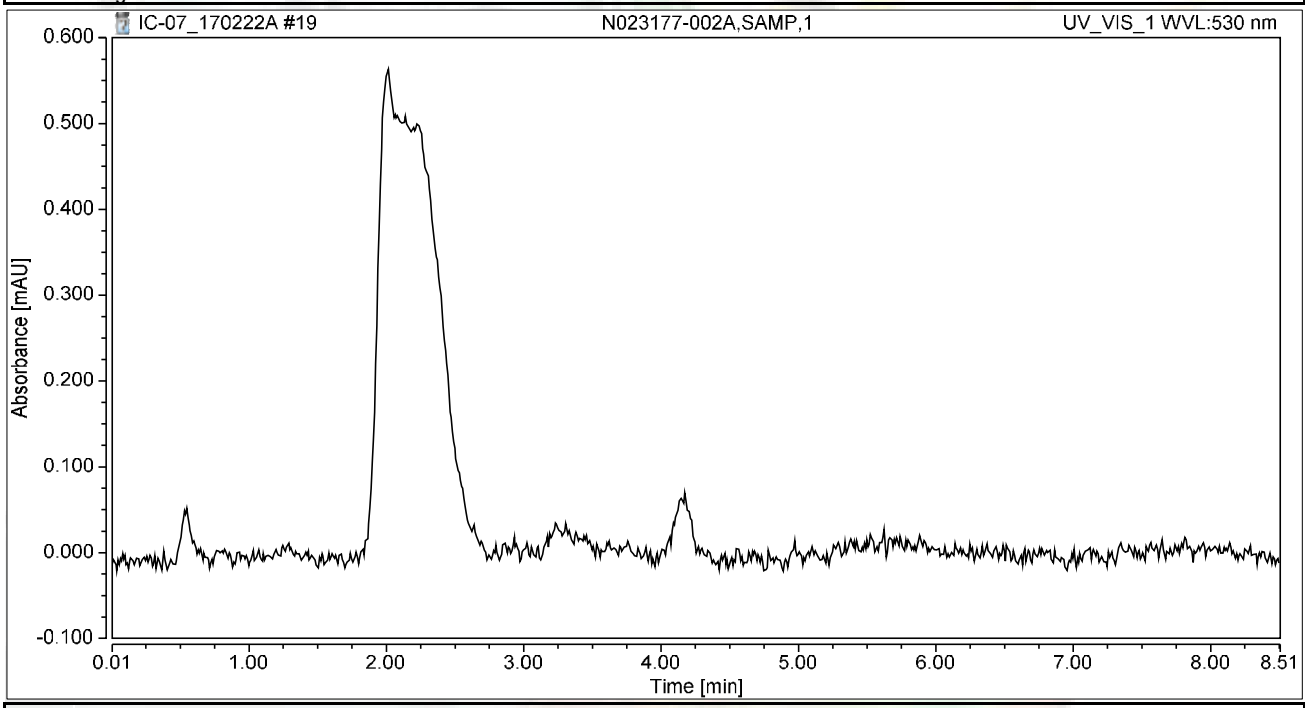
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.283	1.868	100.00	100.00	1.0681
Total:			**0.283**	**1.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

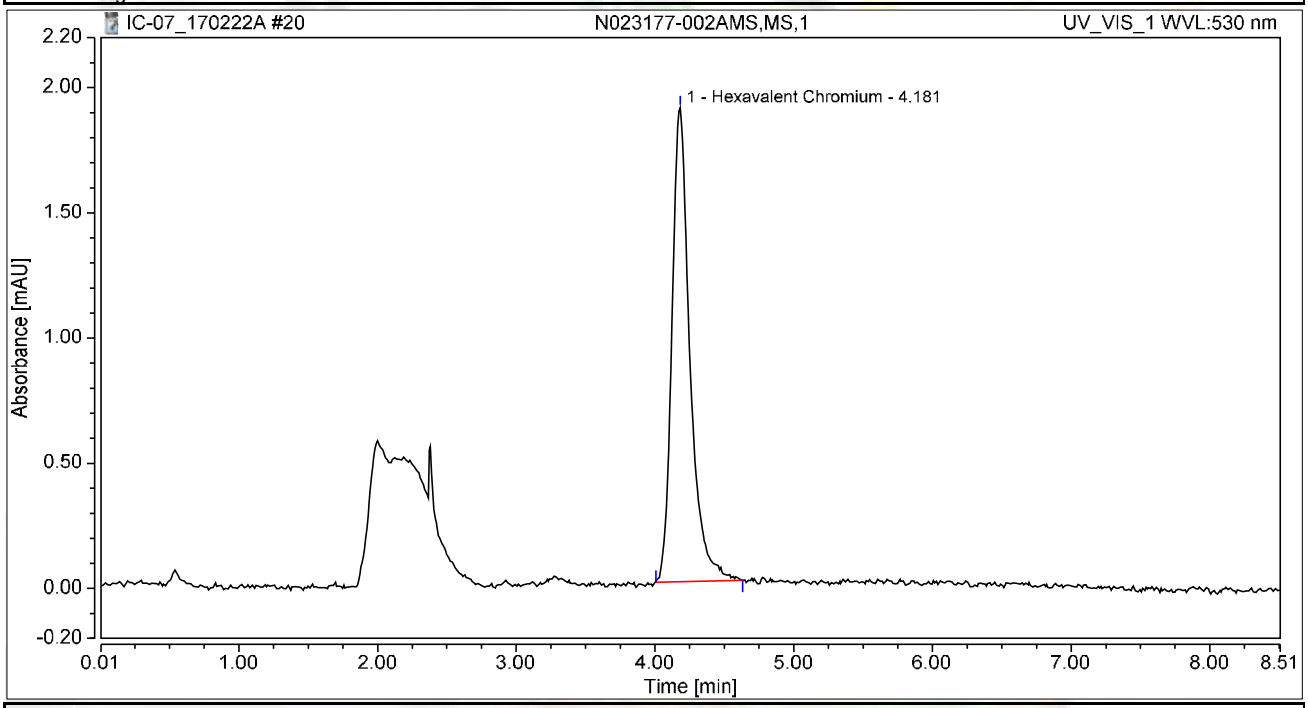
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

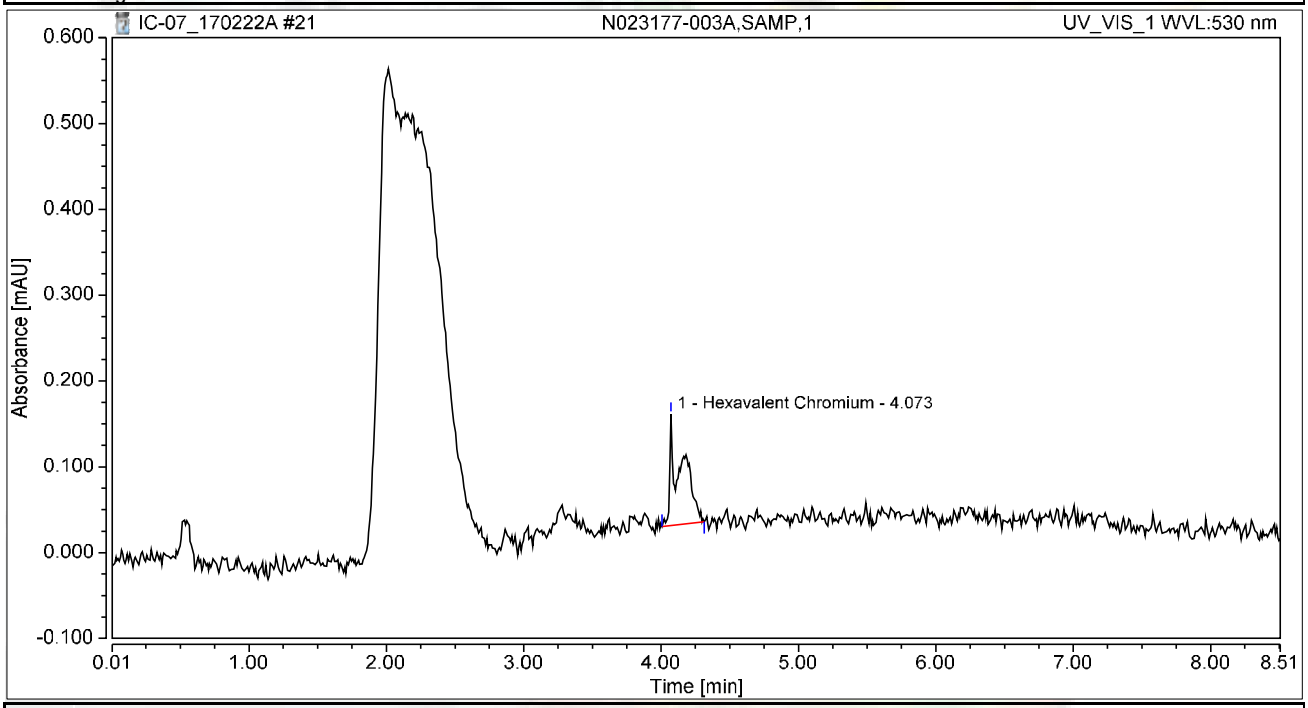
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.285	1.893	100.00	100.00	1.0751
Total:			**0.285**	**1.893**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

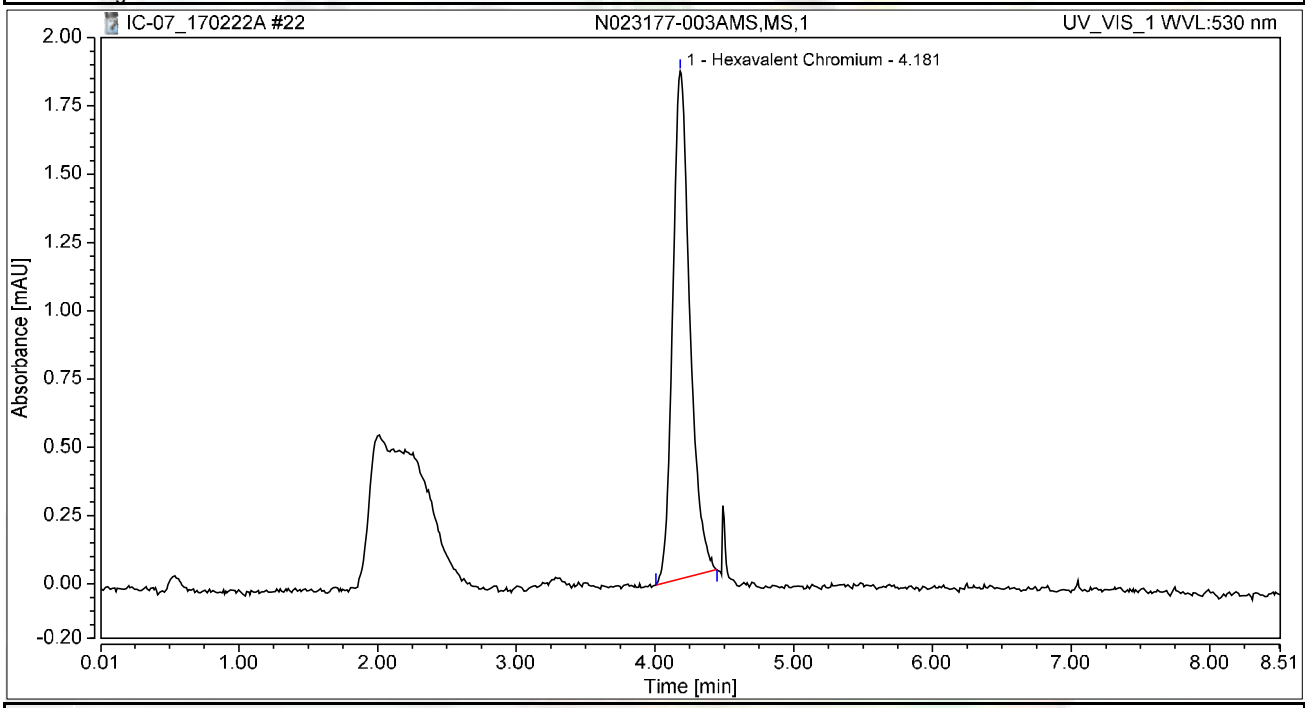
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.013	0.130	100.00	100.00	0.0490
Total:			**0.013**	**0.130**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

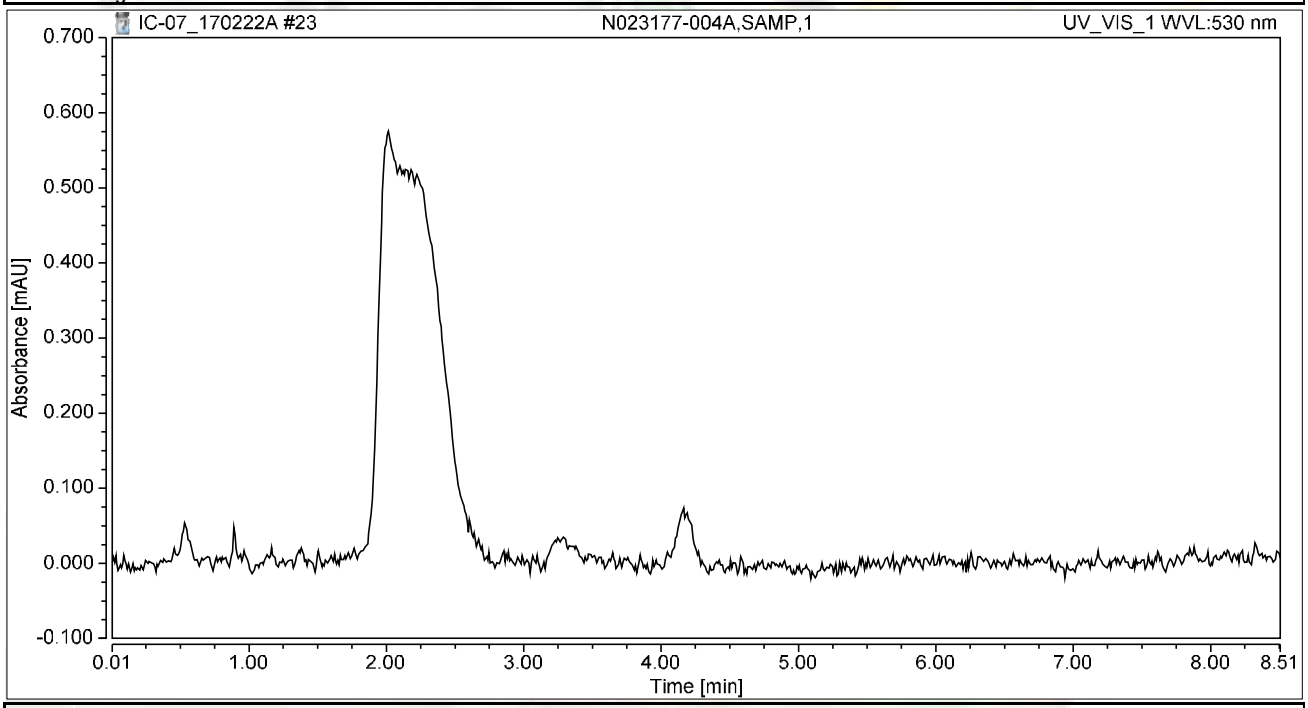
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.269	1.860	100.00	100.00	1.0127
Total:			**0.269**	**1.860**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

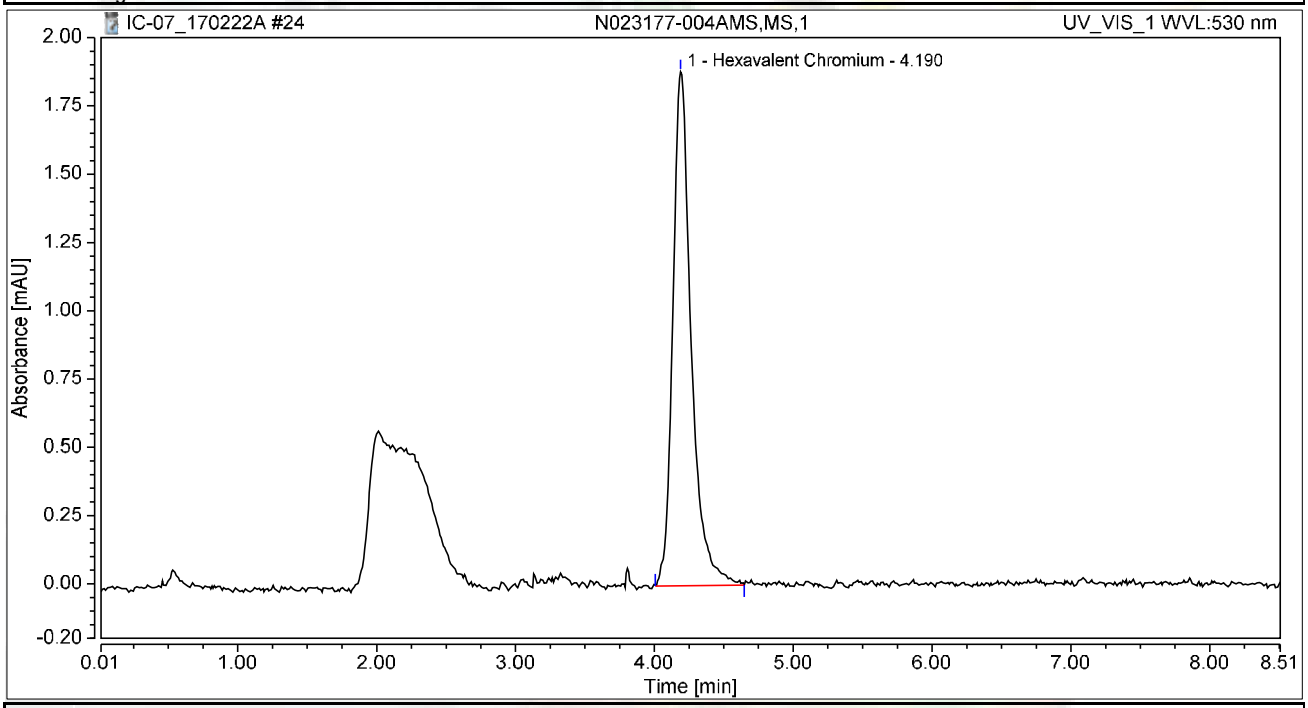
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

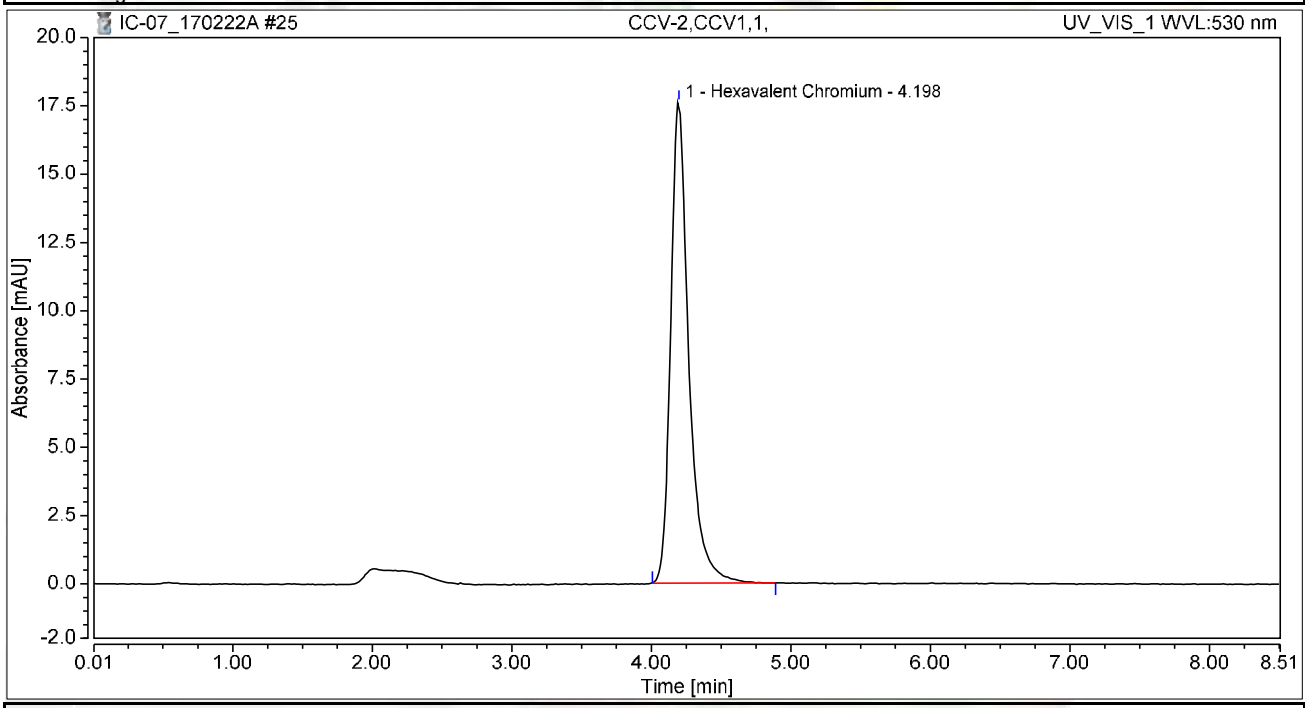
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.288	1.882	100.00	100.00	1.0872
Total:			**0.288**	**1.882**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

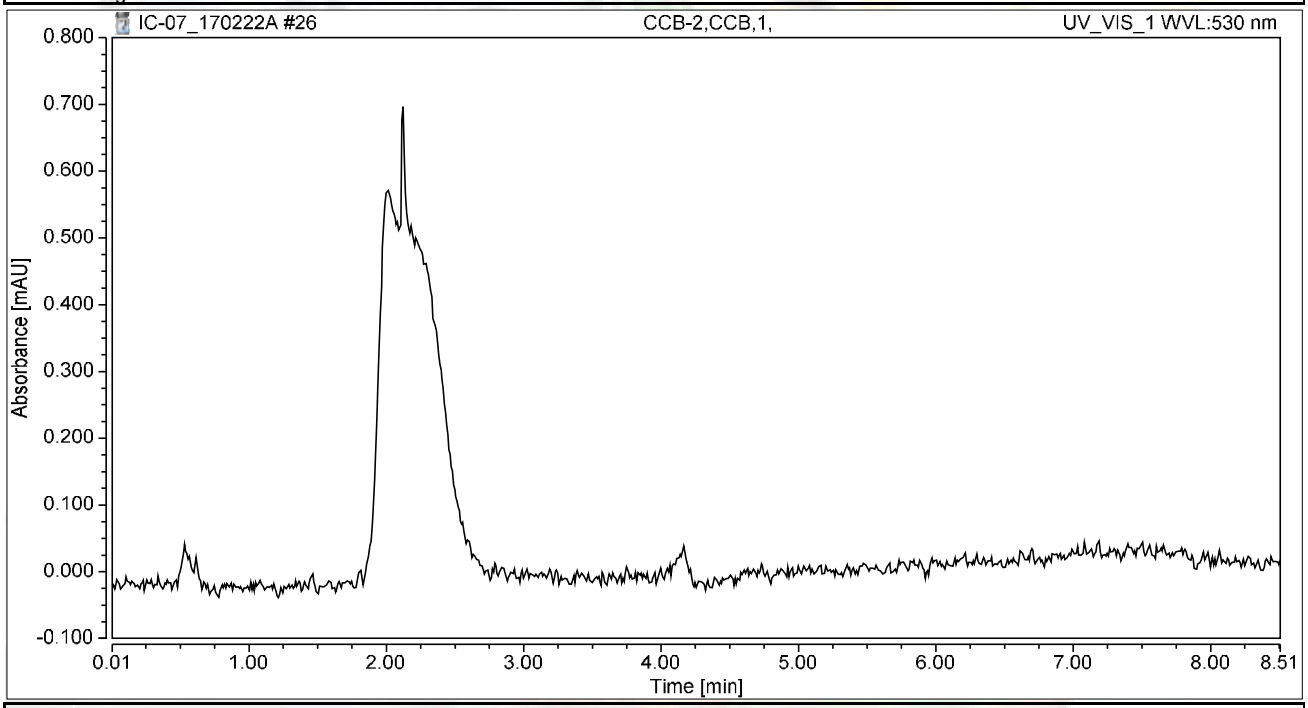
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.656	17.609	100.00	100.00	10.0116
Total:			**2.656**	**17.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

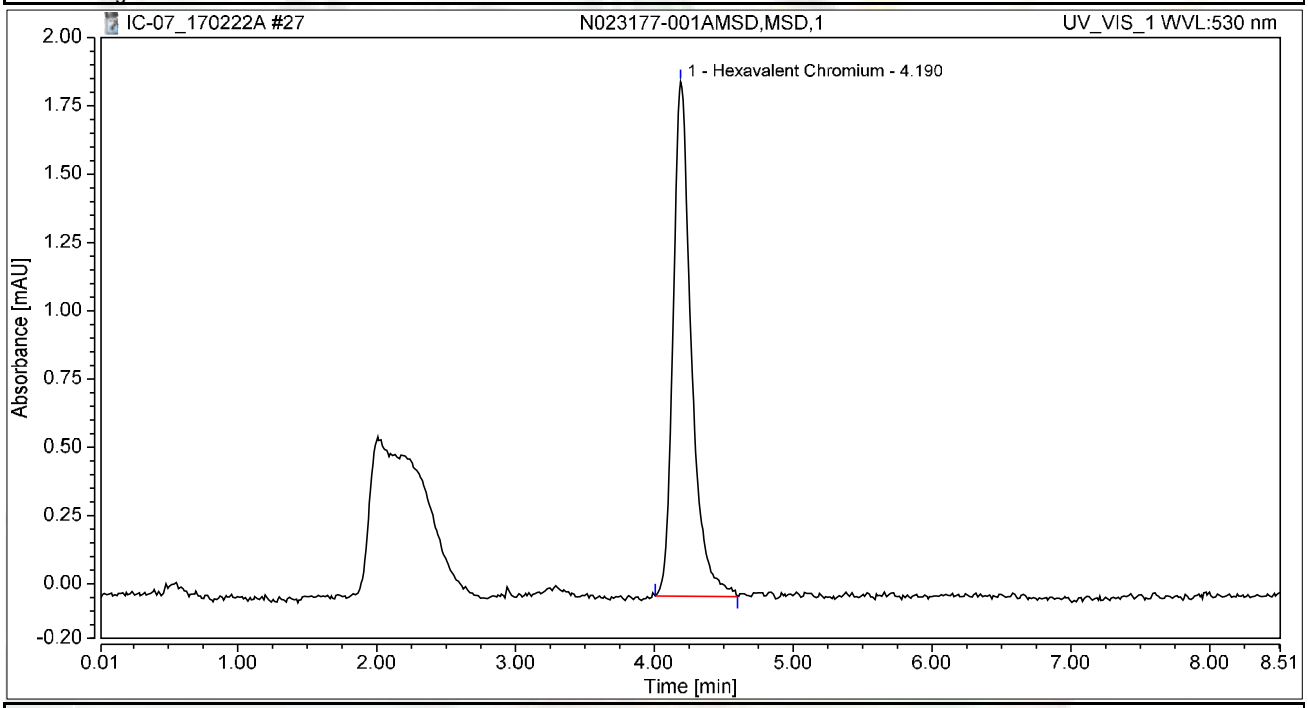
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-001AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

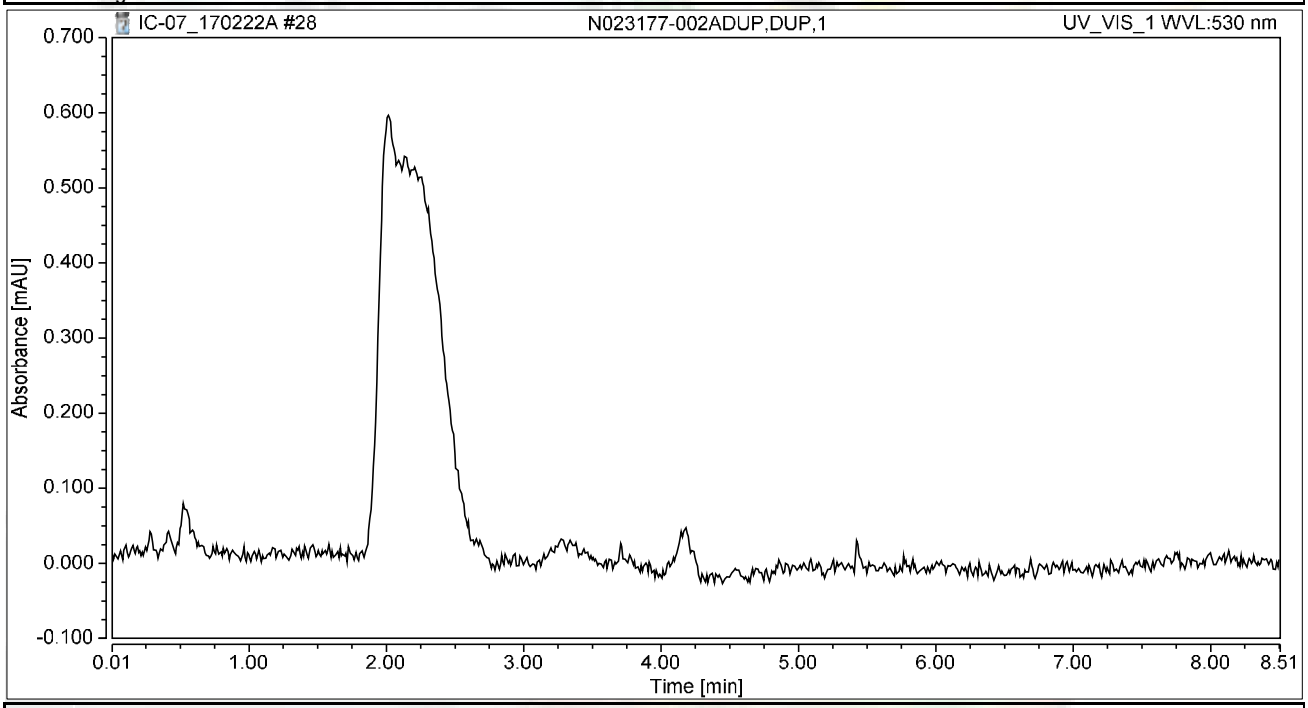
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.286	1.883	100.00	100.00	1.0793
Total:			**0.286**	**1.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-002ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

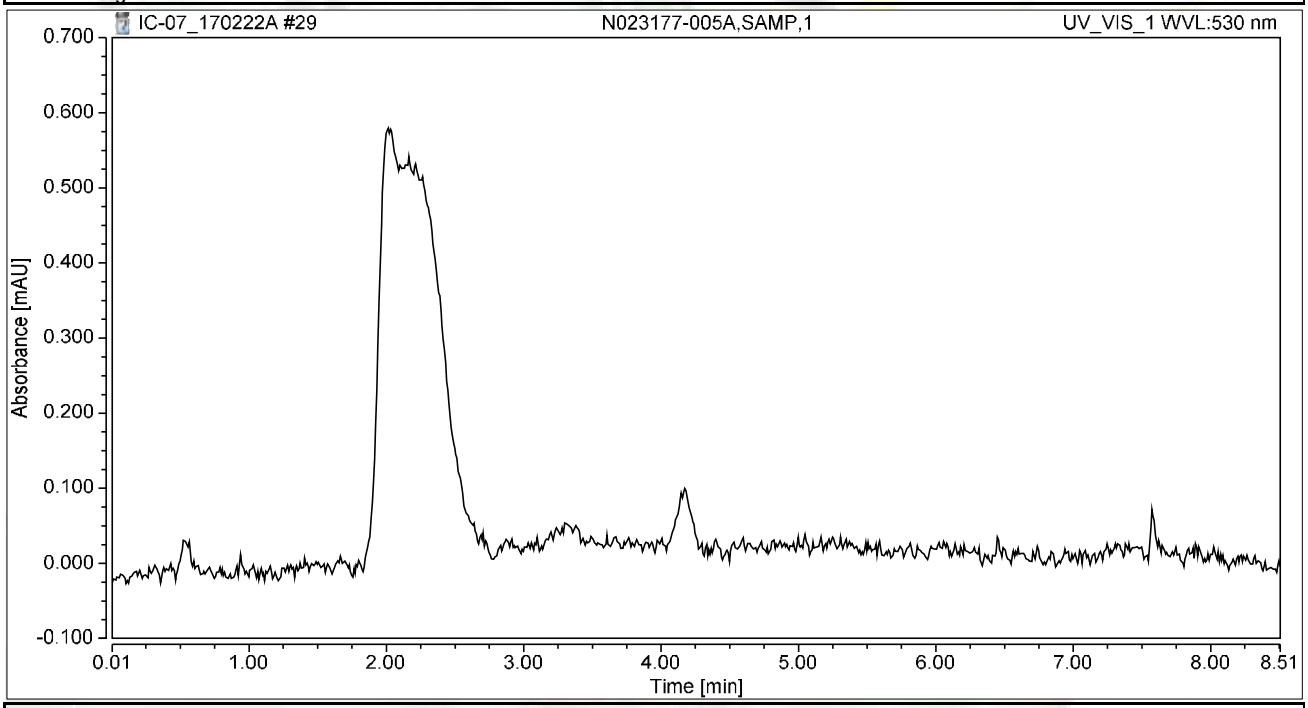
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

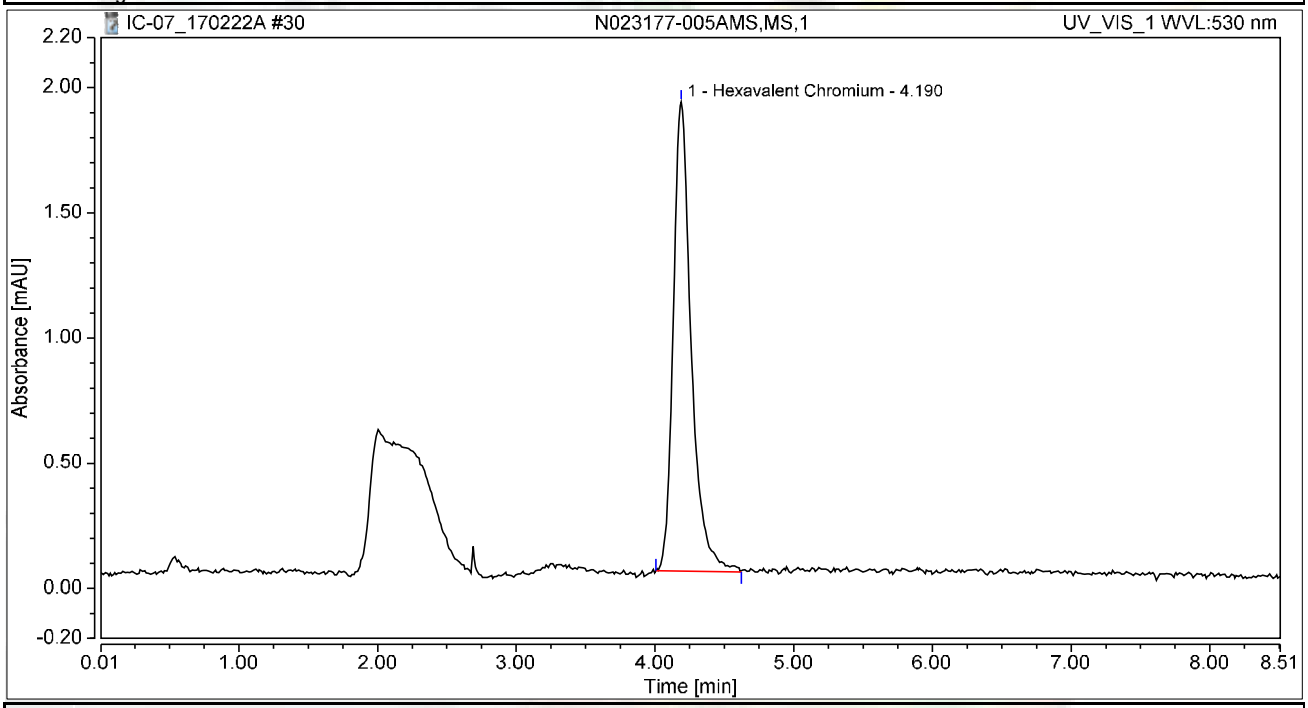
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

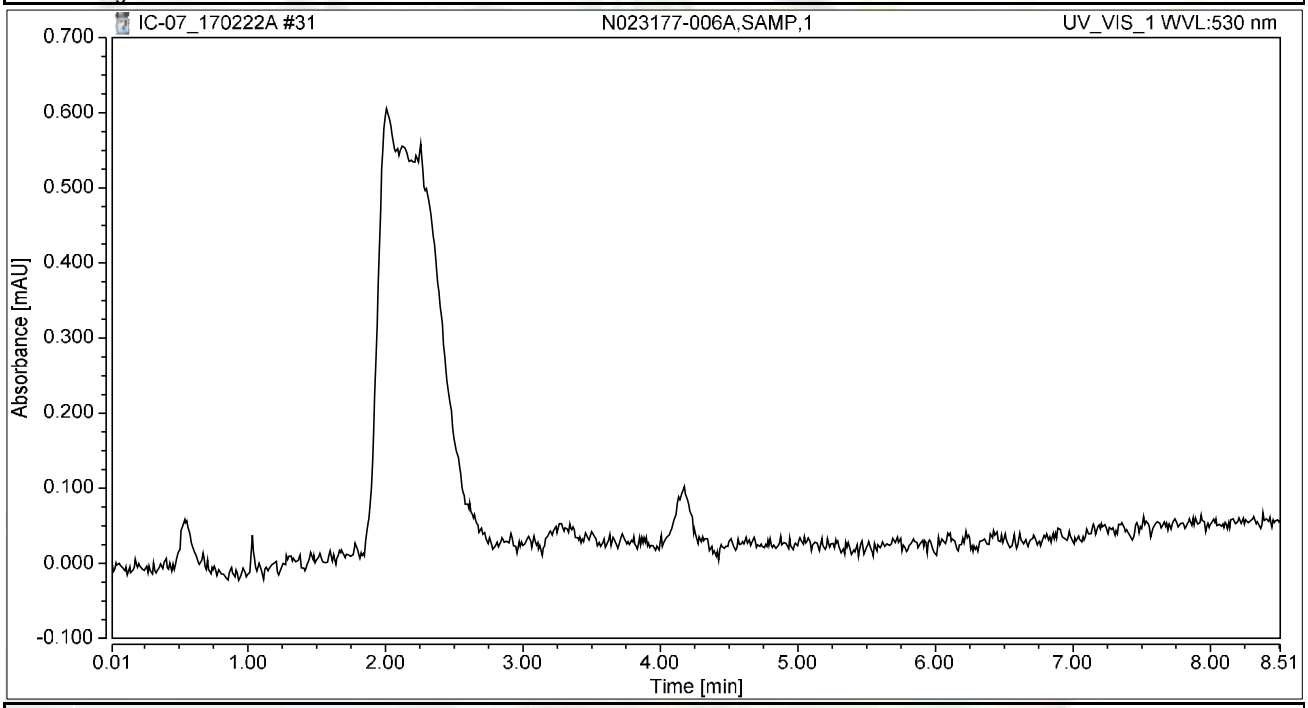
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.282	1.873	100.00	100.00	1.0620
Total:			**0.282**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

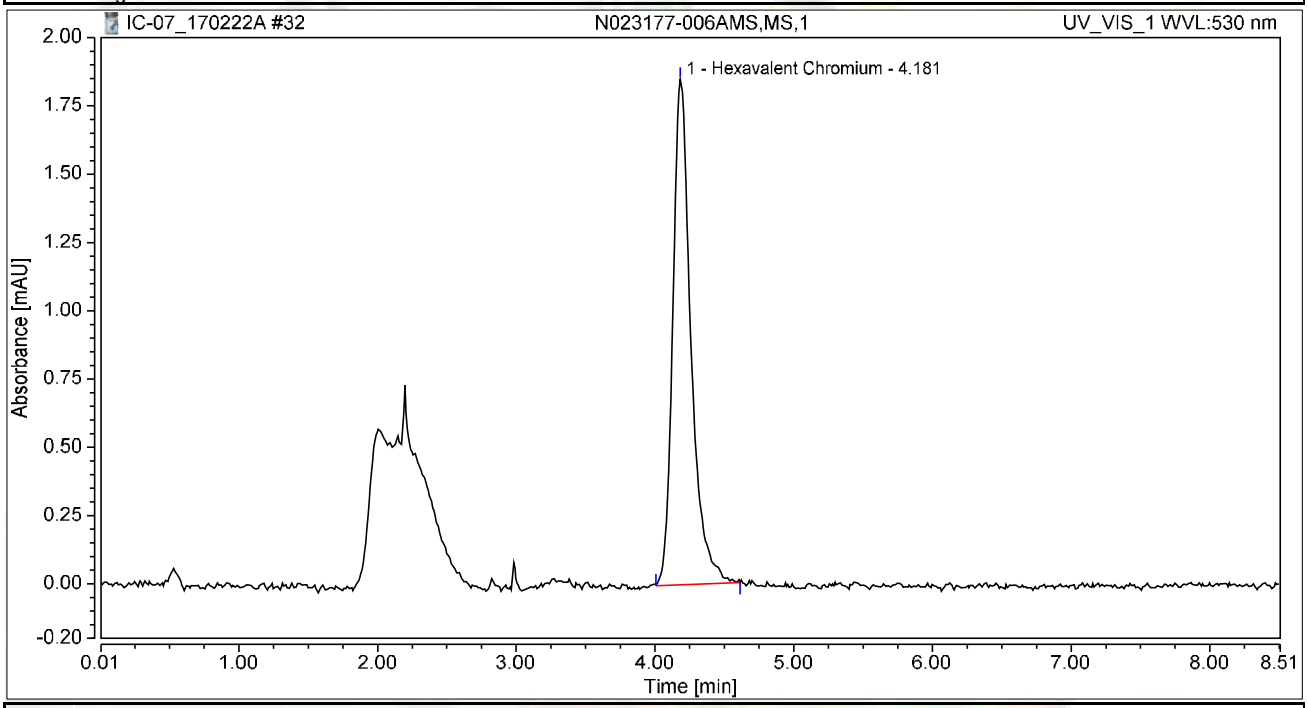
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

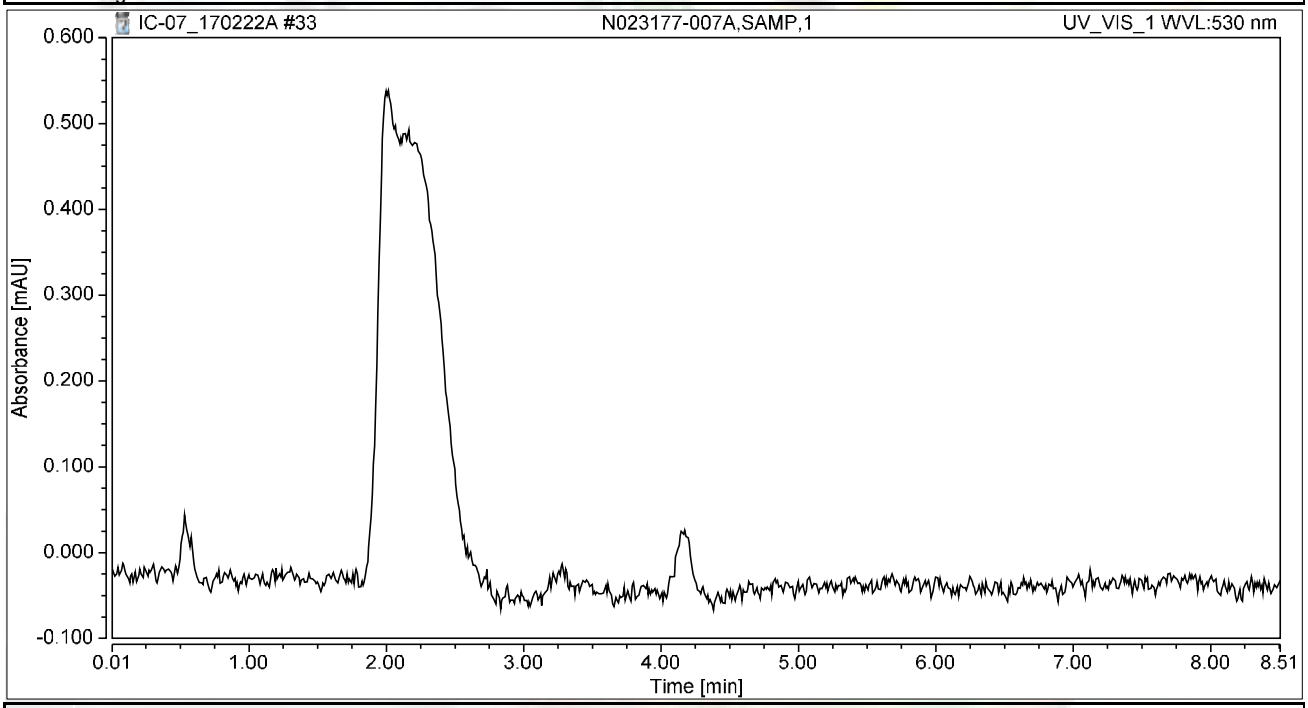
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.281	1.850	100.00	100.00	1.0586
Total:			**0.281**	**1.850**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

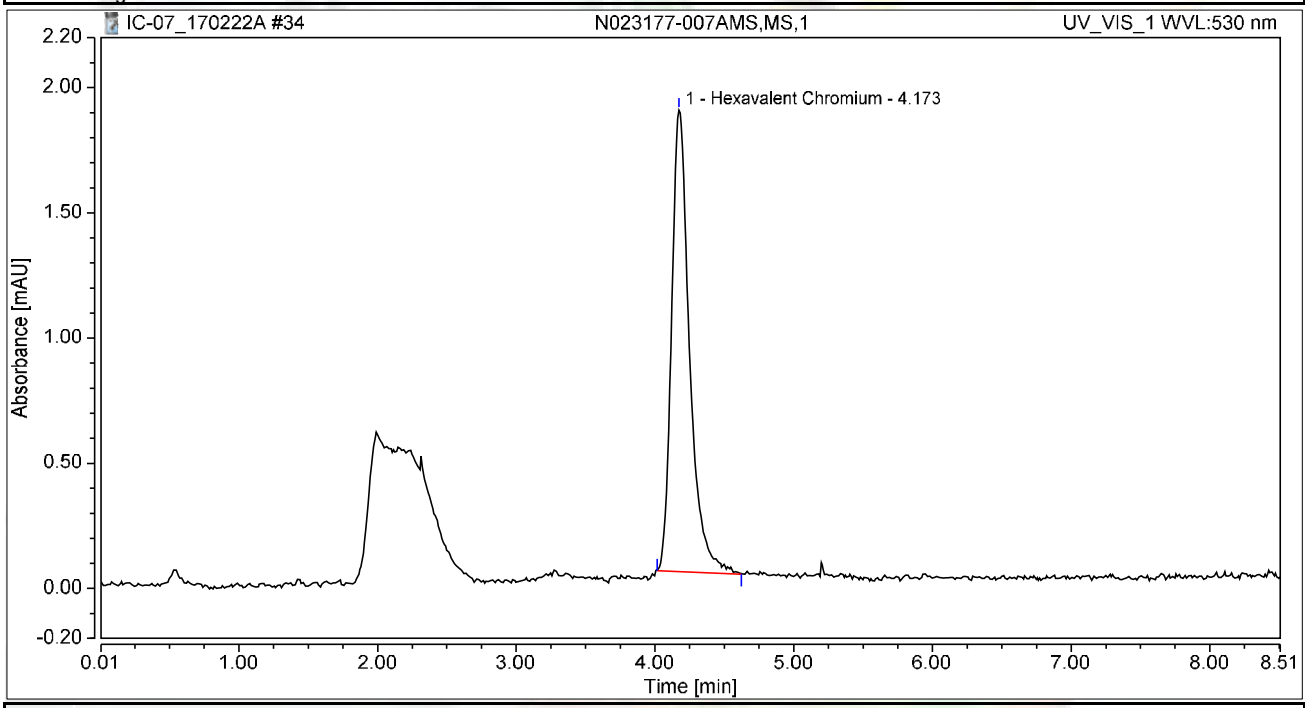
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

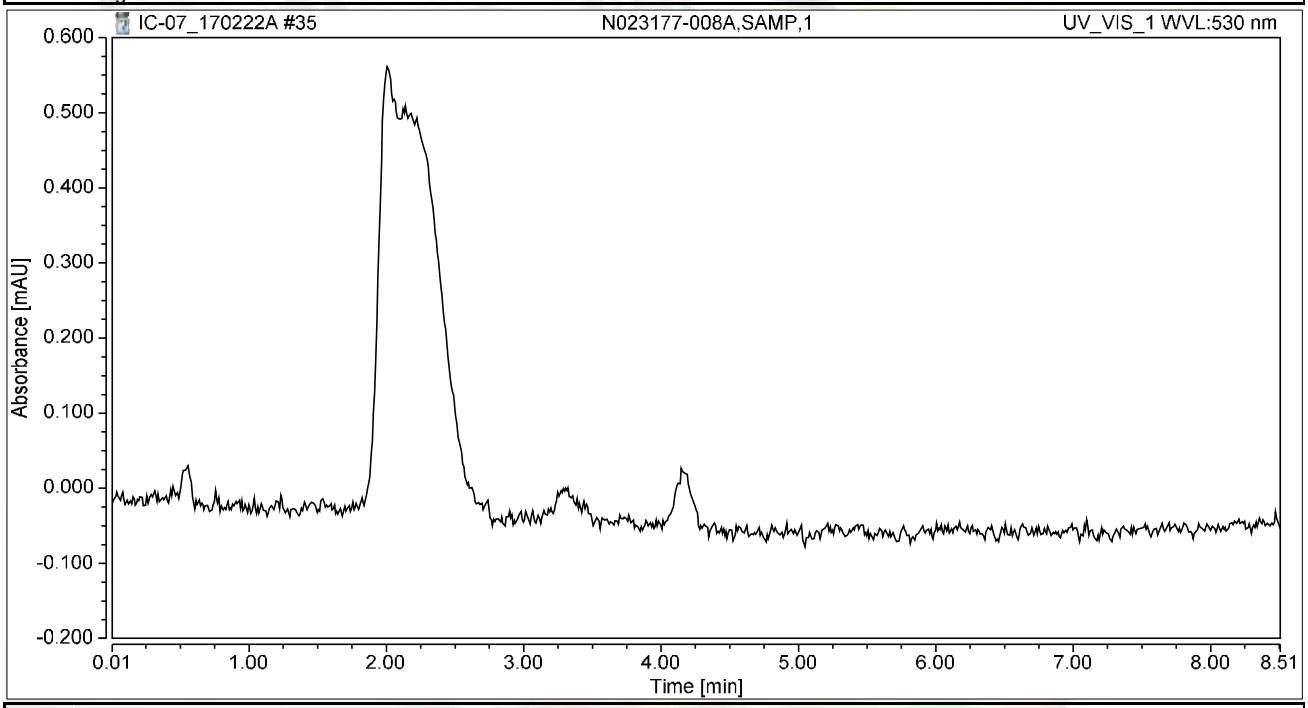
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.278	1.844	100.00	100.00	1.0473
Total:			**0.278**	**1.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

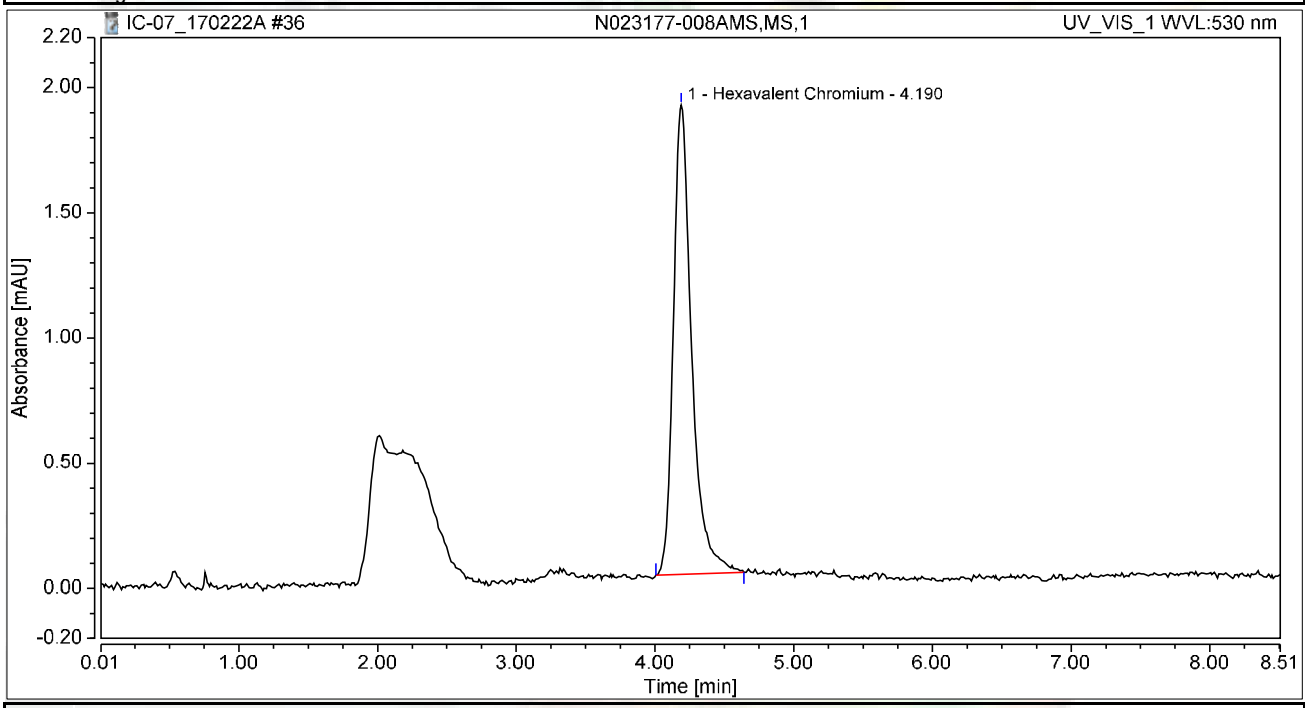
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

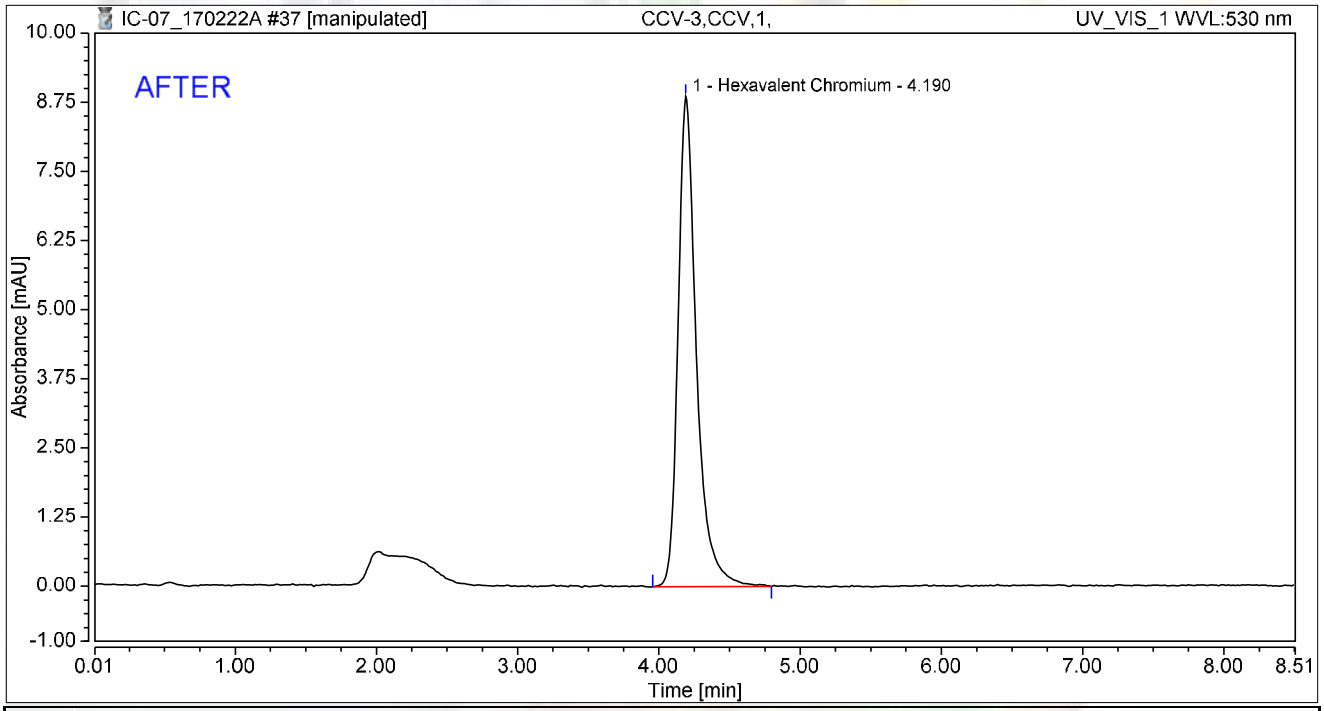
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.875	100.00	100.00	1.0808
Total:			**0.287**	**1.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.338	8.863	100.00	100.00	5.0451
Total:			**1.338**	**8.863**	**100.00**	**100.00**	

rba 2/27/2017

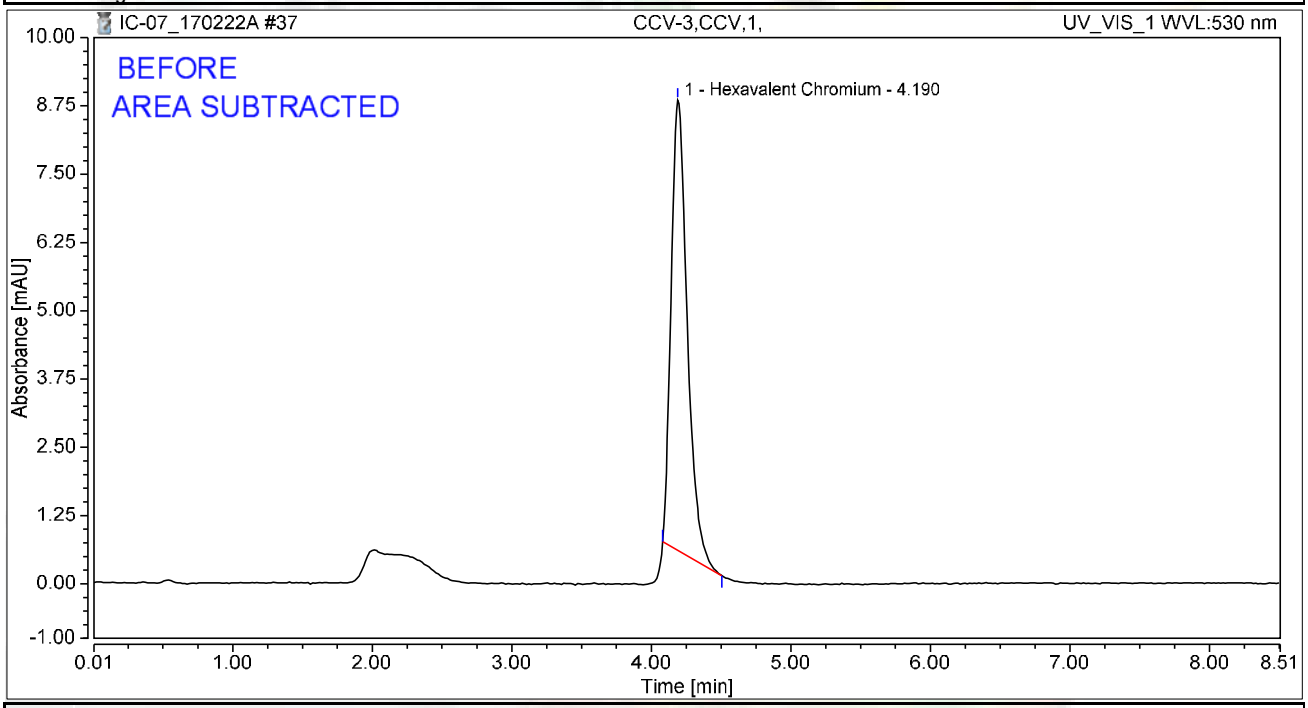
Reviewed
by: Nancy 3/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.106	8.240	100.00	100.00	4.1711
Total:			**1.106**	**8.240**	**100.00**	**100.00**	

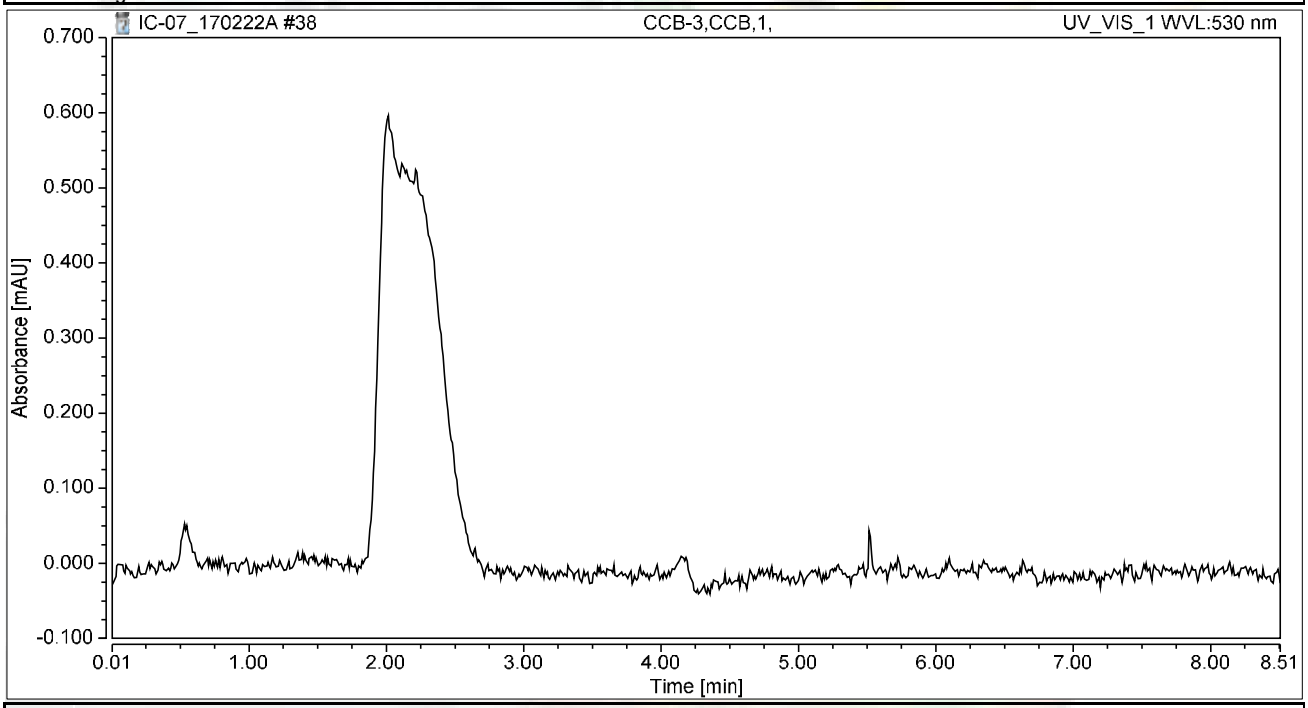
rba 2/27/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

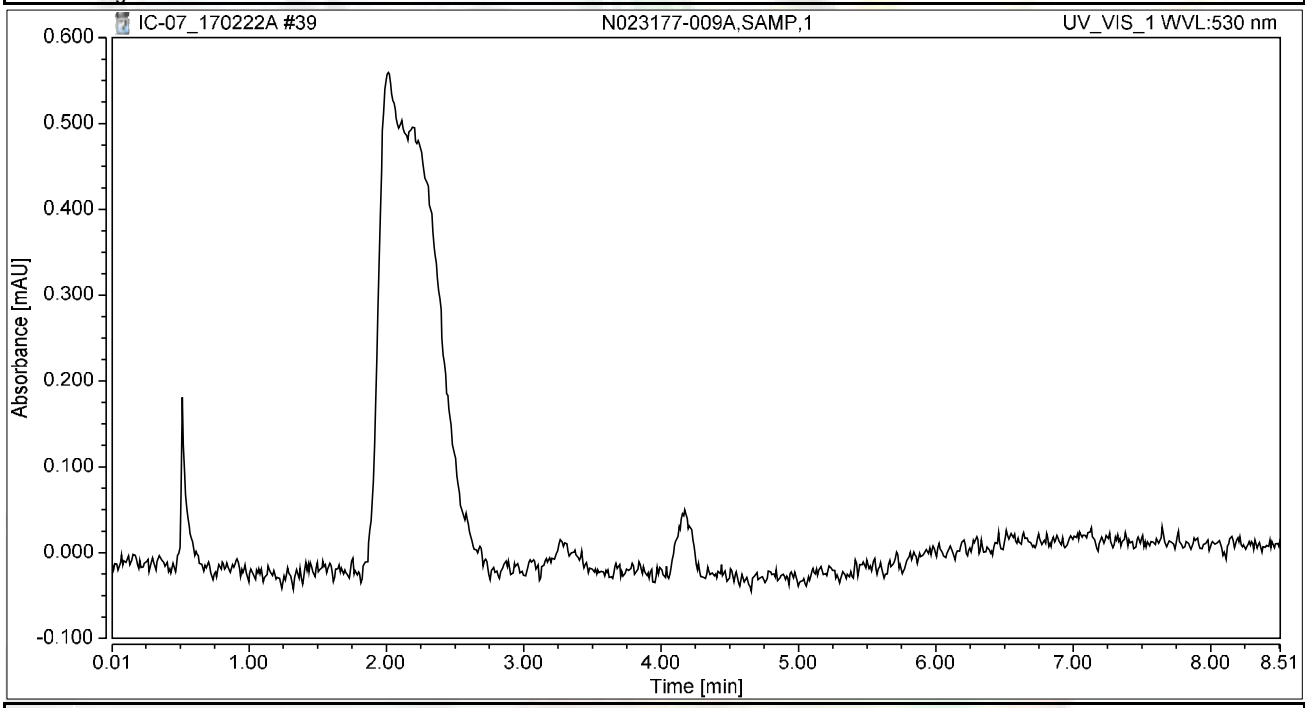
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

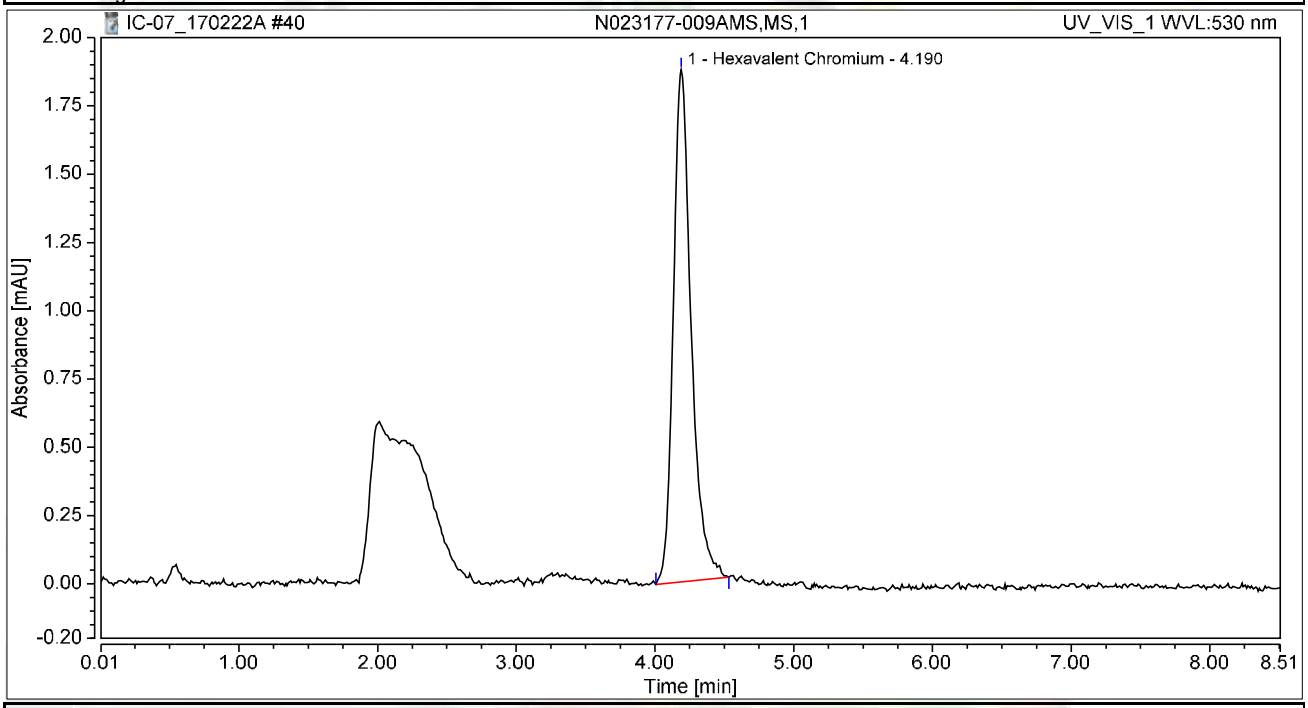
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

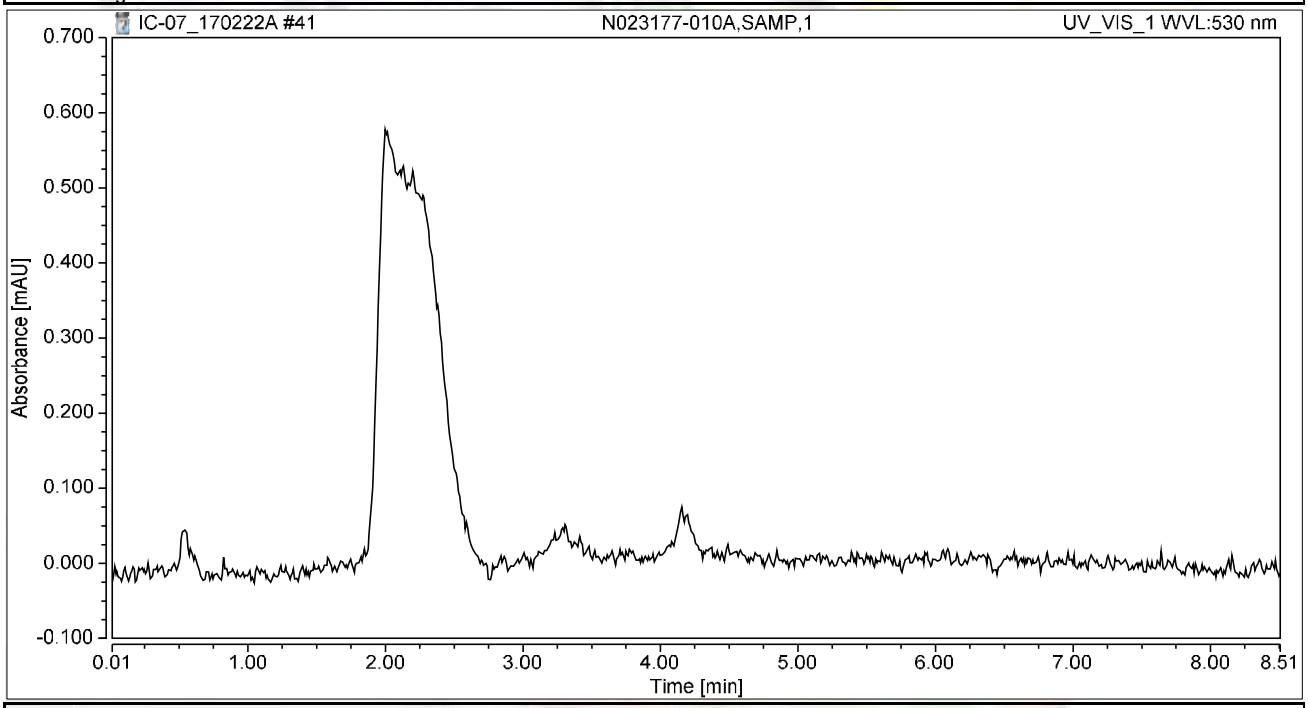
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.280	1.875	100.00	100.00	1.0568
Total:			**0.280**	**1.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-010A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

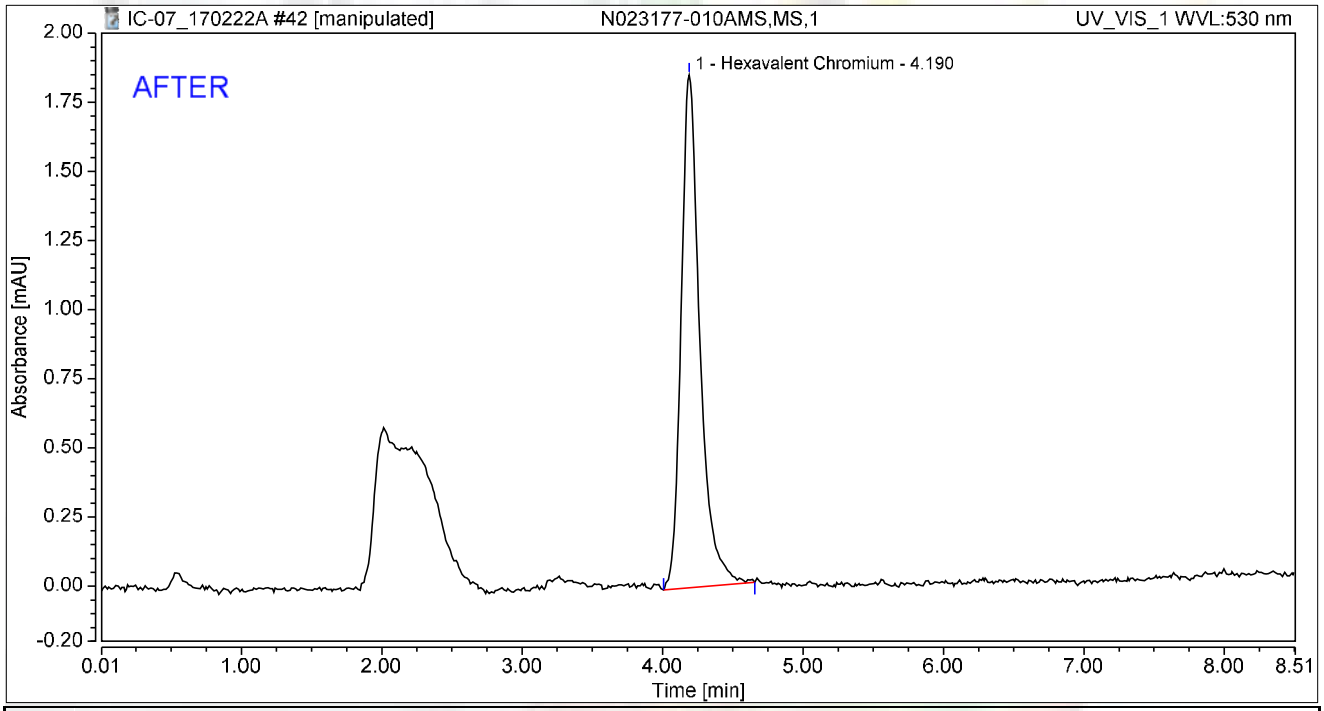
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.855	100.00	100.00	1.0828
Total:			**0.287**	**1.855**	**100.00**	**100.00**	

rba 2/27/2017

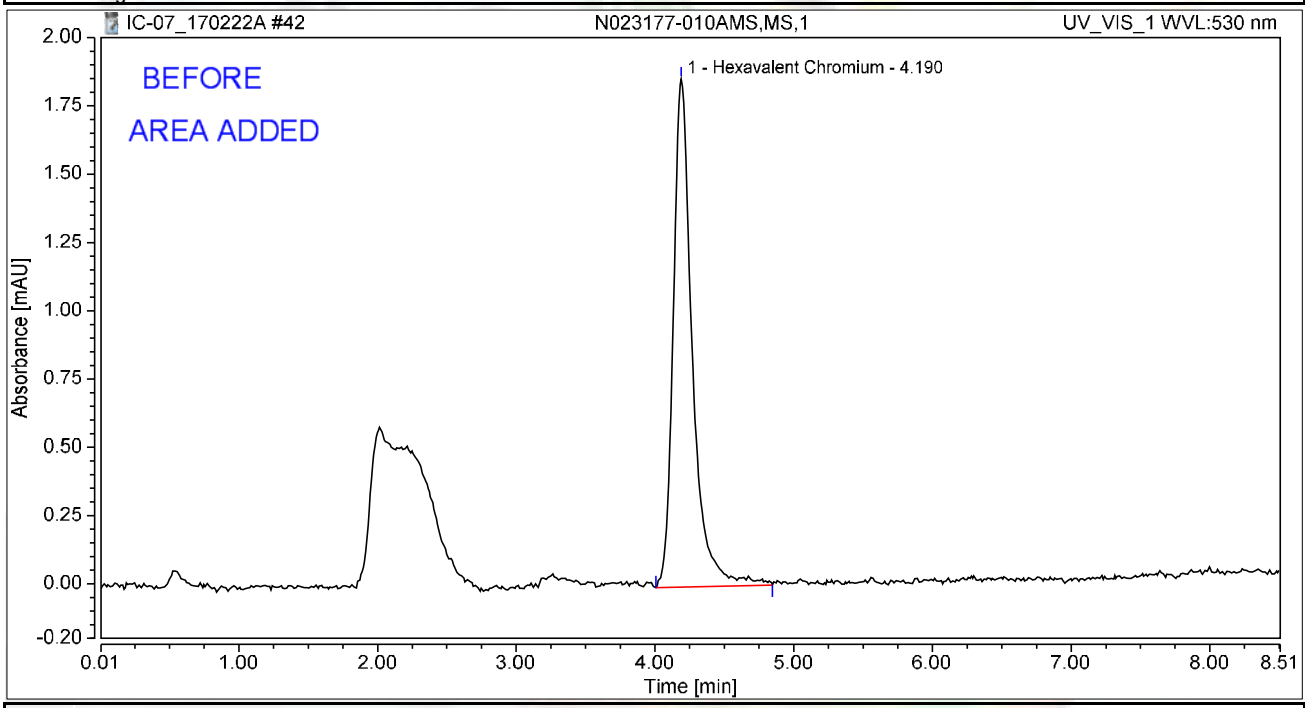
Reviewed by: Nancy 3/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023177-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.297	1.861	100.00	100.00	1.1216
Total:			**0.297**	**1.861**	**100.00**	**100.00**	

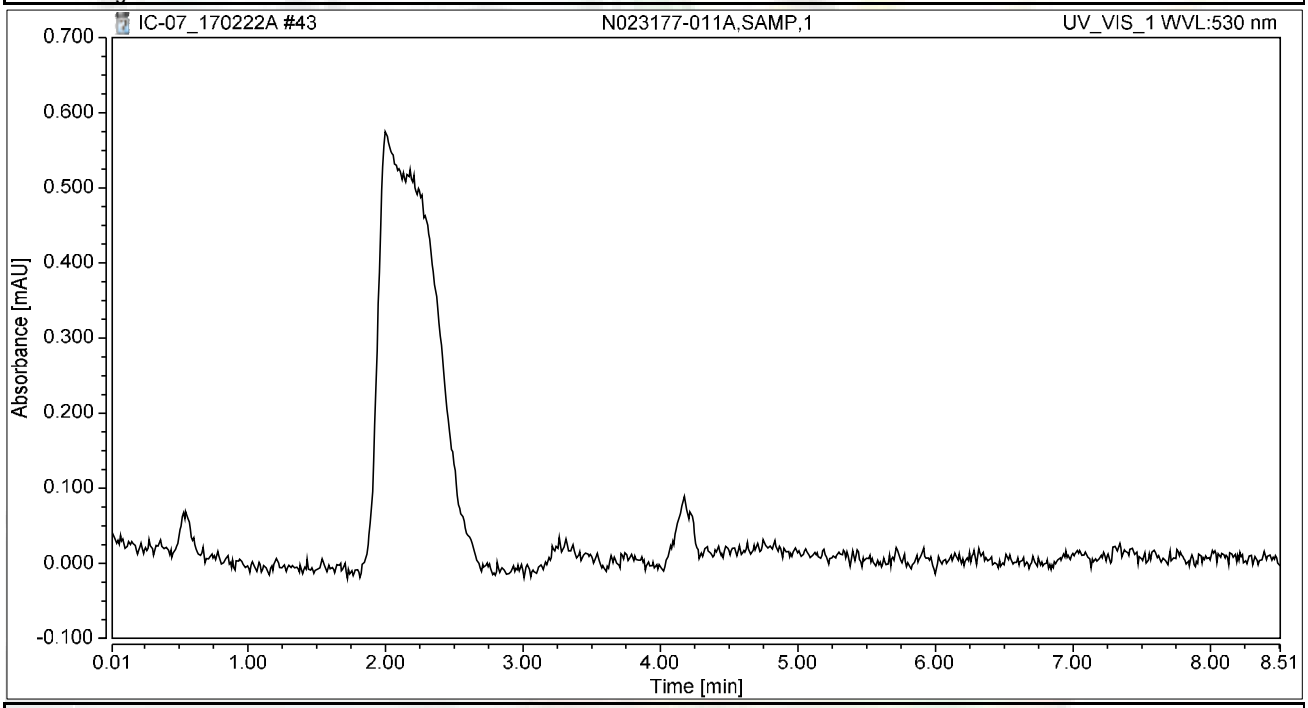
rba 2/27/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023177-011A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

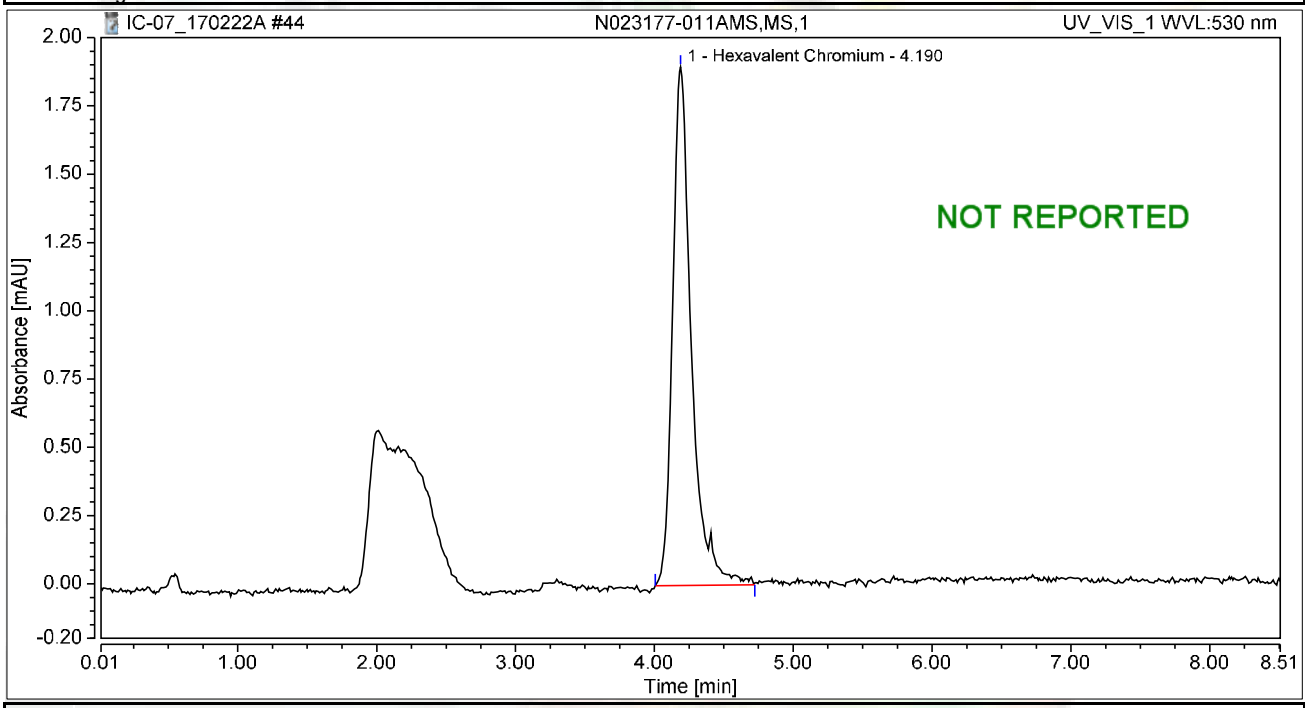
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-011AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

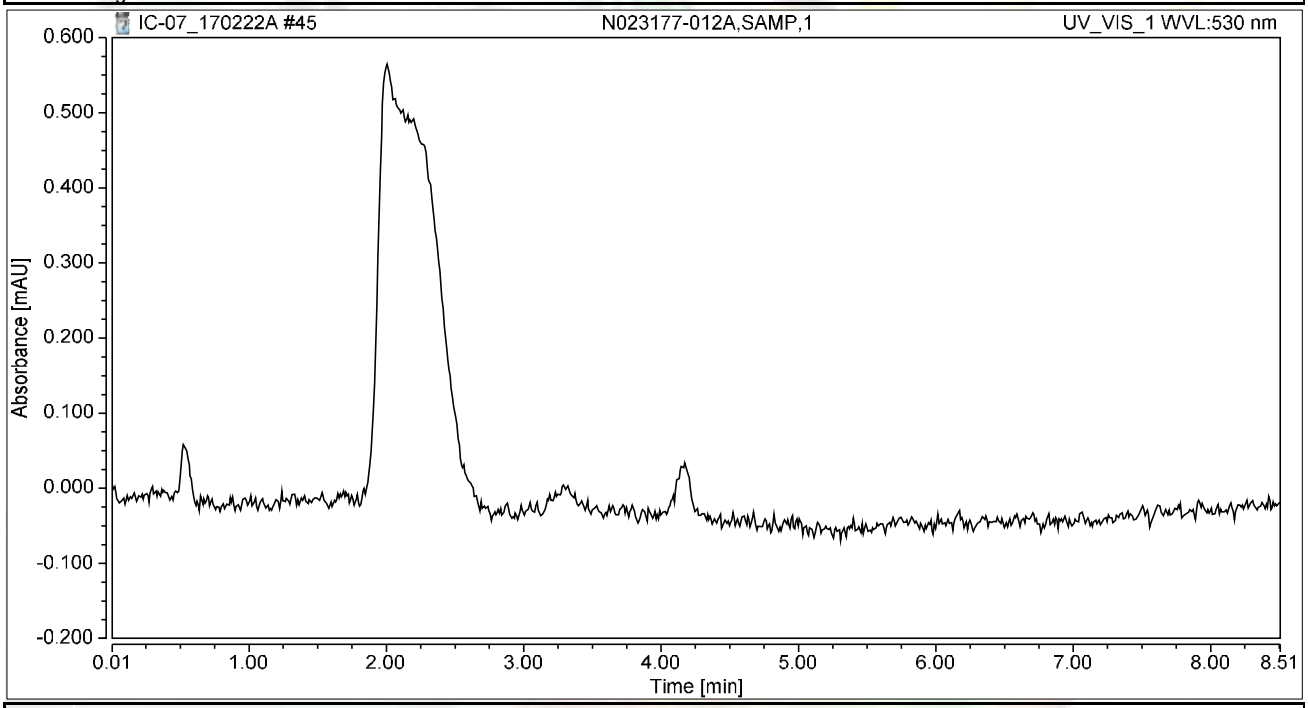
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.297	1.898	100.00	100.00	1.1205
Total:			**0.297**	**1.898**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

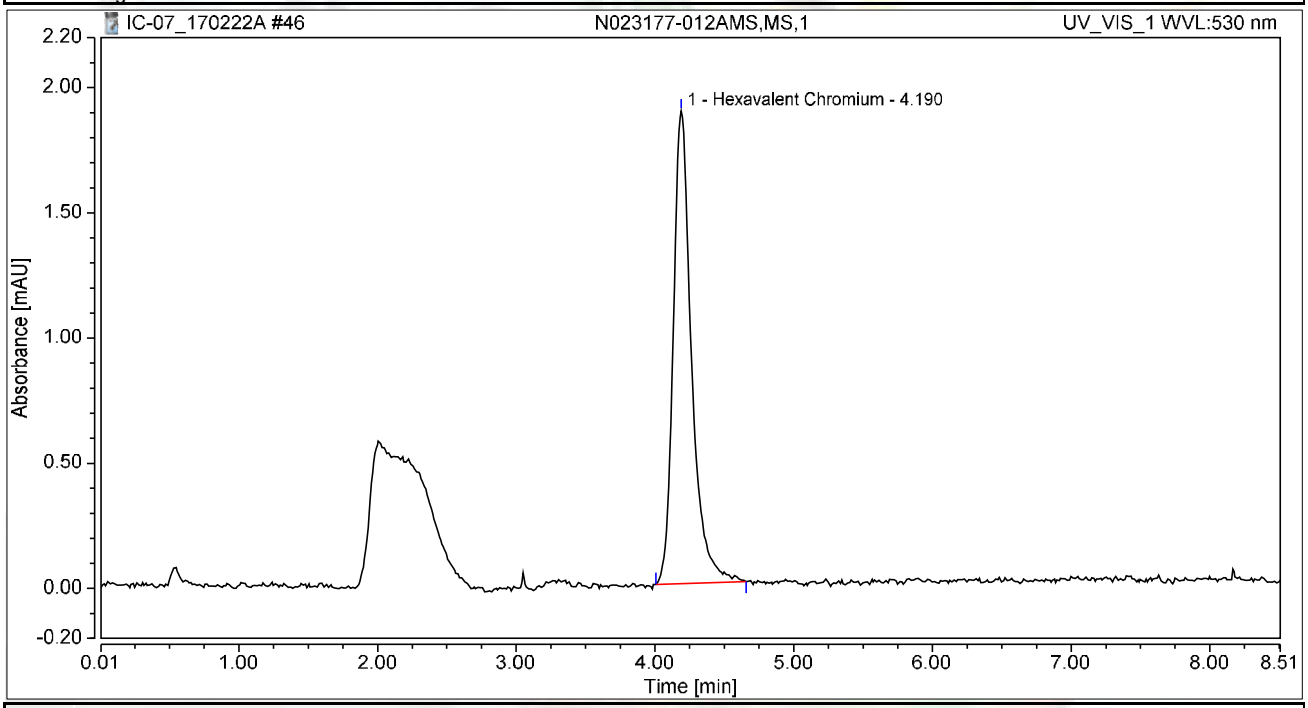
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

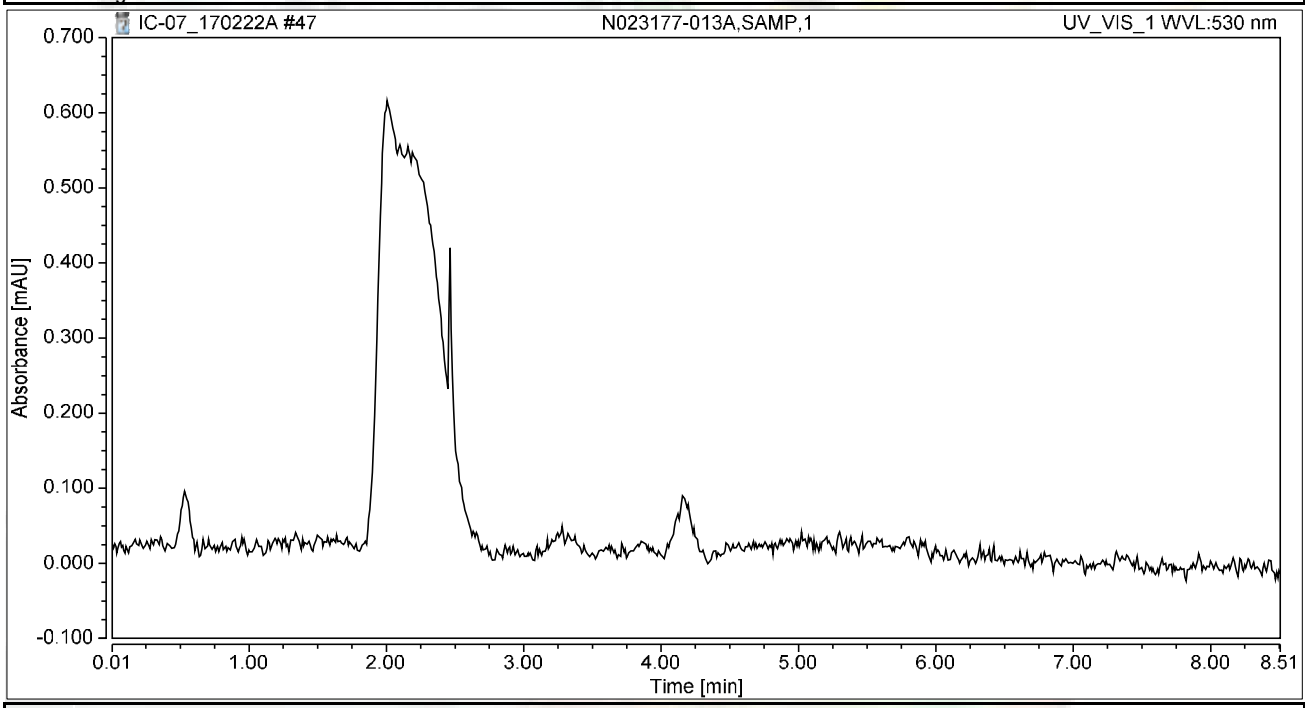
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.288	1.888	100.00	100.00	1.0868
Total:			**0.288**	**1.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-013A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

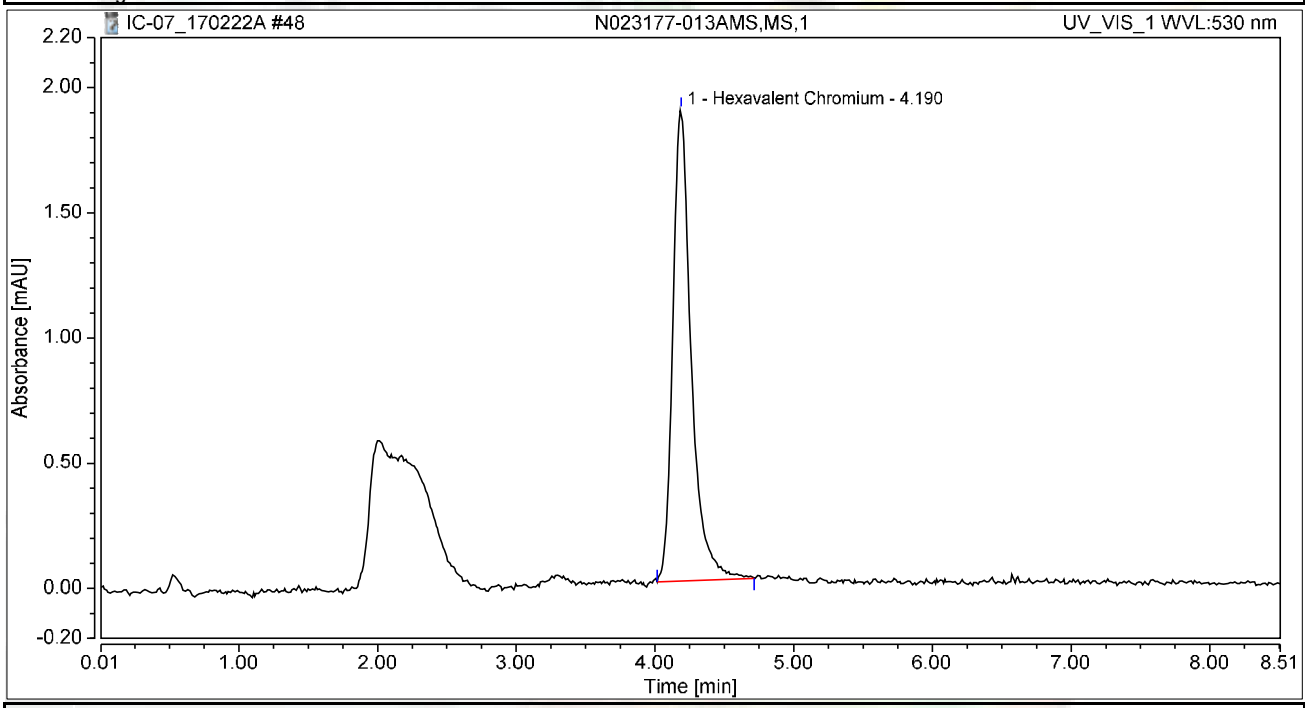
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

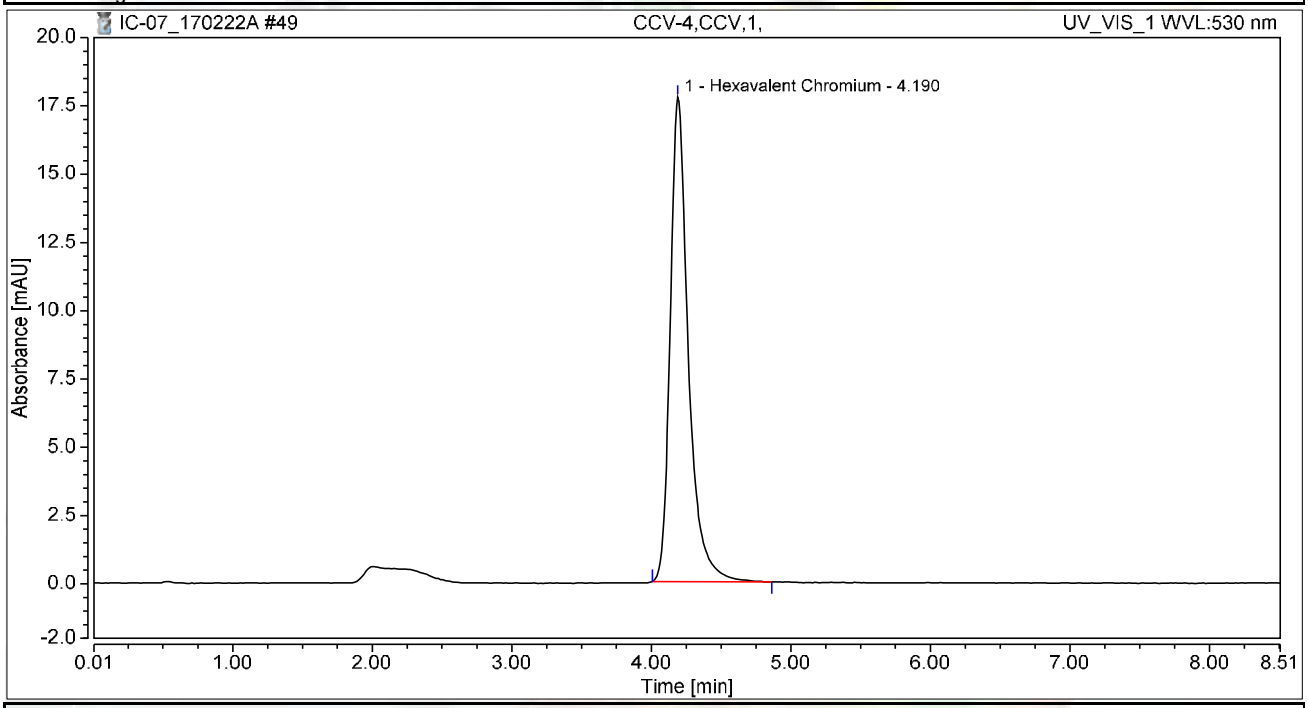
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.290	1.883	100.00	100.00	1.0942
Total:			**0.290**	**1.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

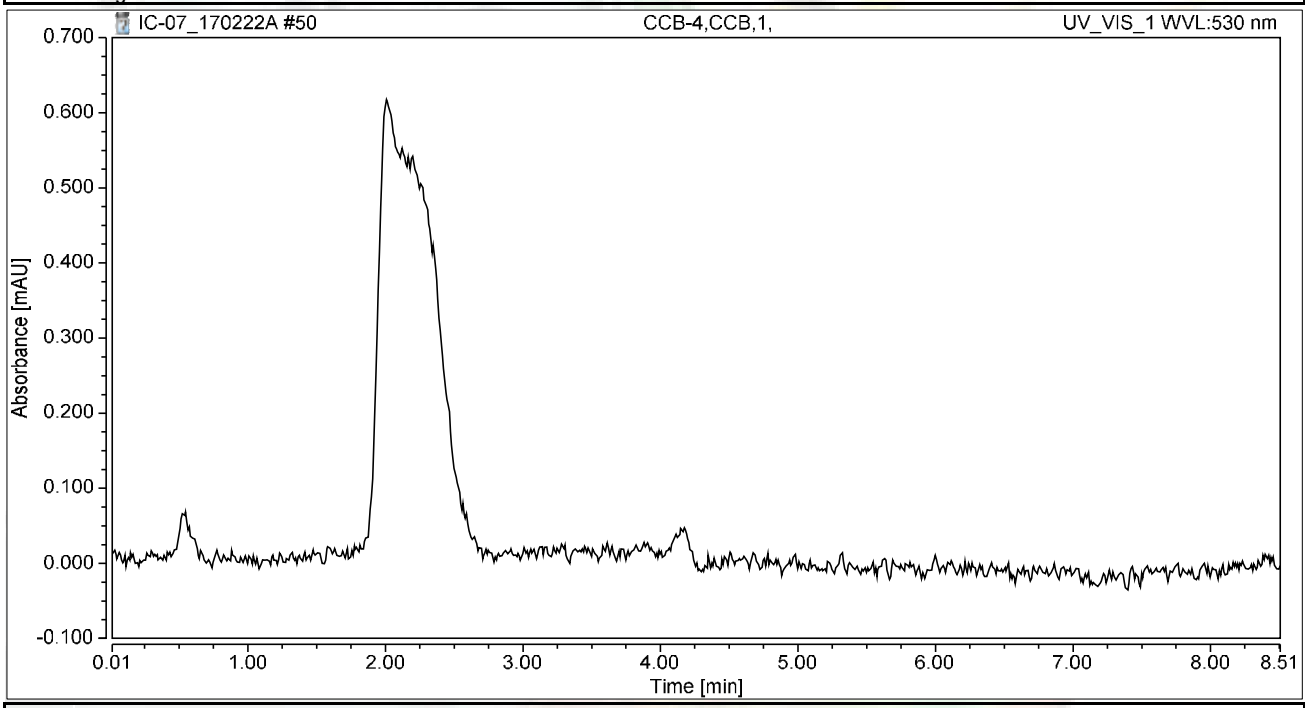
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.672	17.732	100.00	100.00	10.0721
Total:			**2.672**	**17.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

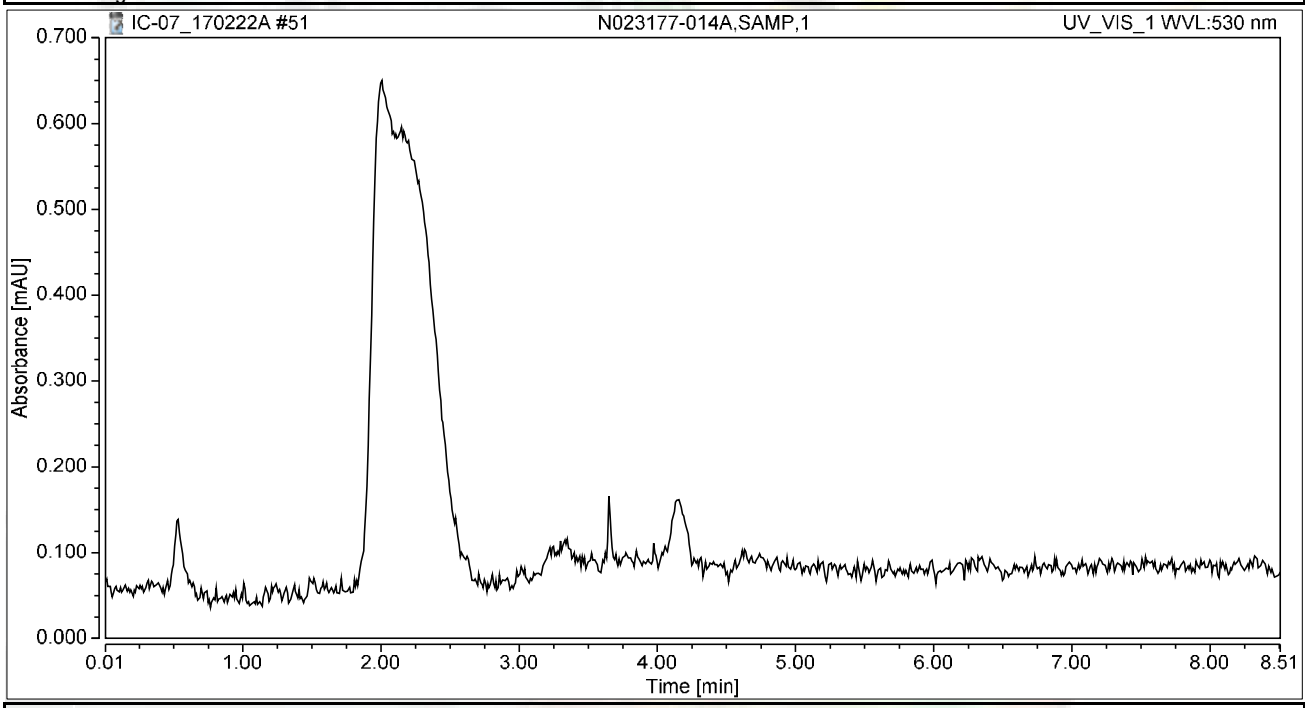
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-014A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

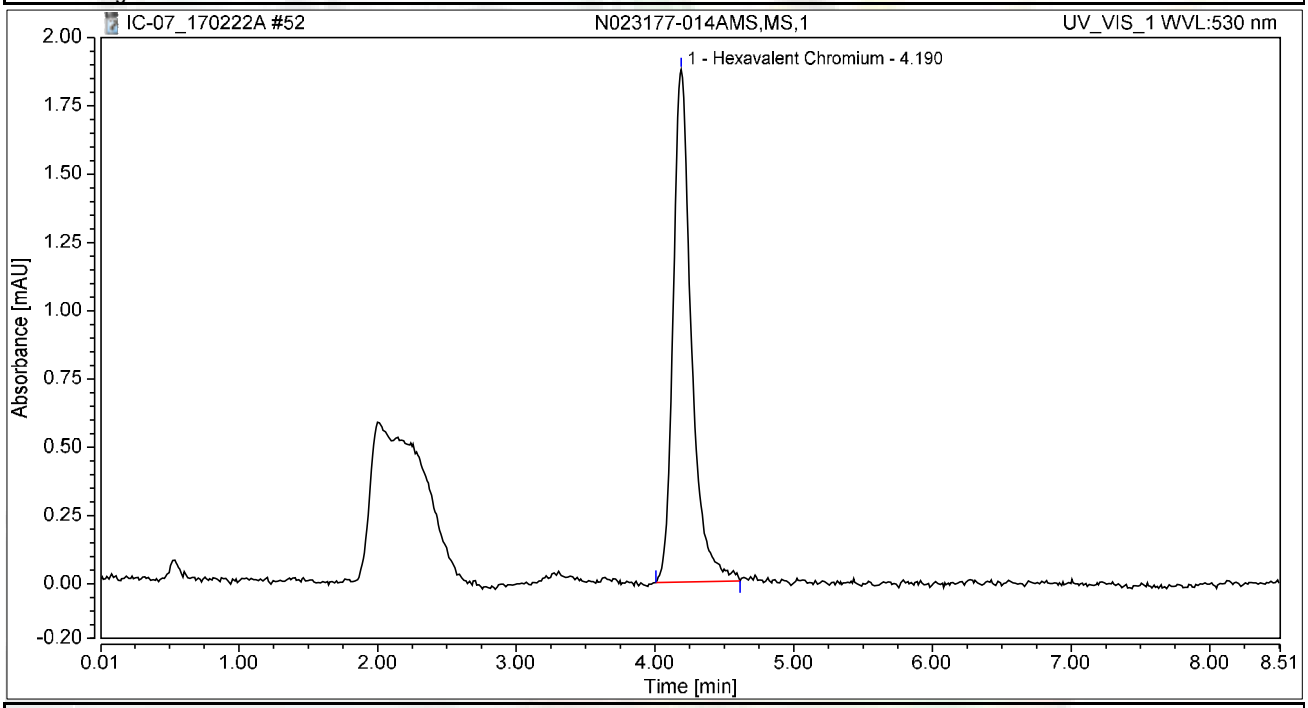
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-014AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

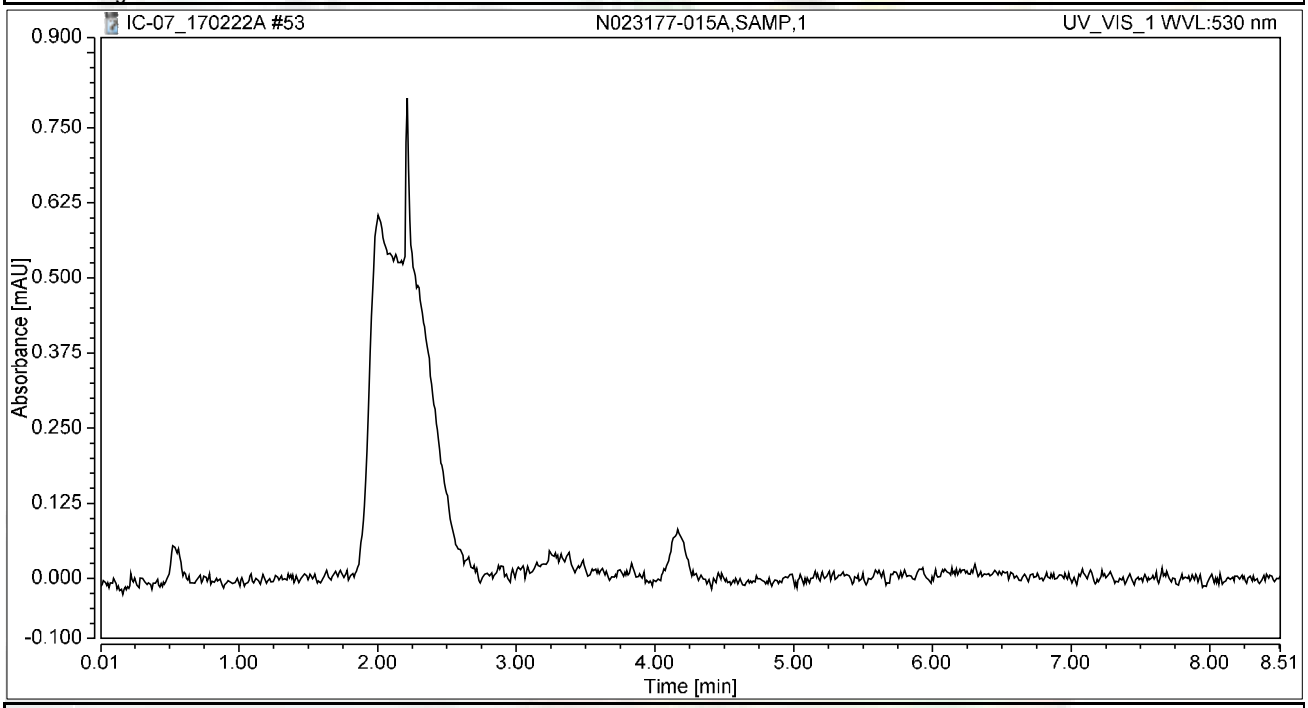
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.876	100.00	100.00	1.0816
Total:			**0.287**	**1.876**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-015A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

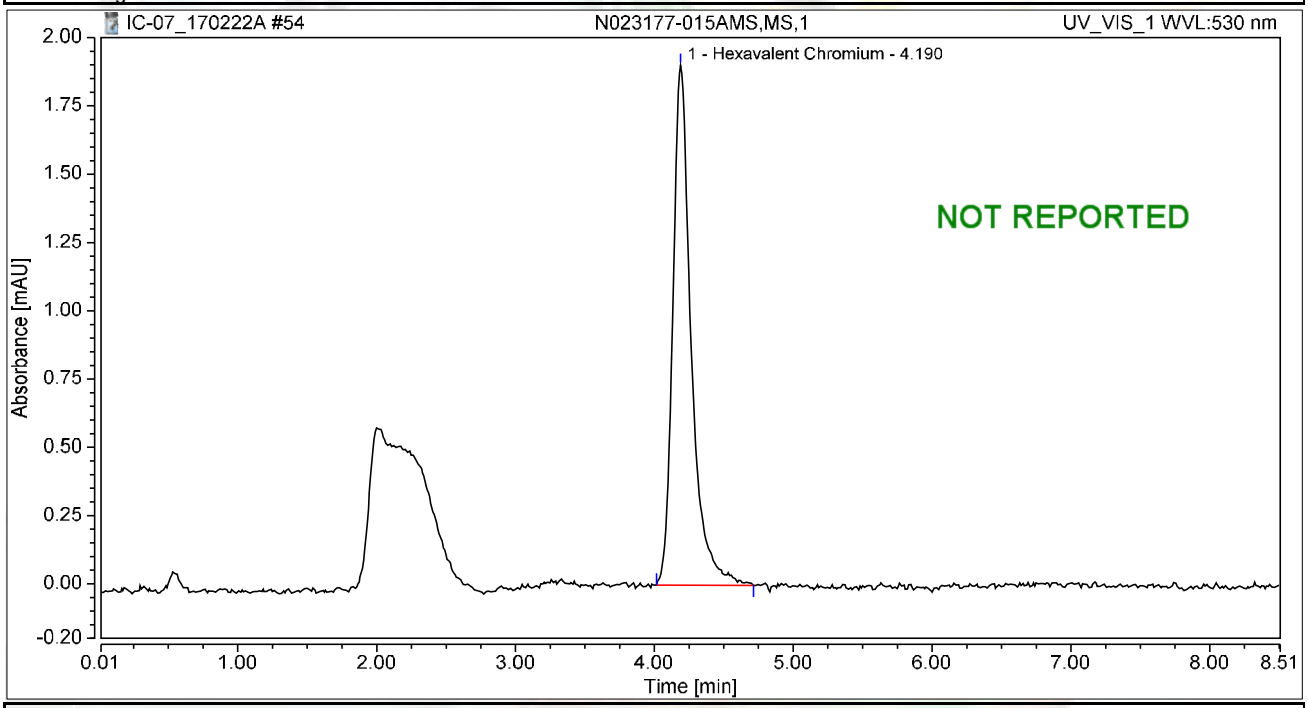
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-015AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

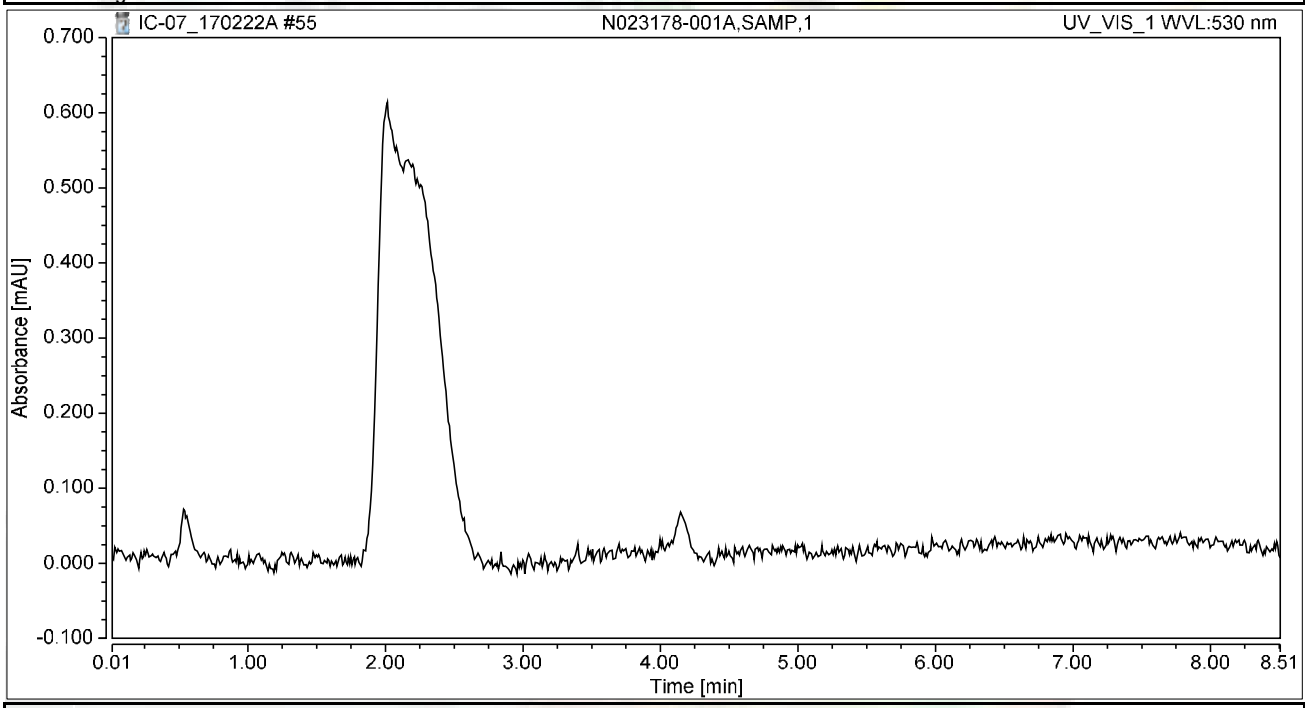
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.292	1.903	100.00	100.00	1.1014
Total:			**0.292**	**1.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023178-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

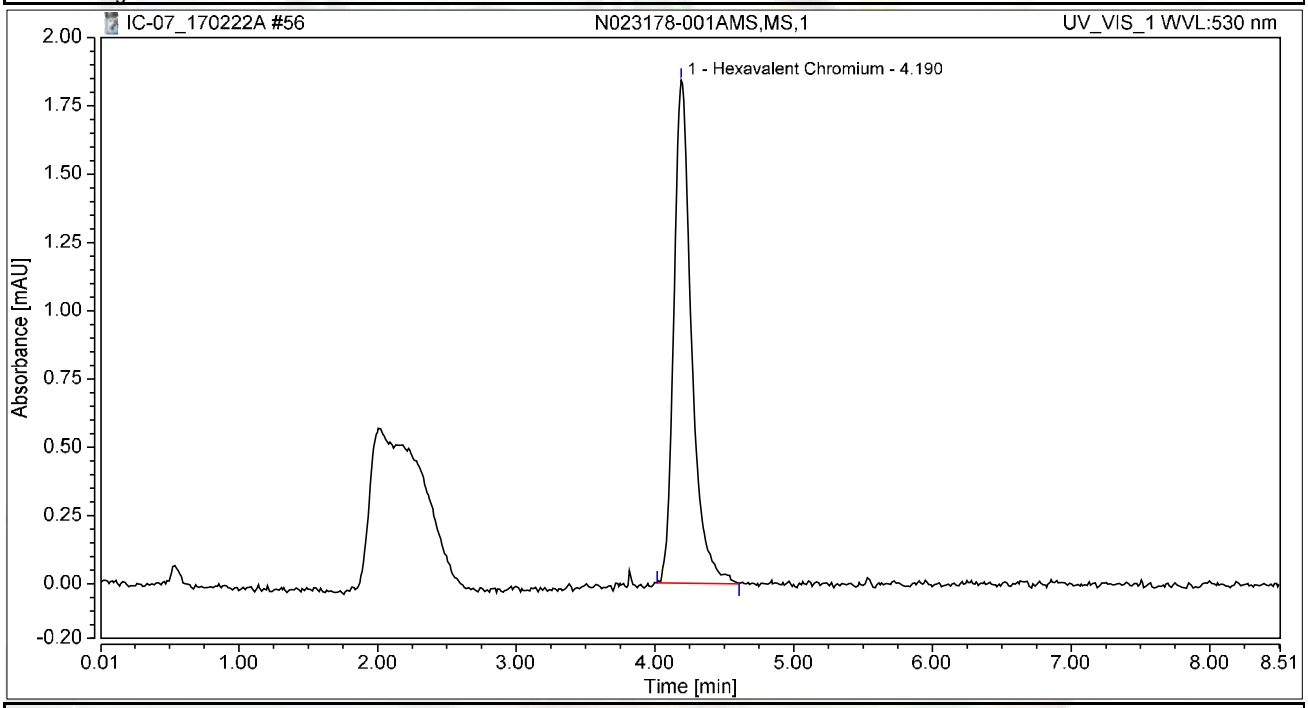
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023178-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

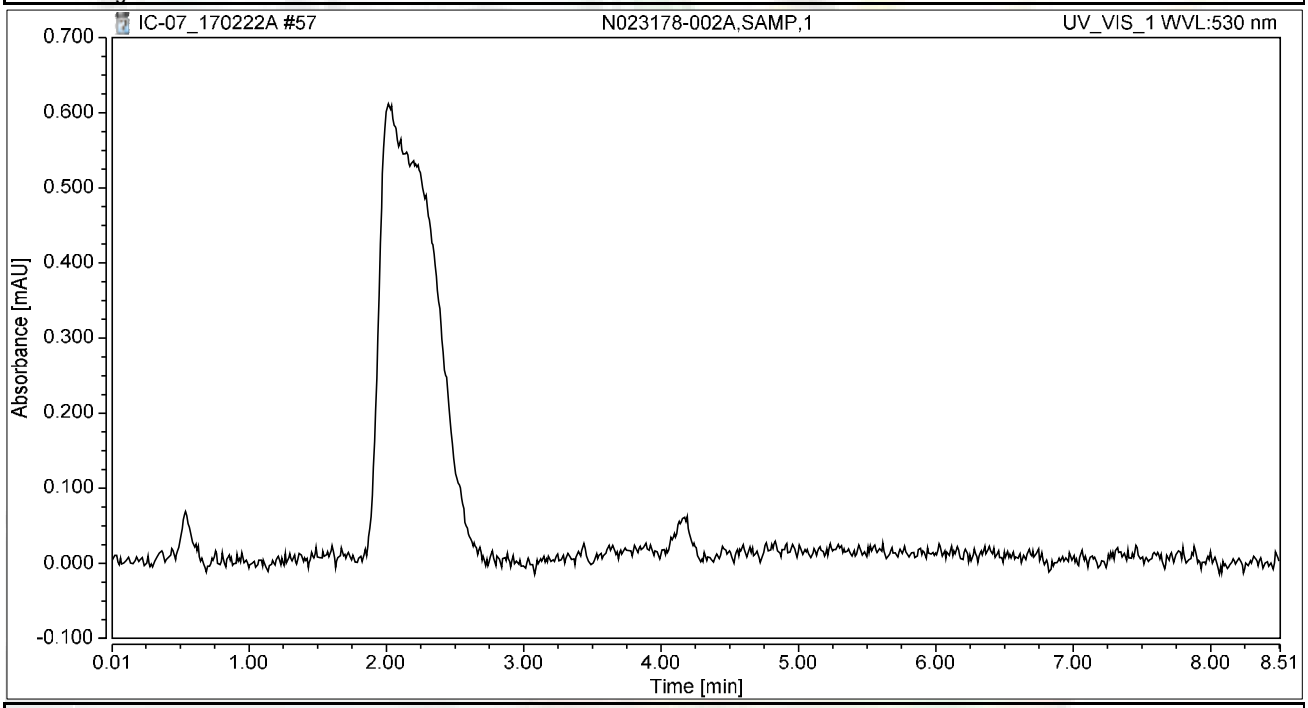
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.273	1.842	100.00	100.00	1.0311
Total:			**0.273**	**1.842**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023178-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

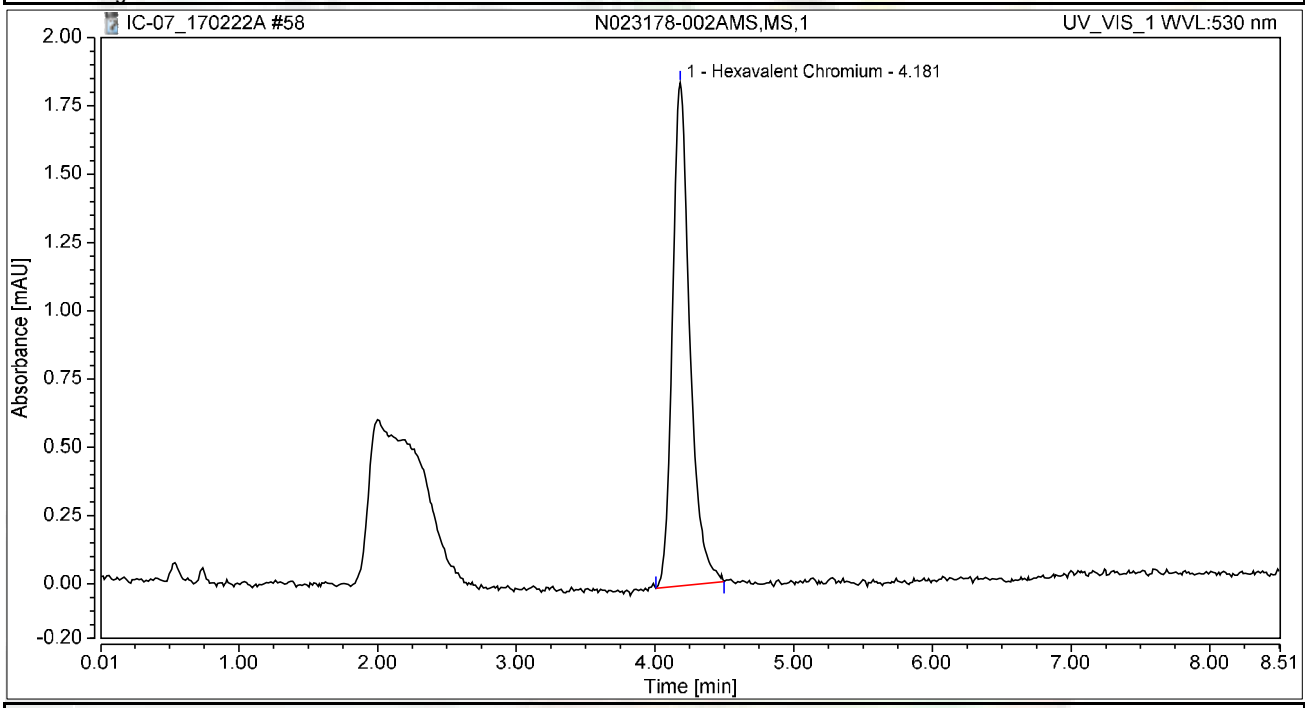
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023178-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

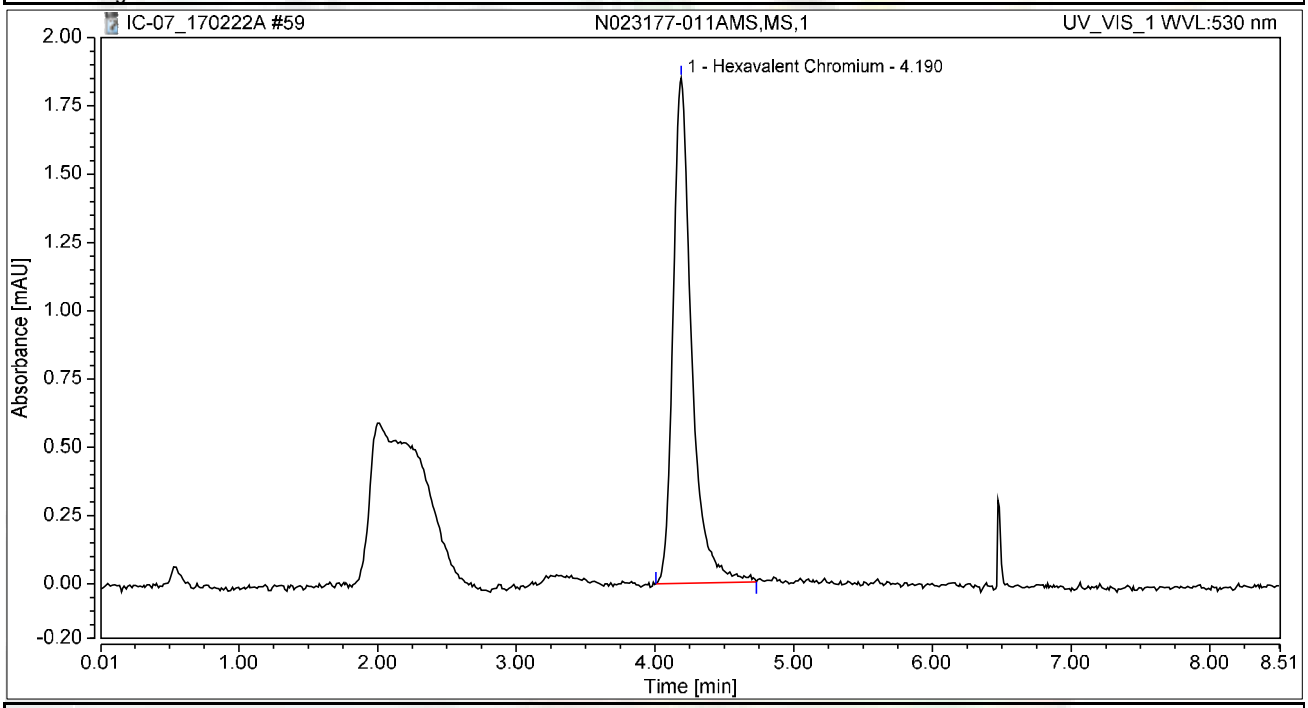
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.268	1.843	100.00	100.00	1.0114
Total:			**0.268**	**1.843**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

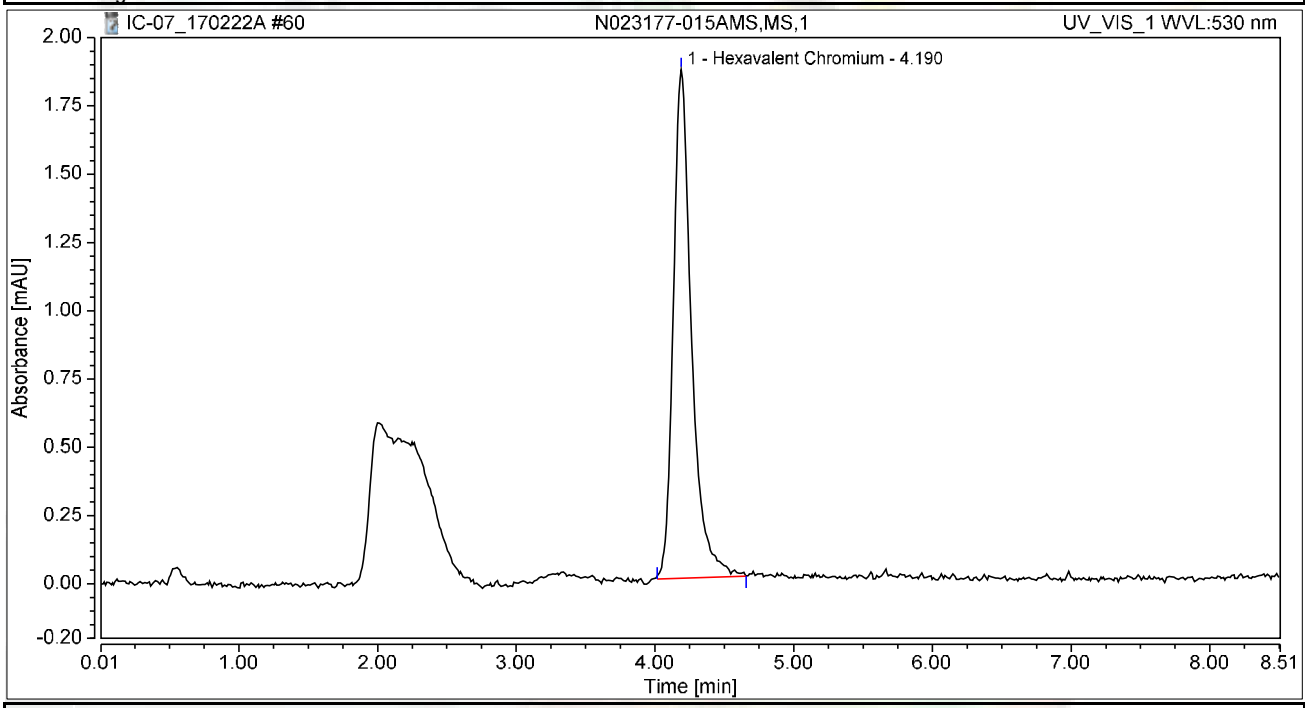
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.852	100.00	100.00	1.0832
Total:			**0.287**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023177-015AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 18:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

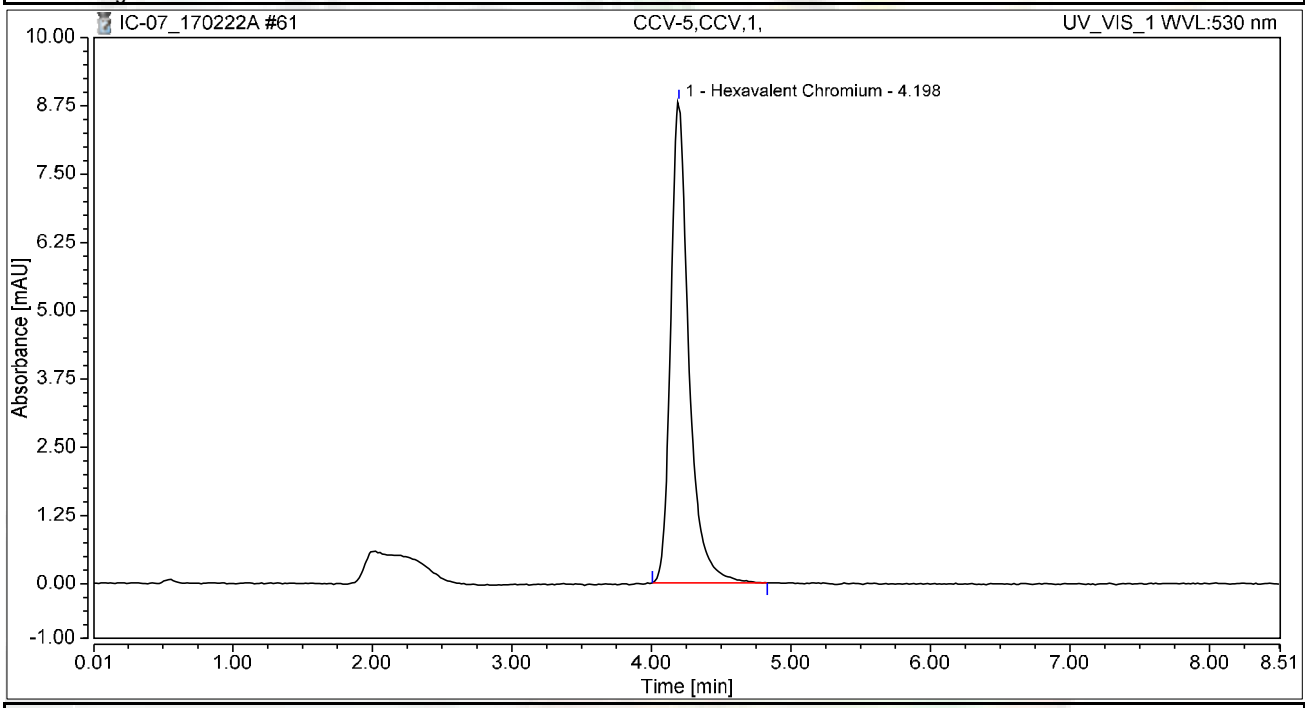
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.284	1.862	100.00	100.00	1.0709
Total:			**0.284**	**1.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 18:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

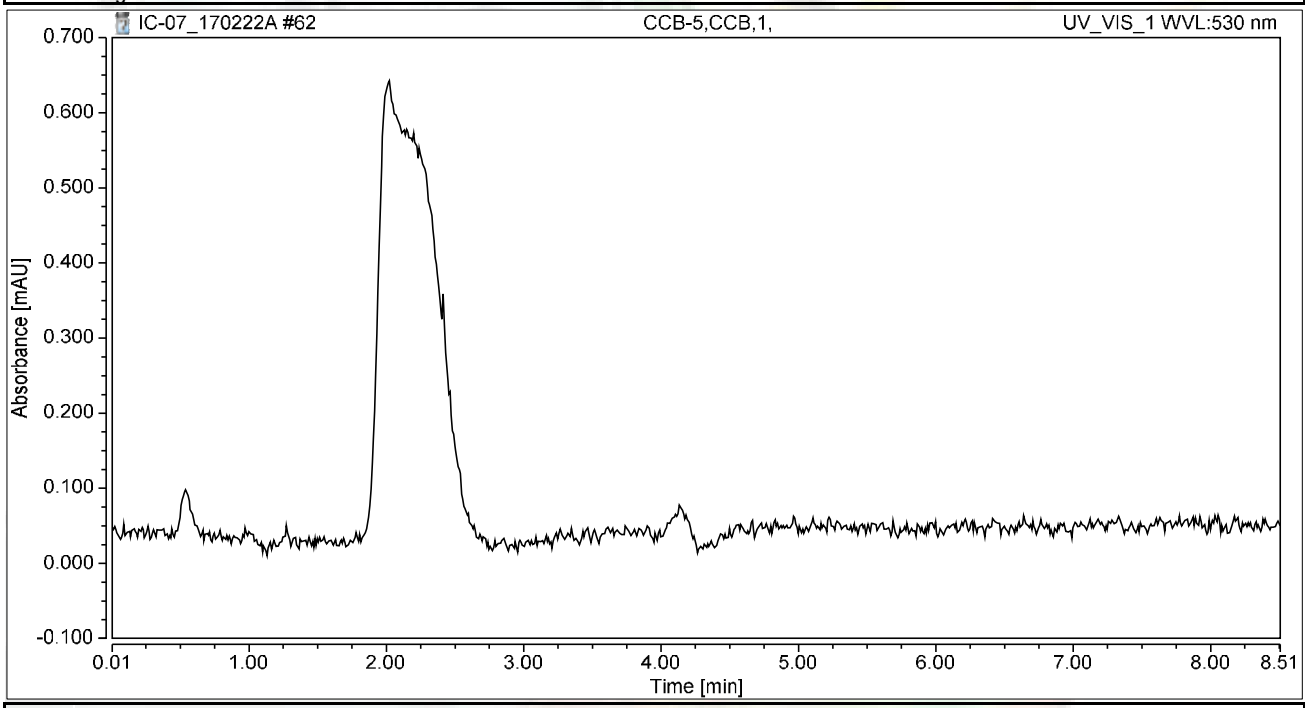
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.336	8.810	100.00	100.00	5.0356
Total:			**1.336**	**8.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/17 18:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113794, R113934 **Analyst:** REB

ASSET #: N023177 **Date Analyzed:** 2/27/17, 3/7/17

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 03/07/17 Date: —

2nd Level Reviewer Nancy 3/7/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023177-001E** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5016*1

= 0.5016 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.50

RJB 03/07/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

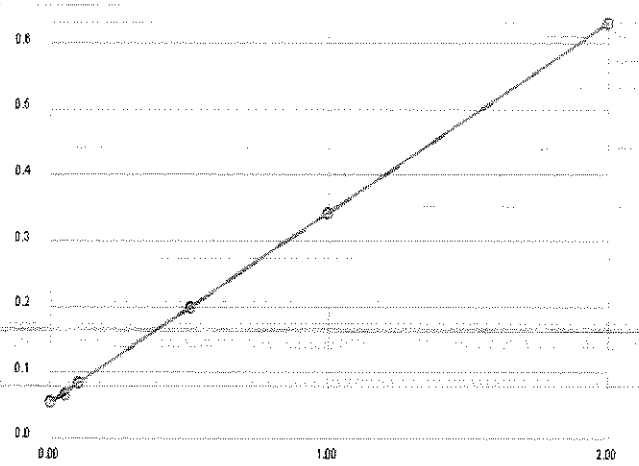
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2881x + 0.0549
Correlation	.999972



Calibrant	Energy	Set	Conc
1	0.0566	0.0000	0.0060
2	0.0664	0.0500	0.0400
3	0.0853	0.1000	0.1056
4	0.1984	0.5000	0.4981
5	0.3429	1.0000	0.9997
6	0.6313	2.0000	2.0006

Notes:

2% CuSO4- R170227C
R1 Buffer- R170227D
R2 Coloring reagent- R170222A

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 03/07/17

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

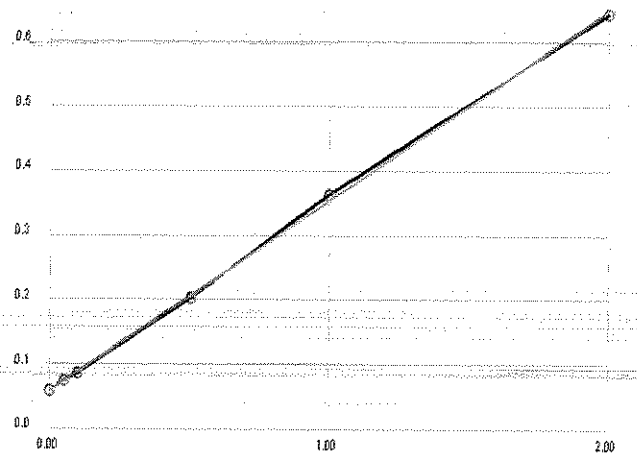
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2941x + 0.0593
Correlation	.999769



Calibrant	Energy	Set	Conc
1	0.0585	0.0000	-0.0028
2	0.0741	0.0500	0.0502
3	0.0869	0.1000	0.0938
4	0.2033	0.5000	0.4896
5	0.3630	1.0000	1.0327
6	0.6435	2.0000	1.9866

Notes:

RB 03/07/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ICV** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCV** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.519	0.050	0.5000	0	104	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCV** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCV** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ICV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.519	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **ICB** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.027	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCB** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCB** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113794**
Client ID: **CCB** Batch ID: **R113794** TestNo: **SM4500-NO3** Analysis Date: **2/27/2017** SeqNo: **2581266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ICB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.033	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.027	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-27-2017 17:55
Time end: 02-27-2017 20:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	20:14:58	0.0105		0.0579
2	<BLANK>	20:15:52	0.0112		0.0581
3	<CAL1>	20:16:53	0.0060	[0]	0.0566
4	<CAL2>	20:17:48	0.0400	[0.05]	0.0664
5	<CAL3>	20:18:42	0.1056	[0.1]	0.0853
6	<CAL4>	20:19:44	0.4981	[0.5]	0.1984
7	<CAL5>	20:20:39	0.9997	[1]	0.3429
8	<CAL6>	20:21:35	2.0006	[2]	0.6313
9	,BLANK,BLANK,1,	20:22:35	0.0129		0.0586
10	,ICV,ICV,1,	20:23:31	0.5051		0.2004
11	,ICB,ICB,1,	20:24:26	0.0272		0.0627
12	,MB-H2O,MBLK,1,	20:25:27	0.0313		0.0639
13	,LCS-H2O,LCS,1,	20:26:22	0.5360		0.2093
14	,N023173-001D,SAMP,1,	20:27:18	0.5558		0.2150
15	,N023173-001DDUP,DUP,1,	20:28:19	0.5131		0.2027
16	,N023173-001DMS,MS,1,	20:29:13	0.9698		0.3343
17	,N023173-001DMSD,MSD,1,	20:30:09	1.0288		0.3513
18	,N023173-002D,SAMP,1,	20:31:11	0.6134		0.2316
19	,N023173-003D,SAMP,1,	20:32:05	0.1875		0.1089
20	,N023173-004D,SAMP,1,	20:33:01	0.2229		0.1191
21	,BLANK,BLANK,1	20:34:03	0.0206		0.0608
22	,CCV-1,CCV,1,	20:34:58	0.5193		0.2045
23	,CCB-1,CCB,1,	20:35:58	0.0206		0.0608
24	,N023174-001D,SAMP,1,	20:36:54	0.1448		0.0966
25	,N023174-002D,SAMP,1,	20:37:49	0.5474		0.2126
26	,N023174-003D,SAMP,1,	20:38:51	0.2330		0.1220

RB 03/07/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N023174-004D,SAMP,1,	20:39:45	0.2021		0.1131
28	,N023177-001E,SAMP,1,	20:40:41	0.5016		0.1994
29	,N023177-002E,SAMP,1,	20:41:43	0.4829		0.1940
30	,N023177-003E,SAMP,1,	20:42:25	0.4478		0.1839
31	,N023177-004E,SAMP,1,	20:43:15	0.4669		0.1894
32	,N023177-005E,SAMP,1,	20:43:57	0.4849		0.1946
33	,BLANK,BLANK,1	20:44:46	0.0091		0.0575
34	,CCV-2,CCV,1,	20:45:30	0.5013		0.1993
35	,CCB-2,CCB,1,	20:46:12	0.0008		0.0551
36	,N023177-006E,SAMP,5,	20:47:01	0.0764		0.0769
37	,N023177-007E,SAMP,1,	20:47:43	0.4624		0.1881
38	,N023177-008E,SAMP,1,	20:48:27	0.4631		0.1883
39	,N023177-009E,SAMP,1,	20:49:15	0.4679		0.1897
40	,N023177-012E,SAMP,1,	20:49:58	0.4520		0.1851
41	,N023177-013E,SAMP,1,	20:50:40	0.4631		0.1883
42	,N023177-014E,SAMP,5,	20:51:30	0.0858		0.0796
43	,N023177-014E,SAMP,1,	20:52:13	0.4829		0.1940
44	,N023177-006E,SAMP,1,	20:52:56	0.4513		0.1849
45	,BLANK,	20:53:45	0.0004		0.0550
46	,CCV-3,CCV,1,	20:54:27	0.5075		0.2011
47	,CCV-3,CCV,1, not used	20:55:11	0.5106		0.2020
48	,CCB-3,CCB,1,	20:55:59	0.0053		0.0564

RB 03/07/17

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-07-2017 10:50
Time end: 03-07-2017 13:28

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	12:51:39	0.0040		0.0605
2	<BLANK>	12:52:32	-0.0103		0.0563
3	<CAL1>	12:53:34	-0.0028	[0]	0.0585
4	<CAL2>	12:54:29	0.0502	[0.05]	0.0741
5	<CAL3>	12:55:24	0.0938	[0.1]	0.0869
6	<CAL4>	12:56:24	0.4896	[0.5]	0.2033
7	<CAL5>	12:57:20	1.0327	[1]	0.3630
8	<CAL6>	12:58:16	1.9866	[2]	0.6435
9	,BLANK,BLANK,1,	12:59:17	0.0305		0.0683
10	,ICV,ICV,1,	13:00:11	0.5188		0.2119
11	,ICB,ICB,1,	13:01:07	0.0043		0.0606
12	,MB-H2O,MBLK,1,	13:02:08	0.0033		0.0603
13	,LCS-H2O,LCS,1,	13:03:02	0.5365		0.2171
14	,N023268-002D,SAMP,5,	13:03:58	0.5573		0.2232
15	,N023268-002DDUP,DUP,5,	13:04:59	0.5637		0.2251
16	,N023268-002DMS,MS,5,	13:05:55	1.0548		0.3695
17	,N023268-002DMSD,MSD,5,	13:06:49	1.0497		0.3680
18	,N023177-015E,SAMP,1,	13:07:51	0.4702		0.1976
19	,N023187-002E,SAMP,1,	13:08:46	0.4457		0.1904
20	,N023187-003E,SAMP,1,	13:09:40	0.4416		0.1892
21	,BLANK,BLANK,1	13:10:42	0.0067		0.0613
22	,CCV-1,CCV,1,	13:11:37	0.5202		0.2123
23	,CCB-1,CCB,1,	13:12:25	0.0155		0.0639
24	,N023187-005E,SAMP,1,	13:13:09	0.4430		0.1896
25	,N023187-006E,SAMP,1,	13:13:58	0.4430		0.1896
26	,N023187-007E,SAMP,1,	13:14:40	0.2349		0.1284

RB 03/07/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N023187-008E,SAMP,1,	13:15:24	0.1155		0.0933
28	,N023187-009E,SAMP,1,	13:16:12	0.4665		0.1965
29	,N023187-010E,SAMP,1,	13:16:55	0.4090		0.1796
30	,N023187-011E,SAMP,1,	13:17:37	0.4447		0.1901
31	,N023187-012E,SAMP,1,	13:18:27	0.4637		0.1957
32	,N023187-013E,SAMP,1,	13:19:10	0.1356		0.0992
33	,BLANK,BLANK,1	13:19:52	0.0203		0.0653
34	,CCV-2,CCV,1,	13:20:42	0.5039		0.2075
35	,CCB-2,CCB,1,	13:21:24	0.0329		0.0690
36	,N023187-014E,SAMP,1,	13:22:07	0.4321		0.1864
37	,N023187-004E,SAMP,1,	13:22:55	0.4342		0.1870
38	,BLANK,	13:23:38	0.0213		0.0656
39	,CCV-3,CCV,1,	13:24:28	0.5035		0.2074
40	,CCV-3,CCV,1, not used	13:25:10	0.4889		0.2031
41	,CCB-3,CCB,1,	13:25:53	0.0271		0.0673

RB 03/07/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 02/27/17
Time Analyzed: 05:55 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170227D
Color reagent: R170222A
2% Copper Sulfate: R170227C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023173-001D		8.78						
2)	N023173-002D		8.46						
3)	N023173-003D		8.81						
4)	N023173-004D		8.85						
5)	N023174-001D		8.50						
6)	N023174-002D		8.47						
7)	N023174-003D		8.53						
8)	N023174-004D		8.40						
9)	N023177-001E		7.76						
10)	N023177-002E		8.17						
11)	N023177-003E		7.83						
12)	N023177-004E		8.18						
13)	N023177-005E		7.18						
14)	N023177-006E		6.38						
15)	N023177-007E		8.67						
16)	N023177-008E		7.80						
17)	N023177-009E		8.05						
18)	N023177-012E		7.27						
19)	N023177-013E		7.16						
20)	N023177-014E		7.66						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 03/07/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 03/07/17
Time Analyzed: 010:50 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170227D
Color reagent: R170222A
2% Copper Sulfate: R170227C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023177-015E		7.64						
2)	N023187-002E		7.03						
3)	N023187-003E		8.16						
4)	N023187-004E		6.96						
5)	N023187-005E		7.35						
6)	N023187-006E		8.08						
7)	N023187-007E		7.28						
8)	N023187-008E		8.89						
9)	N023187-009E		7.39						
10)	N023187-010E		8.61						
11)	N023187-011E		8.17						
12)	N023187-012E		7.38						
13)	N023187-013E		7.57						
14)	N023187-014E		7.59						
15)	N023268-002D		8.67						
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 03/07/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61365 **Instrument ID:** ICP-02
ASSET #: N023177 **Analyst:** CEI
Method: **Date Analyzed:** 2/24/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/6/2017 Date:
2nd Level Reviewer 3/6/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023177-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.07794 * 1 * (25/25) * 1000

Iron , ug/L = 77.94

Reporting results in two significant figures,

Iron , ug/L = 78

% RSD SUMMARY

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	6.26	15	PASS
Standard1	ICAL	1	Fe	0.02	2.0088	15	PASS
Standard2	ICAL	1	Fe	0.05	1.34	15	PASS
Standard3	ICAL	1	Fe	2	0.35	15	PASS
Standard4	ICAL	1	Fe	5	0.2	15	PASS
Standard5	ICAL	1	Fe	7.5	0.17	15	PASS
Standard6	ICAL	1	Fe	10	0.097	15	PASS
Standard7	ICAL	1	Fe	20	0.029	15	PASS
ICV	ICV	1	Fe	9.82	0.13	15	PASS
ICB	ICB	1	Fe	0.0004	153.15	15	<PQL
LLICV	CCV1	1	Fe	0.02	3.88	20	PASS
ICSA1	ICSA	1	Fe	168.72	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	193.86	0.19	15	PASS
CCV1	CCV	1	Fe	9.36	0.093	15	PASS
CCB1	CCB	1	Fe	0.0011	43.39	15	<PQL
CCV2	CCV	1	Fe	9.36	0.15	15	PASS
CCB2	CCB	1	Fe	0.001	14.2	15	PASS
CCV3	CCV	1	Fe	9.5	0.12	15	PASS
CCB3	CCB	1	Fe	0.00049	201.13	15	<PQL
CCB3	CCB	1	Fe	-0.00067	117.82	15	<PQL
CCV4	CCV	1	Fe	10.031	0.22	15	PASS
CCB4	CCB	1	Fe	0.00061	98.46	15	<PQL
CCV5	CCV	1	Fe	10.005	0.2	15	PASS
CCB5	CCB	1	Fe	0.00047	71.76	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.38	20	PASS
ICSA2	ICSA	1	Fe	169.63	0.19	15	PASS
ICSAB2	ICSAB	1	Fe	195.68	0.11	15	PASS
ICV	ICV	1	Fe	90.22	50.88	15	NR!
ICB	ICB	1	Fe	0.00053	62.4	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.047	20	PASS
ICSA2	ICSA	1	Fe	169.68	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	195.64	0.11	15	PASS
MB-61365	MBLK	1	Fe	0.00058	71.34	15	<PQL
LCS-61365	LCS	1	Fe	0.11	0.21	15	PASS
N023177-001B	SAMP	1	Fe	0.0092	8.99	15	PASS
N023177-001B	SAMP	5	Fe	0.0028	3.77	15	PASS
N023177-001B-PS	PS	1	Fe	0.11	0.5	15	PASS
N023177-001B-MS	MS	1	Fe	0.12	0.32	15	PASS
N023177-001B-MSD	MSD	1	Fe	0.12	0.63	15	PASS
N023177-002B	SAMP	1	Fe	0.018	4.37	15	PASS
N023177-003B	SAMP	1	Fe	0.078	1.37	15	PASS
N023177-004B	SAMP	1	Fe	0.011	6.18	15	PASS

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV6	CCV	1	Fe	9.92	0.16	15	PASS
CCB6	CCB	1	Fe	0.00044	61.82	15	<PQL
N023177-005B	SAMP	1	Fe	0.01	1.42	15	PASS
N023177-006B	SAMP	1	Fe	0.017	2.35	15	PASS
N023177-007B	SAMP	1	Fe	0.01	4.94	15	PASS
N023177-008B	SAMP	1	Fe	0.028	0.98	15	PASS
N023177-009B	SAMP	1	Fe	0.025	2.21	15	PASS
N023177-012B	SAMP	1	Fe	0.043	0.54	15	PASS
N023177-013B	SAMP	1	Fe	0.0061	14.43	15	PASS
N023177-014B	SAMP	1	Fe	0.016	3.36	15	PASS
N023177-015B	SAMP	1	Fe	0.0087	4.25	15	PASS
CCV7	CCV	1	Fe	9.97	0.12	15	PASS
CCB7	CCB	1	Fe	0.00028	55.54	15	<PQL
CCV8	CCV	1	Fe	9.97	0.19	15	PASS
CCB8	CCB	1	Fe	0.00075	76.45	15	<PQL
CCV9	CCV	1	Fe	10.035	0.23	15	PASS
CCB9	CCB	1	Fe	0.00044	182.21	15	<PQL
LLCCV2	CCV2	1	Fe	0.021	1.76	20	PASS
ICSA3	ICSA	1	Fe	171.37	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	196.61	0.22	15	PASS
CCV10	CCV	1	Fe	10.028	0.071	15	PASS
CCB10	CCB	1	Fe	0.0008	136.81	15	<PQL
CCV11	CCV	1	Fe	10.061	0.032	15	PASS
CCB11	CCB	1	Fe	0.00032	302.18	15	<PQL
CCV12	CCV	1	Fe	10.069	0.12	15	PASS
CCB12	CCB	1	Fe	0.0018	33.86	15	<PQL
CCV13	CCV	1	Fe	10.14	0.21	15	PASS
CCB13	CCB	1	Fe	0.0023	20.16	15	<PQL
LLCCV3	CCV2	1	Fe	0.022	1.71	20	PASS
ICSA4	ICSA	1	Fe	172.45	0.13	15	PASS
ICSAB4	ICSAB	1	Fe	191.86	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170224B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/24/2017	02:26:30 PM
2	Standard1	ICAL	1	02/24/2017	02:30:31 PM
3	Standard2	ICAL	1	02/24/2017	02:35:02 PM
4	Standard3	ICAL	1	02/24/2017	02:39:33 PM
5	Standard4	ICAL	1	02/24/2017	02:44:07 PM
6	Standard5	ICAL	1	02/24/2017	02:49:41 PM
7	Standard6	ICAL	1	02/24/2017	02:54:47 PM
8	Standard7	ICAL	1	02/24/2017	02:59:55 PM
9	ICV	ICV	1	02/24/2017	03:05:05 PM
1	ICB	ICB	1	02/24/2017	03:10:13 PM
2	LLICV	CCV1	1	02/24/2017	03:22:14 PM
4	ICSA1	ICSA	1	02/24/2017	03:26:46 PM
5	ICSAB1	ICSAB	1	02/24/2017	03:32:29 PM
74	MB-1	MBLK	1	02/24/2017	03:37:44 PM
75	MB-61353 STLC	MBLK	5	02/24/2017	03:42:18 PM
76	LCS-1	LCS	1	02/24/2017	03:46:21 PM
77	N023138-002A	SAMP	5	02/24/2017	03:51:30 PM
78	N023138-008A	SAMP	5	02/24/2017	03:56:06 PM
79	N022940-001A	SAMP	5	02/24/2017	04:01:41 PM
80	N022939-003F	SAMP	5	02/24/2017	04:06:16 PM
81	N023138-002A	SAMP	25	02/24/2017	04:11:51 PM
82	N023138-002A-MS	MS	5	02/24/2017	04:16:25 PM
83	N023138-002A-MSD	MSD	5	02/24/2017	04:21:01 PM
7	CCV1	CCV	1	02/24/2017	04:25:37 PM
1	CCB1	CCB	1	02/24/2017	04:30:45 PM
38	MB-61294	MBLK	1	02/24/2017	04:37:48 PM
64	LCS-61294	LCS	1	02/24/2017	04:41:50 PM
52	N023100-001A	SAMP	1	02/24/2017	04:47:25 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N023100-002A	SAMP	1	02/24/2017	04:52:27 PM
54	N023100-003A	SAMP	1	02/24/2017	04:58:00 PM
55	N023100-004A	SAMP	1	02/24/2017	05:02:33 PM
56	N023100-005A	SAMP	1	02/24/2017	05:08:06 PM
57	N023100-006A	SAMP	1	02/24/2017	05:13:11 PM
58	N023100-007A	SAMP	1	02/24/2017	05:18:16 PM
59	N023100-008A	SAMP	1	02/24/2017	05:23:51 PM
7	CCV2	CCV	1	02/24/2017	05:28:57 PM
1	CCB2	CCB	1	02/24/2017	05:34:02 PM
40	N023101-001A	SAMP	1	02/24/2017	05:38:33 PM
41	N023101-002A	SAMP	1	02/24/2017	05:44:06 PM
42	N023101-003A	SAMP	1	02/24/2017	05:49:38 PM
43	N023101-004A	SAMP	1	02/24/2017	05:55:11 PM
44	N023101-005A	SAMP	1	02/24/2017	06:07:05 PM
45	N023101-006A	SAMP	1	02/24/2017	06:12:09 PM
46	N023101-007A	SAMP	1	02/24/2017	06:17:13 PM
47	N023101-008A	SAMP	1	02/24/2017	06:22:17 PM
48	N023101-009A	SAMP	1	02/24/2017	06:27:51 PM
49	N023101-010A	SAMP	1	02/24/2017	06:33:26 PM
7	CCV3	CCV	1	02/24/2017	06:38:32 PM
1	CCB3	CCB	1	02/24/2017	06:43:39 PM
1	CCB3	CCB	1	02/24/2017	06:48:36 PM
50	N023101-011A	SAMP	1	02/24/2017	06:53:06 PM
51	N023101-012A	SAMP	1	02/24/2017	06:58:12 PM
65	N023100-001A	SAMP	5	02/24/2017	07:03:16 PM
66	N023100-001A-PS	PS	1	02/24/2017	07:07:51 PM
67	N023100-001A-MS1	MS	1	02/24/2017	07:12:59 PM
68	N023100-001A-MSD1	MSD	1	02/24/2017	07:18:38 PM
69	N023100-001A	SAMP	25	02/24/2017	07:23:46 PM
70	N023100-001A-PS	PS	5	02/24/2017	07:28:19 PM
71	N023100-001A-MS1	MS	5	02/24/2017	07:33:53 PM
72	N023100-001A-MSD1	MSD	5	02/24/2017	07:39:27 PM
7	CCV4	CCV	1	02/24/2017	07:45:02 PM
1	CCB4	CCB	1	02/24/2017	07:50:10 PM
54	N023100-003A	SAMP	1	02/24/2017	07:54:40 PM
73	N023101-005A	SAMP	5	02/24/2017	07:59:13 PM
74	N023101-006A	SAMP	5	02/24/2017	08:04:48 PM
75	N023101-007A	SAMP	5	02/24/2017	08:10:23 PM
76	N023101-010A	SAMP	5	02/24/2017	08:15:57 PM
7	CCV5	CCV	1	02/24/2017	08:21:31 PM
1	CCB5	CCB	1	02/24/2017	08:26:38 PM
2	LLCCV1	CCV2	1	02/24/2017	08:31:08 PM
4	ICSA2	ICSA	1	02/24/2017	08:35:41 PM
5	ICSAB2	ICSAB	1	02/24/2017	08:41:24 PM
9	ICV	ICV	1	02/24/2017	09:25:59 PM
1	ICB	ICB	1	02/24/2017	09:31:30 PM

NR

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	02/24/2017	09:40:55 PM
4	ICSA2	ICSA	1	02/24/2017	09:45:27 PM
5	ICSAB2	ICSAB	1	02/24/2017	09:51:10 PM
98	MB-61365	MBLK	1	02/24/2017	10:25:07 PM
99	LCS-61365	LCS	1	02/24/2017	10:29:12 PM
100	N023177-001B	SAMP	1	02/24/2017	10:34:48 PM
101	N023177-001B	SAMP	5	02/24/2017	10:39:23 PM
102	N023177-001B-PS	PS	1	02/24/2017	10:43:57 PM
103	N023177-001B-MS	MS	1	02/24/2017	10:49:34 PM
104	N023177-001B-MSD	MSD	1	02/24/2017	10:55:11 PM
105	N023177-002B	SAMP	1	02/24/2017	11:00:48 PM
106	N023177-003B	SAMP	1	02/24/2017	11:05:23 PM
107	N023177-004B	SAMP	1	02/24/2017	11:09:58 PM
7	CCV6	CCV	1	02/24/2017	11:14:33 PM
1	CCB6	CCB	1	02/24/2017	11:19:41 PM
108	N023177-005B	SAMP	1	02/24/2017	11:24:11 PM
109	N023177-006B	SAMP	1	02/24/2017	11:28:47 PM
110	N023177-007B	SAMP	1	02/24/2017	11:33:22 PM
111	N023177-008B	SAMP	1	02/24/2017	11:37:57 PM
112	N023177-009B	SAMP	1	02/24/2017	11:42:33 PM
113	N023177-012B	SAMP	1	02/24/2017	11:47:09 PM
114	N023177-013B	SAMP	1	02/24/2017	11:51:45 PM
115	N023177-014B	SAMP	1	02/24/2017	11:56:21 PM
116	N023177-015B	SAMP	1	02/25/2017	12:00:57 AM
117	MB-61364	MBLK	1	02/25/2017	12:05:33 AM
7	CCV7	CCV	1	02/25/2017	12:09:38 AM
1	CCB7	CCB	1	02/25/2017	12:14:46 AM
118	LCS-61364	LCS	1	02/25/2017	12:19:16 AM
119	N023177-001C	SAMP	1	02/25/2017	12:24:52 AM
120	N023177-001C	SAMP	5	02/25/2017	12:29:28 AM
121	N023177-001C-PS	PS	1	02/25/2017	12:34:03 AM
122	N023177-001C-MS	MS	1	02/25/2017	12:39:40 AM
123	N023177-001C-MSD	MSD	1	02/25/2017	12:45:17 AM
124	N023177-002C	SAMP	1	02/25/2017	12:50:54 AM
125	N023177-003C	SAMP	1	02/25/2017	12:55:29 AM
126	N023177-004C	SAMP	1	02/25/2017	01:00:04 AM
127	N023177-005C	SAMP	1	02/25/2017	01:04:39 AM
7	CCV8	CCV	1	02/25/2017	01:09:14 AM
1	CCB8	CCB	1	02/25/2017	01:14:21 AM
128	N023177-006C	SAMP	1	02/25/2017	01:18:51 AM
129	N023177-007C	SAMP	1	02/25/2017	01:23:26 AM
130	N023177-008C	SAMP	1	02/25/2017	01:28:01 AM
131	N023177-009C	SAMP	1	02/25/2017	01:32:36 AM
132	N023177-012C	SAMP	1	02/25/2017	01:37:11 AM
133	N023177-013C	SAMP	1	02/25/2017	01:41:46 AM
134	N023177-014C	SAMP	1	02/25/2017	01:46:21 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
135	N023177-015C	SAMP	1	02/25/2017	01:50:57 AM
136	MB-61379	MBLK	1	02/25/2017	01:55:32 AM
137	LCS-61379	LCS	1	02/25/2017	01:59:36 AM
7	CCV9	CCV	1	02/25/2017	02:04:56 AM
1	CCB9	CCB	1	02/25/2017	02:10:03 AM
2	LLCCV2	CCV2	1	02/25/2017	02:14:33 AM
4	ICSA3	ICSA	1	02/25/2017	02:19:06 AM
5	ICSAB3	ICSAB	1	02/25/2017	02:24:49 AM
138	N023187-002B	SAMP	1	02/25/2017	02:30:05 AM
139	N023187-002B	SAMP	5	02/25/2017	02:34:42 AM
140	N023187-002B-PS	PS	1	02/25/2017	02:39:17 AM
141	N023187-002B-MS	MS	1	02/25/2017	02:44:55 AM
142	N023187-002B-MSD	MSD	1	02/25/2017	02:50:33 AM
143	N023187-003B	SAMP	1	02/25/2017	02:56:11 AM
144	N023187-004B	SAMP	1	02/25/2017	03:00:47 AM
145	N023187-005B	SAMP	1	02/25/2017	03:05:23 AM
146	N023187-006B	SAMP	1	02/25/2017	03:09:59 AM
147	N023187-007B	SAMP	1	02/25/2017	03:14:35 AM
7	CCV10	CCV	1	02/25/2017	03:20:11 AM
1	CCB10	CCB	1	02/25/2017	03:25:18 AM
148	N023187-008B	SAMP	1	02/25/2017	03:29:48 AM
149	N023187-009B	SAMP	1	02/25/2017	03:35:25 AM
150	N023187-010B	SAMP	1	02/25/2017	03:40:01 AM
151	N023187-011B	SAMP	1	02/25/2017	03:44:37 AM
152	N023187-012B	SAMP	1	02/25/2017	03:49:13 AM
153	N023187-013B	SAMP	1	02/25/2017	03:53:49 AM
154	N023187-014B	SAMP	1	02/25/2017	03:59:25 AM
74	MB-61378	MBLK	1	02/25/2017	04:04:01 AM
75	LCS-61378	LCS	1	02/25/2017	04:09:35 AM
76	N023187-002C	SAMP	1	02/25/2017	04:15:09 AM
7	CCV11	CCV	1	02/25/2017	04:20:43 AM
1	CCB11	CCB	1	02/25/2017	04:25:50 AM
77	N023187-002C	SAMP	5	02/25/2017	04:30:20 AM
78	N023187-002C-PS	PS	1	02/25/2017	04:35:52 AM
79	N023187-002C-MS	MS	1	02/25/2017	04:41:24 AM
80	N023187-002C-MSD	MSD	1	02/25/2017	04:46:56 AM
81	N023187-003C	SAMP	1	02/25/2017	04:52:28 AM
82	N023187-004C	SAMP	1	02/25/2017	04:58:00 AM
83	N023187-005C	SAMP	1	02/25/2017	05:03:32 AM
84	N023187-006C	SAMP	1	02/25/2017	05:09:04 AM
85	N023187-007C	SAMP	1	02/25/2017	05:14:36 AM
86	N023187-008C	SAMP	1	02/25/2017	05:19:10 AM
7	CCV12	CCV	1	02/25/2017	05:23:13 AM
1	CCB12	CCB	1	02/25/2017	05:28:20 AM
87	N023187-009C	SAMP	1	02/25/2017	05:32:50 AM
88	N023187-010C	SAMP	1	02/25/2017	05:37:24 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
89	N023187-011C	SAMP	1	02/25/2017	05:42:33 AM
90	N023187-012C	SAMP	1	02/25/2017	05:47:09 AM
91	N023187-013C	SAMP	1	02/25/2017	05:52:43 AM
92	N023187-014C	SAMP	1	02/25/2017	05:57:19 AM
7	CCV13	CCV	1	02/25/2017	06:02:54 AM
1	CCB13	CCB	1	02/25/2017	06:08:01 AM
2	LLCCV3	CCV2	1	02/25/2017	06:12:31 AM
4	ICSA4	ICSA	1	02/25/2017	06:17:03 AM
5	ICSAB4	ICSAB	1	02/25/2017	06:22:46 AM
155	MB-61378	MBLK	1	02/25/2017	06:35:13 AM
156	LCS-61378	LCS	1	02/25/2017	06:39:18 AM
157	N023187-002C	SAMP	1	02/25/2017	06:44:54 AM
14	N023187-002C	SAMP	5	02/25/2017	06:49:30 AM
15	N023187-002C-PS	PS	1	02/25/2017	06:54:01 AM
16	N023187-002C-MS	MS	1	02/25/2017	06:59:34 AM
17	N023187-002C-MSD	MSD	1	02/25/2017	07:05:07 AM
18	N023187-003C	SAMP	1	02/25/2017	07:10:40 AM
19	N023187-004C	SAMP	1	02/25/2017	07:15:12 AM
20	N023187-005C	SAMP	1	02/25/2017	07:19:44 AM
7	CCV14	CCV	1	02/25/2017	07:24:17 AM
1	CCB14	CCB	1	02/25/2017	07:29:24 AM
21	N023187-006C	SAMP	1	02/25/2017	07:33:54 AM
22	N023187-007C	SAMP	1	02/25/2017	07:38:27 AM
23	N023187-008C	SAMP	1	02/25/2017	07:44:01 AM
24	N023187-009C	SAMP	1	02/25/2017	07:49:37 AM
25	N023187-010C	SAMP	1	02/25/2017	07:54:11 AM
26	N023187-011C	SAMP	1	02/25/2017	07:58:45 AM
27	N023187-012C	SAMP	1	02/25/2017	08:03:17 AM
28	N023187-013C	SAMP	1	02/25/2017	08:07:49 AM
29	N023187-014C	SAMP	1	02/25/2017	08:13:21 AM
7	CCV15	CCV	1	02/25/2017	08:17:53 AM
1	CCB15	CCB	1	02/25/2017	08:22:58 AM
2	LLCCV4	CCV2	1	02/25/2017	08:27:28 AM
4	ICSA5	ICSA	1	02/25/2017	08:32:00 AM
5	ICSAB5	ICSAB	1	02/25/2017	08:37:41 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 9:00:00**
Prep End Date: **2/23/2017 2:00:00**

Reviewed/ Date: 3/6/2017
Initials/ Date: for 3/6/2017

Prep Batch **61365** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61365	Aqueous		25	☐	0	0	25	1.000		
MB-61365	Aqueous		25	☐	0	0	25	1.000		
N023177-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-012B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8751	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 9:00:00**
Prep End Date: **2/23/2017 2:00:00**

Reviewed/ Date: 3/6/2017
Initials/ Date: for 3/6/2017

Prep Batch **61365** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023177-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8751	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170224B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/24/2017	02:26:30 PM	Fe	273.953	-151	0.00	mg/L	
Standard1	02/24/2017	02:30:31 PM	Fe	273.953	636	0.0200	mg/L	
Standard2	02/24/2017	02:35:02 PM	Fe	273.953	2113	0.050	mg/L	
Standard3	02/24/2017	02:39:33 PM	Fe	273.953	54290	2.000	mg/L	
Standard4	02/24/2017	02:44:07 PM	Fe	273.953	137941	5.000	mg/L	
Standard5	02/24/2017	02:49:41 PM	Fe	273.953	190807	7.500	mg/L	
Standard6	02/24/2017	02:54:47 PM	Fe	273.953	244405	10.000	mg/L	
Standard7	02/24/2017	02:59:55 PM	Fe	273.953	531389	20.000	mg/L	0.9994

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9821.759	20	10000	0	98.2	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.172	20	20.00	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9360.084	20	10000	0	93.6	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9362.661	20	10000	0	93.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9501.326	20	10000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10030.818	20	10000	0	100	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10004.823	20	10000	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.202	20	20.00	0	101	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9924.671	20	10000	0	99.2	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.828	20	10000	0	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9966.626	20	10000	0	99.7	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10034.877	20	10000	0	100	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.605	20	20.00	0	103	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10028.071	20	10000	0	100	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10060.695	20	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV12	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCV	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10068.658	20	10000	0	101	90	110				

Sample ID	CCV13	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCV	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579116

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10139.200	20	10000	0	101	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	ZZZZZZ	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.777	20	20.00	0	109	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.398	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.130	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.050	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.669112	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.606	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.468	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.444	20									

Sample ID **CCB7** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.280	20									

Sample ID **CCB8** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.745	20									

Sample ID **CCB9** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.441	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB10	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.798	20									

Sample ID	CCB11	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.321	20									

Sample ID	CCB12	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.779	20									

Sample ID	CCB13	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.322	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498538.831	50	500000	0	99.7	80	120				
Calcium	495252.064	500	500000	0	99.1	80	120				
Iron	168716.997	20	200000	0	84.4	80	120				
Magnesium	474099.585	100	500000	0	94.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	569636.202	50	500000	0	114	80	120				
Calcium	565868.636	500	500000	0	113	80	120				
Iron	193861.394	20	200000	0	96.9	80	120				
Magnesium	543479.421	100	500000	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502685.321	50	500000	0	101	80	120				
Calcium	495347.079	500	500000	0	99.1	80	120				
Iron	169676.315	20	200000	0	84.8	80	120				
Magnesium	473336.103	100	500000	0	94.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575855.499	50	500000	0	115	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	567519.645	500	500000	0	114	80	120				
Iron	195643.934	20	200000	0	97.8	80	120				
Magnesium	540688.824	100	500000	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502796.458	50	500000	0	101	80	120				
Calcium	509298.042	500	500000	0	102	80	120				
Iron	171365.442	20	200000	0	85.7	80	120				
Magnesium	499529.911	100	500000	0	99.9	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575236.818	50	500000	0	115	80	120				
Calcium	583096.631	500	500000	0	117	80	120				
Iron	196608.892	20	200000	0	98.3	80	120				
Magnesium	569084.337	100	500000	0	114	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	503155.808	50	500000	0	101	80	120				
Calcium	520373.898	500	500000	0	104	80	120				
Iron	172447.991	20	200000	0	86.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	521851.972	100	500000	0	104	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	576417.626	50	500000	0	115	80	120				
Calcium	595654.746	500	500000	0	119	80	120				
Iron	191860.942	20	200000	0	95.9	80	120				
Magnesium	595534.163	100	500000	0	119	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.92	65-125	PASS
Standard2	ICAL	1	1.031	103.13	65-125	PASS
Standard3	ICAL	1	0.99	99.097	65-125	PASS
Standard4	ICAL	1	0.98	97.9	65-125	PASS
Standard5	ICAL	1	0.98	97.68	65-125	PASS
Standard6	ICAL	1	0.97	97.45	65-125	PASS
Standard7	ICAL	1	0.96	96.48	65-125	PASS
ICV	ICV	1	0.98	98.41	65-125	PASS
ICB	ICB	1	1.0043	100.43	65-125	PASS
LLICV	CCV1	1	1	99.8	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.88	88.17	65-125	PASS
CCV1	CCV	1	0.98	97.94	65-125	PASS
CCB1	CCB	1	1.009	100.9	65-125	PASS
CCV2	CCV	1	0.99	99.057	65-125	PASS
CCB2	CCB	1	1.02	102.04	65-125	PASS
CCV3	CCV	1	0.97	97.46	65-125	PASS
CCB3	CCB	1	1.0078	100.78	65-125	PASS
CCB3	CCB	1	0.98	98.43	65-125	PASS
CCV4	CCV	1	0.98	97.7	65-125	PASS
CCB4	CCB	1	0.99	99.4	65-125	PASS
CCV5	CCV	1	0.98	97.67	65-125	PASS
CCB5	CCB	1	0.99	99.002	65-125	PASS
LLCCV1	CCV2	1	1.013	101.26	65-125	PASS
ICSA2	ICSA	1	1	99.82	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.17	65-125	PASS
ICV	ICV	1	-0.00002	-0.002	65-125	NR!
ICB	ICB	1	1.005	100.5	65-125	PASS
LLCCV1	CCV2	1	1.018	101.79	65-125	PASS
ICSA2	ICSA	1	1	99.63	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.15	65-125	PASS
MB-61365	MBLK	1	1.019	101.9	65-125	PASS
LCS-61365	LCS	1	0.92	91.54	65-125	PASS
N023177-001B	SAMP	1	1.026	102.55	65-125	PASS
N023177-001B	SAMP	5	0.99	99.49	65-125	PASS
N023177-001B-PS	PS	1	1.017	101.7	65-125	PASS
N023177-001B-MS	MS	1	1.03	103.03	65-125	PASS
N023177-001B-MSD	MSD	1	1.028	102.76	65-125	PASS
N023177-002B	SAMP	1	1.039	103.9	65-125	PASS
N023177-003B	SAMP	1	0.9	90.19	65-125	PASS

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N023177-004B	SAMP	1	1.022	102.18	65-125	PASS
CCV6	CCV	1	0.99	98.64	65-125	PASS
CCB6	CCB	1	1	99.54	65-125	PASS
N023177-005B	SAMP	1	1.033	103.28	65-125	PASS
N023177-006B	SAMP	1	1.022	102.21	65-125	PASS
N023177-007B	SAMP	1	1.023	102.34	65-125	PASS
N023177-008B	SAMP	1	1.011	101.08	65-125	PASS
N023177-009B	SAMP	1	1.008	100.8	65-125	PASS
N023177-012B	SAMP	1	1.0056	100.56	65-125	PASS
N023177-013B	SAMP	1	1.024	102.45	65-125	PASS
N023177-014B	SAMP	1	1.0092	100.92	65-125	PASS
N023177-015B	SAMP	1	1.006	100.6	65-125	PASS
CCV7	CCV	1	0.98	98.42	65-125	PASS
CCB7	CCB	1	1	99.86	65-125	PASS
CCV8	CCV	1	0.99	98.63	65-125	PASS
CCB8	CCB	1	1.0031	100.31	65-125	PASS
CCV9	CCV	1	0.99	98.74	65-125	PASS
CCB9	CCB	1	1	99.98	65-125	PASS
LLCCV2	CCV2	1	1.026	102.58	65-125	PASS
ICSA3	ICSA	1	1	99.84	65-125	PASS
ICSAB3	ICSAB	1	0.87	86.96	65-125	PASS
CCV10	CCV	1	0.98	98.29	65-125	PASS
CCB10	CCB	1	1.0005	100.05	65-125	PASS
CCV11	CCV	1	0.98	98.42	65-125	PASS
CCB11	CCB	1	1.0009	100.09	65-125	PASS
CCV12	CCV	1	0.98	98.34	65-125	PASS
CCB12	CCB	1	1.0034	100.34	65-125	PASS
CCV13	CCV	1	0.98	97.68	65-125	PASS
CCB13	CCB	1	1.0037	100.37	65-125	PASS
LLCCV3	CCV2	1	1.025	102.54	65-125	PASS
ICSA4	ICSA	1	1	99.61	65-125	PASS
ICSAB4	ICSAB	1	0.87	86.73	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023177
Test Method: EPA 6010B
Analysis Date: 2/24/2017

Matrix: Groundwater
Batch No.: 61365

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023177-001B DT 5X	Iron	ug/L	13.96298	NA	9.219091	51.46%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N023177-001B-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**113758**
Client ID:	**ZZZZZZ**	Batch ID:	**61365**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/24/2017**	SeqNo:	**2579027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	113.204	20	100.0	9.219	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61364
ASSET #: N023177
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/24/2017

Method:
[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Fe in N023177-001C PS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/6/2017 Date: —

2nd Level Reviewer 3/6/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023177-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.05345 * 1 * (25/25) * 1000

Iron , ug/L = 53.45

Reporting results in two significant figures,

Iron , ug/L = 53

% RSD SUMMARY

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	6.26	15	PASS
Standard1	ICAL	1	Fe	0.02	2.0088	15	PASS
Standard2	ICAL	1	Fe	0.05	1.34	15	PASS
Standard3	ICAL	1	Fe	2	0.35	15	PASS
Standard4	ICAL	1	Fe	5	0.2	15	PASS
Standard5	ICAL	1	Fe	7.5	0.17	15	PASS
Standard6	ICAL	1	Fe	10	0.097	15	PASS
Standard7	ICAL	1	Fe	20	0.029	15	PASS
ICV	ICV	1	Fe	9.82	0.13	15	PASS
ICB	ICB	1	Fe	0.0004	153.15	15	<PQL
LLICV	CCV1	1	Fe	0.02	3.88	20	PASS
ICSA1	ICSA	1	Fe	168.72	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	193.86	0.19	15	PASS
CCV1	CCV	1	Fe	9.36	0.093	15	PASS
CCB1	CCB	1	Fe	0.0011	43.39	15	<PQL
CCV2	CCV	1	Fe	9.36	0.15	15	PASS
CCB2	CCB	1	Fe	0.001	14.2	15	PASS
CCV3	CCV	1	Fe	9.5	0.12	15	PASS
CCB3	CCB	1	Fe	0.00049	201.13	15	<PQL
CCB3	CCB	1	Fe	-0.00067	117.82	15	<PQL
CCV4	CCV	1	Fe	10.031	0.22	15	PASS
CCB4	CCB	1	Fe	0.00061	98.46	15	<PQL
CCV5	CCV	1	Fe	10.005	0.2	15	PASS
CCB5	CCB	1	Fe	0.00047	71.76	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.38	20	PASS
ICSA2	ICSA	1	Fe	169.63	0.19	15	PASS
ICSAB2	ICSAB	1	Fe	195.68	0.11	15	PASS
ICV	ICV	1	Fe	90.22	50.88	15	NR!
ICB	ICB	1	Fe	0.00053	62.4	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.047	20	PASS
ICSA2	ICSA	1	Fe	169.68	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	195.64	0.11	15	PASS
CCV6	CCV	1	Fe	9.92	0.16	15	PASS
CCB6	CCB	1	Fe	0.00044	61.82	15	<PQL
MB-61364	MBLK	1	Fe	-0.00036	133.64	15	<PQL
CCV7	CCV	1	Fe	9.97	0.12	15	PASS
CCB7	CCB	1	Fe	0.00028	55.54	15	<PQL
LCS-61364	LCS	1	Fe	0.11	0.87	15	PASS
N023177-001C	SAMP	1	Fe	0.053	0.94	15	PASS
N023177-001C	SAMP	5	Fe	0.012	5.72	15	PASS
N023177-001C-PS	PS	1	Fe	0.2	0.56	15	PASS
N023177-001C-MS	MS	1	Fe	0.16	0.49	15	PASS

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N023177-001C-MSD	MSD	1	Fe	0.17	0.33	15	PASS
N023177-002C	SAMP	1	Fe	0.12	0.77	15	PASS
N023177-003C	SAMP	1	Fe	0.1	0.15	15	PASS
N023177-004C	SAMP	1	Fe	0.066	0.4	15	PASS
N023177-005C	SAMP	1	Fe	0.068	0.58	15	PASS
CCV8	CCV	1	Fe	9.97	0.19	15	PASS
CCB8	CCB	1	Fe	0.00075	76.45	15	<PQL
N023177-006C	SAMP	1	Fe	0.068	1.022	15	PASS
N023177-007C	SAMP	1	Fe	0.055	1.48	15	PASS
N023177-008C	SAMP	1	Fe	0.094	0.85	15	PASS
N023177-009C	SAMP	1	Fe	0.083	0.94	15	PASS
N023177-012C	SAMP	1	Fe	0.053	1.0094	15	PASS
N023177-013C	SAMP	1	Fe	0.051	1.024	15	PASS
N023177-014C	SAMP	1	Fe	0.028	2.74	15	PASS
N023177-015C	SAMP	1	Fe	0.049	0.55	15	PASS
CCV9	CCV	1	Fe	10.035	0.23	15	PASS
CCB9	CCB	1	Fe	0.00044	182.21	15	<PQL
LLCCV2	CCV2	1	Fe	0.021	1.76	20	PASS
ICSA3	ICSA	1	Fe	171.37	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	196.61	0.22	15	PASS
CCV10	CCV	1	Fe	10.028	0.071	15	PASS
CCB10	CCB	1	Fe	0.0008	136.81	15	<PQL
CCV11	CCV	1	Fe	10.061	0.032	15	PASS
CCB11	CCB	1	Fe	0.00032	302.18	15	<PQL
CCV12	CCV	1	Fe	10.069	0.12	15	PASS
CCB12	CCB	1	Fe	0.0018	33.86	15	<PQL
CCV13	CCV	1	Fe	10.14	0.21	15	PASS
CCB13	CCB	1	Fe	0.0023	20.16	15	<PQL
LLCCV3	CCV2	1	Fe	0.022	1.71	20	PASS
ICSA4	ICSA	1	Fe	172.45	0.13	15	PASS
ICSAB4	ICSAB	1	Fe	191.86	0.26	15	PASS
CCV14	CCV	1	Fe	10.1	0.1	15	PASS
CCB14	CCB	1	Fe	0.0014	14.22	15	PASS
CCV15	CCV	1	Fe	10.17	0.057	15	PASS
CCB15	CCB	1	Fe	0.00049	194.69	15	<PQL
LLCCV4	CCV2	1	Fe	0.021	2.53	20	PASS
ICSA5	ICSA	1	Fe	174.8	0.031	15	PASS
ICSAB5	ICSAB	1	Fe	194.22	0.13	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170224B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/24/2017	02:26:30 PM
2	Standard1	ICAL	1	02/24/2017	02:30:31 PM
3	Standard2	ICAL	1	02/24/2017	02:35:02 PM
4	Standard3	ICAL	1	02/24/2017	02:39:33 PM
5	Standard4	ICAL	1	02/24/2017	02:44:07 PM
6	Standard5	ICAL	1	02/24/2017	02:49:41 PM
7	Standard6	ICAL	1	02/24/2017	02:54:47 PM
8	Standard7	ICAL	1	02/24/2017	02:59:55 PM
9	ICV	ICV	1	02/24/2017	03:05:05 PM
1	ICB	ICB	1	02/24/2017	03:10:13 PM
2	LLICV	CCV1	1	02/24/2017	03:22:14 PM
4	ICSA1	ICSA	1	02/24/2017	03:26:46 PM
5	ICSAB1	ICSAB	1	02/24/2017	03:32:29 PM
74	MB-1	MBLK	1	02/24/2017	03:37:44 PM
75	MB-61353 STLC	MBLK	5	02/24/2017	03:42:18 PM
76	LCS-1	LCS	1	02/24/2017	03:46:21 PM
77	N023138-002A	SAMP	5	02/24/2017	03:51:30 PM
78	N023138-008A	SAMP	5	02/24/2017	03:56:06 PM
79	N022940-001A	SAMP	5	02/24/2017	04:01:41 PM
80	N022939-003F	SAMP	5	02/24/2017	04:06:16 PM
81	N023138-002A	SAMP	25	02/24/2017	04:11:51 PM
82	N023138-002A-MS	MS	5	02/24/2017	04:16:25 PM
83	N023138-002A-MSD	MSD	5	02/24/2017	04:21:01 PM
7	CCV1	CCV	1	02/24/2017	04:25:37 PM
1	CCB1	CCB	1	02/24/2017	04:30:45 PM
38	MB-61294	MBLK	1	02/24/2017	04:37:48 PM
64	LCS-61294	LCS	1	02/24/2017	04:41:50 PM
52	N023100-001A	SAMP	1	02/24/2017	04:47:25 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N023100-002A	SAMP	1	02/24/2017	04:52:27 PM
54	N023100-003A	SAMP	1	02/24/2017	04:58:00 PM
55	N023100-004A	SAMP	1	02/24/2017	05:02:33 PM
56	N023100-005A	SAMP	1	02/24/2017	05:08:06 PM
57	N023100-006A	SAMP	1	02/24/2017	05:13:11 PM
58	N023100-007A	SAMP	1	02/24/2017	05:18:16 PM
59	N023100-008A	SAMP	1	02/24/2017	05:23:51 PM
7	CCV2	CCV	1	02/24/2017	05:28:57 PM
1	CCB2	CCB	1	02/24/2017	05:34:02 PM
40	N023101-001A	SAMP	1	02/24/2017	05:38:33 PM
41	N023101-002A	SAMP	1	02/24/2017	05:44:06 PM
42	N023101-003A	SAMP	1	02/24/2017	05:49:38 PM
43	N023101-004A	SAMP	1	02/24/2017	05:55:11 PM
44	N023101-005A	SAMP	1	02/24/2017	06:07:05 PM
45	N023101-006A	SAMP	1	02/24/2017	06:12:09 PM
46	N023101-007A	SAMP	1	02/24/2017	06:17:13 PM
47	N023101-008A	SAMP	1	02/24/2017	06:22:17 PM
48	N023101-009A	SAMP	1	02/24/2017	06:27:51 PM
49	N023101-010A	SAMP	1	02/24/2017	06:33:26 PM
7	CCV3	CCV	1	02/24/2017	06:38:32 PM
1	CCB3	CCB	1	02/24/2017	06:43:39 PM
1	CCB3	CCB	1	02/24/2017	06:48:36 PM
50	N023101-011A	SAMP	1	02/24/2017	06:53:06 PM
51	N023101-012A	SAMP	1	02/24/2017	06:58:12 PM
65	N023100-001A	SAMP	5	02/24/2017	07:03:16 PM
66	N023100-001A-PS	PS	1	02/24/2017	07:07:51 PM
67	N023100-001A-MS1	MS	1	02/24/2017	07:12:59 PM
68	N023100-001A-MSD1	MSD	1	02/24/2017	07:18:38 PM
69	N023100-001A	SAMP	25	02/24/2017	07:23:46 PM
70	N023100-001A-PS	PS	5	02/24/2017	07:28:19 PM
71	N023100-001A-MS1	MS	5	02/24/2017	07:33:53 PM
72	N023100-001A-MSD1	MSD	5	02/24/2017	07:39:27 PM
7	CCV4	CCV	1	02/24/2017	07:45:02 PM
1	CCB4	CCB	1	02/24/2017	07:50:10 PM
54	N023100-003A	SAMP	1	02/24/2017	07:54:40 PM
73	N023101-005A	SAMP	5	02/24/2017	07:59:13 PM
74	N023101-006A	SAMP	5	02/24/2017	08:04:48 PM
75	N023101-007A	SAMP	5	02/24/2017	08:10:23 PM
76	N023101-010A	SAMP	5	02/24/2017	08:15:57 PM
7	CCV5	CCV	1	02/24/2017	08:21:31 PM
1	CCB5	CCB	1	02/24/2017	08:26:38 PM
2	LLCCV1	CCV2	1	02/24/2017	08:31:08 PM
4	ICSA2	ICSA	1	02/24/2017	08:35:41 PM
5	ICSAB2	ICSAB	1	02/24/2017	08:41:24 PM
9	ICV	ICV	1	02/24/2017	09:25:59 PM
1	ICB	ICB	1	02/24/2017	09:31:30 PM

NR

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	02/24/2017	09:40:55 PM
4	ICSA2	ICSA	1	02/24/2017	09:45:27 PM
5	ICSAB2	ICSAB	1	02/24/2017	09:51:10 PM
98	MB-61365	MBLK	1	02/24/2017	10:25:07 PM
99	LCS-61365	LCS	1	02/24/2017	10:29:12 PM
100	N023177-001B	SAMP	1	02/24/2017	10:34:48 PM
101	N023177-001B	SAMP	5	02/24/2017	10:39:23 PM
102	N023177-001B-PS	PS	1	02/24/2017	10:43:57 PM
103	N023177-001B-MS	MS	1	02/24/2017	10:49:34 PM
104	N023177-001B-MSD	MSD	1	02/24/2017	10:55:11 PM
105	N023177-002B	SAMP	1	02/24/2017	11:00:48 PM
106	N023177-003B	SAMP	1	02/24/2017	11:05:23 PM
107	N023177-004B	SAMP	1	02/24/2017	11:09:58 PM
7	CCV6	CCV	1	02/24/2017	11:14:33 PM
1	CCB6	CCB	1	02/24/2017	11:19:41 PM
108	N023177-005B	SAMP	1	02/24/2017	11:24:11 PM
109	N023177-006B	SAMP	1	02/24/2017	11:28:47 PM
110	N023177-007B	SAMP	1	02/24/2017	11:33:22 PM
111	N023177-008B	SAMP	1	02/24/2017	11:37:57 PM
112	N023177-009B	SAMP	1	02/24/2017	11:42:33 PM
113	N023177-012B	SAMP	1	02/24/2017	11:47:09 PM
114	N023177-013B	SAMP	1	02/24/2017	11:51:45 PM
115	N023177-014B	SAMP	1	02/24/2017	11:56:21 PM
116	N023177-015B	SAMP	1	02/25/2017	12:00:57 AM
117	MB-61364	MBLK	1	02/25/2017	12:05:33 AM
7	CCV7	CCV	1	02/25/2017	12:09:38 AM
1	CCB7	CCB	1	02/25/2017	12:14:46 AM
118	LCS-61364	LCS	1	02/25/2017	12:19:16 AM
119	N023177-001C	SAMP	1	02/25/2017	12:24:52 AM
120	N023177-001C	SAMP	5	02/25/2017	12:29:28 AM
121	N023177-001C-PS	PS	1	02/25/2017	12:34:03 AM
122	N023177-001C-MS	MS	1	02/25/2017	12:39:40 AM
123	N023177-001C-MSD	MSD	1	02/25/2017	12:45:17 AM
124	N023177-002C	SAMP	1	02/25/2017	12:50:54 AM
125	N023177-003C	SAMP	1	02/25/2017	12:55:29 AM
126	N023177-004C	SAMP	1	02/25/2017	01:00:04 AM
127	N023177-005C	SAMP	1	02/25/2017	01:04:39 AM
7	CCV8	CCV	1	02/25/2017	01:09:14 AM
1	CCB8	CCB	1	02/25/2017	01:14:21 AM
128	N023177-006C	SAMP	1	02/25/2017	01:18:51 AM
129	N023177-007C	SAMP	1	02/25/2017	01:23:26 AM
130	N023177-008C	SAMP	1	02/25/2017	01:28:01 AM
131	N023177-009C	SAMP	1	02/25/2017	01:32:36 AM
132	N023177-012C	SAMP	1	02/25/2017	01:37:11 AM
133	N023177-013C	SAMP	1	02/25/2017	01:41:46 AM
134	N023177-014C	SAMP	1	02/25/2017	01:46:21 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
135	N023177-015C	SAMP	1	02/25/2017	01:50:57 AM
136	MB-61379	MBLK	1	02/25/2017	01:55:32 AM
137	LCS-61379	LCS	1	02/25/2017	01:59:36 AM
7	CCV9	CCV	1	02/25/2017	02:04:56 AM
1	CCB9	CCB	1	02/25/2017	02:10:03 AM
2	LLCCV2	CCV2	1	02/25/2017	02:14:33 AM
4	ICSA3	ICSA	1	02/25/2017	02:19:06 AM
5	ICSAB3	ICSAB	1	02/25/2017	02:24:49 AM
138	N023187-002B	SAMP	1	02/25/2017	02:30:05 AM
139	N023187-002B	SAMP	5	02/25/2017	02:34:42 AM
140	N023187-002B-PS	PS	1	02/25/2017	02:39:17 AM
141	N023187-002B-MS	MS	1	02/25/2017	02:44:55 AM
142	N023187-002B-MSD	MSD	1	02/25/2017	02:50:33 AM
143	N023187-003B	SAMP	1	02/25/2017	02:56:11 AM
144	N023187-004B	SAMP	1	02/25/2017	03:00:47 AM
145	N023187-005B	SAMP	1	02/25/2017	03:05:23 AM
146	N023187-006B	SAMP	1	02/25/2017	03:09:59 AM
147	N023187-007B	SAMP	1	02/25/2017	03:14:35 AM
7	CCV10	CCV	1	02/25/2017	03:20:11 AM
1	CCB10	CCB	1	02/25/2017	03:25:18 AM
148	N023187-008B	SAMP	1	02/25/2017	03:29:48 AM
149	N023187-009B	SAMP	1	02/25/2017	03:35:25 AM
150	N023187-010B	SAMP	1	02/25/2017	03:40:01 AM
151	N023187-011B	SAMP	1	02/25/2017	03:44:37 AM
152	N023187-012B	SAMP	1	02/25/2017	03:49:13 AM
153	N023187-013B	SAMP	1	02/25/2017	03:53:49 AM
154	N023187-014B	SAMP	1	02/25/2017	03:59:25 AM
74	MB-61378	MBLK	1	02/25/2017	04:04:01 AM
75	LCS-61378	LCS	1	02/25/2017	04:09:35 AM
76	N023187-002C	SAMP	1	02/25/2017	04:15:09 AM
7	CCV11	CCV	1	02/25/2017	04:20:43 AM
1	CCB11	CCB	1	02/25/2017	04:25:50 AM
77	N023187-002C	SAMP	5	02/25/2017	04:30:20 AM
78	N023187-002C-PS	PS	1	02/25/2017	04:35:52 AM
79	N023187-002C-MS	MS	1	02/25/2017	04:41:24 AM
80	N023187-002C-MSD	MSD	1	02/25/2017	04:46:56 AM
81	N023187-003C	SAMP	1	02/25/2017	04:52:28 AM
82	N023187-004C	SAMP	1	02/25/2017	04:58:00 AM
83	N023187-005C	SAMP	1	02/25/2017	05:03:32 AM
84	N023187-006C	SAMP	1	02/25/2017	05:09:04 AM
85	N023187-007C	SAMP	1	02/25/2017	05:14:36 AM
86	N023187-008C	SAMP	1	02/25/2017	05:19:10 AM
7	CCV12	CCV	1	02/25/2017	05:23:13 AM
1	CCB12	CCB	1	02/25/2017	05:28:20 AM
87	N023187-009C	SAMP	1	02/25/2017	05:32:50 AM
88	N023187-010C	SAMP	1	02/25/2017	05:37:24 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
89	N023187-011C	SAMP	1	02/25/2017	05:42:33 AM
90	N023187-012C	SAMP	1	02/25/2017	05:47:09 AM
91	N023187-013C	SAMP	1	02/25/2017	05:52:43 AM
92	N023187-014C	SAMP	1	02/25/2017	05:57:19 AM
7	CCV13	CCV	1	02/25/2017	06:02:54 AM
1	CCB13	CCB	1	02/25/2017	06:08:01 AM
2	LLCCV3	CCV2	1	02/25/2017	06:12:31 AM
4	ICSA4	ICSA	1	02/25/2017	06:17:03 AM
5	ICSAB4	ICSAB	1	02/25/2017	06:22:46 AM
155	MB-61378	MBLK	1	02/25/2017	06:35:13 AM
156	LCS-61378	LCS	1	02/25/2017	06:39:18 AM
157	N023187-002C	SAMP	1	02/25/2017	06:44:54 AM
14	N023187-002C	SAMP	5	02/25/2017	06:49:30 AM
15	N023187-002C-PS	PS	1	02/25/2017	06:54:01 AM
16	N023187-002C-MS	MS	1	02/25/2017	06:59:34 AM
17	N023187-002C-MSD	MSD	1	02/25/2017	07:05:07 AM
18	N023187-003C	SAMP	1	02/25/2017	07:10:40 AM
19	N023187-004C	SAMP	1	02/25/2017	07:15:12 AM
20	N023187-005C	SAMP	1	02/25/2017	07:19:44 AM
7	CCV14	CCV	1	02/25/2017	07:24:17 AM
1	CCB14	CCB	1	02/25/2017	07:29:24 AM
21	N023187-006C	SAMP	1	02/25/2017	07:33:54 AM
22	N023187-007C	SAMP	1	02/25/2017	07:38:27 AM
23	N023187-008C	SAMP	1	02/25/2017	07:44:01 AM
24	N023187-009C	SAMP	1	02/25/2017	07:49:37 AM
25	N023187-010C	SAMP	1	02/25/2017	07:54:11 AM
26	N023187-011C	SAMP	1	02/25/2017	07:58:45 AM
27	N023187-012C	SAMP	1	02/25/2017	08:03:17 AM
28	N023187-013C	SAMP	1	02/25/2017	08:07:49 AM
29	N023187-014C	SAMP	1	02/25/2017	08:13:21 AM
7	CCV15	CCV	1	02/25/2017	08:17:53 AM
1	CCB15	CCB	1	02/25/2017	08:22:58 AM
2	LLCCV4	CCV2	1	02/25/2017	08:27:28 AM
4	ICSA5	ICSA	1	02/25/2017	08:32:00 AM
5	ICSAB5	ICSAB	1	02/25/2017	08:37:41 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 9:00:00**
Prep End Date: **2/23/2017 2:00:00**

Reviewed/ Date: 3/6/2017
Initials/ Date: for 3/6/2017

Prep Batch **61364** Prep Code: **3010_W** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61364	Aqueous		25	☐	0	0	25	1.000		
MB-61364	Aqueous		25	☐	0	0	25	1.000		
N023177-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-012C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8751	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 9:00:00**
Prep End Date: **2/23/2017 2:00:00**

Reviewed/ Date: 3/6/2017

Initials/ Date: for 3/6/2017

Prep Batch **61364** Prep Code: **3010_W** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023177-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-015C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8751	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170224B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/24/2017	02:26:30 PM	Fe	273.953	-151	0.00	mg/L	
Standard1	02/24/2017	02:30:31 PM	Fe	273.953	636	0.0200	mg/L	
Standard2	02/24/2017	02:35:02 PM	Fe	273.953	2113	0.050	mg/L	
Standard3	02/24/2017	02:39:33 PM	Fe	273.953	54290	2.000	mg/L	
Standard4	02/24/2017	02:44:07 PM	Fe	273.953	137941	5.000	mg/L	
Standard5	02/24/2017	02:49:41 PM	Fe	273.953	190807	7.500	mg/L	
Standard6	02/24/2017	02:54:47 PM	Fe	273.953	244405	10.000	mg/L	
Standard7	02/24/2017	02:59:55 PM	Fe	273.953	531389	20.000	mg/L	0.9994

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9821.759	20	10000	0	98.2	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.172	20	20.00	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9360.084	20	10000	0	93.6	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9362.661	20	10000	0	93.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9501.326	20	10000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10030.818	20	10000	0	100	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10004.823	20	10000	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.202	20	20.00	0	101	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9924.671	20	10000	0	99.2	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.828	20	10000	0	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9966.626	20	10000	0	99.7	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10034.877	20	10000	0	100	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.605	20	20.00	0	103	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10028.071	20	10000	0	100	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10060.695	20	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV12** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10068.658	20	10000	0	101	90	110				

Sample ID **CCV13** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10139.200	20	10000	0	101	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.777	20	20.00	0	109	70	130				

Sample ID **CCV14** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10101.925	20	10000	0	101	90	110				

Sample ID **CCV15** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10168.823	20	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**LLCCV4**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**113759**
Client ID:	**ZZZZZZ**	Batch ID:	**R113759**	TestNo:	**EPA 6010B**			Analysis Date:	**2/25/2017**		SeqNo:	**2579337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.306	20	20.00	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.398	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.130	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.050	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.669112	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.606	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB5	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/24/2017**	SeqNo: **2579207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.468	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB6	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/24/2017**	SeqNo: **2579227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.444	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB7	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.280	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB8	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.745	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB9	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.441	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB10** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.798	20									

Sample ID **CCB11** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.321	20									

Sample ID **CCB12** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.779	20									

Sample ID **CCB13** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.322	20									

Sample ID **CCB14** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.426	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB15** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.493	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498538.831	50	500000	0	99.7	80	120				
Calcium	495252.064	500	500000	0	99.1	80	120				
Iron	168716.997	20	200000	0	84.4	80	120				
Magnesium	474099.585	100	500000	0	94.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	569636.202	50	500000	0	114	80	120				
Calcium	565868.636	500	500000	0	113	80	120				
Iron	193861.394	20	200000	0	96.9	80	120				
Magnesium	543479.421	100	500000	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502685.321	50	500000	0	101	80	120				
Calcium	495347.079	500	500000	0	99.1	80	120				
Iron	169676.315	20	200000	0	84.8	80	120				
Magnesium	473336.103	100	500000	0	94.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575855.499	50	500000	0	115	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	567519.645	500	500000	0	114	80	120				
Iron	195643.934	20	200000	0	97.8	80	120				
Magnesium	540688.824	100	500000	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502796.458	50	500000	0	101	80	120				
Calcium	509298.042	500	500000	0	102	80	120				
Iron	171365.442	20	200000	0	85.7	80	120				
Magnesium	499529.911	100	500000	0	99.9	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575236.818	50	500000	0	115	80	120				
Calcium	583096.631	500	500000	0	117	80	120				
Iron	196608.892	20	200000	0	98.3	80	120				
Magnesium	569084.337	100	500000	0	114	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	503155.808	50	500000	0	101	80	120				
Calcium	520373.898	500	500000	0	104	80	120				
Iron	172447.991	20	200000	0	86.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	521851.972	100	500000	0	104	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	576417.626	50	500000	0	115	80	120				
Calcium	595654.746	500	500000	0	119	80	120				
Iron	191860.942	20	200000	0	95.9	80	120				
Magnesium	595534.163	100	500000	0	119	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508366.201	50	500000	0	102	80	120				
Calcium	519794.929	500	500000	0	104	80	120				
Iron	174797.338	20	200000	0	87.4	80	120				
Magnesium	518898.061	100	500000	0	104	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	583664.801	50	500000	0	117	80	120				
Calcium	596796.293	500	500000	0	119	80	120				
Iron	194215.763	20	200000	0	97.1	80	120				
Magnesium	595324.919	100	500000	0	119	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.92	65-125	PASS
Standard2	ICAL	1	1.031	103.13	65-125	PASS
Standard3	ICAL	1	0.99	99.097	65-125	PASS
Standard4	ICAL	1	0.98	97.9	65-125	PASS
Standard5	ICAL	1	0.98	97.68	65-125	PASS
Standard6	ICAL	1	0.97	97.45	65-125	PASS
Standard7	ICAL	1	0.96	96.48	65-125	PASS
ICV	ICV	1	0.98	98.41	65-125	PASS
ICB	ICB	1	1.0043	100.43	65-125	PASS
LLICV	CCV1	1	1	99.8	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.88	88.17	65-125	PASS
CCV1	CCV	1	0.98	97.94	65-125	PASS
CCB1	CCB	1	1.009	100.9	65-125	PASS
CCV2	CCV	1	0.99	99.057	65-125	PASS
CCB2	CCB	1	1.02	102.04	65-125	PASS
CCV3	CCV	1	0.97	97.46	65-125	PASS
CCB3	CCB	1	1.0078	100.78	65-125	PASS
CCB3	CCB	1	0.98	98.43	65-125	PASS
CCV4	CCV	1	0.98	97.7	65-125	PASS
CCB4	CCB	1	0.99	99.4	65-125	PASS
CCV5	CCV	1	0.98	97.67	65-125	PASS
CCB5	CCB	1	0.99	99.002	65-125	PASS
LLCCV1	CCV2	1	1.013	101.26	65-125	PASS
ICSA2	ICSA	1	1	99.82	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.17	65-125	PASS
ICV	ICV	1	-0.00002	-0.002	65-125	NR!
ICB	ICB	1	1.005	100.5	65-125	PASS
LLCCV1	CCV2	1	1.018	101.79	65-125	PASS
ICSA2	ICSA	1	1	99.63	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.15	65-125	PASS
CCV6	CCV	1	0.99	98.64	65-125	PASS
CCB6	CCB	1	1	99.54	65-125	PASS
MB-61364	MBLK	1	1.02	102.04	65-125	PASS
CCV7	CCV	1	0.98	98.42	65-125	PASS
CCB7	CCB	1	1	99.86	65-125	PASS
LCS-61364	LCS	1	0.93	92.7	65-125	PASS
N023177-001C	SAMP	1	1.026	102.63	65-125	PASS
N023177-001C	SAMP	5	1.0034	100.34	65-125	PASS
N023177-001C-PS	PS	1	1.022	102.21	65-125	PASS

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N023177-001C-MS	MS	1	1.024	102.38	65-125	PASS
N023177-001C-MSD	MSD	1	1.016	101.56	65-125	PASS
N023177-002C	SAMP	1	1.039	103.92	65-125	PASS
N023177-003C	SAMP	1	0.98	97.91	65-125	PASS
N023177-004C	SAMP	1	0.99	98.58	65-125	PASS
N023177-005C	SAMP	1	0.97	97.19	65-125	PASS
CCV8	CCV	1	0.99	98.63	65-125	PASS
CCB8	CCB	1	1.0031	100.31	65-125	PASS
N023177-006C	SAMP	1	0.98	97.92	65-125	PASS
N023177-007C	SAMP	1	0.98	97.64	65-125	PASS
N023177-008C	SAMP	1	0.98	98.096	65-125	PASS
N023177-009C	SAMP	1	0.99	98.69	65-125	PASS
N023177-012C	SAMP	1	1	99.58	65-125	PASS
N023177-013C	SAMP	1	1	99.94	65-125	PASS
N023177-014C	SAMP	1	0.99	99.05	65-125	PASS
N023177-015C	SAMP	1	1	99.53	65-125	PASS
CCV9	CCV	1	0.99	98.74	65-125	PASS
CCB9	CCB	1	1	99.98	65-125	PASS
LLCCV2	CCV2	1	1.026	102.58	65-125	PASS
ICSA3	ICSA	1	1	99.84	65-125	PASS
ICSAB3	ICSAB	1	0.87	86.96	65-125	PASS
CCV10	CCV	1	0.98	98.29	65-125	PASS
CCB10	CCB	1	1.0005	100.05	65-125	PASS
CCV11	CCV	1	0.98	98.42	65-125	PASS
CCB11	CCB	1	1.0009	100.09	65-125	PASS
CCV12	CCV	1	0.98	98.34	65-125	PASS
CCB12	CCB	1	1.0034	100.34	65-125	PASS
CCV13	CCV	1	0.98	97.68	65-125	PASS
CCB13	CCB	1	1.0037	100.37	65-125	PASS
LLCCV3	CCV2	1	1.025	102.54	65-125	PASS
ICSA4	ICSA	1	1	99.61	65-125	PASS
ICSAB4	ICSAB	1	0.87	86.73	65-125	PASS
CCV14	CCV	1	1	99.76	65-125	PASS
CCB14	CCB	1	1.0054	100.54	65-125	PASS
CCV15	CCV	1	1.0047	100.47	65-125	PASS
CCB15	CCB	1	0.99	98.98	65-125	PASS
LLCCV4	CCV2	1	1.039	103.9	65-125	PASS
ICSA5	ICSA	1	1.017	101.73	65-125	PASS
ICSAB5	ICSAB	1	0.88	88.29	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023177
Test Method: EPA 6010B
Analysis Date: 2/24/2017

Matrix: Groundwater
Batch No.: 61364

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023177-001C DT 5X	Iron	ug/L	60.02353	NA	53.44693	12.30%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N023177-001C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**113759**
Client ID:	**ZZZZZZ**	Batch ID:	**61364**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/25/2017**	SeqNo:	**2579243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	202.899	20	100.0	53.45	149	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61362 **Instrument ID:** ICPMS-02
ASSET #: N023177 **Analyst:** CEI
Method: **Date Analyzed:** 3/3/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X				
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ba in LLCCV2 failed, bias high. However samples closed by LLCCV1.
%RSD of Se in STD 2 failed > 15%. However %RSD of LLICV passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/7/2017 Date:
2nd Level Reviewer 3/7/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023177-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.25131 * 1 * (25/25)

Arsenic , ug/L = 2.25131

Reporting results in two significant figures,

Arsenic , ug/L = 2.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.18	1.067	15	PASS	0.11	5.072	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	1.79	15	PASS	0.5	2.82	15	PASS
Std3-5/50 ppb	ICAL	1	5.096	0.5	15	PASS	5.029	0.95	15	PASS
Std4-10/100 ppb	ICAL	1	10.071	0.37	15	PASS	10.11	0.84	15	PASS
Std5-20/200 ppb	ICAL	1	19.93	0.25	15	PASS	20.24	0.5	15	PASS
Std6-40/400 ppb	ICAL	1	39.56	0.72	15	PASS	39.89	0.87	15	PASS
Std7-100/1000 ppb	ICAL	1	100.18	1.033	15	PASS	99.98	0.98	15	PASS
Std8-200/2000 ppb	ICAL	1	196.99	0.59	15	PASS	194.71	1.51	15	PASS
ICV	ICV	1	99.67	0.77	15	PASS	9.74	0.52	15	PASS
ICB	ICB	1	0.0037	97.39	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.95	0.24	20	PASS	0.91	2.98	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.015	65.58	15	<PQL
ICSAB1	ICSAB	1	19.89	0.47	15	PASS	18.63	1.28	15	PASS
MB-61362	MBLK	1	<0.000	N/A	15	<PQL	0.098	19.71	15	<PQL
LCS-61362	LCS	1	101.21	0.7	15	PASS	9.75	0.85	15	PASS
N023177-001B	SAMP	1	125.17	0.48	15	PASS	0.039	10.36	15	PASS
N023177-001B	SAMP	5	26.61	0.35	15	PASS	0.036	18.93	15	<PQL
N023177-001B-PS	PS	1	215.52	0.35	15	PASS	9.11	0.43	15	PASS
N023177-001B-MS	MS	1	216.51	0.17	15	PASS	9.098	1.45	15	PASS
N023177-001B-MSD	MSD	1	214.94	0.18	15	PASS	9.21	0.34	15	PASS
N023177-002B	SAMP	1	120.94	0.67	15	PASS	0.0059	113.012	15	<PQL
N023177-003B	SAMP	1	122.91	0.68	15	PASS	0.027	13.73	15	PASS
N023177-004B	SAMP	1	121.65	0.22	15	PASS	0.075	14.64	15	PASS
CCV1	CCV	1	20.13	0.53	15	PASS	20.23	0.66	15	PASS
CCB1	CCB	1	0.011	78.78	15	<PQL	0.02	25.44	15	<PQL
N023177-005B	SAMP	1	117.0065	0.74	15	PASS	0.65	3.6	15	PASS
N023177-006B	SAMP	1	122.11	1.35	15	PASS	0.01	44.081	15	<PQL
N023177-007B	SAMP	1	119.55	0.9	15	PASS	0.14	2.7	15	PASS
N023177-008B	SAMP	1	126.7	0.65	15	PASS	0.0077	152.3	15	<PQL
N023177-009B	SAMP	1	123.63	0.42	15	PASS	0.023	29.44	15	<PQL
N023177-010B	SAMP	1	99.056	0.91	15	PASS	0.0052	103.36	15	<PQL
N023177-011B	SAMP	1	111.85	0.62	15	PASS	0.019	32.075	15	<PQL
N023177-012B	SAMP	1	124.26	0.59	15	PASS	0.016	54.86	15	<PQL
N023177-013B	SAMP	1	122.97	0.57	15	PASS	<0.000	N/A	15	<PQL
N023177-014B	SAMP	1	127.28	0.55	15	PASS	0.0027	264.54	15	<PQL
CCV2	CCV	1	20.42	0.62	15	PASS	20.33	0.51	15	PASS
CCB2	CCB	1	0.01	6.8	15	PASS	0.025	27.85	15	<PQL
N023177-015B	SAMP	1	123.67	0.31	15	PASS	0.013	66.6	15	<PQL
N023177-001B	SAMP	25	5.74	1.021	15	PASS	0.038	17.36	15	<PQL
N023177-001B-PS	PS	5	47.84	0.71	15	PASS	2.15	0.31	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023177-001B-MS	MS	5	46.059	0.77	15	PASS	2.048	1.25	15	PASS
N023177-001B-MSD	MSD	5	45.7	0.46	15	PASS	2	2.2	15	PASS
CCV3	CCV	1	20.34	0.64	15	PASS	20.28	0.76	15	PASS
CCB3	CCB	1	0.012	33.87	15	<PQL	0.01	55.4	15	<PQL
LLCCV1	CCV2	1	0.96	1.3	20	PASS	0.93	3.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.96	0.17	15	PASS	18.59	0.83	15	PASS
CCV4	CCV	1	21.62	0.67	15	PASS	19.89	1.21	15	PASS
CCB4	CCB	1	0.014	12.17	15	PASS	0.0079	13.76	15	PASS
CCV5	CCV	1	21.41	0.46	15	PASS	20.028	0.8	15	PASS
CCB5	CCB	1	0.017	11.84	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.49	1.62	20	PASS	0.93	4.74	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.15	0.61	15	PASS	18.52	0.68	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	0.96	15	PASS	0.099	22.89	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	2.17	15	PASS	0.51	5.3	15	PASS
Std3-5/50 ppb	ICAL	1	5.1	0.57	15	PASS	5	2.46	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.53	15	PASS	10.16	2.21	15	PASS
Std5-20/200 ppb	ICAL	1	20.36	0.62	15	PASS	20.18	0.14	15	PASS
Std6-40/400 ppb	ICAL	1	40.26	0.26	15	PASS	40.16	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	99.79	0.85	15	PASS	99.45	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	197.26	0.79	15	PASS	200.22	1.027	15	PASS
ICV	ICV	1	98.29	0.55	15	PASS	10.065	1.94	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.018	26.59	15	<PQL
LLICV	CCV1	1	0.47	4.85	20	PASS	0.099	17.065	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.029	35.58	15	<PQL
ICSAB1	ICSAB	1	23.35	1.36	15	PASS	20.28	1.11	15	PASS
MB-61362	MBLK	1	0.068	23.18	15	<PQL	0.0086	77.47	15	<PQL
LCS-61362	LCS	1	97.72	0.9	15	PASS	10.02	1.55	15	PASS
N023177-001B	SAMP	1	0.011	356.84	15	<PQL	2.25	3.9	15	PASS
N023177-001B	SAMP	5	0.0077	311.62	15	<PQL	0.48	1.72	15	PASS
N023177-001B-PS	PS	1	90.027	0.89	15	PASS	11.81	2.56	15	PASS
N023177-001B-MS	MS	1	90.35	1.62	15	PASS	11.84	0.39	15	PASS
N023177-001B-MSD	MSD	1	90.71	1.53	15	PASS	11.94	1.36	15	PASS
N023177-002B	SAMP	1	0.89	1.92	15	PASS	2.18	2	15	PASS
N023177-003B	SAMP	1	0.092	44.094	15	<PQL	2.2	1.44	15	PASS
N023177-004B	SAMP	1	0.34	25.2	15	<PQL	2.14	2.23	15	PASS
CCV1	CCV	1	20.067	1.051	15	PASS	19.79	1.4	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0053	78.7	15	<PQL
N023177-005B	SAMP	1	0.11	13.12	15	PASS	2.098	3.061	15	PASS
N023177-006B	SAMP	1	0.06	9.57	15	PASS	2.15	4.2	15	PASS
N023177-007B	SAMP	1	<0.000	N/A	15	<PQL	2.093	3.87	15	PASS
N023177-008B	SAMP	1	0.89	3.3	15	PASS	2.21	2.72	15	PASS
N023177-009B	SAMP	1	0.64	7.46	15	PASS	2.13	3.61	15	PASS
N023177-010B	SAMP	1	34.93	1.0035	15	PASS	1.44	2.1	15	PASS
N023177-011B	SAMP	1	18.54	1.34	15	PASS	1.61	3.042	15	PASS
N023177-012B	SAMP	1	<0.000	N/A	15	<PQL	2.24	1.37	15	PASS
N023177-013B	SAMP	1	<0.000	N/A	15	<PQL	2.2	1.43	15	PASS
N023177-014B	SAMP	1	<0.000	N/A	15	<PQL	2.31	0.62	15	PASS
CCV2	CCV	1	19.94	1.43	15	PASS	19.65	0.28	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N023177-015B	SAMP	1	<0.000	N/A	15	<PQL	2.23	4.44	15	PASS
N023177-001B	SAMP	25	<0.000	N/A	15	<PQL	0.09	11.058	15	PASS
N023177-001B-PS	PS	5	20.67	0.69	15	PASS	2.67	4.11	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023177-001B-MS	MS	5	19.81	0.53	15	PASS	2.54	3.37	15	PASS
N023177-001B-MSD	MSD	5	19.8	1.32	15	PASS	2.56	2.48	15	PASS
CCV3	CCV	1	19.99	1.069	15	PASS	19.94	1.53	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0068	58.42	15	<PQL
LLCCV1	CCV2	1	0.45	2.051	20	PASS	0.084	4.45	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.029	99.41	15	<PQL
ICSAB2	ICSAB	1	23.77	1.18	15	PASS	20.16	1.039	15	PASS
CCV4	CCV	1	19.8	0.86	15	PASS	19.7	1.59	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.00098	541.25	15	<PQL
CCV5	CCV	1	20.17	0.97	15	PASS	19.97	0.36	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0019	192.21	15	<PQL
LLCCV2	CCV2	1	0.5	0.37	20	PASS	0.097	11.098	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.032	14.34	15	PASS
ICSAB3	ICSAB	1	23.72	0.73	15	PASS	20.13	1.62	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.07	56.72	15	<PQL	0.098	14.17	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	15.11	15	NR!	0.5	2.63	15	PASS
Std3-5/50 ppb	ICAL	1	5.19	1.27	15	PASS	5.028	1.0042	15	PASS
Std4-10/100 ppb	ICAL	1	10.16	1.15	15	PASS	10.043	1.28	15	PASS
Std5-20/200 ppb	ICAL	1	20.16	0.63	15	PASS	20.087	0.44	15	PASS
Std6-40/400 ppb	ICAL	1	39.58	3.72	15	PASS	39.97	0.26	15	PASS
Std7-100/1000 ppb	ICAL	1	99.96	1.35	15	PASS	101.9	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	200.074	1.21	15	PASS	199.046	1.97	15	PASS
ICV	ICV	1	10.071	1.19	15	PASS	10.42	0.69	15	PASS
ICB	ICB	1	0.054	81.9	15	<PQL	0.18	1.73	15	PASS
LLICV	CCV1	1	0.46	19.48	20	PASS	0.51	0.53	20	PASS
ICSA1	ICSA	1	0.0029	242.1	15	<PQL	0.095	16.47	15	<PQL
ICSAB1	ICSAB	1	18.84	2.35	15	PASS	23.58	0.56	15	PASS
MB-61362	MBLK	1	0.018	132.72	15	<PQL	0.053	23.82	15	<PQL
LCS-61362	LCS	1	10.13	0.35	15	PASS	9.59	0.91	15	PASS
N023177-001B	SAMP	1	1.56	5.052	15	PASS	5.57	1.52	15	PASS
N023177-001B	SAMP	5	0.33	19.9	15	<PQL	1.07	2.72	15	PASS
N023177-001B-PS	PS	1	10.51	2.68	15	PASS	16.15	0.12	15	PASS
N023177-001B-MS	MS	1	10.88	1.095	15	PASS	16.092	1.31	15	PASS
N023177-001B-MSD	MSD	1	11.086	5.34	15	PASS	15.97	0.34	15	PASS
N023177-002B	SAMP	1	1.72	11.047	15	PASS	5.32	2.34	15	PASS
N023177-003B	SAMP	1	1.72	8.92	15	PASS	5.4	0.65	15	PASS
N023177-004B	SAMP	1	1.75	3.16	15	PASS	5.24	1.22	15	PASS
CCV1	CCV	1	20.59	2.39	15	PASS	19.93	0.79	15	PASS
CCB1	CCB	1	0.0099	454.46	15	<PQL	0.079	13.011	15	PASS
N023177-005B	SAMP	1	1.67	7.21	15	PASS	4.98	1.17	15	PASS
N023177-006B	SAMP	1	1.66	7.18	15	PASS	5.17	0.49	15	PASS
N023177-007B	SAMP	1	1.65	2.55	15	PASS	5.26	1.29	15	PASS
N023177-008B	SAMP	1	1.79	7.22	15	PASS	5.42	1.34	15	PASS
N023177-009B	SAMP	1	1.55	3.92	15	PASS	5.3	0.6	15	PASS
N023177-010B	SAMP	1	0.56	7.44	15	PASS	3.81	0.96	15	PASS
N023177-011B	SAMP	1	0.91	2.34	15	PASS	5.41	0.86	15	PASS
N023177-012B	SAMP	1	1.73	6.81	15	PASS	5.41	0.7	15	PASS
N023177-013B	SAMP	1	1.67	6.97	15	PASS	5.3	0.77	15	PASS
N023177-014B	SAMP	1	1.88	4.95	15	PASS	5.53	0.74	15	PASS
CCV2	CCV	1	20.26	1.37	15	PASS	19.99	0.32	15	PASS
CCB2	CCB	1	0.019	176.29	15	<PQL	0.083	11.49	15	PASS
N023177-015B	SAMP	1	1.79	12.28	15	PASS	5.38	1.49	15	PASS
N023177-001B	SAMP	25	0.045	32.34	15	<PQL	0.23	3.057	15	PASS
N023177-001B-PS	PS	5	2.48	9.26	15	PASS	3.28	1.18	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023177-001B-MS	MS	5	2.5	1.75	15	PASS	3.17	1.21	15	PASS
N023177-001B-MSD	MSD	5	2.6	4.018	15	PASS	3.14	3.28	15	PASS
CCV3	CCV	1	20.46	5.39	15	PASS	20	0.95	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.09	4.66	15	PASS
LLCCV1	CCV2	1	0.49	28.072	20	<PQL	0.46	1.16	20	PASS
ICSA2	ICSA	1	0.049	67.78	15	<PQL	0.17	0.86	15	PASS
ICSAB2	ICSAB	1	18.33	0.68	15	PASS	23.71	0.42	15	PASS
CCV4	CCV	1	20.16	0.78	15	PASS	20.73	0.18	15	PASS
CCB4	CCB	1	0.0081	104.14	15	<PQL	0.066	6.23	15	PASS
CCV5	CCV	1	19.87	1.34	15	PASS	20.59	0.57	15	PASS
CCB5	CCB	1	0.0043	451.13	15	<PQL	0.067	10.06	15	PASS
LLCCV2	CCV2	1	0.4	17.013	20	PASS	0.44	1.62	20	PASS
ICSA3	ICSA	1	0.036	2.61	15	PASS	0.11	3.36	15	PASS
ICSAB3	ICSAB	1	18.58	2.32	15	PASS	23.77	1.14	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170303A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0303001.D	RINSE	RINSE	1	03/03/17 1:14 PM
A0303002.D	Cal Blank	IBLK	1	03/03/17 1:20 PM
A0303003.D	Std1-0.1/1 ppb	ICAL	1	03/03/17 1:25 PM
A0303004.D	Std2-0.5/5 ppb	ICAL	1	03/03/17 1:31 PM
A0303005.D	Std3-5/50 ppb	ICAL	1	03/03/17 1:36 PM
A0303006.D	Std4-10/100 ppb	ICAL	1	03/03/17 1:42 PM
A0303007.D	Std5-20/200 ppb	ICAL	1	03/03/17 1:48 PM
A0303008.D	Std6-40/400 ppb	ICAL	1	03/03/17 1:53 PM
A0303009.D	Std7-100/1000 ppb	ICAL	1	03/03/17 1:59 PM
A0303010.D	Std8-200/2000 ppb	ICAL	1	03/03/17 2:04 PM
A0303011.D	ICV	ICV	1	03/03/17 2:10 PM
A0303012.D	ICB	ICB	1	03/03/17 2:15 PM
A0303013.D	LLICV	CCV1	1	03/03/17 2:21 PM
A0303014.D	ICSA1	ICSA	1	03/03/17 2:27 PM
A0303015.D	ICSAB1	ICSAB	1	03/03/17 2:34 PM
A0303016.D	MB-61362	MBLK	1	03/03/17 2:48 PM
A0303017.D	LCS-61362	LCS	1	03/03/17 2:54 PM
A0303018.D	N023177-001B	SAMP	1	03/03/17 3:00 PM
A0303019.D	N023177-001B	SAMP	5	03/03/17 3:05 PM
A0303020.D	N023177-001B-PS	PS	1	03/03/17 3:13 PM
A0303021.D	N023177-001B-MS	MS	1	03/03/17 3:18 PM
A0303022.D	N023177-001B-MSD	MSD	1	03/03/17 3:24 PM
A0303023.D	N023177-002B	SAMP	1	03/03/17 3:29 PM
A0303024.D	N023177-003B	SAMP	1	03/03/17 3:35 PM
A0303025.D	N023177-004B	SAMP	1	03/03/17 3:40 PM
A0303026.D	CCV1	CCV	1	03/03/17 3:46 PM
A0303027.D	CCB1	CCB	1	03/03/17 3:52 PM
A0303028.D	N023177-005B	SAMP	1	03/03/17 3:57 PM
A0303029.D	N023177-006B	SAMP	1	03/03/17 4:03 PM
A0303030.D	N023177-007B	SAMP	1	03/03/17 4:08 PM
A0303031.D	N023177-008B	SAMP	1	03/03/17 4:14 PM
A0303032.D	N023177-009B	SAMP	1	03/03/17 4:19 PM
A0303033.D	N023177-010B	SAMP	1	03/03/17 4:25 PM
A0303034.D	N023177-011B	SAMP	1	03/03/17 4:30 PM
A0303035.D	N023177-012B	SAMP	1	03/03/17 4:36 PM
A0303036.D	N023177-013B	SAMP	1	03/03/17 4:41 PM
A0303037.D	N023177-014B	SAMP	1	03/03/17 4:47 PM
A0303038.D	CCV2	CCV	1	03/03/17 4:53 PM
A0303039.D	CCB2	CCB	1	03/03/17 4:58 PM
A0303040.D	N023177-015B	SAMP	1	03/03/17 5:04 PM
A0303041.D	N023177-001B	SAMP	25	03/03/17 5:09 PM
A0303042.D	N023177-001B-PS	PS	5	03/03/17 5:15 PM

INJECTION LOG: 170303A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0303043.D	N023177-001B-MS	MS	5	03/03/17 5:20 PM
A0303044.D	N023177-001B-MSD	MSD	5	03/03/17 5:26 PM
A0303045.D	MB-61386	MBLK	1	03/03/17 5:31 PM
A0303046.D	LCS-61386	LCS	1	03/03/17 5:37 PM
A0303047.D	N023187-002B	SAMP	1	03/03/17 5:42 PM
A0303048.D	N023187-002B	SAMP	5	03/03/17 5:48 PM
A0303049.D	N023187-002B-PS	PS	1	03/03/17 5:53 PM
A0303050.D	CCV3	CCV	1	03/03/17 5:59 PM
A0303051.D	CCB3	CCB	1	03/03/17 6:05 PM
A0303052.D	LLCCV1	CCV2	1	03/03/17 6:10 PM
A0303053.D	ICSA2	ICSA	1	03/03/17 6:14 PM
A0303054.D	ICSAB2	ICSAB	1	03/03/17 6:20 PM
A0303055.D	N023187-002B-MS	MS	1	03/03/17 6:25 PM
A0303056.D	N023187-002B-MSD	MSD	1	03/03/17 6:31 PM
A0303057.D	N023187-003B	SAMP	1	03/03/17 6:37 PM
A0303058.D	N023187-004B	SAMP	1	03/03/17 6:43 PM
A0303059.D	N023187-005B	SAMP	1	03/03/17 6:48 PM
A0303060.D	N023187-006B	SAMP	1	03/03/17 6:54 PM
A0303061.D	N023187-007B	SAMP	1	03/03/17 6:59 PM
A0303062.D	N023187-008B	SAMP	1	03/03/17 7:06 PM
A0303063.D	N023187-009B	SAMP	1	03/03/17 7:11 PM
A0303064.D	N023187-010B	SAMP	1	03/03/17 7:16 PM
A0303065.D	CCV4	CCV	1	03/03/17 7:22 PM
A0303066.D	CCB4	CCB	1	03/03/17 7:27 PM
A0303067.D	N023187-011B	SAMP	1	03/03/17 7:33 PM
A0303068.D	N023187-012B	SAMP	1	03/03/17 7:38 PM
A0303069.D	N023187-013B	SAMP	1	03/03/17 7:44 PM
A0303070.D	N023187-014B	SAMP	1	03/03/17 7:49 PM
A0303071.D	N023187-002B	SAMP	25	03/03/17 7:55 PM
A0303072.D	N023187-002B-PS	PS	5	03/03/17 8:00 PM
A0303073.D	N023187-002B-MS	MS	5	03/03/17 8:06 PM
A0303074.D	N023187-002B-MSD	MSD	5	03/03/17 8:11 PM
A0303075.D	CCV5	CCV	1	03/03/17 8:17 PM
A0303076.D	CCB5	CCB	1	03/03/17 8:23 PM
A0303077.D	LLCCV2	CCV2	1	03/03/17 8:29 PM
A0303078.D	ICSA3	ICSA	1	03/03/17 8:34 PM
A0303079.D	ICSAB3	ICSAB	1	03/03/17 8:40 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 7:48:44 A**
Prep End Date: **2/23/2017 12:00:00**

Reviewed/ Date: 3/7/2017
Initials/ Date: 3/7/2017

Prep Batch **61362** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61362	Aqueous		25	☐	0	0	25	1.000		
MB-61362	Aqueous		25	☐	0	0	25	1.000		
N023177-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 7:48:44 A**
Prep End Date: **2/23/2017 12:00:00**

Reviewed/ Date: 3/7/2017

Initials/ Date: 3/7/2017

Prep Batch **61362** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023177-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N023177-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 3 Mar 2017 10:59:36 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	158304.00	0.00	
24 Mg	686666.00	0.00	
25 Mg	91509.50	0.00	
26 Mg	105098.00	0.00	
59 Co	1016960.00	0.00	
115 In	1675790.00	0.00	
206 Pb	467343.00	0.00	
207 Pb	407044.00	0.00	
208 Pb	1008360.00	0.00	

RSD (%)

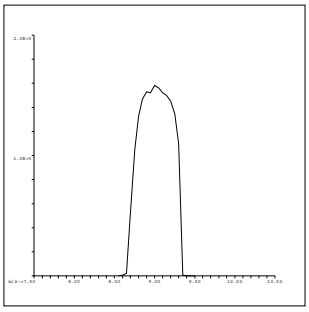
Element	Actual	Required	Flag
9 Be	0.36	5.00	
24 Mg	3.02	5.00	
25 Mg	3.44	5.00	
26 Mg	1.07	5.00	
59 Co	0.42	5.00	
115 In	0.91	5.00	
206 Pb	0.78	5.00	
207 Pb	0.38	5.00	
208 Pb	0.56	5.00	

Ion Ratio

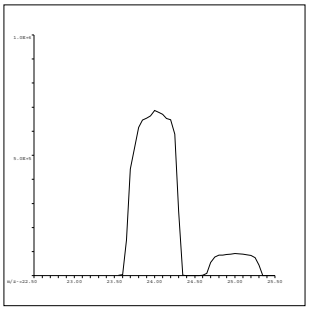
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

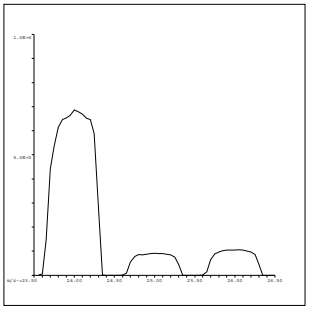
Element	Actual	Required	Flag



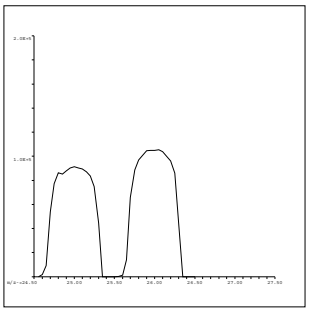
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



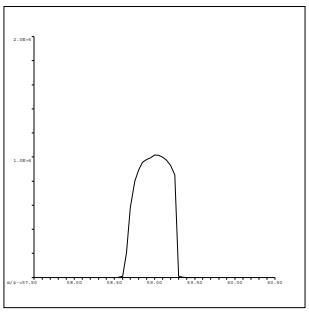
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



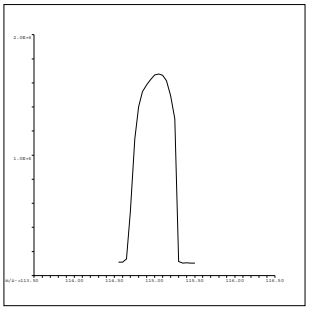
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



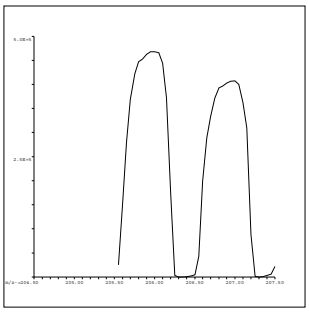
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



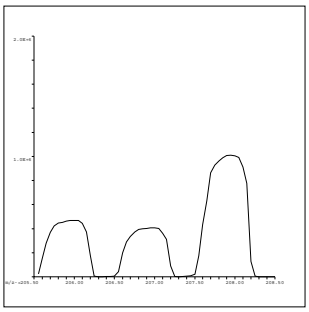
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



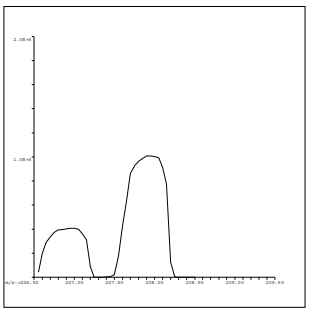
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170303A

Instrument ID: ICPMS-02

Analyte	Data File	A0303002.D	A0303003.D	A0303004.D	A0303005.D	A0303006.D	A0303007.D	A0303008.D	A0303009.D	A0303010.D	
	Acq. Date-Time	03/03/2017 01:20 PM	03/03/2017 01:25 PM	03/03/2017 01:31 PM	03/03/2017 01:36 PM	03/03/2017 01:42 PM	03/03/2017 01:48 PM	03/03/2017 01:53 PM	03/03/2017 01:59 PM	03/03/2017 02:04 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	137629.7		144032.1	144404.7	143573.9	140379.3	143570.7	143716.3	141675.8	
55 Mn [2]	CPS	641.2		4086.6	33867.9	67298.2	129412.6	261059.4	646813	1259835.8	1.0000
52 Cr [2]	CPS	542.2		7130.6	66528.9	132387	258585.8	520805.1	1305828.1	2506554.2	1.0000
72 Ge (ISTD) [1]	CPS	114126.4		121445.6	119841.9	119959.3	118930.3	122257.5	119568.7	119491.9	
78 Se [1]	CPS	18.9		341.1	3052.6	5963.5	11710.2	23614.7	58299.9	116581.3	1.0000
72 Ge (ISTD) [2]	CPS	93987.7	99204.9	98548.6	98101.5	98446.9	96851.1	98253.7	98477.7	95793.5	
75 As [2]	CPS	25.3	139.6	602.7	5675.7	11557.1	22556.5	45519.6	112940.3	221126	1.0000
103 Rh (ISTD) [2]	CPS	3488544.3		3630252	3645363.8	3631228.8	3575297.3	3636707.4	3594217.4	3536028.1	
95 Mo [2]	CPS	208.9		4260.7	40700.3	80775.5	158847.3	321287.9	809160.1	1555129.5	0.9999
159 Tb (ISTD) [3]	CPS	12070086.8		12869715.4	12775454.5	12867935.2	12639532.9	12831020.6	12957211.5	12825587.9	
137 Ba [3]	CPS	1054.3		11497.3	101280.2	200528	388698.9	782199.4	1998201.6	3888485.4	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.065	0.10	10.00	0	101	90	110				
Barium	99.674	1.0	100.0	0	99.7	90	110				
Manganese	98.289	0.50	100.0	0	98.3	90	110				
Molybdenum	10.424	0.50	10.00	0	104	90	110				
Selenium	10.071	0.50	10.00	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	98.9	80	120				
Barium	0.948	1.0	1.000	0	94.8	80	120				
Manganese	0.466	0.50	0.5000	0	93.1	80	120				
Molybdenum	0.508	0.50	0.5000	0	102	80	120				
Selenium	0.465	0.50	0.5000	0	93.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.791	0.10	20.00	0	99.0	90	110				
Barium	20.132	1.0	20.00	0	101	90	110				
Manganese	20.067	0.50	20.00	0	100	90	110				
Molybdenum	19.933	0.50	20.00	0	99.7	90	110				
Selenium	20.591	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.649	0.10	20.00	0	98.2	90	110				
Barium	20.419	1.0	20.00	0	102	90	110				
Manganese	19.937	0.50	20.00	0	99.7	90	110				
Molybdenum	19.987	0.50	20.00	0	99.9	90	110				
Selenium	20.262	0.50	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.942	0.10	20.00	0	99.7	90	110				
Barium	20.340	1.0	20.00	0	102	90	110				
Manganese	19.991	0.50	20.00	0	100	90	110				
Molybdenum	19.998	0.50	20.00	0	100	90	110				
Selenium	20.464	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.084	0.10	0.1000	0	84.4	70	130				
Barium	0.963	1.0	1.000	0	96.3	70	130				
Manganese	0.453	0.50	0.5000	0	90.7	70	130				
Molybdenum	0.464	0.50	0.5000	0	92.8	70	130				
Selenium	0.492	0.50	0.5000	0	98.4	70	130				

Samples N023177 were closed by CCV3 / LLCCV1/ CCB3 / ICSA2 / ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/6/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.701	0.10	20.00	0	98.5	90	110				
Manganese	19.798	0.50	20.00	0	99.0	90	110				
Molybdenum	20.727	0.50	20.00	0	104	90	110				
Selenium	20.155	0.50	20.00	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.969	0.10	20.00	0	99.8	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.594	0.50	20.00	0	103	90	110				
Selenium	19.868	0.50	20.00	0	99.3	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.097	0.10	0.1000	0	96.8	70	130				
Manganese	0.502	0.50	0.5000	0	100	70	130				
Molybdenum	0.441	0.50	0.5000	0	88.1	70	130				
Selenium	0.402	0.50	0.5000	0	80.3	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.738	1.0	10.00	0	97.4	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.910	1.0	1.000	0	91.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.227	1.0	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.333	1.0	20.00	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.281	1.0	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.932	1.0	1.000	0	93.2	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.887	1.0	20.00	0	99.4	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.028	1.0	20.00	0	100	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.932	1.0	1.000	0	93.2	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.178	0.50									
Selenium	0.054	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.079	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCB	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2586035

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.090	0.50									
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCB	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2586050

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.066	0.50									
Selenium	ND	0.50									

Sample ID	CCB5	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCB	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2586060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.067	0.50									
Selenium	ND	0.50									

Samples N023177 were closed by CCV3 / LLCCV1/ CCB3 / ICSA2 / ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.020	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCB	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2585984

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.029	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.095	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.277	0.10	20.00	0	101	80	120				
Barium	19.888	1.0	20.00	0	99.4	80	120				
Manganese	23.355	0.50	20.00	0	117	80	120				
Molybdenum	23.584	0.50	20.00	0	118	80	120				
Selenium	18.837	0.50	20.00	0	94.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.029	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.169	0.50									
Selenium	0.049	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.162	0.10	20.00	0	101	80	120				
Barium	19.962	1.0	20.00	0	99.8	80	120				
Manganese	23.771	0.50	20.00	0	119	80	120				
Molybdenum	23.711	0.50	20.00	0	119	80	120				
Selenium	18.331	0.50	20.00	0	91.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.032	0.10									
Manganese	ND	0.50									
Molybdenum	0.110	0.50									
Selenium	0.036	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.128	0.10	20.00	0	101	80	120				
Manganese	23.724	0.50	20.00	0	119	80	120				
Molybdenum	23.770	0.50	20.00	0	119	80	120				
Selenium	18.583	0.50	20.00	0	92.9	80	120				

Samples N023177 were closed by CCV3 / LLCCV1/ CCB3 / ICSA2 / ICSAB2.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 3/6/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.633	1.0	20.00	0	93.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.586	1.0	20.00	0	92.9	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.524	1.0	20.00	0	92.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	12070086.8	12070086.8	100	PASS	70-125	137629.7	137629.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	12909761.9	12070086.8	106.96	PASS	70-125	145045.7	137629.7	105.39	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	12869715.4	12070086.8	106.62	PASS	70-125	144032.1	137629.7	104.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	12775454.5	12070086.8	105.84	PASS	70-125	144404.7	137629.7	104.92	PASS	70-125
Std4-10/100 ppb	ICAL	1	12867935.2	12070086.8	106.61	PASS	70-125	143573.9	137629.7	104.32	PASS	70-125
Std5-20/200 ppb	ICAL	1	12639532.9	12070086.8	104.72	PASS	70-125	140379.3	137629.7	102	PASS	70-125
Std6-40/400 ppb	ICAL	1	12831020.6	12070086.8	106.3	PASS	70-125	143570.7	137629.7	104.32	PASS	70-125
Std7-100/1000 ppb	ICAL	1	12957211.5	12070086.8	107.35	PASS	70-125	143716.3	137629.7	104.42	PASS	70-125
Std8-200/2000 ppb	ICAL	1	12825587.9	12070086.8	106.26	PASS	70-125	141675.8	137629.7	102.94	PASS	70-125
ICV	ICV	1	12022986.3	12070086.8	99.61	PASS	70-125	128927.7	137629.7	93.68	PASS	70-125
ICB	ICB	1	12204058.4	12070086.8	101.11	PASS	70-125	131968.8	137629.7	95.89	PASS	70-125
LLICV	CCV1	1	12852489.7	12070086.8	106.48	PASS	70-125	138433.5	137629.7	100.58	PASS	70-125
ICSA1	ICSA	1	10808619	12070086.8	89.55	PASS	70-125	133830.6	137629.7	97.24	PASS	70-125
ICSAB1	ICSAB	1	11113881.8	12070086.8	92.078	PASS	70-125	139195.2	137629.7	101.14	PASS	70-125
MB-61362	MBLK	1	12390991.5	12070086.8	102.66	PASS	70-125	133619.5	137629.7	97.086	PASS	70-125
LCS-61362	LCS	1	12527309.5	12070086.8	103.79	PASS	70-125	133711.3	137629.7	97.15	PASS	70-125
N023177-001B	SAMP	1	12733773.1	12070086.8	105.5	PASS	70-125	160818	137629.7	116.85	PASS	70-125
N023177-001B	SAMP	5	12278255.2	12070086.8	101.72	PASS	70-125	130413.9	137629.7	94.76	PASS	70-125
N023177-001B-PS	PS	1	12916094	12070086.8	107.01	PASS	70-125	149623.9	137629.7	108.71	PASS	70-125
N023177-001B-MS	MS	1	12640570.1	12070086.8	104.73	PASS	70-125	145700.2	137629.7	105.86	PASS	70-125
N023177-001B-MSD	MSD	1	12760833.4	12070086.8	105.72	PASS	70-125	143613.2	137629.7	104.35	PASS	70-125
N023177-002B	SAMP	1	12896258.8	12070086.8	106.84	PASS	70-125	142772.5	137629.7	103.74	PASS	70-125
N023177-003B	SAMP	1	12465715.7	12070086.8	103.28	PASS	70-125	139093.8	137629.7	101.06	PASS	70-125
N023177-004B	SAMP	1	12897006.2	12070086.8	106.85	PASS	70-125	145081.7	137629.7	105.41	PASS	70-125
CCV1	CCV	1	13370958	12070086.8	110.78	PASS	70-125	137790.2	137629.7	100.12	PASS	70-125
CCB1	CCB	1	12413412	12070086.8	102.84	PASS	70-125	119739.7	137629.7	87.001	PASS	70-125
N023177-005B	SAMP	1	10795521.9	12070086.8	89.44	PASS	70-125	113455.3	137629.7	82.44	PASS	70-125
N023177-006B	SAMP	1	12378667.9	12070086.8	102.56	PASS	70-125	132799.9	137629.7	96.49	PASS	70-125
N023177-007B	SAMP	1	12878880.1	12070086.8	106.7	PASS	70-125	139936.1	137629.7	101.68	PASS	70-125
N023177-008B	SAMP	1	13196024	12070086.8	109.33	PASS	70-125	145268.9	137629.7	105.55	PASS	70-125
N023177-009B	SAMP	1	12888710.1	12070086.8	106.78	PASS	70-125	142467.1	137629.7	103.51	PASS	70-125
N023177-010B	SAMP	1	12615534.8	12070086.8	104.52	PASS	70-125	141180.6	137629.7	102.58	PASS	70-125
N023177-011B	SAMP	1	13089003.6	12070086.8	108.44	PASS	70-125	145710.4	137629.7	105.87	PASS	70-125
N023177-012B	SAMP	1	13177991.2	12070086.8	109.18	PASS	70-125	145474.3	137629.7	105.7	PASS	70-125
N023177-013B	SAMP	1	13688918.3	12070086.8	113.41	PASS	70-125	151664.5	137629.7	110.2	PASS	70-125
N023177-014B	SAMP	1	13376317	12070086.8	110.82	PASS	70-125	147466	137629.7	107.15	PASS	70-125
CCV2	CCV	1	13840208.8	12070086.8	114.67	PASS	70-125	139111.8	137629.7	101.08	PASS	70-125
CCB2	CCB	1	12697539.1	12070086.8	105.2	PASS	70-125	119915.2	137629.7	87.13	PASS	70-125
N023177-015B	SAMP	1	13015954.1	12070086.8	107.84	PASS	70-125	135198.9	137629.7	98.23	PASS	70-125
N023177-001B	SAMP	25	12737869.5	12070086.8	105.53	PASS	70-125	119431.3	137629.7	86.78	PASS	70-125
N023177-001B-PS	PS	5	12769123.7	12070086.8	105.79	PASS	70-125	120985	137629.7	87.91	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023177-001B-MS	MS	5	12643365.2	12070086.8	104.75	PASS	70-125	121664.8	137629.7	88.4	PASS	70-125
N023177-001B-MSD	MSD	5	12786080.8	12070086.8	105.93	PASS	70-125	123163.7	137629.7	89.49	PASS	70-125
CCV3	CCV	1	13855827.2	12070086.8	114.79	PASS	70-125	135840.3	137629.7	98.7	PASS	70-125
CCB3	CCB	1	12890118.6	12070086.8	106.79	PASS	70-125	124986.6	137629.7	90.81	PASS	70-125
LLCCV1	CCV2	1	13518004.7	12070086.8	112	PASS	70-125	129877.4	137629.7	94.37	PASS	70-125
ICSA2	ICSA	1	11071743	12070086.8	91.73	PASS	70-125	133485.8	137629.7	96.99	PASS	70-125
ICSAB2	ICSAB	1	11080341.9	12070086.8	91.8	PASS	70-125	142426	137629.7	103.48	PASS	70-125
CCV4	CCV	1	14292930.1	12070086.8	118.42	PASS	70-125	160630.7	137629.7	116.71	PASS	70-125
CCB4	CCB	1	13102502.6	12070086.8	108.55	PASS	70-125	134498.3	137629.7	97.72	PASS	70-125
CCV5	CCV	1	13836868.5	12070086.8	114.64	PASS	70-125	139017.5	137629.7	101.01	PASS	70-125
CCB5	CCB	1	12791120.4	12070086.8	105.97	PASS	70-125	126886.5	137629.7	92.19	PASS	70-125
LLCCV2	CCV2	1	14186896.2	12070086.8	117.54	PASS	70-125	134824.2	137629.7	97.96	PASS	70-125
ICSA3	ICSA	1	10846904.4	12070086.8	89.87	PASS	70-125	128808.8	137629.7	93.59	PASS	70-125
ICSAB3	ICSAB	1	11045172.9	12070086.8	91.51	PASS	70-125	140084	137629.7	101.78	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	93987.7	93987.7	100	PASS	70-125	114126.4	114126.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	99204.9	93987.7	105.55	PASS	70-125	120665.7	114126.4	105.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	98548.6	93987.7	104.85	PASS	70-125	121445.6	114126.4	106.41	PASS	70-125
Std3-5/50 ppb	ICAL	1	98101.5	93987.7	104.38	PASS	70-125	119841.9	114126.4	105.01	PASS	70-125
Std4-10/100 ppb	ICAL	1	98446.9	93987.7	104.74	PASS	70-125	119959.3	114126.4	105.11	PASS	70-125
Std5-20/200 ppb	ICAL	1	96851.1	93987.7	103.05	PASS	70-125	118930.3	114126.4	104.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	98253.7	93987.7	104.54	PASS	70-125	122257.5	114126.4	107.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98477.7	93987.7	104.78	PASS	70-125	119568.7	114126.4	104.77	PASS	70-125
Std8-200/2000 ppb	ICAL	1	95793.5	93987.7	101.92	PASS	70-125	119491.9	114126.4	104.7	PASS	70-125
ICV	ICV	1	88722.7	93987.7	94.4	PASS	70-125	108126.3	114126.4	94.74	PASS	70-125
ICB	ICB	1	91427.6	93987.7	97.28	PASS	70-125	111221.2	114126.4	97.45	PASS	70-125
LLICV	CCV1	1	95408.6	93987.7	101.51	PASS	70-125	117485.4	114126.4	102.94	PASS	70-125
ICSA1	ICSA	1	82727.7	93987.7	88.02	PASS	70-125	92747.2	114126.4	81.27	PASS	70-125
ICSAB1	ICSAB	1	85027.1	93987.7	90.47	PASS	70-125	98210.1	114126.4	86.054	PASS	70-125
MB-61362	MBLK	1	91435.3	93987.7	97.28	PASS	70-125	105748.6	114126.4	92.66	PASS	70-125
LCS-61362	LCS	1	90436.4	93987.7	96.22	PASS	70-125	107215.5	114126.4	93.94	PASS	70-125
N023177-001B	SAMP	1	100564.2	93987.7	107	PASS	70-125	121995.7	114126.4	106.9	PASS	70-125
N023177-001B	SAMP	5	88693.5	93987.7	94.37	PASS	70-125	107902.3	114126.4	94.55	PASS	70-125
N023177-001B-PS	PS	1	96311	93987.7	102.47	PASS	70-125	113287	114126.4	99.26	PASS	70-125
N023177-001B-MS	MS	1	94237.7	93987.7	100.27	PASS	70-125	109416.9	114126.4	95.87	PASS	70-125
N023177-001B-MSD	MSD	1	93805.4	93987.7	99.81	PASS	70-125	106280	114126.4	93.12	PASS	70-125
N023177-002B	SAMP	1	93271.4	93987.7	99.24	PASS	70-125	104741.2	114126.4	91.78	PASS	70-125
N023177-003B	SAMP	1	90351.5	93987.7	96.13	PASS	70-125	99867.7	114126.4	87.51	PASS	70-125
N023177-004B	SAMP	1	94239.2	93987.7	100.27	PASS	70-125	104327.4	114126.4	91.41	PASS	70-125
CCV1	CCV	1	95584.6	93987.7	101.7	PASS	70-125	112066.5	114126.4	98.2	PASS	70-125
CCB1	CCB	1	86165.1	93987.7	91.68	PASS	70-125	99103.2	114126.4	86.84	PASS	70-125
N023177-005B	SAMP	1	76816.7	93987.7	81.73	PASS	70-125	86774.2	114126.4	76.033	PASS	70-125
N023177-006B	SAMP	1	87934.2	93987.7	93.56	PASS	70-125	96441.3	114126.4	84.5	PASS	70-125
N023177-007B	SAMP	1	91862.6	93987.7	97.74	PASS	70-125	101135.3	114126.4	88.62	PASS	70-125
N023177-008B	SAMP	1	95153	93987.7	101.24	PASS	70-125	103457.1	114126.4	90.65	PASS	70-125
N023177-009B	SAMP	1	93719.5	93987.7	99.71	PASS	70-125	101936.9	114126.4	89.32	PASS	70-125
N023177-010B	SAMP	1	91346.1	93987.7	97.19	PASS	70-125	97436.1	114126.4	85.38	PASS	70-125
N023177-011B	SAMP	1	95607.5	93987.7	101.72	PASS	70-125	102557.2	114126.4	89.86	PASS	70-125
N023177-012B	SAMP	1	94824.7	93987.7	100.89	PASS	70-125	102908.4	114126.4	90.17	PASS	70-125
N023177-013B	SAMP	1	99293.3	93987.7	105.64	PASS	70-125	107416.2	114126.4	94.12	PASS	70-125
N023177-014B	SAMP	1	96694.2	93987.7	102.88	PASS	70-125	104127.3	114126.4	91.24	PASS	70-125
CCV2	CCV	1	99011.7	93987.7	105.35	PASS	70-125	113209	114126.4	99.2	PASS	70-125
CCB2	CCB	1	87135.5	93987.7	92.71	PASS	70-125	100018.4	114126.4	87.64	PASS	70-125
N023177-015B	SAMP	1	90316.3	93987.7	96.094	PASS	70-125	100036.4	114126.4	87.65	PASS	70-125
N023177-001B	SAMP	25	86526.4	93987.7	92.061	PASS	70-125	97704.8	114126.4	85.61	PASS	70-125
N023177-001B-PS	PS	5	86868.3	93987.7	92.43	PASS	70-125	97001.6	114126.4	84.99	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023177-001B-MS	MS	5	86704.2	93987.7	92.25	PASS	70-125	97372	114126.4	85.32	PASS	70-125
N023177-001B-MSD	MSD	5	87029.8	93987.7	92.6	PASS	70-125	97871.1	114126.4	85.76	PASS	70-125
CCV3	CCV	1	96768.3	93987.7	102.96	PASS	70-125	111083.7	114126.4	97.33	PASS	70-125
CCB3	CCB	1	90863.5	93987.7	96.68	PASS	70-125	103618.4	114126.4	90.79	PASS	70-125
LLCCV1	CCV2	1	94055.5	93987.7	100.07	PASS	70-125	109631.8	114126.4	96.062	PASS	70-125
ICSA2	ICSA	1	83214.6	93987.7	88.54	PASS	70-125	95760	114126.4	83.91	PASS	70-125
ICSAB2	ICSAB	1	90168.3	93987.7	95.94	PASS	70-125	108966	114126.4	95.48	PASS	70-125
CCV4	CCV	1	113106.5	93987.7	120.34	PASS	70-125	134405.2	114126.4	117.77	PASS	70-125
CCB4	CCB	1	98174.1	93987.7	104.45	PASS	70-125	119178.9	114126.4	104.43	PASS	70-125
CCV5	CCV	1	101502.4	93987.7	108	PASS	70-125	121642.3	114126.4	106.59	PASS	70-125
CCB5	CCB	1	94370.8	93987.7	100.41	PASS	70-125	113195.3	114126.4	99.18	PASS	70-125
LLCCV2	CCV2	1	97203.9	93987.7	103.42	PASS	70-125	119093.9	114126.4	104.35	PASS	70-125
ICSA3	ICSA	1	83343.9	93987.7	88.68	PASS	70-125	97301.6	114126.4	85.26	PASS	70-125
ICSAB3	ICSAB	1	89096.9	93987.7	94.8	PASS	70-125	110128.6	114126.4	96.5	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3488544.3	3488544.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	3667614	3488544.3	105.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	3630252	3488544.3	104.06	PASS	70-125
Std3-5/50 ppb	ICAL	1	3645363.8	3488544.3	104.5	PASS	70-125
Std4-10/100 ppb	ICAL	1	3631228.8	3488544.3	104.09	PASS	70-125
Std5-20/200 ppb	ICAL	1	3575297.3	3488544.3	102.49	PASS	70-125
Std6-40/400 ppb	ICAL	1	3636707.4	3488544.3	104.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	3594217.4	3488544.3	103.03	PASS	70-125
Std8-200/2000 ppb	ICAL	1	3536028.1	3488544.3	101.36	PASS	70-125
ICV	ICV	1	3321810.5	3488544.3	95.22	PASS	70-125
ICB	ICB	1	3425331.2	3488544.3	98.19	PASS	70-125
LLICV	CCV1	1	3586750.2	3488544.3	102.82	PASS	70-125
ICSA1	ICSA	1	2688715.9	3488544.3	77.073	PASS	70-125
ICSAB1	ICSAB	1	2774965.3	3488544.3	79.55	PASS	70-125
MB-61362	MBLK	1	3469506	3488544.3	99.45	PASS	70-125
LCS-61362	LCS	1	3425661.6	3488544.3	98.2	PASS	70-125
N023177-001B	SAMP	1	3356906	3488544.3	96.23	PASS	70-125
N023177-001B	SAMP	5	3219053.3	3488544.3	92.27	PASS	70-125
N023177-001B-PS	PS	1	3248792.3	3488544.3	93.13	PASS	70-125
N023177-001B-MS	MS	1	3187112	3488544.3	91.36	PASS	70-125
N023177-001B-MSD	MSD	1	3192284.6	3488544.3	91.51	PASS	70-125
N023177-002B	SAMP	1	3160180.3	3488544.3	90.59	PASS	70-125
N023177-003B	SAMP	1	3086298.8	3488544.3	88.47	PASS	70-125
N023177-004B	SAMP	1	3188494.1	3488544.3	91.4	PASS	70-125
CCV1	CCV	1	3571983.9	3488544.3	102.39	PASS	70-125
CCB1	CCB	1	3264807.5	3488544.3	93.59	PASS	70-125
N023177-005B	SAMP	1	2651321.2	3488544.3	76.001	PASS	70-125
N023177-006B	SAMP	1	3016387	3488544.3	86.47	PASS	70-125
N023177-007B	SAMP	1	3135156.7	3488544.3	89.87	PASS	70-125
N023177-008B	SAMP	1	3221642.7	3488544.3	92.35	PASS	70-125
N023177-009B	SAMP	1	3152927.9	3488544.3	90.38	PASS	70-125
N023177-010B	SAMP	1	3047617.5	3488544.3	87.36	PASS	70-125
N023177-011B	SAMP	1	3231415.1	3488544.3	92.63	PASS	70-125
N023177-012B	SAMP	1	3210312.1	3488544.3	92.024	PASS	70-125
N023177-013B	SAMP	1	3356936	3488544.3	96.23	PASS	70-125
N023177-014B	SAMP	1	3264145.2	3488544.3	93.57	PASS	70-125
CCV2	CCV	1	3638777.9	3488544.3	104.31	PASS	70-125
CCB2	CCB	1	3318571	3488544.3	95.13	PASS	70-125
N023177-015B	SAMP	1	3124943.8	3488544.3	89.58	PASS	70-125
N023177-001B	SAMP	25	3202028	3488544.3	91.79	PASS	70-125
N023177-001B-PS	PS	5	3128152.9	3488544.3	89.67	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N023177-001B-MS	MS	5	3127000.7	3488544.3	89.64	PASS	70-125
N023177-001B-MSD	MSD	5	3134364.9	3488544.3	89.85	PASS	70-125
CCV3	CCV	1	3602449	3488544.3	103.27	PASS	70-125
CCB3	CCB	1	3348100.5	3488544.3	95.97	PASS	70-125
LLCCV1	CCV2	1	3528624.3	3488544.3	101.15	PASS	70-125
ICSA2	ICSA	1	2725198	3488544.3	78.12	PASS	70-125
ICSAB2	ICSAB	1	2863792.4	3488544.3	82.091	PASS	70-125
CCV4	CCV	1	3911110.9	3488544.3	112.11	PASS	70-125
CCB4	CCB	1	3496732.7	3488544.3	100.23	PASS	70-125
CCV5	CCV	1	3600645.3	3488544.3	103.21	PASS	70-125
CCB5	CCB	1	3385879.6	3488544.3	97.057	PASS	70-125
LLCCV2	CCV2	1	3571467.1	3488544.3	102.38	PASS	70-125
ICSA3	ICSA	1	2659450.8	3488544.3	76.23	PASS	70-125
ICSAB3	ICSAB	1	2824027.5	3488544.3	80.95	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023177
Test Method: EPA 6020
Analysis Date: 3/3/2017

Matrix: Groundwater
Batch No.: 61362

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023177-001B DT 5X	Arsenic	ug/L	2.418752	NA	2.251312	7.44%	10
N023177-001B DT 25X	Barium	ug/L	143.5549	PASS	133.0637	7.88%	10
N023177-001B DT 5X	Chromium	ug/L	0.179995	NA	0.038858	363.21%	10
N023177-001B DT 5X	Manganese	ug/L	0	NA	0		10
N023177-001B DT 5X	Molybdenum	ug/L	5.351046	NA	5.570755	3.94%	10
N023177-001B DT 5X	Selenium	ug/L	1.648202	NA	1.561325	5.56%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023177-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.808	0.10	10.00	2.251	95.6	80	120				
Manganese	90.027	0.50	100.0	0	90.0	80	120				
Molybdenum	16.146	0.50	10.00	5.571	106	80	120				
Selenium	10.511	0.50	10.00	1.561	89.5	80	120				

Sample ID **N023177-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	239.212	5.0	100.0	133.1	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023177
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N023177-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61362** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2585928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.115	1.0	10.00	0.03886	90.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

March 08, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023187

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *08-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-001A	AB3-0217	Groundwater	2/22/2017 1:30:00 PM	2/22/2017	3/8/2017
N023187-002A	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002B	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002C	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002D	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002E	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-003A	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003B	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003C	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003D	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003E	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-004A	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004B	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004C	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004D	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004E	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-005A	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005B	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005C	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005D	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005E	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-006A	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006B	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006C	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006D	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006E	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-007A	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007B	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007C	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-007D	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007E	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-008A	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008B	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008C	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008D	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008E	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-009A	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009B	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009C	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009D	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009E	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-010A	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010B	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010C	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010D	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010E	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-011A	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011B	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011C	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011D	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011E	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-012A	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012B	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012C	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012D	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012E	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-013A	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013B	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013C	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-013D	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013E	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-014A	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014B	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014C	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014D	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014E	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	1900	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023187-008DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113727**
Client ID: **ZZZZZZ** Batch ID: **R113727** TestNo: **EPA 120.1** Analysis Date: **2/23/2017** SeqNo: **2577577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1948.000	0.10						1944	0.206	10	

Sample ID **N023187-013DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113727**
Client ID: **ZZZZZZ** Batch ID: **R113727** TestNo: **EPA 120.1** Analysis Date: **2/23/2017** SeqNo: **2577583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2020.000	0.10						2010	0.496	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023187-008DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113728**
Client ID: **ZZZZZZ** Batch ID: **R113728** TestNo: **SM4500-H+B** Analysis Date: **2/23/2017** SeqNo: **2577641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.990	0.10						8.000	0.125	10	H
Temp. at time of pH Analysis	19.000	0.10						18.90	0.528	10	H

Sample ID **N023187-013DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113728**
Client ID: **ZZZZZZ** Batch ID: **R113728** TestNo: **SM4500-H+B** Analysis Date: **2/23/2017** SeqNo: **2577696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.980	0.10						8.000	0.250	10	H
Temp. at time of pH Analysis	19.300	0.10						19.20	0.519	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170223C** QC Batch: **61369** PrepDate **2/23/2017** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	39	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	87	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	85	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61368** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **LCSW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	916.000	10	1000	0	91.6	80	120				

Sample ID **MB-61368** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **PBW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N023177-013DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **ZZZZZZ** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61369** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **LCSW** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	941.000	10	1000	0	94.1	80	120				

Sample ID **MB-61369** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **PBW** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N023187-002DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **ZZZZZZ** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 11:38 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 01:12 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 01:31 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 03:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 03:25 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 04:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 04:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113715** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **PBW** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113715** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **LCSW** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.970	0.20	5.000	0	99.4	90	110				

Sample ID **N023188-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.633	0.20						1.671	2.31	20	

Sample ID **N023188-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.764	0.20	5.000	1.671	102	90	110				

Sample ID **N023188-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.828	0.20	5.000	1.671	103	90	110	6.764	0.943	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	103	90	110				

Sample ID **N023187-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID **N023187-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N023187-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N023187-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N023187-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N023187-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N023187-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N023187-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N023187-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N023187-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID **N023187-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61386	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	PBW	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-61386	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	LCSW	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.915	1.0	10.00	0	99.2	85	115				

Sample ID	N023187-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.664	1.0	10.00	0.02174	86.4	75	125				

Sample ID	N023187-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585964

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.718	1.0	10.00	0.02174	87.0	75	125	8.664	0.623	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170307C**	QC Batch: **R113934**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.23	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170307C**	QC Batch: **R113934**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.12	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113934** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **PBW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113934** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **LCSW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N023268-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.819	0.25						2.786	1.14	20	

Sample ID **N023268-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.274	0.25	2.500	2.786	99.5	75	125				

Sample ID **N023268-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.249	0.25	2.500	2.786	98.5	75	125	5.274	0.485	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	2/25/2017 02:30 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	2/25/2017 06:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 02:56 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	66	1.8	20		ug/L	1	2/25/2017 07:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	140	1.8	20		ug/L	1	2/25/2017 07:15 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:05 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	29	1.8	20		ug/L	1	2/25/2017 07:19 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	2/25/2017 07:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	230	1.8	20		ug/L	1	2/25/2017 03:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	1600	1.8	20		ug/L	1	2/25/2017 07:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	3100	1.8	20		ug/L	1	2/25/2017 07:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:35 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	2/25/2017 07:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:40 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	54	1.8	20		ug/L	1	2/25/2017 07:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:44 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	52	1.8	20		ug/L	1	2/25/2017 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:49 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	34	1.8	20		ug/L	1	2/25/2017 08:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:53 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	3000	1.8	20		ug/L	1	2/25/2017 08:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:59 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	2/25/2017 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61379** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **PBW** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61379** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **LCSW** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.610	20	100.0	0	109	85	115				

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.646	20	100.0	31.04	85.6	75	125				

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.096	20	100.0	31.04	85.1	75	125	116.6	0.473	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-61378** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **PBW** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.720	20									

Sample ID **LCS-61378** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **LCSW** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	112.396	20	100.0	0	112	85	115				

Sample ID **N023187-002C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.991	20	100.0	26.95	106	75	125				

Sample ID **N023187-002C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	134.026	20	100.0	26.95	107	75	125	133.0	0.775	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 05:42 PM
Barium	130	0.35	5.0		µg/L	5	3/3/2017 05:48 PM
Manganese	0.72	0.056	0.50		µg/L	1	3/3/2017 05:42 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 05:42 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:37 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:37 PM
Manganese	1.8	0.056	0.50		µg/L	1	3/3/2017 06:37 PM
Molybdenum	5.8	0.039	0.50		µg/L	1	3/3/2017 06:37 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:43 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:43 PM
Manganese	2.7	0.056	0.50		µg/L	1	3/3/2017 06:43 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 06:43 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:48 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:48 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 06:48 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 06:48 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 06:54 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:54 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 06:54 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 06:54 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	3.0	0.025	0.10		µg/L	1	3/3/2017 06:59 PM
Barium	210	0.35	5.0		µg/L	5	3/6/2017 09:21 PM
Manganese	440	0.28	2.5		µg/L	5	3/6/2017 09:21 PM
Molybdenum	7.0	0.039	0.50		µg/L	1	3/3/2017 06:59 PM
Selenium	0.98	0.028	0.50		µg/L	1	3/3/2017 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:06 PM
Barium	230	0.35	5.0		µg/L	5	3/6/2017 09:26 PM
Manganese	520	0.28	2.5		µg/L	5	3/6/2017 09:26 PM
Molybdenum	7.7	0.039	0.50		µg/L	1	3/3/2017 07:06 PM
Selenium	0.64	0.028	0.50		µg/L	1	3/3/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:11 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:11 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 07:11 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 07:11 PM
Selenium	1.5	0.028	0.50		µg/L	1	3/3/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 07:16 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:16 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 07:16 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 07:16 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 07:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:33 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:33 PM
Manganese	0.56	0.056	0.50		µg/L	1	3/3/2017 07:33 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 07:33 PM
Selenium	1.5	0.028	0.50		µg/L	1	3/3/2017 07:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:38 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 07:38 PM
Manganese	0.63	0.056	0.50		µg/L	1	3/3/2017 07:38 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 07:38 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:44 PM
Barium	210	0.35	5.0		µg/L	5	3/6/2017 09:32 PM
Manganese	460	0.28	2.5		µg/L	5	3/6/2017 09:32 PM
Molybdenum	7.4	0.039	0.50		µg/L	1	3/3/2017 07:44 PM
Selenium	0.70	0.028	0.50		µg/L	1	3/3/2017 07:44 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:49 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:49 PM
Manganese	0.75	0.056	0.50		µg/L	1	3/3/2017 07:49 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 07:49 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 07:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61386** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61386** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.851	0.10	10.00	0	98.5	85	115				
Barium	103.270	1.0	100.0	0	103	85	115				
Manganese	97.437	0.50	100.0	0	97.4	85	115				
Molybdenum	9.671	0.50	10.00	0	96.7	85	115				
Selenium	10.311	0.50	10.00	0	103	85	115				

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.131	0.10	10.00	2.157	99.7	75	125				
Manganese	90.620	0.50	100.0	0.7202	89.9	75	125				
Molybdenum	16.859	0.50	10.00	5.351	115	75	125				
Selenium	10.097	0.50	10.00	1.640	84.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.800	0.10	10.00	2.157	96.4	75	125	12.13	2.77	20	
Manganese	91.683	0.50	100.0	0.7202	91.0	75	125	90.62	1.17	20	
Molybdenum	16.830	0.50	10.00	5.351	115	75	125	16.86	0.168	20	
Selenium	10.252	0.50	10.00	1.640	86.1	75	125	10.10	1.52	20	

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	257.870	5.0	100.0	133.0	125	75	125				

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	256.688	5.0	100.0	133.0	124	75	125	257.9	0.460	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@ptvox.com	P.O.#
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200	Fax:
Title: sample Tech	Phone: 916-786-3302 / Fax:		Global ID:
Signature: 2/22/17 Date:	Sampled By: Nara Tey		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 2/22/17		
Project Number: RC000753.0801			

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: ice		
Sample Temp: 2.0°C		
Couner:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba 3x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~MW-908-0217~~				X		X					X	X					E	1	P	BN	
		~~AB1-0217~~					X												E	1	P	BN	
		~~AB2-0217~~					X												E	1	P	BN	
	N023187 - 01	AB3-0217	2/22/17	1330			X												E	1	P	BN	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tey	2/22/17 1540	[signature]	2/22/17 1540
[signature]	2/22/17 1900	[signature]	2/22/17 1900

Turn Around Time (TAT)

- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:

Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436

www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@enbigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nava Tay		Phone: 949-727-1400, ext 200	Fax:
Title: Sample tech	Phone: 916-786-3302 / Fax:		
Signature: Date: 2/22/17	Sampled By: Nava Tay		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: / Date: 2/22/17		
Project Number: RC000753.0801			

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		
Sample Temp:		
Courier:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0), Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023187 - 02	C-NR4-S-0217	2/22/17	13:45		X		X		X	X		X	X			X	X	E	7	P	BNS
2		~~C-R22A-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
3		~~C-R22A-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
4		~~C-R27-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
5		~~C-R27-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
		~~C-TAZ-D-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
7		~~MW-911-Q117~~				X		X		X	X		X	X			X	X	E	9	P	BNS
8		~~C-TAZ-S-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
9	- 03	R-19-0217	2/22/17	0915		X		X		X	X		X	X			X	X	E	7	P	BNS
10		~~R-28-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
11		~~R63-0217~~				X		X		X	X		X	X			X	X	E	9	P	BNS
12	- 04	RRB-0217	2/22/17	0950		X		X		X	X		X	X			X	X	E	7	P	BNS
13		~~SW1-0217~~				X		X					X	X					E	7	P	BNS
14		~~SW2-0217~~				X		X					X	X					E	7	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nava Tay	2/22/17 1540	Yong Chang	2/22/17 1540
Yong Chang	2/22/17 1900	Yong Chang	2/22/17 1900

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@cirtigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 / Fax:		
Signature: 2/22/17 Date:	Sampled By: Nara Tey		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 2/22/17		
Project Number: RC000753.0801			

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 3.2°C, 2.9°C		
Courier:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0), Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	E	~~9~~	P	BNS
2	N023187 - 05	C-CON-D-0217	2/22/17	10:25		X		X		X	X		X	X			X	X	E	7	P	BNS
3	- 06	C-CON-S-0217	2/22/17	10:45		X		X		X	X		X	X			X	X	E	7	P	BNS
4		~~C-I-3-D-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~
		~~MW-909-Q117~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~
6		~~C-I-3-S-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~
7	- 07	C-MAR-D-0217	2/22/17	08:15		X		X		X	X		X	X			X	X	E	7	P	BNS
8	- 08	C-MAR-S-0217	2/22/17	08:40		X		X		X	X		X	X			X	X	E	7	P	BNS
9	- 09	C-NR1-D-0217	2/22/17	11:25		X		X		X	X		X	X			X	X	E	7	P	BNS
	- 10	C-NR1-S-0217	2/22/17	11:55		X		X		X	X		X	X			X	X	E	7	P	BNS
11	- 11	C-NR3-D-0217	2/22/17	12:30		X		X		X	X		X	X			X	X	E	7	P	BNS
12	- 12	C-NR3-S-0217	2/22/17	12:50		X		X		X	X		X	X			X	X	E	7	P	BNS
13	- 13	MW-910-Q117	2/22/17	08:50		X		X		X	X		X	X			X	X	E	7	P	BNS
14	- 14	C-NR4-D-0217	2/22/17	13:20		X		X		X	X		X	X			X	X	E	7	P	BNS

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
Nara Tey	2/22/17 1540	Tony Lang	2/22/17 1540
Tony Lang	2/22/17 1900	Tony Lang	2/22/17 1900

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2017	Workorder:	N023187
Rep sample Temp (Deg C):	2.6/3.2/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/24/2017

Reviewed By: MBC 2/27/2017

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-001A	AB3-0217	2/22/2017 1:30:00 PM	3/8/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-002A	C-NR4-S-0217	2/22/2017 1:45:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-002B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-002C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-002D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-002E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-003A	R-19-0217	2/22/2017 9:15:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-003B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-003C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-003D	R-19-0217	2/22/2017 9:15:00 AM	3/8/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-003E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-004A	RRB-0217	2/22/2017 9:50:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-004B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-004C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-004D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-004E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-005A	C-CON-D-0217	2/22/2017 10:25:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-005B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-005B	C-CON-D-0217	2/22/2017 10:25:00 AM	3/8/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-005C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-005D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-005E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-006A	C-CON-S-0217	2/22/2017 10:45:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-006B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-006C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-006D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-006E	C-CON-S-0217	2/22/2017 10:45:00 AM	3/8/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-007A	C-MAR-D-0217	2/22/2017 8:15:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-007B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-007C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-007D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-007E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-008A	C-MAR-S-0217	2/22/2017 8:40:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-008B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-008C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-008C	C-MAR-S-0217	2/22/2017 8:40:00 AM	3/8/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-008D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-008E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-009A	C-NR1-D-0217	2/22/2017 11:25:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-009B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-009C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-009D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-009E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-010A	C-NR1-S-0217	2/22/2017 11:55:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-010B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-010B	C-NR1-S-0217	2/22/2017 11:55:00 AM	3/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-010C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-010D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-010E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-011A	C-NR3-D-0217	2/22/2017 12:30:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-011B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-011C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-011D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-011D	C-NR3-D-0217	2/22/2017 12:30:00 PM	3/8/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N023187-011E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-012A	C-NR3-S-0217	2/22/2017 12:50:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-012B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-012C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-012D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-012E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-013A	MW-910-Q117	2/22/2017 8:50:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-013B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-013C	MW-910-Q117	2/22/2017 8:50:00 AM	3/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-013D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-013E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-014A	C-NR4-D-0217	2/22/2017 1:20:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-014B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-014C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-014D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-014E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-015A	FOLDER	3/8/2017	3/8/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-015A	FOLDER	3/8/2017	3/8/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N023187

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N023187

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-113
Sample Receiving Items	114-127
List of Analysts	128
Raw Data	
SM 120.1	129-132
SM 4500-H+B	133-137
SM 2540D	138-152
EPA 218.6	153-259
SM 4500_NO3F	260-273
EPA 6010B_Dissolved	274-313
EPA 6010B	314-357
EPA 6020_Dissolved	358-424

March 08, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023187

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *08-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-001A	AB3-0217	Groundwater	2/22/2017 1:30:00 PM	2/22/2017	3/8/2017
N023187-002A	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002B	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002C	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002D	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-002E	C-NR4-S-0217	Groundwater	2/22/2017 1:45:00 PM	2/22/2017	3/8/2017
N023187-003A	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003B	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003C	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003D	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-003E	R-19-0217	Groundwater	2/22/2017 9:15:00 AM	2/22/2017	3/8/2017
N023187-004A	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004B	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004C	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004D	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-004E	RRB-0217	Groundwater	2/22/2017 9:50:00 AM	2/22/2017	3/8/2017
N023187-005A	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005B	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005C	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005D	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-005E	C-CON-D-0217	Groundwater	2/22/2017 10:25:00 AM	2/22/2017	3/8/2017
N023187-006A	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006B	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006C	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006D	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-006E	C-CON-S-0217	Groundwater	2/22/2017 10:45:00 AM	2/22/2017	3/8/2017
N023187-007A	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007B	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007C	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-007D	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-007E	C-MAR-D-0217	Groundwater	2/22/2017 8:15:00 AM	2/22/2017	3/8/2017
N023187-008A	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008B	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008C	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008D	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-008E	C-MAR-S-0217	Groundwater	2/22/2017 8:40:00 AM	2/22/2017	3/8/2017
N023187-009A	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009B	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009C	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009D	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-009E	C-NR1-D-0217	Groundwater	2/22/2017 11:25:00 AM	2/22/2017	3/8/2017
N023187-010A	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010B	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010C	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010D	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-010E	C-NR1-S-0217	Groundwater	2/22/2017 11:55:00 AM	2/22/2017	3/8/2017
N023187-011A	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011B	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011C	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011D	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-011E	C-NR3-D-0217	Groundwater	2/22/2017 12:30:00 PM	2/22/2017	3/8/2017
N023187-012A	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012B	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012C	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012D	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-012E	C-NR3-S-0217	Groundwater	2/22/2017 12:50:00 PM	2/22/2017	3/8/2017
N023187-013A	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013B	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013C	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N023187
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023187-013D	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-013E	MW-910-Q117	Groundwater	2/22/2017 8:50:00 AM	2/22/2017	3/8/2017
N023187-014A	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014B	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014C	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014D	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017
N023187-014E	C-NR4-D-0217	Groundwater	2/22/2017 1:20:00 PM	2/22/2017	3/8/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	1500	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	1900	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170223E**	QC Batch: **R113727**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/23/2017 03:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023187-008DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113727**
Client ID: **ZZZZZZ** Batch ID: **R113727** TestNo: **EPA 120.1** Analysis Date: **2/23/2017** SeqNo: **2577577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1948.000	0.10						1944	0.206	10	

Sample ID **N023187-013DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113727**
Client ID: **ZZZZZZ** Batch ID: **R113727** TestNo: **EPA 120.1** Analysis Date: **2/23/2017** SeqNo: **2577583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	2020.000	0.10						2010	0.496	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D**	QC Batch: **R113728**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.0	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170223D** QC Batch: **R113728**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2017 03:35 PM
Temp. at time of pH Analysis	20	0.10	0.10	H	°C	1	2/23/2017 03:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023187-008DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113728**
Client ID: **ZZZZZZ** Batch ID: **R113728** TestNo: **SM4500-H+B** Analysis Date: **2/23/2017** SeqNo: **2577641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.990	0.10						8.000	0.125	10	H
Temp. at time of pH Analysis	19.000	0.10						18.90	0.528	10	H

Sample ID **N023187-013DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113728**
Client ID: **ZZZZZZ** Batch ID: **R113728** TestNo: **SM4500-H+B** Analysis Date: **2/23/2017** SeqNo: **2577696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.980	0.10						8.000	0.250	10	H
Temp. at time of pH Analysis	19.300	0.10						19.20	0.519	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170223C** QC Batch: **61369** PrepDate **2/23/2017** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	39	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	87	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223C**	QC Batch: **61369**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_170223B** QC Batch: **61368** PrepDate **2/23/2017** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	85	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170223B**	QC Batch: **61368**				PrepDate	**2/23/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2017 10:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61368** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **LCSW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	916.000	10	1000	0	91.6	80	120				

Sample ID **MB-61368** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **PBW** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N023177-013DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113725**
Client ID: **ZZZZZZ** Batch ID: **61368** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-61369** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **LCSW** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	941.000	10	1000	0	94.1	80	120				

Sample ID **MB-61369** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **PBW** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N023187-002DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **2/23/2017** RunNo: **113726**
Client ID: **ZZZZZZ** Batch ID: **61369** TestNo: **SM2540D** Analysis Date: **2/23/2017** SeqNo: **2577560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170223A**	QC Batch: **R113715**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 11:38 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:16 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 12:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 01:12 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 01:31 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:28 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017** Analyst: **CEI**							
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 02:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 03:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 03:25 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 04:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386** PrepDate **2/24/2017**							Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170223A** QC Batch: **R113715**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	2/23/2017 04:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A** QC Batch: **61386**				PrepDate	**2/24/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	3/3/2017 07:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R113715** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **PBW** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R113715** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **LCSW** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.970	0.20	5.000	0	99.4	90	110				

Sample ID **N023188-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.633	0.20						1.671	2.31	20	

Sample ID **N023188-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.764	0.20	5.000	1.671	102	90	110				

Sample ID **N023188-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.828	0.20	5.000	1.671	103	90	110	6.764	0.943	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	103	90	110				

Sample ID **N023187-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.039	0.20	1.000	0	104	90	110				

Sample ID **N023187-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N023187-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N023187-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N023187-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N023187-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N023187-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID **N023187-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023187-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N023187-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N023187-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.097	0.20	1.000	0	110	90	110				

Sample ID **N023187-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-61386	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	PBW	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-61386	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	LCSW	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585954

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.915	1.0	10.00	0	99.2	85	115				

Sample ID	N023187-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585963

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.664	1.0	10.00	0.02174	86.4	75	125				

Sample ID	N023187-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/24/2017	RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	61386	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/3/2017	SeqNo:	2585964

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.718	1.0	10.00	0.02174	87.0	75	125	8.664	0.623	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170307C**	QC Batch: **R113934**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170307C**	QC Batch: **R113934**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.23	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.12	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170307C** QC Batch: **R113934** PrepDate Analyst: **RB**							
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	3/7/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R113934** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **PBW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R113934** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **LCSW** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	85	115				

Sample ID **N023268-002DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.819	0.25						2.786	1.14	20	

Sample ID **N023268-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.274	0.25	2.500	2.786	99.5	75	125				

Sample ID **N023268-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ZZZZZZ** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.249	0.25	2.500	2.786	98.5	75	125	5.274	0.485	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	2/25/2017 02:30 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	2/25/2017 06:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 02:56 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	66	1.8	20		ug/L	1	2/25/2017 07:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:00 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	140	1.8	20		ug/L	1	2/25/2017 07:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:05 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	29	1.8	20		ug/L	1	2/25/2017 07:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	2/25/2017 07:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	230	1.8	20		ug/L	1	2/25/2017 03:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	1600	1.8	20		ug/L	1	2/25/2017 07:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	3100	1.8	20		ug/L	1	2/25/2017 07:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:35 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	2/25/2017 07:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:40 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	54	1.8	20		ug/L	1	2/25/2017 07:54 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:44 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	52	1.8	20		ug/L	1	2/25/2017 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:49 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	34	1.8	20		ug/L	1	2/25/2017 08:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:53 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	3000	1.8	20		ug/L	1	2/25/2017 08:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224C**	QC Batch: **61379**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	2/25/2017 03:59 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170224D**	QC Batch: **61378**				PrepDate	**2/24/2017**	Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	2/25/2017 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61379** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **PBW** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-61379** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **LCSW** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.610	20	100.0	0	109	85	115				

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.646	20	100.0	31.04	85.6	75	125				

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **61379** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.096	20	100.0	31.04	85.1	75	125	116.6	0.473	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-61378** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **PBW** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.720	20									

Sample ID **LCS-61378** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **LCSW** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	112.396	20	100.0	0	112	85	115				

Sample ID **N023187-002C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.991	20	100.0	26.95	106	75	125				

Sample ID **N023187-002C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **2/24/2017** RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **61378** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **2/25/2017** SeqNo: **2579320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	134.026	20	100.0	26.95	107	75	125	133.0	0.775	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 05:42 PM
Barium	130	0.35	5.0		µg/L	5	3/3/2017 05:48 PM
Manganese	0.72	0.056	0.50		µg/L	1	3/3/2017 05:42 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 05:42 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 05:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:37 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:37 PM
Manganese	1.8	0.056	0.50		µg/L	1	3/3/2017 06:37 PM
Molybdenum	5.8	0.039	0.50		µg/L	1	3/3/2017 06:37 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:43 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:43 PM
Manganese	2.7	0.056	0.50		µg/L	1	3/3/2017 06:43 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 06:43 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 06:48 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:48 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 06:48 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 06:48 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 06:54 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 06:54 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 06:54 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 06:54 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 06:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	3.0	0.025	0.10		µg/L	1	3/3/2017 06:59 PM
Barium	210	0.35	5.0		µg/L	5	3/6/2017 09:21 PM
Manganese	440	0.28	2.5		µg/L	5	3/6/2017 09:21 PM
Molybdenum	7.0	0.039	0.50		µg/L	1	3/3/2017 06:59 PM
Selenium	0.98	0.028	0.50		µg/L	1	3/3/2017 06:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:06 PM
Barium	230	0.35	5.0		µg/L	5	3/6/2017 09:26 PM
Manganese	520	0.28	2.5		µg/L	5	3/6/2017 09:26 PM
Molybdenum	7.7	0.039	0.50		µg/L	1	3/3/2017 07:06 PM
Selenium	0.64	0.028	0.50		µg/L	1	3/3/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:11 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:11 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 07:11 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	3/3/2017 07:11 PM
Selenium	1.5	0.028	0.50		µg/L	1	3/3/2017 07:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	3/3/2017 07:16 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:16 PM
Manganese	ND	0.056	0.50		µg/L	1	3/3/2017 07:16 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 07:16 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 07:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	3/3/2017 07:33 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:33 PM
Manganese	0.56	0.056	0.50		µg/L	1	3/3/2017 07:33 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	3/3/2017 07:33 PM
Selenium	1.5	0.028	0.50		µg/L	1	3/3/2017 07:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:38 PM
Barium	120	0.070	1.0		µg/L	1	3/3/2017 07:38 PM
Manganese	0.63	0.056	0.50		µg/L	1	3/3/2017 07:38 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	3/3/2017 07:38 PM
Selenium	1.7	0.028	0.50		µg/L	1	3/3/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q117
Lab Order:	N023187	**Collection Date:**	2/22/2017 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**			PrepDate	**2/24/2017**		Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:44 PM
Barium	210	0.35	5.0		µg/L	5	3/6/2017 09:32 PM
Manganese	460	0.28	2.5		µg/L	5	3/6/2017 09:32 PM
Molybdenum	7.4	0.039	0.50		µg/L	1	3/3/2017 07:44 PM
Selenium	0.70	0.028	0.50		µg/L	1	3/3/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *08-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-0217
Lab Order:	N023187	**Collection Date:**	2/22/2017 1:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023187-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170303A**	QC Batch: **61386**				PrepDate	**2/24/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	3/3/2017 07:49 PM
Barium	130	0.070	1.0		µg/L	1	3/3/2017 07:49 PM
Manganese	0.75	0.056	0.50		µg/L	1	3/3/2017 07:49 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	3/3/2017 07:49 PM
Selenium	1.6	0.028	0.50		µg/L	1	3/3/2017 07:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-61386** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **PBW** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-61386** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **LCSW** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.851	0.10	10.00	0	98.5	85	115				
Barium	103.270	1.0	100.0	0	103	85	115				
Manganese	97.437	0.50	100.0	0	97.4	85	115				
Molybdenum	9.671	0.50	10.00	0	96.7	85	115				
Selenium	10.311	0.50	10.00	0	103	85	115				

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.131	0.10	10.00	2.157	99.7	75	125				
Manganese	90.620	0.50	100.0	0.7202	89.9	75	125				
Molybdenum	16.859	0.50	10.00	5.351	115	75	125				
Selenium	10.097	0.50	10.00	1.640	84.6	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.800	0.10	10.00	2.157	96.4	75	125	12.13	2.77	20	
Manganese	91.683	0.50	100.0	0.7202	91.0	75	125	90.62	1.17	20	
Molybdenum	16.830	0.50	10.00	5.351	115	75	125	16.86	0.168	20	
Selenium	10.252	0.50	10.00	1.640	86.1	75	125	10.10	1.52	20	

Sample ID **N023187-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	257.870	5.0	100.0	133.0	125	75	125				

Sample ID **N023187-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/24/2017** RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	256.688	5.0	100.0	133.0	124	75	125	257.9	0.460	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Nara Tey
Title: sample Tech
Signature: Date: 2/22/17
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Nara Tey
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 2/22/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:

QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:

Sample Receipt Condition (Y N):
1. Chilled ✓
2. Headspace
3. Container Intact
4. Seal Present
5. IR number
6. Method of Cooling: ice
Sample Temp: 2.6°C
Couner:
Tracking No.:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba 3x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~MW-908-0217~~				X		X					X	X					E	1	P	BN
		~~AB1-0217~~					X												E	1	P	BN
		~~AB2-0217~~					X												E	1	P	BN
	N023187 - 01	AB3-0217	2/22/17	1330			X												E	1	P	BN

Reliquished by (Signature and Printed Name): Nara Tey Date/Time: 2/22/17 1540
Reliquished by (Signature and Printed Name): Date/Time: 2/22/17 1540
Reliquished by (Signature and Printed Name): Date/Time: 2/22/17 1900
Reliquished by (Signature and Printed Name): Date/Time: 2/22/17 1900
Reliquished by (Signature and Printed Name): Date/Time:
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives: H=HCL; N=HNO_3; S=H_2SO_4; C=4°C; Z=$Zn(AC)_2$; O=NaOH; T=$Na_2S_2O_3$; Others/Specify: B (NH4)2SO4/NH4OH

Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Nara Tay
Title:	Sample tech
Signature:	
Date:	2/22/17

I hereby authorize ASSET Labs to perform the tests indicated below

Project Name:	PG&E Topock - RMP
Project Number:	RC000753.0801

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com; daniel.moore@enbigen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Nara Tay

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature:	
Date:	2/22/17

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		
Sample Temp:		
Courier:		
Tracking No.:		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0), Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023187 - 02	C-NR4-S-0217	2/22/17	13:45		X		X		X	X		X	X			X	X	E	~~7~~ 8	P	BNS
2		~~C-R22A-D-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
3		~~C-R22A-S-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
4		~~C-R27-D-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
5		~~C-R27-S-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
		~~C-TAZ-D-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
7		~~MW-911-Q117~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
8		~~C-TAZ-S-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
9	- 03	R-19-0217	2/22/17	0915		X		X		X	X		X	X			X	X	E	~~7~~ 8	P	BNS
10		~~R-28-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
11		~~R63-0217~~				X		X		X	X		X	X			X	X	E	~~9~~	P	BNS
12	- 04	RRB-0217	2/22/17	0950		X		X		X	X		X	X			X	X	E	~~7~~ 8	P	BNS
13		~~SW1-0217~~				X		X					X	X					E	~~7~~	P	BNS
14		~~SW2-0217~~				X		X					X	X					E	~~7~~	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tay	2/22/17 1540	Yong Chang	2/22/17 1540
Yong Chang	2/22/17 1900	Yong Chang	2/22/17 1900

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Nara Tey
Title: sample tech
Signature: 2/22/17 Date:
I hereby authorize ASSET Labs to perform the tests indicated below
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@cristigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Nara Tey
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 2/22/17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Global ID:

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 3.2°C, 2.9°C		

Courier:
Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0), Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	E	~~9~~	P	BNS
2	N023187 - 05	C-CON-D-0217	2/22/17	10:25		X		X		X	X		X	X			X	X	E	7	P	BNS
3	- 06	C-CON-S-0217	2/22/17	10:45		X		X		X	X		X	X			X	X	E	7	P	BNS
4		~~C-I-3-D-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~
		~~MW-909-Q117~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~9~~	~~P~~	~~BNS~~
6		~~C-I-3-S-0217~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	E	9	P	BNS
7	- 07	C-MAR-D-0217	2/22/17	08:15		X		X		X	X		X	X			X	X	E	7	P	BNS
8	- 08	C-MAR-S-0217	2/22/17	08:40		X		X		X	X		X	X			X	X	E	7	P	BNS
9	- 09	C-NR1-D-0217	2/22/17	11:25		X		X		X	X		X	X			X	X	E	7	P	BNS
	- 10	C-NR1-S-0217	2/22/17	11:55		X		X		X	X		X	X			X	X	E	7	P	BNS
11	- 11	C-NR3-D-0217	2/22/17	12:30		X		X		X	X		X	X			X	X	E	7	P	BNS
12	- 12	C-NR3-S-0217	2/22/17	12:50		X		X		X	X		X	X			X	X	E	7	P	BNS
13	- 13	MW-910-Q117	2/22/17	08:50		X		X		X	X		X	X			X	X	E	7	P	BNS
14	- 14	C-NR4-D-0217	2/22/17	13:20		X		X		X	X		X	X			X	X	E	7	P	BNS

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
Nara Tey	2/22/17 1540	Tony Lang	2/22/17 1540
Tony Lang	2/22/17 1900	Tony Lang	2/22/17 1900

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2017	Workorder:	N023187
Rep sample Temp (Deg C):	2.6/3.2/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 2/24/2017

Reviewed By: MBC 2/27/2017

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-001A	AB3-0217	2/22/2017 1:30:00 PM	3/8/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-002A	C-NR4-S-0217	2/22/2017 1:45:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-002B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-002C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-002D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-002E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-003A	R-19-0217	2/22/2017 9:15:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-003B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-003C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-003D	R-19-0217	2/22/2017 9:15:00 AM	3/8/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-003E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-004A	RRB-0217	2/22/2017 9:50:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-004B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-004C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-004D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-004E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-005A	C-CON-D-0217	2/22/2017 10:25:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-005B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-005B	C-CON-D-0217	2/22/2017 10:25:00 AM	3/8/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-005C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-005D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-005E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-006A	C-CON-S-0217	2/22/2017 10:45:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-006B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-006C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-006D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-006E	C-CON-S-0217	2/22/2017 10:45:00 AM	3/8/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-007A	C-MAR-D-0217	2/22/2017 8:15:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-007B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-007C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-007D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-007E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-008A	C-MAR-S-0217	2/22/2017 8:40:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-008B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-008C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-008C	C-MAR-S-0217	2/22/2017 8:40:00 AM	3/8/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-008D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-008E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-009A	C-NR1-D-0217	2/22/2017 11:25:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-009B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-009C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-009D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-009E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-010A	C-NR1-S-0217	2/22/2017 11:55:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-010B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-010B	C-NR1-S-0217	2/22/2017 11:55:00 AM	3/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-010C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-010D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-010E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-011A	C-NR3-D-0217	2/22/2017 12:30:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-011B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-011C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-011D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-011D	C-NR3-D-0217	2/22/2017 12:30:00 PM	3/8/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N023187-011E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-012A	C-NR3-S-0217	2/22/2017 12:50:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-012B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-012C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-012D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-012E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-013A	MW-910-Q117	2/22/2017 8:50:00 AM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-013B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-013C	MW-910-Q117	2/22/2017 8:50:00 AM	3/8/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-013D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-013E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-014A	C-NR4-D-0217	2/22/2017 1:20:00 PM	3/8/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023187-014B			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023187-014C			3/8/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N023187-014D			3/8/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/8/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/8/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			3/8/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N023187-014E			3/8/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023187-015A	FOLDER	3/8/2017	3/8/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

22-Feb-17

WorkOrder: N023187

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2017

Comments: RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023187-015A	FOLDER	3/8/2017	3/8/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N023187**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6
Lilia Ramit	SM 2540D, SM 4500-H+B, SM 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113727 **Analyst:** LSR

ASSET #: N023187 **Date Analyzed:** 2/23/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/3/2017

2nd Level Reviewer Nancy 3/8/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 2/23/17 1510

Analyst:

Standard	Std ID	Reading	Comments
10413 µS/cm	CMW-161025C	10.30 mS/cm @21.2°C	% Rec: (90-110%)
1413	161214B	1423 @21.2°C	
10043	161220 I	10190 @21.0°C	
99988	161220 J	101200 @21.0°C	

	Sample ID	Matrix	Reading	Comments
1	N0223187-002D	H2O	984 @19.8°C	
2	3D		985 @19.7°C	
3	4D		986 @19.6°C	
4	5D		975 @19.6°C	
5	6D		975 @19.5°C	
6	7D		1510 @19.5°C	
7	8D		1944 @19.5°C	
8	9D		971 @19.4°C	
9	10D		981 @19.4°C	
10	11D		982 @19.4°C	
Dup	8D DUP		1948 @19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:

Analyst: CONTD

Standard	Std ID	Reading	Comments
1413 µS/cm	CMW-160939A	1475 @20.4°C	% Rec: (90-110%)
10053	160909D	10370 @20.8°C	
99899	161104A	103400 @20.5°C	

	Sample ID	Matrix	Reading	Comments
1	N0223187-012D	H2O	964 @20.3°C	
2	13D		2010 @19.9°C	
3	14D		990 @20.0°C	
4	13D DUP		2020 @19.9°C	
5				
6				
7				Julia Ramit
8	1413 µS/cm	CMW-160929A	1479 @20.9°C	3/3/2017
9	10053	160909D	10410 @20.9°C	
10	99899	161104A	103600 @20.9°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113728 **Instrument ID:** pH meter

ASSET #: N023187 **Analyst:** LSR

Date Analyzed: 2/23/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/3/2017

2nd Level Reviewer 3/8/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/23/17 1520
Analyst: KSR

Standard	Std ID	pH	Comments
Buffer 4	CMW-161027B	4.02 @ 20.4°C	Slope: 99.8%
Buffer 7	161027A	7.00 @ 20.4°C	
Buffer 10	161214A	10.01 @ 20.4°C	

	Sample ID	Matrix	pH	Comments
1	N022911-002A	Soil	3.37 @ 21.6°C	
2	2A DUP		3.40 @ 21.4°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CMW-161010A	6.97 @ 21.2°C	Accept: +/-0.1 pH units from expected value

Date: 2/23/17 1535
Analyst: _____

Standard	Std ID	pH	Comments
Buffer 4	CMW - 161025B	4.02 @ 20.4°C	SLOPE: 99.8%
Buffer 7	161025A	7.00 @ 20.4°C	
Buffer 10	161214A	10.01 @ 20.4°C	

	Sample ID	Matrix	pH	Comments
1	N023187-002D	H2O	8.25 @ 19.4°C	
2	3D		8.26 @ 19.3°C	
3	4D		8.29 @ 19.2°C	
4	5D		8.28 @ 18.7°C	
5	6D		8.25 @ 18.8°C	
6	7D		8.05 @ 18.7°C	
7	8D		8.00 @ 18.9°C	
8	9D		8.23 @ 18.6°C	
9	10D		8.23 @ 18.5°C	Julia Ramit
10	11D		8.23 @ 18.9°C	3/3/2017
Dup	8D DUP		7.99 @ 18.0°C	Accept: 10% water, 20% soil
	Buffer 4, 7, 10 (Circle one)	CMW-161010A	6.99 @ 21.4°C	Accept: +/-0.1 pH units from expected value

Logbook #10

pH Logbook

Date: 2/23/17 1535

Analyst: ISR

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.02 @ 20.4°C	SLOPE: 99.8%
Buffer 7	161025A	7.00 @ 20.4°C	
Buffer 10	161214A	10.01 @ 20.4°C	

	Sample ID	Matrix	pH	Comments
1	N023187-01D	H2O	8.20 @ 19.1°C	
2	13D		8.00 @ 19.2°C	
3	14D		8.22 @ 19.5°C	
4	13D DUP		7.98 @ 19.3°C	
5	N023196-002A		10.22 @ 19.7°C	
6				
7				
8				
9				Julia Ramit
10				3/3/2017
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-161010A	6.98 @ 21.2°C	Accept: +/-0.1 pH units from expected value

Date: 2/27/17

Analyst: MG

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.02 @ 20.4°C	Slope - 98.7%
Buffer 7	161025A	7.01 @ 20.5°C	
Buffer 10	161214A	10.03 @ 20.5°C	

	Sample ID	Matrix	pH	Comments
1	N023125-16A	soil	8.66 / 1.76	
2	N023176-1A		9.02 / 1.88	
3	N023176-5A		8.81 / 1.27	
4	N023176-5A DUP		8.76 / 1.31	
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7), 10 (Circle one)	CINV-161010A	6.99 @ 20.5°C	Accept: +/-0.1 pH units from expected value

Logbook #10

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61368/61369 **Analyst:** LSR

ASSET #: N023187 **Date Analyzed:** 2/23/2017

Method: EPA 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/2/2017

2nd Level Reviewer Mary 3/8/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N023187-002D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4185 - 1.4184)*1000000}{100}$$
$$= 1 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 3/2/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:34**
Prep End Date: **2/23/2017 5:30:00 P**

Reviewed/ Date: Nancy 3/8/2017
Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61368** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL** Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61368	Water		100	☐	0	0	100	1.000		
MB-61368	Water		100	☐	0	0	100	1.000		
N023177-013D	Groundwater		100	☐	0	0	100	1.000		
N023177-013D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-014D	Groundwater		100	☐	0	0	100	1.000		
N023177-015D	Groundwater		100	☐	0	0	100	1.000		
N023187-012D	Groundwater		100	☐	0	0	100	1.000		
N023187-013D	Groundwater		100	☐	0	0	100	1.000		
N023187-014D	Groundwater		100	☐	0	0	100	1.000		
N023196-002A	Surface Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8834	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170222A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:34**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61368** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit** Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61368	Water	IWCT170222A	100	☐	0	0	100	1.000		
MB-61368	Water		100	☐	0	0	100	1.000		
N023177-013D	Groundwater		100	☐	0	0	100	1.000		
N023177-013D-DU	Groundwater		100	☐	0	0	100	1.000		
N023177-014D	Groundwater		100	☐	0	0	100	1.000		
N023177-015D	Groundwater		100	☐	0	0	100	1.000		
N023187-012D	Groundwater		100	☐	0	0	100	1.000		
N023187-013D	Groundwater		100	☐	0	0	100	1.000		
N023187-014D	Groundwater		100	☐	0	0	100	1.000		
N023196-002A	Surface Water		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

5834

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:37**
Prep End Date: **2/23/2017 5:30:00 P**

Reviewed/ Date: Nancy 3/8/2017

Initials/ Date: Lilia Ramit 3/2/2017

Prep Batch **61369** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL** Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61369	Water		100	☐	0	0	100	1.000		
MB-61369	Water		100	☐	0	0	100	1.000		
N023187-002D	Groundwater		100	☐	0	0	100	1.000		
N023187-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N023187-003D	Groundwater		100	☐	0	0	100	1.000		
N023187-004D	Groundwater		100	☐	0	0	100	1.000		
N023187-005D	Groundwater		100	☐	0	0	100	1.000		
N023187-006D	Groundwater		100	☐	0	0	100	1.000		
N023187-007D	Groundwater		100	☐	0	0	100	1.000		
N023187-008D	Groundwater		100	☐	0	0	100	1.000		
N023187-009D	Groundwater		100	☐	0	0	100	1.000		
N023187-010D	Groundwater		100	☐	0	0	100	1.000		
N023187-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8834	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170222A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2017 10:16:37**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 3/2/2017

Prep Factor Units
mL / mL

Prep Batch **61369** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61369	Water	1WST170227A	100	☐	0	0	100	1.000		
MB-61369	Water		100	☐	0	0	100	1.000		
N023187-002D	Groundwater		100	☐	0	0	100	1.000		
N023187-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N023187-003D	Groundwater		100	☐	0	0	100	1.000		
N023187-004D	Groundwater		100	☐	0	0	100	1.000		
N023187-005D	Groundwater		100	☐	0	0	100	1.000		
N023187-006D	Groundwater		100	☐	0	0	100	1.000		
N023187-007D	Groundwater		100	☐	0	0	100	1.000		
N023187-008D	Groundwater		100	☐	0	0	100	1.000		
N023187-009D	Groundwater		100	☐	0	0	100	1.000		
N023187-010D	Groundwater		100	☐	0	0	100	1.000		
N023187-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8834

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TEST (TSS/TDS/TS

SOLIDS RAW DATA

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/17 1016 20	MB G1368	100	1.4125 1.4125	1.4123 1.4124	
22	ICS G1369	100	1.4119 1.4117	1.5033 1.5033	
1	N023177-013D	100	1.4252 1.4257	1.4258 1.4259	
2	13D DUP	100	1.4067 1.4067	1.4070 1.4070	
3	14D	100	1.3984 1.3986	1.3988 1.3987	
4	15D	100	1.4033 1.4033	1.4034 1.4034	
5	N023187-012D	100	1.3914 1.3916	1.3916 1.3916	
6	13D	100	1.4028 1.4027	1.4114 1.4112	
7	14D	100	1.4066 1.4066	1.4069 1.4068	
8	N023196-002A	100	1.4033 1.4035	1.4042 1.4041	

Julia Ramit 3/2/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2017							
MB-61368	100	1.4125	1.4124	-1.0000	1.00	-1	MBLK
LCS-61368	100	1.4117	1.5033	916.0000	1.00	916	LCS
N023177-013D	100	1.4257	1.4259	2.0000	1.00	2	SAMP
N023177-013DDUP	100	1.4067	1.407	3.0000	1.00	3	DUP
N023177-014D	100	1.3986	1.3987	1.0000	1.00	1	SAMP
N023177-015D	100	1.4033	1.4034	1.0000	1.00	1	SAMP
N023187-012D	100	1.3916	1.3916	0.0000	1.00	0	SAMP
N023187-013D	100	1.4027	1.4112	85.0000	1.00	85	SAMP
N023187-014D	100	1.4066	1.4068	2.0000	1.00	2	SAMP
N023196-002A	100	1.4035	1.4041	6.0000	1.00	6	SAMP

Julia Ramit 3/2/2017

SOLIDS RAW DATA

TEST: TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/17 1016	MB 613688	100	1.4117 1.4115	1.4112 1.4113	
26	LCS 613689	100	1.4109 1.4107	1.5059 1.5048	
9	N23187-002D	100	1.4184 1.4184	1.4185 1.4185	
10	2D DUP	100	1.3928 1.3927	1.3929 1.3928	
11	3D	100	1.4061 1.4060	1.4067 1.4064	
12	4D	100	1.4130 1.4130	1.4129 1.4129	
13	5D	100	1.4079 1.4082	1.4082 1.4081	
14	6D	100	1.3995 1.3995	1.3994 1.3994	
15	7D	100	1.4081 1.4079	1.4121 1.4118	
16	8D	100	1.4014 1.4016	1.4105 1.4103	

Julia Ramit 3/2/2017

SOLIDS RAW DATA

TEST: TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/17 17	N023187-009D	100	1.4179 1.4178	1.4178 1.4179	
18	10D	100	1.4098 1.4096	1.4103 1.4099	
19	11D	100	1.4186 1.4188	1.4189 1.4189	

ASSET Laboratories

Logbook#5

Julia Ramit 3/2/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2017							
MB-61369	100	1.4115	1.4113	-2.0000	1.00	-2	MBLK
LCS-61369	100	1.4107	1.5048	941.0000	1.00	941	LCS
N023187-002D	100	1.4184	1.4185	1.0000	1.00	1	SAMP
N023187-002DDUP	100	1.3927	1.3928	1.0000	1.00	1	DUP
N023187-003D	100	1.406	1.4064	4.0000	1.00	4	SAMP
N023187-004D	100	1.413	1.4129	-1.0000	1.00	-1	SAMP
N023187-005D	100	1.4082	1.4081	-1.0000	1.00	-1	SAMP
N023187-006D	100	1.3995	1.3994	-1.0000	1.00	-1	SAMP
N023187-007D	100	1.4079	1.4118	39.0000	1.00	39	SAMP
N023187-008D	100	1.4016	1.4103	87.0000	1.00	87	SAMP
N023187-009D	100	1.4178	1.4179	1.0000	1.00	1	SAMP
N023187-010D	100	1.4096	1.4099	3.0000	1.00	3	SAMP
N023187-011D	100	1.4188	1.4189	1.0000	1.00	1	SAMP

Julia Ramit 3/2/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R113715
ASSET #: N023187

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/23/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/24/2017

2nd Level Reviewer Nancy 3/1/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N023187-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}, \mu g/L = ND}$$

rba 2/24/2017

ANALYSIS RUN LOG

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/23/17 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/23/17 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/23/17 9:54 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/23/17 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/23/17 10:13 AM	Reported
15	MB-R113715	MBLK	1	Hexavalent Chromium	02/23/17 10:22 AM	Reported
16	LCS-R113715	LCS	1	Hexavalent Chromium	02/23/17 10:32 AM	Reported
17	N023188-001A	SAMP	1	Hexavalent Chromium	02/23/17 10:41 AM	Reported
18	N023188-001ADUP	DUP	1	Hexavalent Chromium	02/23/17 10:51 AM	Reported
19	N023188-001AMS	MS	1	Hexavalent Chromium	02/23/17 11:00 AM	Reported
20	N023188-001AMSD	MSD	1	Hexavalent Chromium	02/23/17 11:09 AM	Reported
21	N023187-001A	SAMP	1	Hexavalent Chromium	02/23/17 11:19 AM	Reported
22	N023187-001AMS	MS	1	Hexavalent Chromium	02/23/17 11:28 AM	Reported
23	N023187-002A	SAMP	1	Hexavalent Chromium	02/23/17 11:38 AM	Reported
24	N023187-002AMS	MS	1	Hexavalent Chromium	02/23/17 11:47 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/23/17 11:57 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/23/17 12:06 PM	Reported
27	N023187-003A	SAMP	1	Hexavalent Chromium	02/23/17 12:16 PM	Reported
28	N023187-003AMS	MS	1	Hexavalent Chromium	02/23/17 12:25 PM	Reported
29	N023187-004A	SAMP	1	Hexavalent Chromium	02/23/17 12:35 PM	Reported
30	N023187-004AMS	MS	1	Hexavalent Chromium	02/23/17 12:44 PM	Reported
31	N023187-005A	SAMP	1	Hexavalent Chromium	02/23/17 12:54 PM	Reported
32	N023187-005AMS	MS	1	Hexavalent Chromium	02/23/17 1:03 PM	Reported
33	N023187-006A	SAMP	1	Hexavalent Chromium	02/23/17 1:12 PM	Reported
34	N023187-006AMS	MS	1	Hexavalent Chromium	02/23/17 1:22 PM	Reported
35	N023187-007A	SAMP	1	Hexavalent Chromium	02/23/17 1:31 PM	Reported
36	N023187-007AMS	MS	1	Hexavalent Chromium	02/23/17 1:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/23/17 1:50 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/23/17 2:00 PM	Reported
39	N023187-008A	SAMP	1	Hexavalent Chromium	02/23/17 2:09 PM	Reported
40	N023187-008AMS	MS	1	Hexavalent Chromium	02/23/17 2:19 PM	Reported
41	N023187-009A	SAMP	1	Hexavalent Chromium	02/23/17 2:28 PM	Reported
42	N023187-009AMS	MS	1	Hexavalent Chromium	02/23/17 2:38 PM	Reported

INJECTION LOG: 170223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023187-010A	SAMP	1	Hexavalent Chromium	02/23/17 2:47 PM	Reported
44	N023187-010AMS	MS	1	Hexavalent Chromium	02/23/17 2:57 PM	Reported
45	N023187-011A	SAMP	1	Hexavalent Chromium	02/23/17 3:06 PM	Reported
46	N023187-011AMS	MS	1	Hexavalent Chromium	02/23/17 3:15 PM	Reported
47	N023187-012A	SAMP	1	Hexavalent Chromium	02/23/17 3:25 PM	Reported
48	N023187-012AMS	MS	1	Hexavalent Chromium	02/23/17 3:34 PM	Reported
49	CCV-4	CCV	1	Hexavalent Chromium	02/23/17 3:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/23/17 3:53 PM	Reported
51	N023187-013A	SAMP	1	Hexavalent Chromium	02/23/17 4:03 PM	Reported
52	N023187-013AMS	MS	1	Hexavalent Chromium	02/23/17 4:12 PM	Reported
53	N023187-014A	SAMP	1	Hexavalent Chromium	02/23/17 4:22 PM	Reported
54	N023187-014AMS	MS	1	Hexavalent Chromium	02/23/17 4:31 PM	Reported
55	N023187-002AMS	MS	1	Hexavalent Chromium	02/23/17 4:41 PM	Reported
56	CCV-5	CCV	1	Hexavalent Chromium	02/23/17 4:51 PM	Reported
57	CCB-5	CCB	1	Hexavalent Chromium	02/23/17 5:03 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170223A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**23/Feb/17 17:33:23**
No. of Injections:	**60**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/23/2017 09:33	Finished	
11	BLANK	2	1000	Unknown		02/23/2017 09:44	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/23/2017 09:54	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/23/2017 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/23/2017 10:13	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/23/2017 10:22	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/23/2017 10:32	Finished	LCS, IWST-161114D
17	N023188-001A,SAMF	8	1000	Unknown		02/23/2017 10:41	Finished	SAMP, 10mL
18	N023188-001ADUP,D	9	1000	Unknown		02/23/2017 10:51	Finished	DUP, 10mL
19	N023188-001AMS,MS	10	1000	Unknown		02/23/2017 11:00	Finished	MS (5ppb), IWST-161114D,10
20	N023188-001AMSD,M	11	1000	Unknown		02/23/2017 11:09	Finished	MSD (5ppb), IWST-161114D,10
21	N023187-001A,SAMF	12	1000	Unknown		02/23/2017 11:19	Finished	SAMP, 10mL
22	N023187-001AMS,MS	13	1000	Unknown		02/23/2017 11:28	Finished	MS (1ppb), IWST-161114D,10
23	N023187-002A,SAMF	14	1000	Unknown		02/23/2017 11:38	Finished	SAMP, 10mL
24	N023187-002AMS,MS	15	1000	Unknown		02/23/2017 11:47	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/23/2017 11:57	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/23/2017 12:06	Finished	CCB R170123B
27	N023187-003A,SAMF	18	1000	Unknown		02/23/2017 12:16	Finished	SAMP, 10mL
28	N023187-003AMS,MS	19	1000	Unknown		02/23/2017 12:25	Finished	MS (1ppb), IWST-161114D,10
29	N023187-004A,SAMF	20	1000	Unknown		02/23/2017 12:35	Finished	SAMP, 10mL
30	N023187-004AMS,MS	21	1000	Unknown		02/23/2017 12:44	Finished	MS (1ppb), IWST-161114D,10
31	N023187-005A,SAMF	22	1000	Unknown		02/23/2017 12:54	Finished	SAMP, 10mL
32	N023187-005AMS,MS	23	1000	Unknown		02/23/2017 13:03	Finished	MS (1ppb), IWST-161114D,10
33	N023187-006A,SAMF	24	1000	Unknown		02/23/2017 13:12	Finished	SAMP, 10mL
34	N023187-006AMS,MS	25	1000	Unknown		02/23/2017 13:22	Finished	MS (1ppb), IWST-161114D,10
35	N023187-007A,SAMF	26	1000	Unknown		02/23/2017 13:31	Finished	SAMP, 10mL
36	N023187-007AMS,MS	27	1000	Unknown		02/23/2017 13:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/23/2017 13:50	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/23/2017 14:00	Finished	CCB R170123B
39	N023187-008A,SAMF	30	1000	Unknown		02/23/2017 14:09	Finished	SAMP, 10mL
40	N023187-008AMS,MS	31	1000	Unknown		02/23/2017 14:19	Finished	MS (1ppb), IWST-161114D,10
41	N023187-009A,SAMF	32	1000	Unknown		02/23/2017 14:28	Finished	SAMP, 10mL
42	N023187-009AMS,MS	33	1000	Unknown		02/23/2017 14:38	Finished	MS (1ppb), IWST-161114D,10
43	N023187-010A,SAMF	34	1000	Unknown		02/23/2017 14:47	Finished	SAMP, 10mL
44	N023187-010AMS,MS	35	1000	Unknown		02/23/2017 14:57	Finished	MS (1ppb), IWST-161114D,10
45	N023187-011A,SAMF	36	1000	Unknown		02/23/2017 15:06	Finished	SAMP, 10mL
46	N023187-011AMS,MS	37	1000	Unknown		02/23/2017 15:15	Finished	MS (1ppb), IWST-161114D,10
47	N023187-012A,SAMF	38	1000	Unknown		02/23/2017 15:25	Finished	SAMP, 10mL
48	N023187-012AMS,MS	39	1000	Unknown		02/23/2017 15:34	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV,1,	40	1000	Unknown		02/23/2017 15:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/23/2017 15:53	Finished	CCB R170123B
51	N023187-013A,SAMF	42	1000	Unknown		02/23/2017 16:03	Finished	SAMP, 10mL
52	N023187-013AMS,MS	43	1000	Unknown		02/23/2017 16:12	Finished	MS (1ppb), IWST-161114D,10
53	N023187-014A,SAMF	44	1000	Unknown		02/23/2017 16:22	Finished	SAMP, 10mL
54	N023187-014AMS,MS	45	1000	Unknown		02/23/2017 16:31	Finished	MS (1ppb), IWST-161114D,10
55	N023187-002AMS,MS	46	1000	Unknown		02/23/2017 16:41	Finished	MS (1ppb), IWST-161114D,10
56	CCV-5,CCV,1,	48	1000	Unknown		02/23/2017 16:51	Finished	CCV @5pb, IWST-161114C
57	CCB-5,CCB,1,	49	1000	Unknown		02/23/2017 17:03	Finished	CCB R170123B
58	SHUTDOWN	50	1000	Unknown		02/23/2017 17:12	Finished	
59	Eluent: R170223A	51	1000	Unknown		n.a.	Finished	Eluent
60	PCR: R170223B	CurrentVial	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/23/17
Time Prepared: 0912H
Prepared By: RBA

slope: 99.8%
pH 4: 4.02 @ 20.4°C
7: 7.00 @ 20.4°C
10: 10.01 @ 20.4°C
CO: 7.02 @ 20.5°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170223A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023188-005A	9.48	–	~250mL	~250 mL		
2)	N023187-1A	9.47	–				1/1
3)	1A						
4)	1A	9.57					no sample bottles
5)	2A		–				1/3
6)	2A	9.48	–				2/3
7)	2A	9.54	–				3/3
8)	3A	9.65	–				1/3
9)	3A	9.53	–				2/3
10)	3A	9.58	–				3/3
11)	4A	9.62	–				1/3
12)	4A	9.66	–				2/3
13)	4A	9.60	–				3/3
14)	5A	9.63	–				1/3
15)	5A	9.61	–				2/3
	5A	9.56	–				3/3

Sample Preparation

Date Prepared: 2/23/17
Time Prepared: 0912H
Prepared By: RBA

CONTN

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170223A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023187-006A	9.50	–	~250mL	~250mL		1/3
2)	6A	9.56	–				2/3
3)	6A	9.54	–				3/3
4)	7A	9.48	–				1/3
5)	7A	9.53	–				2/3
6)	7A	9.51	–				3/3
7)	8A	9.46	–				1/3
8)	8A	9.43	–				2/3
9)	8A	9.50	–				3/3
10)	9A	9.55	–				1/3
11)	9A	9.57	–				2/3
12)	9A	9.57	–				3/3
13)	10A	9.51	–				1/3
14)	10A	9.58	–				2/3
15)	10A	9.53	–				3/3
	11A	9.62	–				1/3

Logbook No. 12

rba 2/24/2017

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/23/17
Time Prepared: 0912 H
Prepared By: RBA

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170223A
NH4OH + NH4SO4 buffer: R170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023 187-11A	9.60	–	2250 ml	~250 mL		2/3
2)	11A	9.61	–				3/3
3)	12A	9.52	–				1/3
4)	12A	9.56	–				2/3
5)	12A	9.54	–				3/3
6)	13A	9.58	–				1/3
7)	13A	9.50	–				2/3
8)	13A	9.49	–				3/3
9)	14A	9.46	–				1/3
10)	14A	9.48	–				2/3
11)	14A	9.53	–				3/3
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared:
Time Prepared:
Prepared By:

Reagent ID:
Sulfuric Acid:
Diphenylcarbazide:
NH4OH + NH4SO4 eluent:
NH4OH + NH4SO4 buffer:

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)							
2)							
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

rba 2/24/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0546	0.2596	1.3235	2.6295	3.9978	5.3030	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ICV** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.963	0.20	5.000	0	99.3	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	100	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCV** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.040	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.209	0.20	0.2000	0	104	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ZZZZZZ** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.068	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCV** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	0.20	5.000	0	99.9	95	105				

Sample ID **CCV-4** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCV** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.942	0.20	10.00	0	99.4	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCV** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	0.20	5.000	0	99.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **ICB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/3/2017** SeqNo: **2577249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **113715**
Client ID: **CCB** Batch ID: **R113715** TestNo: **EPA 218.6** Analysis Date: **2/23/2017** SeqNo: **2577690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/23/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.190	
CCV-3	4.190	
CCV-4	4.198	
CCV-5	4.198	
Average	4.193	
Actual RT Window	4.113 - 4.273	
Applied RT Window	3.993 - 4.393	
MB-R113715	N.A.	N.A.
LCS-R113715	4.190	PASS
N023188-001A	4.173	PASS
N023188-001ADUP	4.173	PASS
N023188-001AMS	4.173	PASS
N023188-001AMSD	4.173	PASS
N023187-001A	N.A.	N.A.
N023187-001AMS	4.198	PASS
N023187-002A	N.A.	N.A.
N023187-002AMS	4.190	PASS
N023187-003A	N.A.	N.A.
N023187-003AMS	4.190	PASS
N023187-004A	N.A.	N.A.
N023187-004AMS	4.190	PASS
N023187-005A	N.A.	N.A.
N023187-005AMS	4.190	PASS
N023187-006A	N.A.	N.A.
N023187-006AMS	4.190	PASS
N023187-007A	N.A.	N.A.
N023187-007AMS	4.181	PASS
N023187-008A	N.A.	N.A.
N023187-008AMS	4.181	PASS
N023187-009A	4.173	PASS
N023187-009AMS	4.190	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/23/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.190	
CCV-3	4.190	
CCV-4	4.198	
CCV-5	4.198	
Average	4.193	
Actual RT Window	4.113 - 4.273	
Applied RT Window	3.993 - 4.393	
N023187-010A	N.A.	N.A.
N023187-010AMS	4.190	PASS
N023187-011A	N.A.	N.A.
N023187-011AMS	4.190	PASS
N023187-012A	N.A.	N.A.
N023187-012AMS	4.190	PASS
N023187-013A	N.A.	N.A.
N023187-013AMS	4.181	PASS
N023187-014A	N.A.	N.A.
N023187-014AMS	4.190	PASS
N023187-002AMS	4.190	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	02/03/17 10:39 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/03/17 10:50 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	02/03/17 11:02 AM	Reported
13	MB-R113266	MBLK	1	Hexavalent Chromium	02/03/17 11:11 AM	Reported
14	LCS-R113266	LCS	1	Hexavalent Chromium	02/03/17 11:20 AM	Reported
15	N022931-001B	SAMP	100	Hexavalent Chromium	02/03/17 11:30 AM	Reported
16	N022931-001BMS	MS	100	Hexavalent Chromium	02/03/17 11:39 AM	Reported
17	N022931-001BMSD	MSD	100	Hexavalent Chromium	02/03/17 11:49 AM	Reported
18	N022931-002C	SAMP	1	Hexavalent Chromium	02/03/17 12:02 PM	Reported
19	N022931-002CMS	MS	1	Hexavalent Chromium	02/03/17 12:14 PM	Reported
20	N022924-001A	SAMP	1	Hexavalent Chromium	02/03/17 12:23 PM	Reported
21	N022924-002A	SAMP	1	Hexavalent Chromium	02/03/17 12:33 PM	Reported
22	N022924-005A	SAMP	1	Hexavalent Chromium	02/03/17 12:42 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	02/03/17 12:51 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	02/03/17 1:01 PM	Reported
25	N022924-006A	SAMP	1	Hexavalent Chromium	02/03/17 1:10 PM	Reported
26	N022924-007A	SAMP	20	Hexavalent Chromium	02/03/17 1:20 PM	Reported
27	N022924-008A	SAMP	20	Hexavalent Chromium	02/03/17 1:29 PM	Reported
28	N022924-009A	SAMP	1	Hexavalent Chromium	02/03/17 1:39 PM	Reported
29	N022924-010A	SAMP	20	Hexavalent Chromium	02/03/17 1:48 PM	Reported
30	N022924-011A	SAMP	50	Hexavalent Chromium	02/03/17 1:58 PM	Reported
31	N022924-012A	SAMP	50	Hexavalent Chromium	02/03/17 2:07 PM	Reported
32	N022943-001A	SAMP	1	Hexavalent Chromium	02/03/17 2:17 PM	Reported
33	N022943-002A	SAMP	1	Hexavalent Chromium	02/03/17 2:26 PM	Reported
34	N022943-003A	SAMP	1	Hexavalent Chromium	02/03/17 2:36 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	02/03/17 2:45 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	02/03/17 2:54 PM	Reported
37	N022943-004A	SAMP	1	Hexavalent Chromium	02/03/17 3:04 PM	Reported
38	N022943-005A	SAMP	1	Hexavalent Chromium	02/03/17 3:14 PM	Reported
39	N022943-006A	SAMP	1	Hexavalent Chromium	02/03/17 3:23 PM	Reported
40	N022943-007A	SAMP	1	Hexavalent Chromium	02/03/17 3:32 PM	Reported
41	N022943-008A	SAMP	1	Hexavalent Chromium	02/03/17 3:42 PM	Reported
42	N022924-001ADUP	DUP	1	Hexavalent Chromium	02/03/17 3:51 PM	Reported

rba 2/7/2017

IC7 RBA 2/6/2017 3:25 PM

Nancy 2/14/2017

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	LCS-R113267	LCS	1	Hexavalent Chromium	02/03/17 4:01 PM	Reported
44	MB-R113267	MBLK	1	Hexavalent Chromium	02/03/17 4:10 PM	Reported
45	N022945-001A	SAMP	1	Hexavalent Chromium	02/03/17 4:20 PM	Not Reported
46	N022945-008A	SAMP	1	Hexavalent Chromium	02/03/17 4:29 PM	Not Reported
47	N022945-009A	SAMP	1	Hexavalent Chromium	02/03/17 4:39 PM	Not Reported
48	CCV-3	CCV1	1	Hexavalent Chromium	02/03/17 4:48 PM	Reported
49	CCB-3	CCB	1	Hexavalent Chromium	02/03/17 4:57 PM	Reported
50	N022943-009A	SAMP	1	Hexavalent Chromium	02/03/17 5:07 PM	Reported
51	N022943-009AMS	MS	1	Hexavalent Chromium	02/03/17 5:22 PM	Reported
52	N022943-009AMSD	MSD	1	Hexavalent Chromium	02/03/17 5:33 PM	Reported
53	N022945-002A	SAMP	50	Hexavalent Chromium	02/03/17 5:42 PM	Reported
54	N022945-002AMS	MS	50	Hexavalent Chromium	02/03/17 5:52 PM	Reported
55	N022945-003A	SAMP	100	Hexavalent Chromium	02/03/17 6:01 PM	Not Reported
56	N022945-003A	SAMP	10	Hexavalent Chromium	02/03/17 6:19 PM	Reported
57	N022945-004A	SAMP	10	Hexavalent Chromium	02/03/17 6:32 PM	Reported
58	N022945-005A	SAMP	20	Hexavalent Chromium	02/03/17 6:43 PM	Reported
59	N022945-006A	SAMP	50	Hexavalent Chromium	02/03/17 6:53 PM	Reported
60	CCV-4	CCV	1	Hexavalent Chromium	02/03/17 7:02 PM	Reported
61	CCB-4	CCB	1	Hexavalent Chromium	02/03/17 7:12 PM	Reported
62	N022945-007A	SAMP	1	Hexavalent Chromium	02/03/17 7:34 PM	Reported
63	N022943-010A	SAMP	1	Hexavalent Chromium	02/03/17 7:45 PM	Reported
64	N022943-011A	SAMP	1	Hexavalent Chromium	02/03/17 7:54 PM	Reported
65	N022943-012A	SAMP	5	Hexavalent Chromium	02/03/17 8:04 PM	Reported
66	N022945-001A	SAMP	50	Hexavalent Chromium	02/03/17 8:13 PM	Reported
67	N022945-008A	SAMP	50	Hexavalent Chromium	02/03/17 8:23 PM	Reported
68	N022945-009A	SAMP	10	Hexavalent Chromium	02/03/17 8:32 PM	Reported
69	N022945-003ADUP	DUP	10	Hexavalent Chromium	02/03/17 8:41 PM	Reported
70	CCV-5	CCV1	1	Hexavalent Chromium	02/03/17 8:51 PM	Reported
71	CCB-5	CCB	1	Hexavalent Chromium	02/03/17 9:00 PM	Reported
72	MB-R113268	MBLK	1	Hexavalent Chromium	02/03/17 9:10 PM	Reported
73	LCS-R113268	LCS	1	Hexavalent Chromium	02/03/17 9:19 PM	Reported
74	N022944-004A	SAMP	20	Hexavalent Chromium	02/03/17 9:29 PM	Reported
75	N022944-004AMS	MS	20	Hexavalent Chromium	02/03/17 9:38 PM	Reported
76	N022944-004AMSD	MSD	20	Hexavalent Chromium	02/03/17 9:48 PM	Reported
77	N022944-005A	SAMP	20	Hexavalent Chromium	02/03/17 9:57 PM	Reported
78	N022944-005AMS	MS	20	Hexavalent Chromium	02/03/17 10:06 PM	Reported
79	N022944-002A	SAMP	1	Hexavalent Chromium	02/03/17 10:16 PM	Reported
80	N022944-002ADUP	DUP	1	Hexavalent Chromium	02/03/17 10:25 PM	Reported
81	N022944-001A	SAMP	1	Hexavalent Chromium	02/03/17 10:35 PM	Reported
82	CCV-6	CCV	1	Hexavalent Chromium	02/03/17 10:44 PM	Reported
83	CCB-6	CCB	1	Hexavalent Chromium	02/03/17 10:54 PM	Reported
84	N022944-003A	SAMP	50	Hexavalent Chromium	02/03/17 11:03 PM	Reported

INJECTION LOG: 170203A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N022944-006A	SAMP	20	Hexavalent Chromium	02/03/17 11:13 PM	Not Reported
86	N022944-007A	SAMP	1	Hexavalent Chromium	02/03/17 11:22 PM	Reported
87	N022944-008A	SAMP	1	Hexavalent Chromium	02/03/17 11:32 PM	Reported
88	N022944-009A	SAMP	1	Hexavalent Chromium	02/03/17 11:41 PM	Reported
89	N022944-010A	SAMP	1	Hexavalent Chromium	02/03/17 11:50 PM	Reported
90	N022944-011A	SAMP	1	Hexavalent Chromium	02/04/17 12:00 AM	Reported
91	N022944-012A	SAMP	50	Hexavalent Chromium	02/04/17 12:09 AM	Reported
92	CCV-7	CCV1	1	Hexavalent Chromium	02/04/17 12:19 AM	Reported
93	CCB-7	CCB	1	Hexavalent Chromium	02/04/17 12:28 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170203A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Feb/17 15:25:49**
No. of Injections:	**96**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	10	1000	Unknown		02/03/2017 10:39	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		02/03/2017 10:50	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		02/03/2017 11:02	Finished	ICB R170112D
13	MB-H2O,MBLK,1	13	1000	Unknown		02/03/2017 11:11	Finished	MB R170112D
14	LCS-H2O,LCS,1	14	1000	Unknown		02/03/2017 11:20	Finished	LCS, IWST-161114D
15	N022931-001B,SAMF	15	1000	Unknown		02/03/2017 11:30	Finished	SAMP, 0.1>10mL
16	N022931-001BMS,MS	16	1000	Unknown		02/03/2017 11:39	Finished	MS (5ppb), IWST-161114D,0.1
17	N022931-001BMSD,M	17	1000	Unknown		02/03/2017 11:49	Finished	MSD (5ppb), IWST-161114D,0.
18	N022931-002C,SAMF	18	1000	Unknown		02/03/2017 12:02	Finished	SAMP, 10mL
19	N022931-002CMS,MS	19	1000	Unknown		02/03/2017 12:14	Finished	MS (1ppb), IWST-161114D,10
20	N022924-001A,SAMF	20	1000	Unknown		02/03/2017 12:23	Finished	SAMP, 10mL
21	N022924-002A,SAMF	21	1000	Unknown		02/03/2017 12:33	Finished	SAMP, 10mL
22	N022924-005A,SAMF	22	1000	Unknown		02/03/2017 12:42	Finished	SAMP, 10mL
23	CCV-1,CCV1,1,	23	1000	Unknown		02/03/2017 12:51	Finished	CCV @10ppb, IWST-161114C
24	CCB-1,CCB,1,	24	1000	Unknown		02/03/2017 13:01	Finished	CCB R170103B
25	N022924-006A,SAMF	25	1000	Unknown		02/03/2017 13:10	Finished	SAMP, 10mL
26	N022924-007A,SAMF	26	1000	Unknown		02/03/2017 13:20	Finished	SAMP, 0.5>10mL
27	N022924-008A,SAMF	27	1000	Unknown		02/03/2017 13:29	Finished	SAMP, 0.5>10mL
28	N022924-009A,SAMF	28	1000	Unknown		02/03/2017 13:39	Finished	SAMP, 10mL
29	N022924-010A,SAMF	29	1000	Unknown		02/03/2017 13:48	Finished	SAMP, 0.5>10mL
30	N022924-011A,SAMF	30	1000	Unknown		02/03/2017 13:58	Finished	SAMP, 0.2>10mL
31	N022924-012A,SAMF	31	1000	Unknown		02/03/2017 14:07	Finished	SAMP, 0.2>10mL
32	N022943-001A,SAMF	32	1000	Unknown		02/03/2017 14:17	Finished	SAMP, 10mL
33	N022943-002A,SAMF	33	1000	Unknown		02/03/2017 14:26	Finished	SAMP, 10mL
34	N022943-003A,SAMF	34	1000	Unknown		02/03/2017 14:36	Finished	SAMP, 10mL
35	CCV-2,CCV,1,	35	1000	Unknown		02/03/2017 14:45	Finished	CCV @5ppb, IWST-161114C
36	CCB-2,CCB,1,	36	1000	Unknown		02/03/2017 14:54	Finished	CCB R170112D
37	N022943-004A,SAMF	37	1000	Unknown		02/03/2017 15:04	Finished	SAMP, 10mL
38	N022943-005A,SAMF	38	1000	Unknown		02/03/2017 15:14	Finished	SAMP, 10mL
39	N022943-006A,SAMF	39	1000	Unknown		02/03/2017 15:23	Finished	SAMP, 10mL
40	N022943-007A,SAMF	40	1000	Unknown		02/03/2017 15:32	Finished	SAMP, 10mL
41	N022943-008A,SAMF	41	1000	Unknown		02/03/2017 15:42	Finished	SAMP, 10mL
42	N022924-001ADUP,D	42	1000	Unknown		02/03/2017 15:51	Finished	DUP, 10mL
43	LCS-2,LCS,1	43	1000	Unknown		02/03/2017 16:01	Finished	LCS, IWST-161114D
44	MB-2,MBLK,1	44	1000	Unknown		02/03/2017 16:10	Finished	MB R170112D
45	N022945-001A,SAMF	45	1000	Unknown		02/03/2017 16:20	Finished	SAMP, 10mL
46	N022945-008A,SAMF	46	1000	Unknown		02/03/2017 16:29	Finished	SAMP, 10mL
47	N022945-009A,SAMF	47	1000	Unknown		02/03/2017 16:39	Finished	SAMP, 10mL
48	CCV-3,CCV1,1,	48	1000	Unknown		02/03/2017 16:48	Finished	CCV @10ppb, IWST-161114C
49	CCB-3,CCB,1,	49	1000	Unknown		02/03/2017 16:57	Finished	CCB R170103B
50	N022943-009A,SAMF	50	1000	Unknown		02/03/2017 17:07	Finished	SAMP, 10mL
51	N022943-009AMS,MS	1	1000	Unknown		02/03/2017 17:22	Finished	MS (5ppb), IWST-161114D,10
52	N022943-009AMSD,M	2	1000	Unknown		02/03/2017 17:33	Finished	MSD (5ppb), IWST-161114D,1
53	N022945-002A,SAMF	3	1000	Unknown		02/03/2017 17:42	Finished	SAMP, 0.2>10mL
54	N022945-002AMS,MS	4	1000	Unknown		02/03/2017 17:52	Finished	MS (5ppb), IWST-161114D,0.2
55	N022945-003A,SAMF	5	1000	Unknown		02/03/2017 18:01	Finished	SAMP, 0.1>10mL
56	N022945-003A,SAMF	6	1000	Unknown		02/03/2017 18:19	Finished	SAMP,1>10mL
57	N022945-004A,SAMF	7	1000	Unknown		02/03/2017 18:32	Finished	SAMP, 1>10mL
58	N022945-005A,SAMF	8	1000	Unknown		02/03/2017 18:43	Finished	SAMP, 0.5>10mL
59	N022945-006A,SAMF	9	1000	Unknown		02/03/2017 18:53	Finished	SAMP, 0.2>10mL
60	CCV-4,CCV,1,	10	1000	Unknown		02/03/2017 19:02	Finished	CCV @5ppb, IWST-161114C

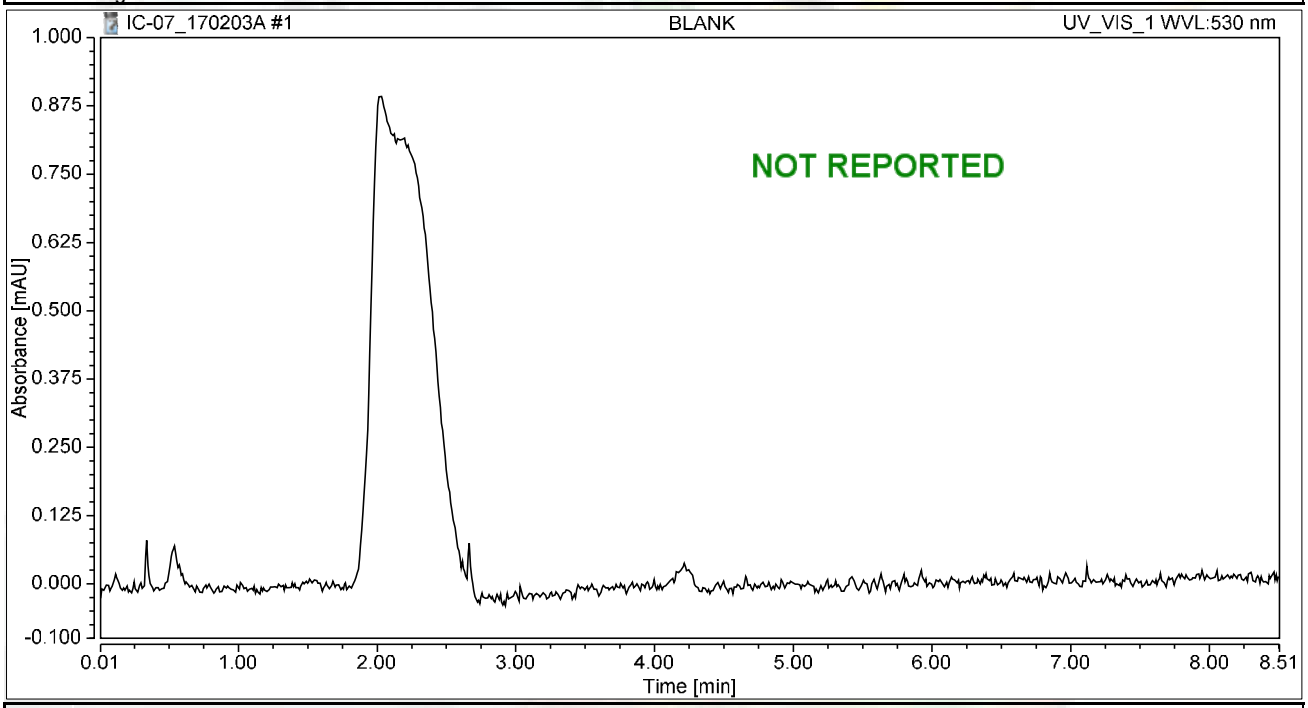
61	CCB-4,CCB,1,	11	1000	Unknown		02/03/2017 19:12	Finished	CCB R170112D
62	N022945-007A,SAMF	1	1000	Unknown		02/03/2017 19:34	Finished	SAMP, 10mL
63	N022943-010A,SAMF	2	1000	Unknown		02/03/2017 19:45	Finished	SAMP, 10mL
64	N022943-011A,SAMF	3	1000	Unknown		02/03/2017 19:54	Finished	SAMP, 10mL
65	N022943-012A,SAMF	4	1000	Unknown		02/03/2017 20:04	Finished	SAMP, 2>10mL
66	N022945-001A,SAMF	5	1000	Unknown		02/03/2017 20:13	Finished	SAMP, 0.2>10mL
67	N022945-008A,SAMF	6	1000	Unknown		02/03/2017 20:23	Finished	SAMP, 0.2>10mL
68	N022945-009A,SAMF	7	1000	Unknown		02/03/2017 20:32	Finished	SAMP, 1>10mL
69	N022945-003ADUP,D	8	1000	Unknown		02/03/2017 20:41	Finished	DUP, 1>10mL
70	CCV-5,CCV1,1,	9	1000	Unknown		02/03/2017 20:51	Finished	CCV @10ppb, IWST-161114C
71	CCB-5,CCB,1,	10	1000	Unknown		02/03/2017 21:00	Finished	CCB R170103B
72	MB-3,MBLK,1	11	1000	Unknown		02/03/2017 21:10	Finished	MB R170112D
73	LCS-3,LCS,1	12	1000	Unknown		02/03/2017 21:19	Finished	LCS, IWST-161114D
74	N022944-004A,SAMF	13	1000	Unknown		02/03/2017 21:29	Finished	SAMP,0.5>10mL
75	N022944-004AMS,MS	14	1000	Unknown		02/03/2017 21:38	Finished	MS (5ppb), IWST-161114D,0.5
76	N022944-004AMSD,M	15	1000	Unknown		02/03/2017 21:48	Finished	MSD (5ppb), IWST-161114D,0.
77	N022944-005A,SAMF	16	1000	Unknown		02/03/2017 21:57	Finished	SAMP, 0.5>10mL
78	N022944-005AMS,MS	17	1000	Unknown		02/03/2017 22:06	Finished	MS (5ppb), IWST-161114D,0.5
79	N022944-002A,SAMF	18	1000	Unknown		02/03/2017 22:16	Finished	SAMP, 10mL
80	N022944-002ADUP,D	19	1000	Unknown		02/03/2017 22:25	Finished	DUP,10mL
81	N022944-001A,SAMF	20	1000	Unknown		02/03/2017 22:35	Finished	SAMP, 10mL
82	CCV-6,CCV,1,	21	1000	Unknown		02/03/2017 22:44	Finished	CCV @5ppb, IWST-161114C
83	CCB-6,CCB,1,	22	1000	Unknown		02/03/2017 22:54	Finished	CCB R170112D
84	N022944-003A,SAMF	23	1000	Unknown		02/03/2017 23:03	Finished	SAMP, 0.2>10mL
85	N022944-006A,SAMF	24	1000	Unknown		02/03/2017 23:13	Finished	SAMP, 0.5>10mL
86	N022944-007A,SAMF	25	1000	Unknown		02/03/2017 23:22	Finished	SAMP,10mL
87	N022944-008A,SAMF	26	1000	Unknown		02/03/2017 23:32	Finished	SAMP,10mL
88	N022944-009A,SAMF	27	1000	Unknown		02/03/2017 23:41	Finished	SAMP,10mL
89	N022944-010A,SAMF	28	1000	Unknown		02/03/2017 23:50	Finished	SAMP,10mL
90	N022944-011A,SAMF	29	1000	Unknown		02/04/2017 00:00	Finished	SAMP,10mL
91	N022944-012A,SAMF	30	1000	Unknown		02/04/2017 00:09	Finished	SAMP, 0.2>10mL
92	CCV-7,CCV1,1,	31	1000	Unknown		02/04/2017 00:19	Finished	CCV @10ppb, IWST-161114C
93	CCB-7,CCB,1,	32	1000	Unknown		02/04/2017 00:28	Finished	CCB R170103B
94	SHUTDOWN	33	1000	Unknown		02/04/2017 00:38	Finished	
95	Eluent: R170202A	34	1000	Unknown		n.a.	Finished	Eluent
96	PCR: R170201A	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

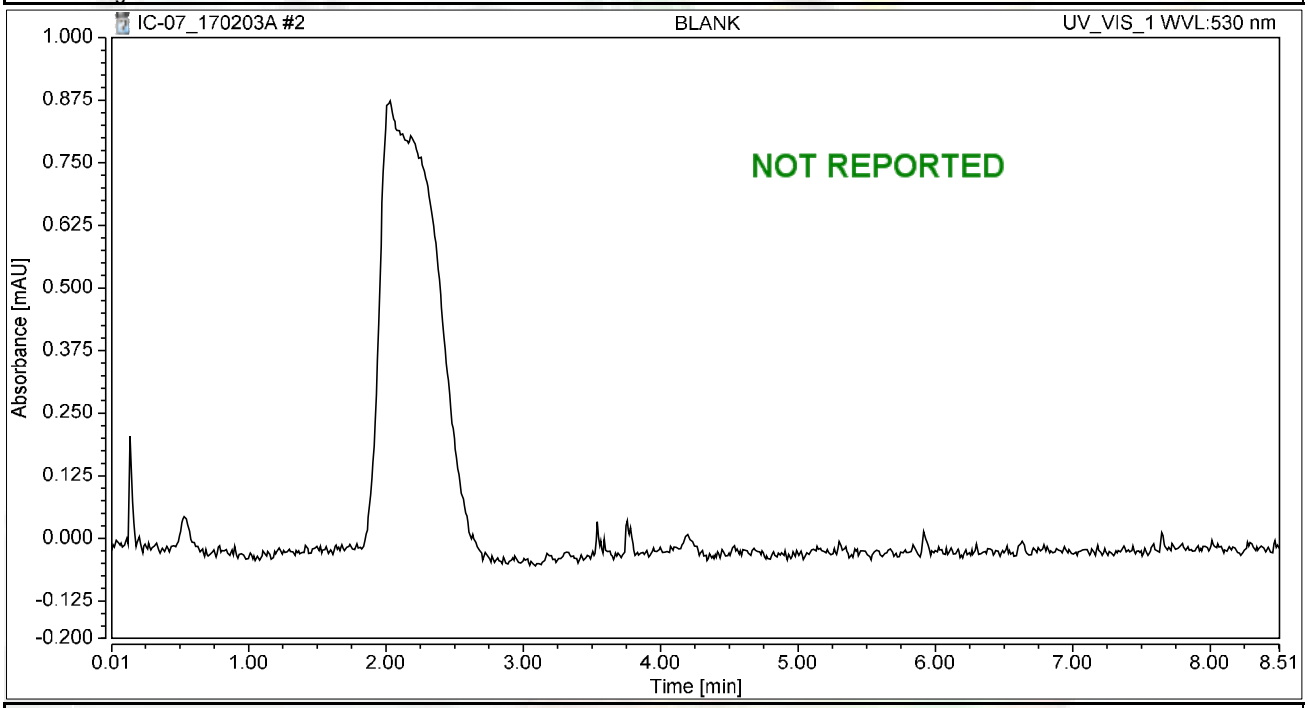
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

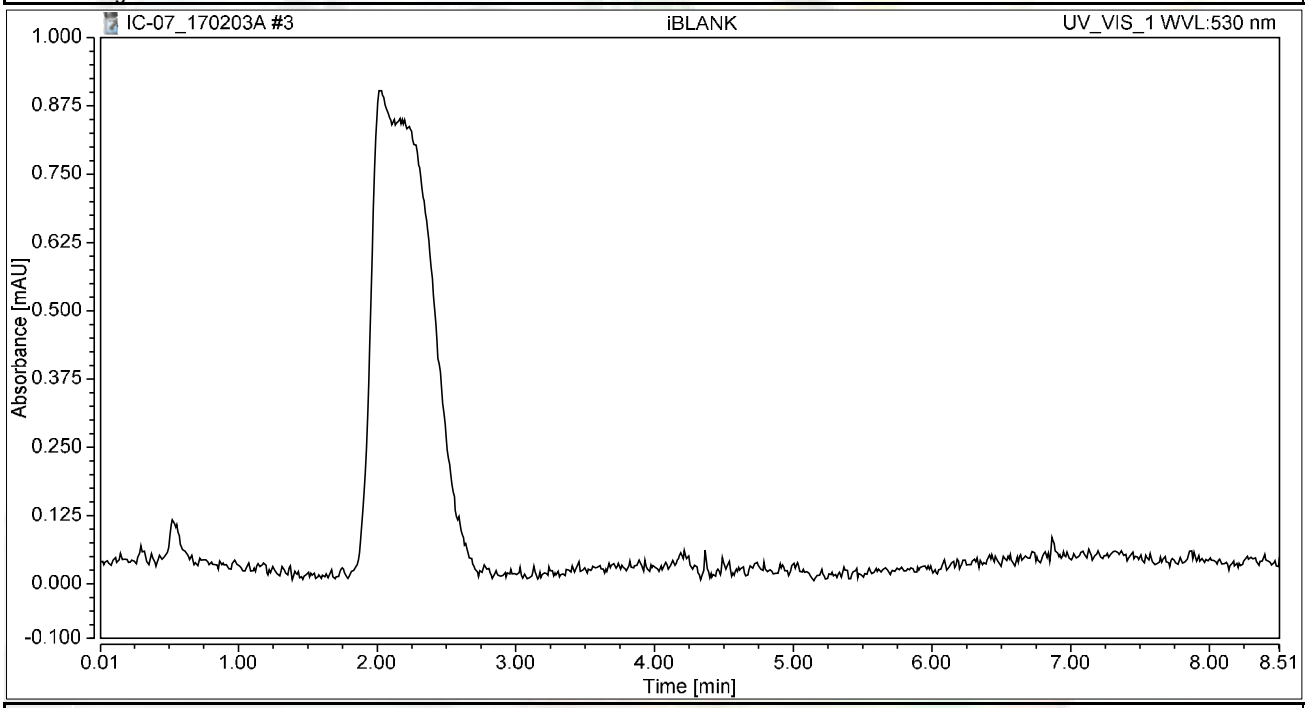
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

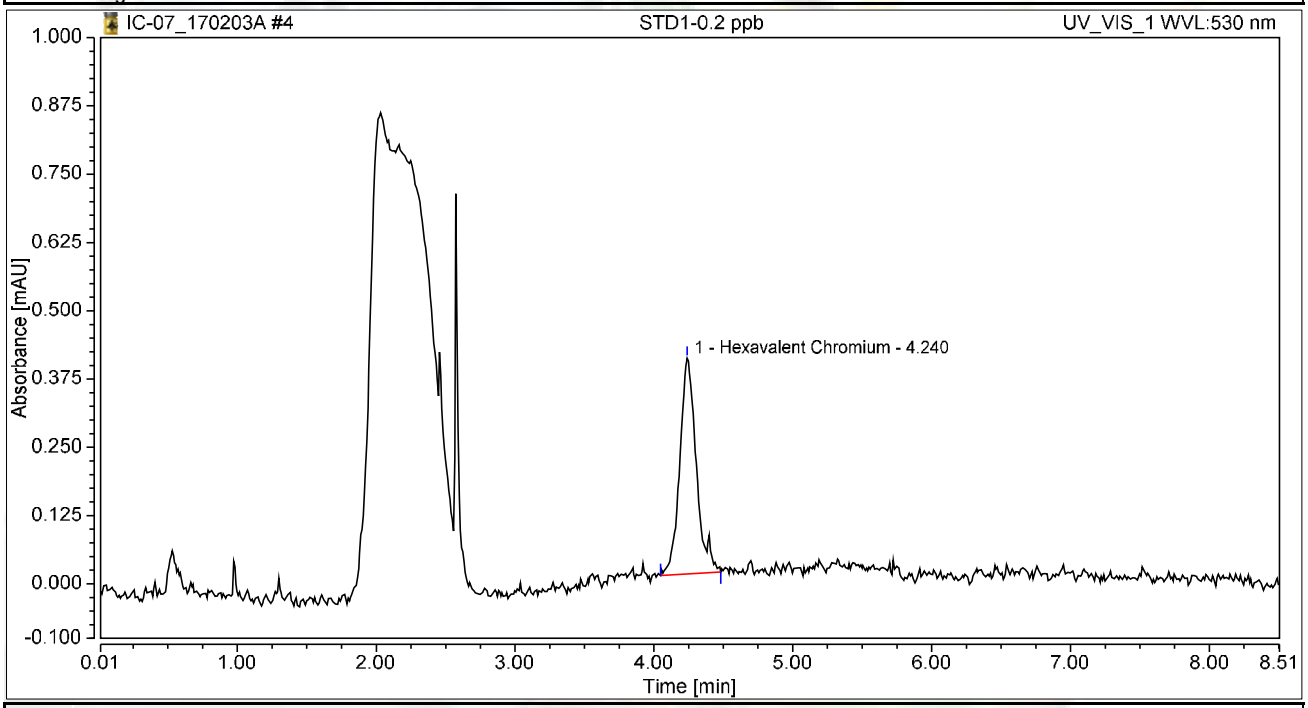
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

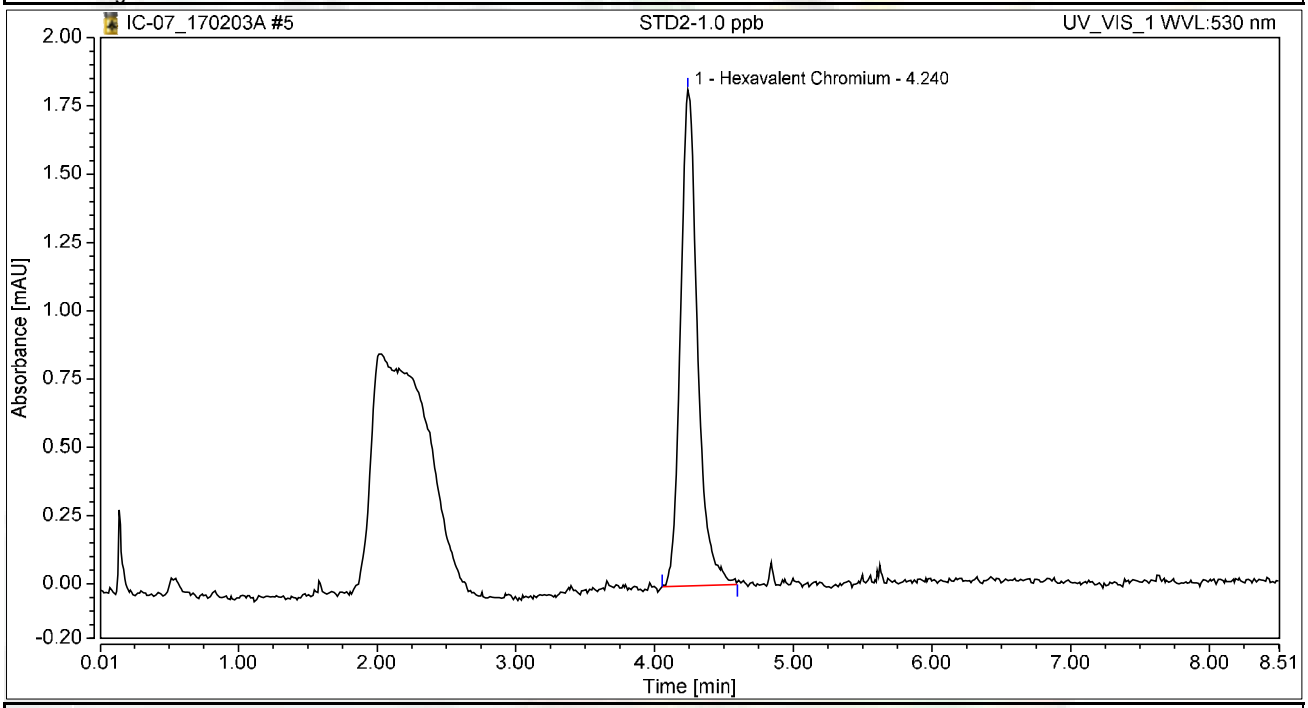
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.055	0.395	100.00	100.00	0.2059
Total:			**0.055**	**0.395**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

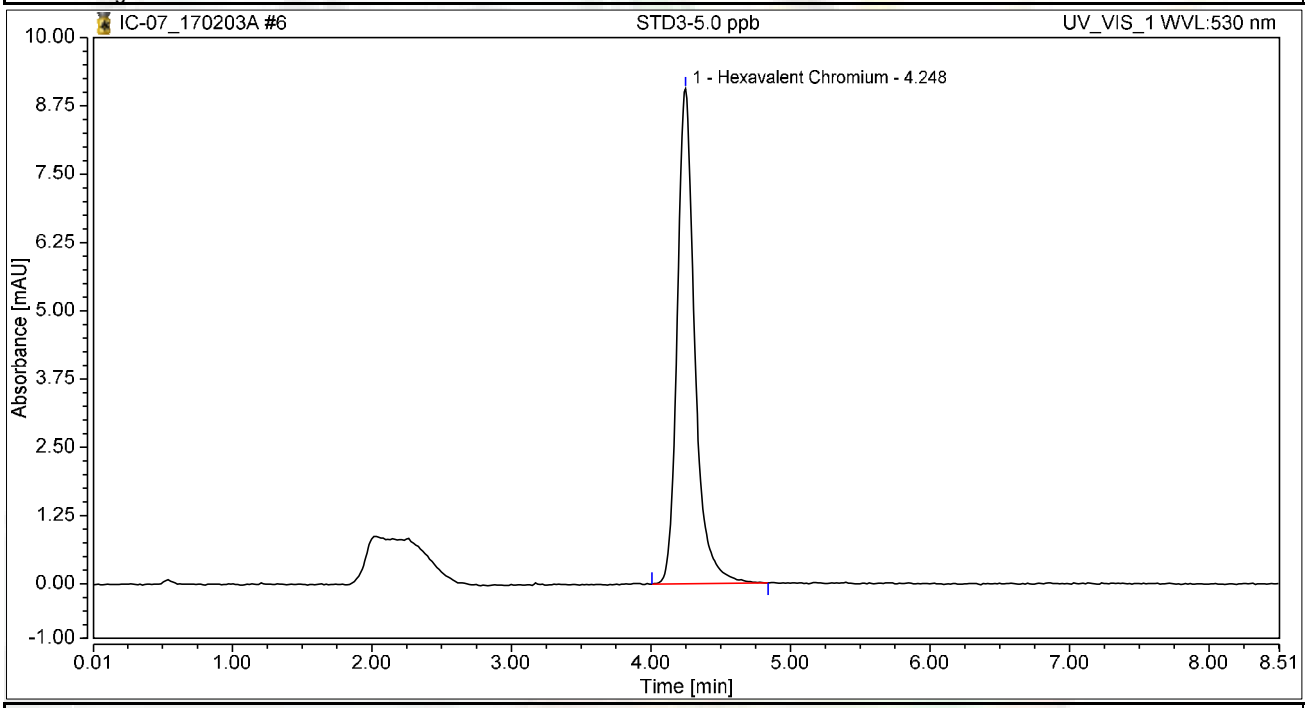
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.260	1.817	100.00	100.00	0.9787
Total:			**0.260**	**1.817**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

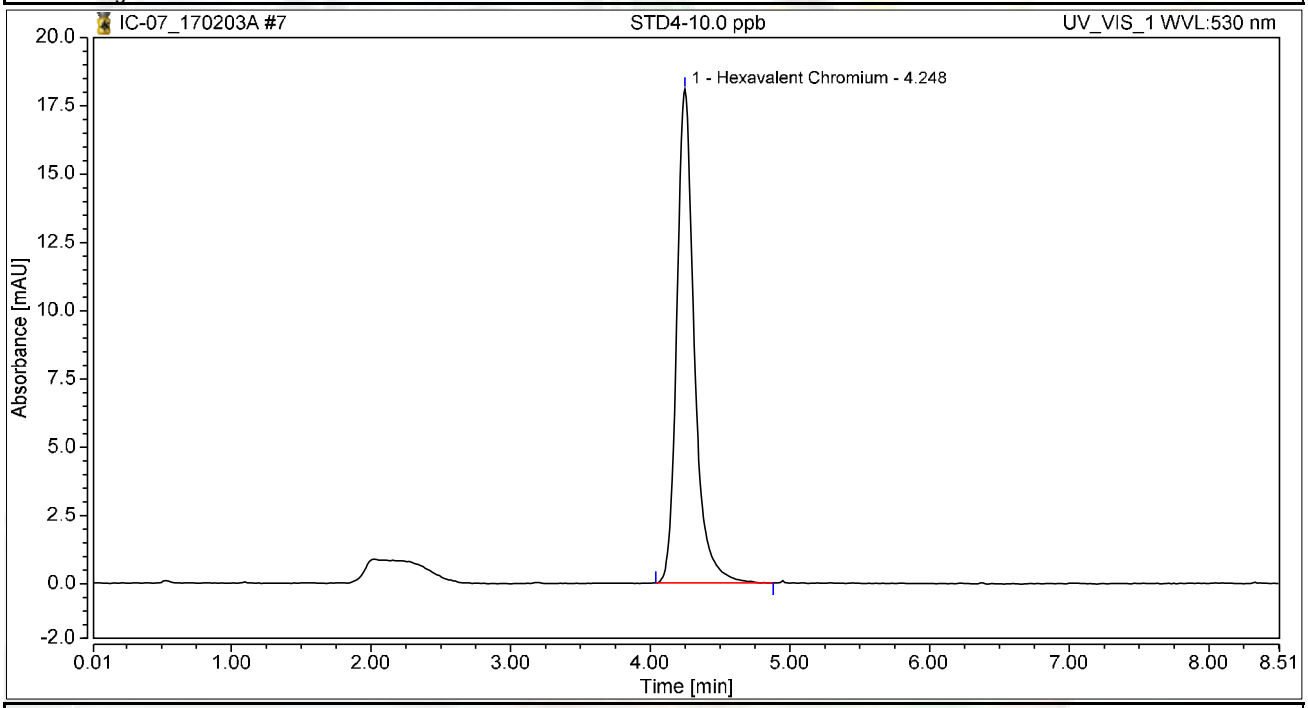
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.324	9.063	100.00	100.00	4.9898
Total:			**1.324**	**9.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

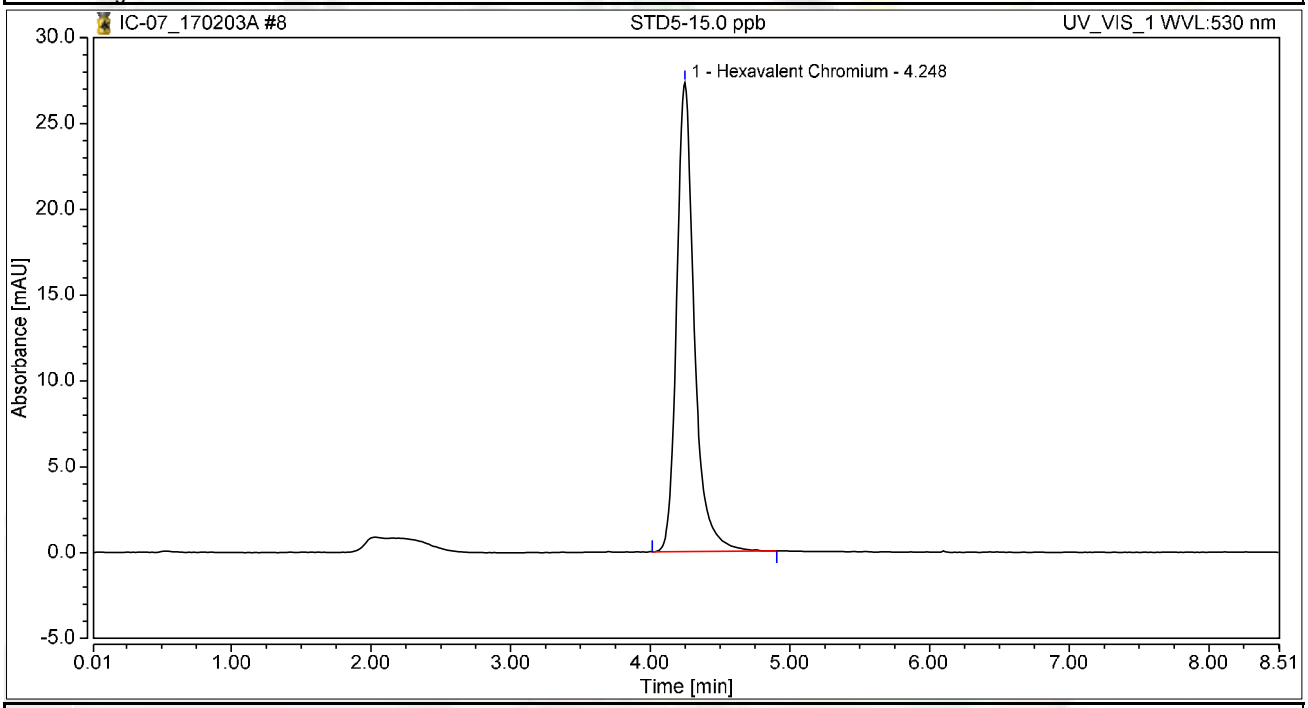
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.630	18.087	100.00	100.00	9.9136
Total:			**2.630**	**18.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

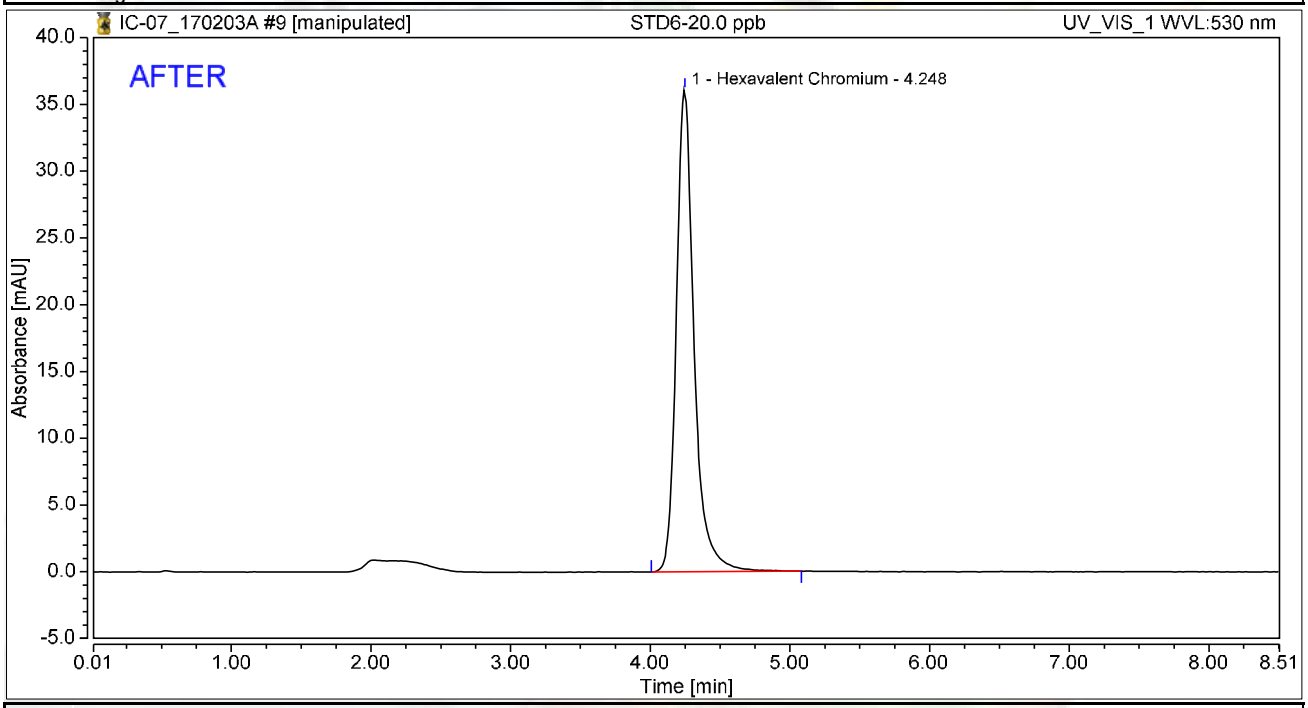
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.998	27.340	100.00	100.00	15.0722
Total:			**3.998**	**27.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.303	36.063	100.00	100.00	19.9926
Total:			**5.303**	**36.063**	**100.00**	**100.00**	

rba 2/6/2017

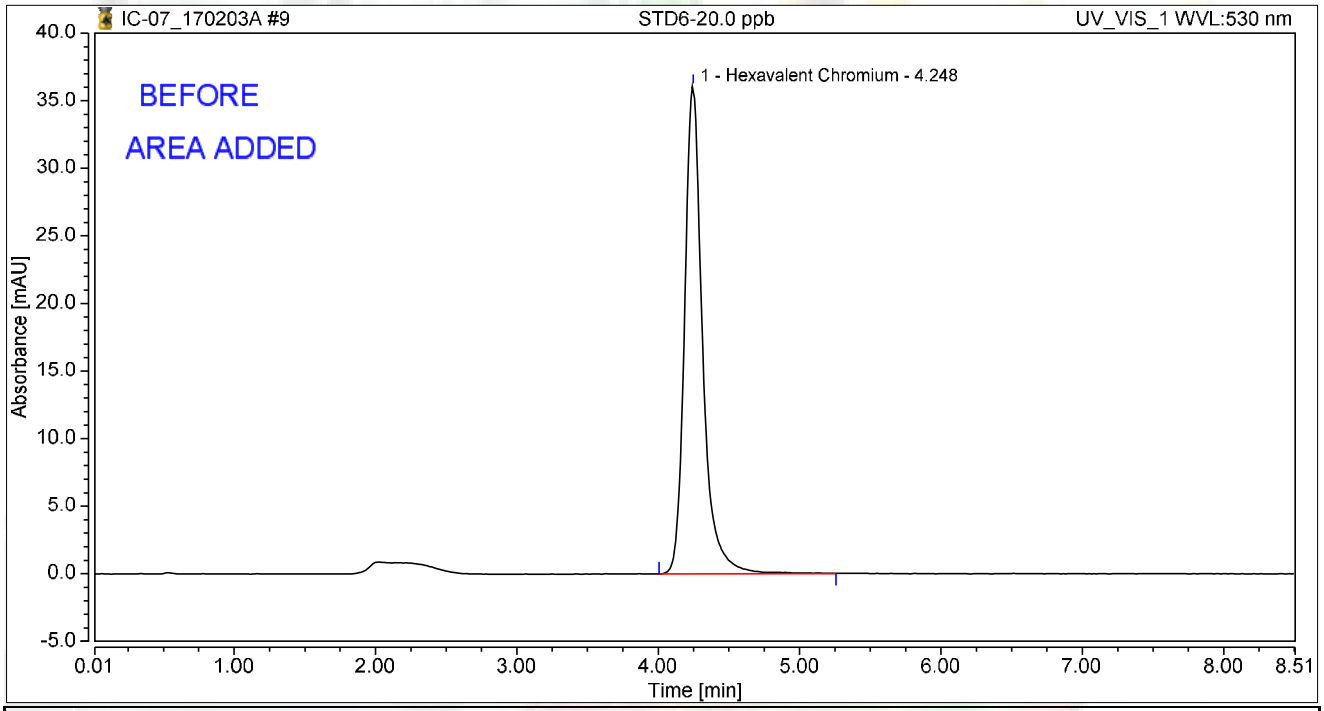
Nancy 2/14/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

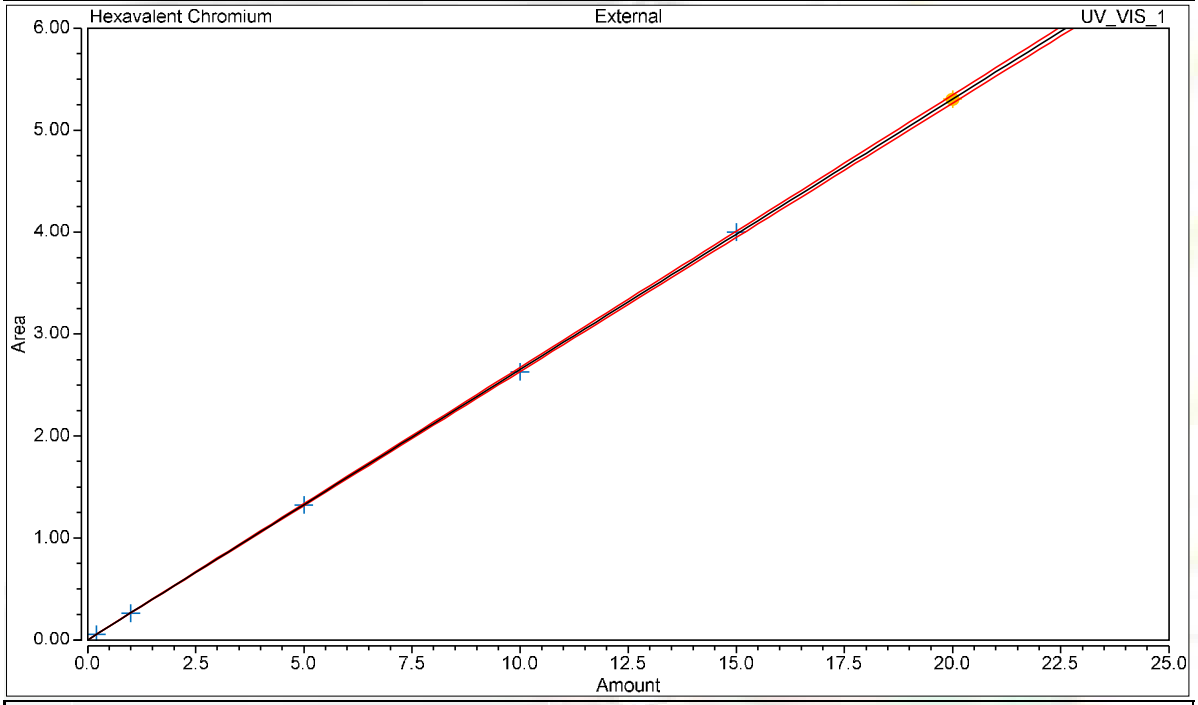
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.325	36.070	100.00	100.00	20.0319
Total:			**5.325**	**36.070**	**100.00**	**100.00**	

rba 2/6/2017

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2652
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

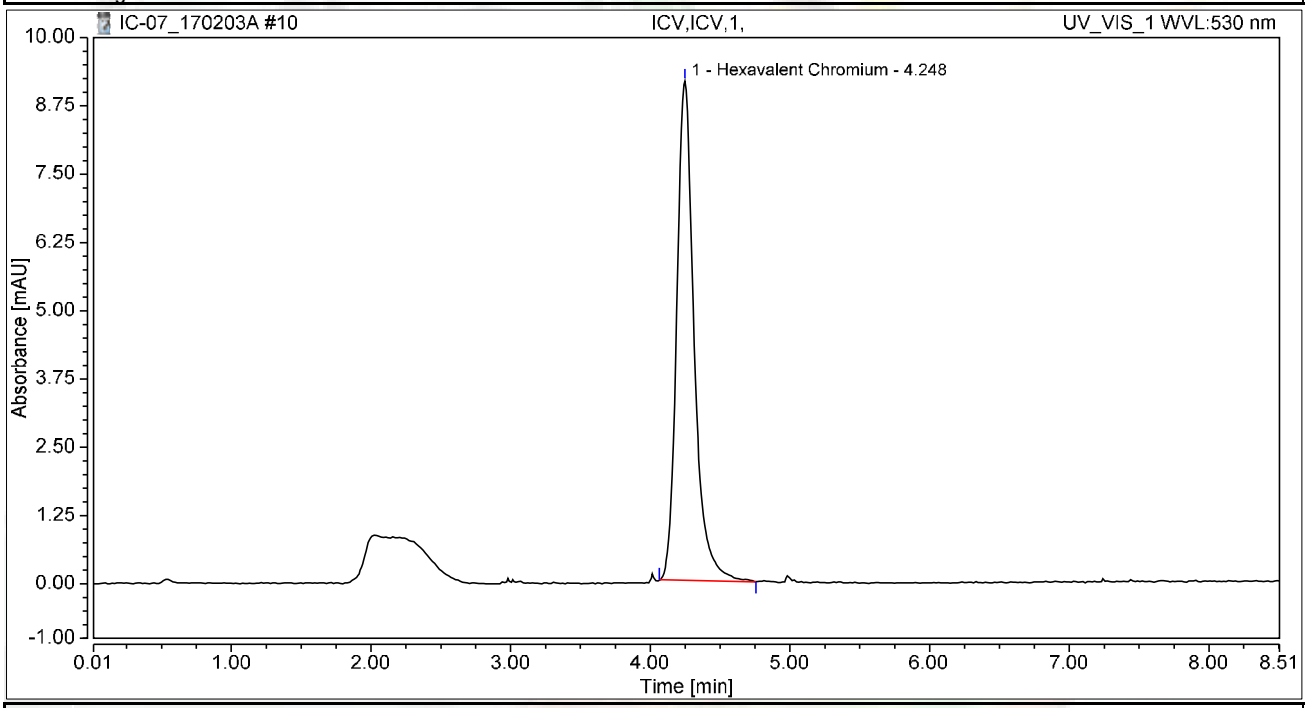
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0546	0.055	0.395
5	STD2-1.0 ppb	02	1.0000	0.2596	0.260	1.817
6	STD3-5.0 ppb	03	5.0000	1.3235	1.324	9.063
7	STD4-10.0 ppb	04	10.0000	2.6295	2.630	18.087
8	STD5-15.0 ppb	05	15.0000	3.9978	3.998	27.340
9	STD6-20.0 ppb	06	20.0000	5.3030	5.303	36.063

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

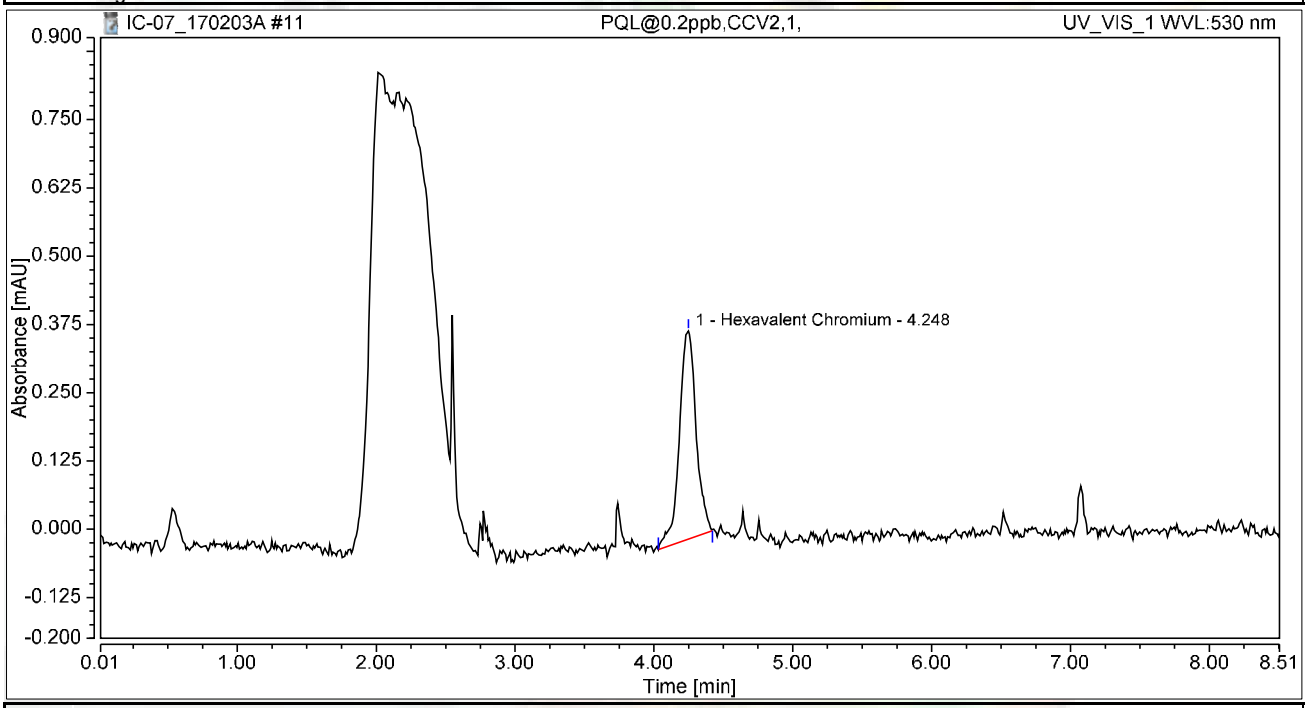
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.316	9.138	100.00	100.00	4.9632
Total:			**1.316**	**9.138**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

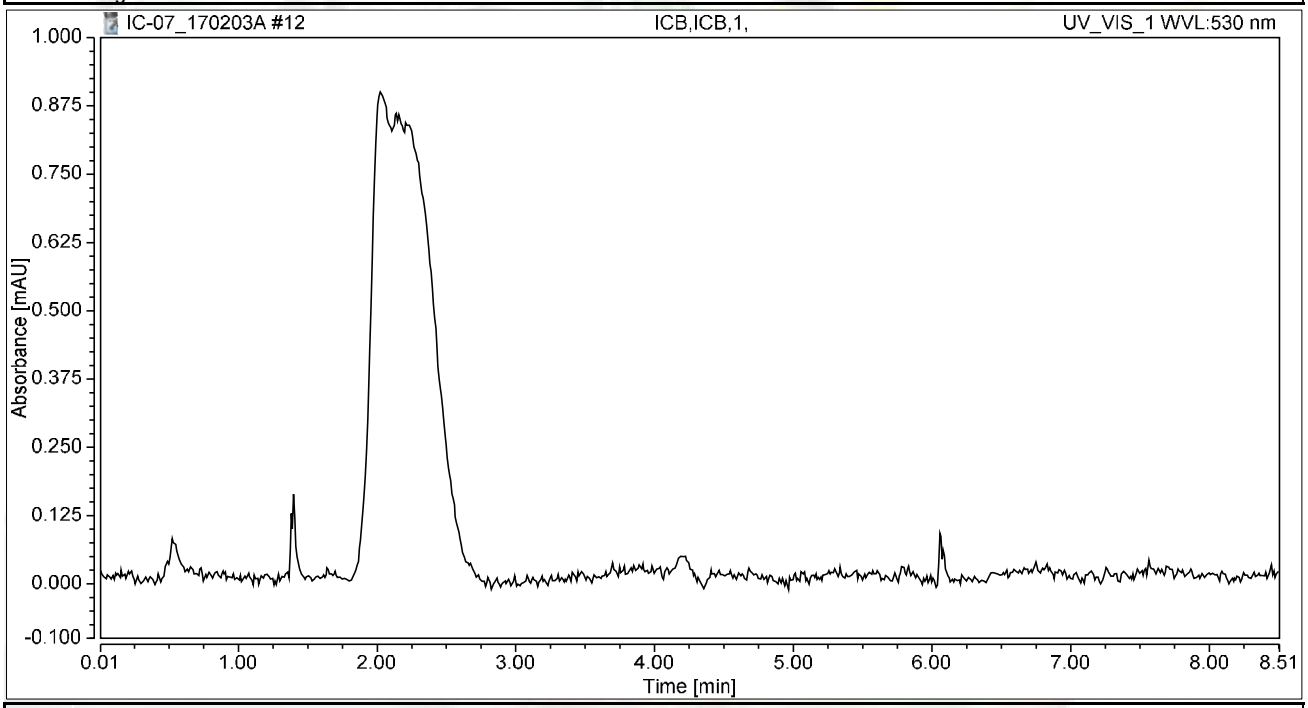
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.053	0.381	100.00	100.00	0.2005
Total:			**0.053**	**0.381**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Feb/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:12 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	02/03/17 9:23 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	02/03/17 9:32 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:42 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 9:51 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:01 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:10 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:20 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/03/17 10:29 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/23/17 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	02/23/17 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	02/23/17 9:54 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/23/17 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	02/23/17 10:13 AM	Reported
15	MB-R113715	MBLK	1	Hexavalent Chromium	02/23/17 10:22 AM	Reported
16	LCS-R113715	LCS	1	Hexavalent Chromium	02/23/17 10:32 AM	Reported
17	N023188-001A	SAMP	1	Hexavalent Chromium	02/23/17 10:41 AM	Reported
18	N023188-001ADUP	DUP	1	Hexavalent Chromium	02/23/17 10:51 AM	Reported
19	N023188-001AMS	MS	1	Hexavalent Chromium	02/23/17 11:00 AM	Reported
20	N023188-001AMSD	MSD	1	Hexavalent Chromium	02/23/17 11:09 AM	Reported
21	N023187-001A	SAMP	1	Hexavalent Chromium	02/23/17 11:19 AM	Reported
22	N023187-001AMS	MS	1	Hexavalent Chromium	02/23/17 11:28 AM	Reported
23	N023187-002A	SAMP	1	Hexavalent Chromium	02/23/17 11:38 AM	Reported
24	N023187-002AMS	MS	1	Hexavalent Chromium	02/23/17 11:47 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	02/23/17 11:57 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	02/23/17 12:06 PM	Reported
27	N023187-003A	SAMP	1	Hexavalent Chromium	02/23/17 12:16 PM	Reported
28	N023187-003AMS	MS	1	Hexavalent Chromium	02/23/17 12:25 PM	Reported
29	N023187-004A	SAMP	1	Hexavalent Chromium	02/23/17 12:35 PM	Reported
30	N023187-004AMS	MS	1	Hexavalent Chromium	02/23/17 12:44 PM	Reported
31	N023187-005A	SAMP	1	Hexavalent Chromium	02/23/17 12:54 PM	Reported
32	N023187-005AMS	MS	1	Hexavalent Chromium	02/23/17 1:03 PM	Reported
33	N023187-006A	SAMP	1	Hexavalent Chromium	02/23/17 1:12 PM	Reported
34	N023187-006AMS	MS	1	Hexavalent Chromium	02/23/17 1:22 PM	Reported
35	N023187-007A	SAMP	1	Hexavalent Chromium	02/23/17 1:31 PM	Reported
36	N023187-007AMS	MS	1	Hexavalent Chromium	02/23/17 1:41 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	02/23/17 1:50 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	02/23/17 2:00 PM	Reported
39	N023187-008A	SAMP	1	Hexavalent Chromium	02/23/17 2:09 PM	Reported
40	N023187-008AMS	MS	1	Hexavalent Chromium	02/23/17 2:19 PM	Reported
41	N023187-009A	SAMP	1	Hexavalent Chromium	02/23/17 2:28 PM	Reported
42	N023187-009AMS	MS	1	Hexavalent Chromium	02/23/17 2:38 PM	Reported

rba 2/24/2017

IC7 RBA 2/24/2017 12:48 PM

3/1/2017

INJECTION LOG: 170223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023187-010A	SAMP	1	Hexavalent Chromium	02/23/17 2:47 PM	Reported
44	N023187-010AMS	MS	1	Hexavalent Chromium	02/23/17 2:57 PM	Reported
45	N023187-011A	SAMP	1	Hexavalent Chromium	02/23/17 3:06 PM	Reported
46	N023187-011AMS	MS	1	Hexavalent Chromium	02/23/17 3:15 PM	Reported
47	N023187-012A	SAMP	1	Hexavalent Chromium	02/23/17 3:25 PM	Reported
48	N023187-012AMS	MS	1	Hexavalent Chromium	02/23/17 3:34 PM	Reported
49	CCV-4	CCV	1	Hexavalent Chromium	02/23/17 3:44 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/23/17 3:53 PM	Reported
51	N023187-013A	SAMP	1	Hexavalent Chromium	02/23/17 4:03 PM	Reported
52	N023187-013AMS	MS	1	Hexavalent Chromium	02/23/17 4:12 PM	Reported
53	N023187-014A	SAMP	1	Hexavalent Chromium	02/23/17 4:22 PM	Reported
54	N023187-014AMS	MS	1	Hexavalent Chromium	02/23/17 4:31 PM	Reported
55	N023187-002AMS	MS	1	Hexavalent Chromium	02/23/17 4:41 PM	Reported
56	CCV-5	CCV	1	Hexavalent Chromium	02/23/17 4:51 PM	Reported
57	CCB-5	CCB	1	Hexavalent Chromium	02/23/17 5:03 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170223A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**23/Feb/17 17:33:23**
No. of Injections:	**60**	*Updated By:*	**ics 5000**

Injection Details

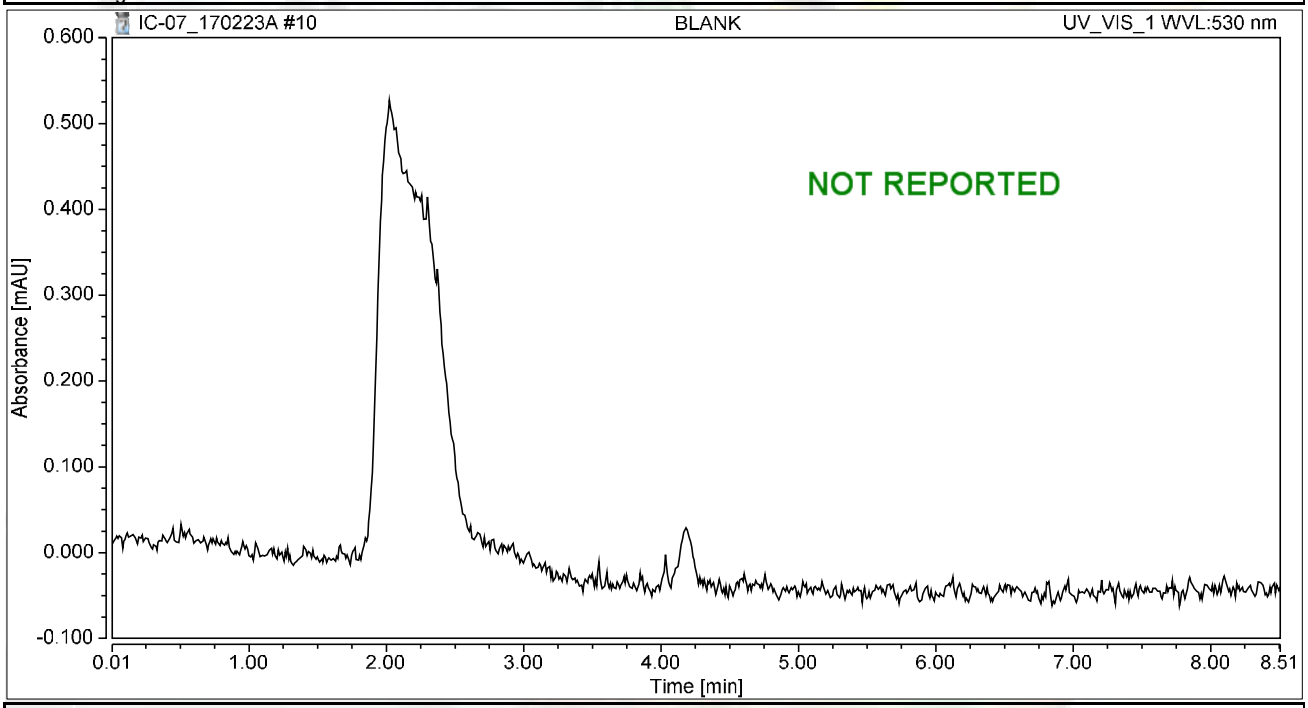
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/03/2017 09:12	Finished	
2	BLANK	2	1000	Unknown		02/03/2017 09:23	Finished	
3	iBLANK	3	1000	Unknown		02/03/2017 09:32	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	02/03/2017 09:42	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	02/03/2017 09:51	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	02/03/2017 10:01	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	02/03/2017 10:10	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	02/03/2017 10:20	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	02/03/2017 10:29	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		02/23/2017 09:33	Finished	
11	BLANK	2	1000	Unknown		02/23/2017 09:44	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		02/23/2017 09:54	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/23/2017 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		02/23/2017 10:13	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		02/23/2017 10:22	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		02/23/2017 10:32	Finished	LCS, IWST-161114D
17	N023188-001A,SAMF	8	1000	Unknown		02/23/2017 10:41	Finished	SAMP, 10mL
18	N023188-001ADUP,D	9	1000	Unknown		02/23/2017 10:51	Finished	DUP, 10mL
19	N023188-001AMS,MS	10	1000	Unknown		02/23/2017 11:00	Finished	MS (5ppb), IWST-161114D,10
20	N023188-001AMSD,M	11	1000	Unknown		02/23/2017 11:09	Finished	MSD (5ppb), IWST-161114D,10
21	N023187-001A,SAMF	12	1000	Unknown		02/23/2017 11:19	Finished	SAMP, 10mL
22	N023187-001AMS,MS	13	1000	Unknown		02/23/2017 11:28	Finished	MS (1ppb), IWST-161114D,10
23	N023187-002A,SAMF	14	1000	Unknown		02/23/2017 11:38	Finished	SAMP, 10mL
24	N023187-002AMS,MS	15	1000	Unknown		02/23/2017 11:47	Finished	MS (1ppb), IWST-161114D,10
25	CCV-2,CCV1,1,	16	1000	Unknown		02/23/2017 11:57	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		02/23/2017 12:06	Finished	CCB R170123B
27	N023187-003A,SAMF	18	1000	Unknown		02/23/2017 12:16	Finished	SAMP, 10mL
28	N023187-003AMS,MS	19	1000	Unknown		02/23/2017 12:25	Finished	MS (1ppb), IWST-161114D,10
29	N023187-004A,SAMF	20	1000	Unknown		02/23/2017 12:35	Finished	SAMP, 10mL
30	N023187-004AMS,MS	21	1000	Unknown		02/23/2017 12:44	Finished	MS (1ppb), IWST-161114D,10
31	N023187-005A,SAMF	22	1000	Unknown		02/23/2017 12:54	Finished	SAMP, 10mL
32	N023187-005AMS,MS	23	1000	Unknown		02/23/2017 13:03	Finished	MS (1ppb), IWST-161114D,10
33	N023187-006A,SAMF	24	1000	Unknown		02/23/2017 13:12	Finished	SAMP, 10mL
34	N023187-006AMS,MS	25	1000	Unknown		02/23/2017 13:22	Finished	MS (1ppb), IWST-161114D,10
35	N023187-007A,SAMF	26	1000	Unknown		02/23/2017 13:31	Finished	SAMP, 10mL
36	N023187-007AMS,MS	27	1000	Unknown		02/23/2017 13:41	Finished	MS (1ppb), IWST-161114D,10
37	CCV-3,CCV,1,	28	1000	Unknown		02/23/2017 13:50	Finished	CCV @5ppb, IWST-161114C
38	CCB-3,CCB,1,	29	1000	Unknown		02/23/2017 14:00	Finished	CCB R170123B
39	N023187-008A,SAMF	30	1000	Unknown		02/23/2017 14:09	Finished	SAMP, 10mL
40	N023187-008AMS,MS	31	1000	Unknown		02/23/2017 14:19	Finished	MS (1ppb), IWST-161114D,10
41	N023187-009A,SAMF	32	1000	Unknown		02/23/2017 14:28	Finished	SAMP, 10mL
42	N023187-009AMS,MS	33	1000	Unknown		02/23/2017 14:38	Finished	MS (1ppb), IWST-161114D,10
43	N023187-010A,SAMF	34	1000	Unknown		02/23/2017 14:47	Finished	SAMP, 10mL
44	N023187-010AMS,MS	35	1000	Unknown		02/23/2017 14:57	Finished	MS (1ppb), IWST-161114D,10
45	N023187-011A,SAMF	36	1000	Unknown		02/23/2017 15:06	Finished	SAMP, 10mL
46	N023187-011AMS,MS	37	1000	Unknown		02/23/2017 15:15	Finished	MS (1ppb), IWST-161114D,10
47	N023187-012A,SAMF	38	1000	Unknown		02/23/2017 15:25	Finished	SAMP, 10mL
48	N023187-012AMS,MS	39	1000	Unknown		02/23/2017 15:34	Finished	MS (1ppb), IWST-161114D,10
49	CCV-4,CCV,1,	40	1000	Unknown		02/23/2017 15:44	Finished	CCV @10ppb, IWST-161114C
50	CCB-4,CCB,1,	41	1000	Unknown		02/23/2017 15:53	Finished	CCB R170123B
51	N023187-013A,SAMF	42	1000	Unknown		02/23/2017 16:03	Finished	SAMP, 10mL
52	N023187-013AMS,MS	43	1000	Unknown		02/23/2017 16:12	Finished	MS (1ppb), IWST-161114D,10
53	N023187-014A,SAMF	44	1000	Unknown		02/23/2017 16:22	Finished	SAMP, 10mL
54	N023187-014AMS,MS	45	1000	Unknown		02/23/2017 16:31	Finished	MS (1ppb), IWST-161114D,10
55	N023187-002AMS,MS	46	1000	Unknown		02/23/2017 16:41	Finished	MS (1ppb), IWST-161114D,10
56	CCV-5,CCV,1,	48	1000	Unknown		02/23/2017 16:51	Finished	CCV @5pb, IWST-161114C
57	CCB-5,CCB,1,	49	1000	Unknown		02/23/2017 17:03	Finished	CCB R170123B
58	SHUTDOWN	50	1000	Unknown		02/23/2017 17:12	Finished	
59	Eluent: R170223A	51	1000	Unknown		n.a.	Finished	Eluent
60	PCR: R170223B	CurrentVial	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

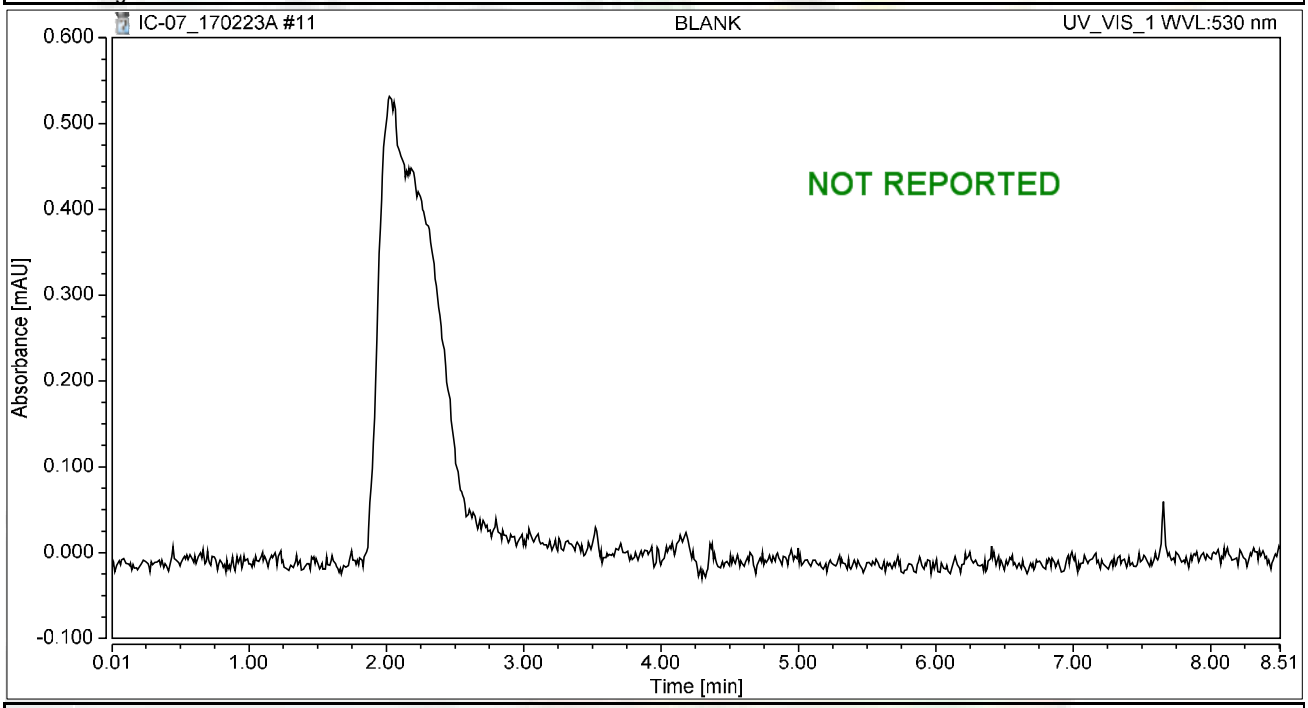
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 09:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

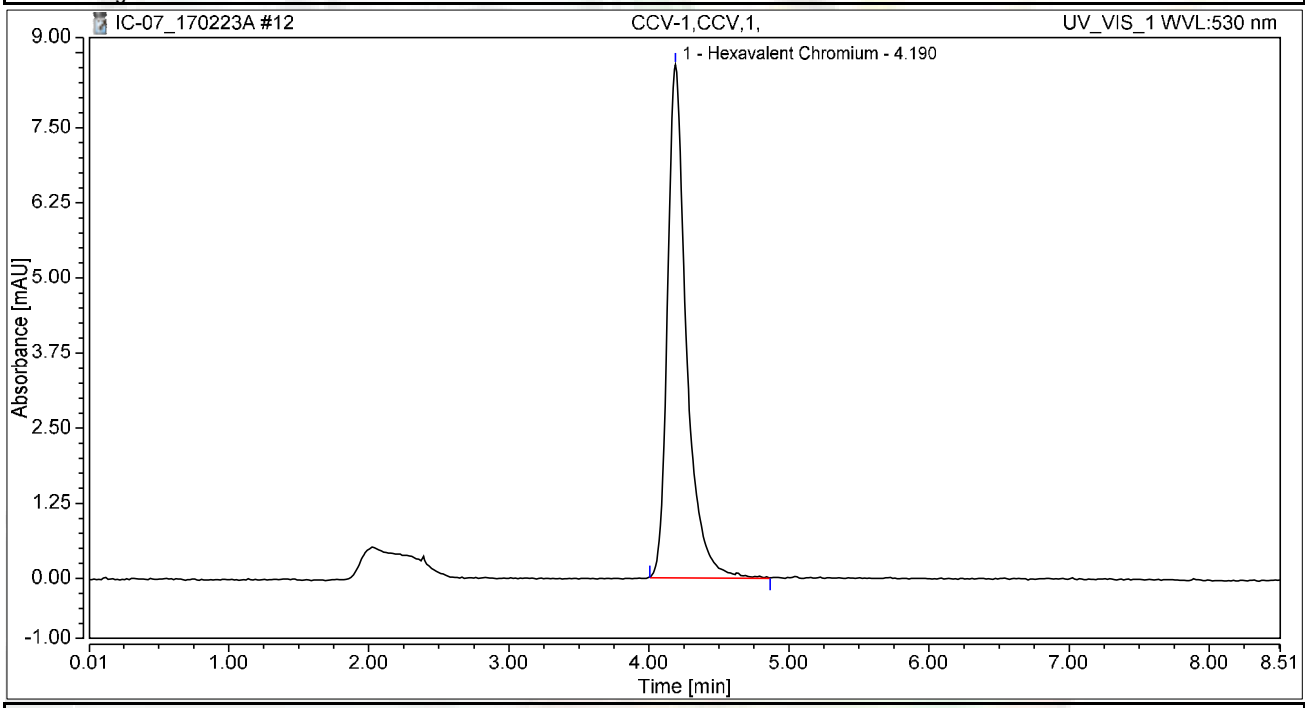
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

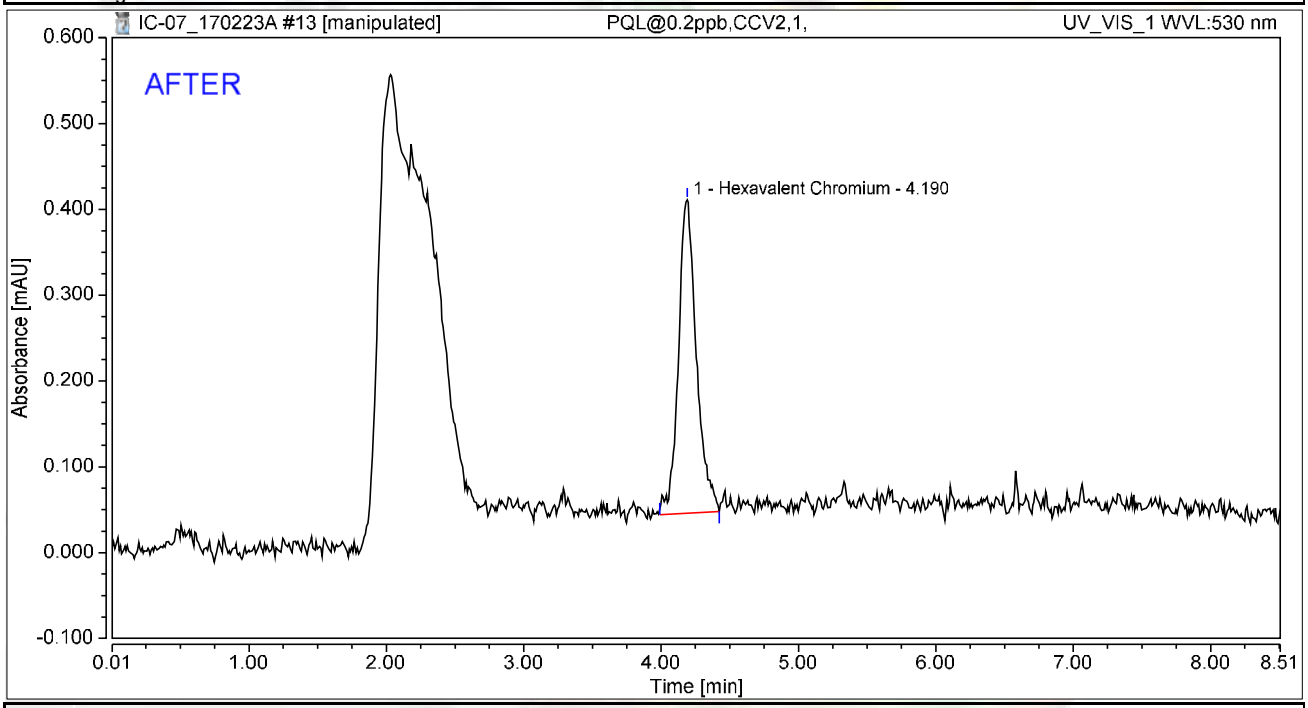
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.337	8.536	100.00	100.00	5.0395
Total:			**1.337**	**8.536**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.055	0.365	100.00	100.00	0.2089
Total:			**0.055**	**0.365**	**100.00**	**100.00**	

rba 2/24/2017

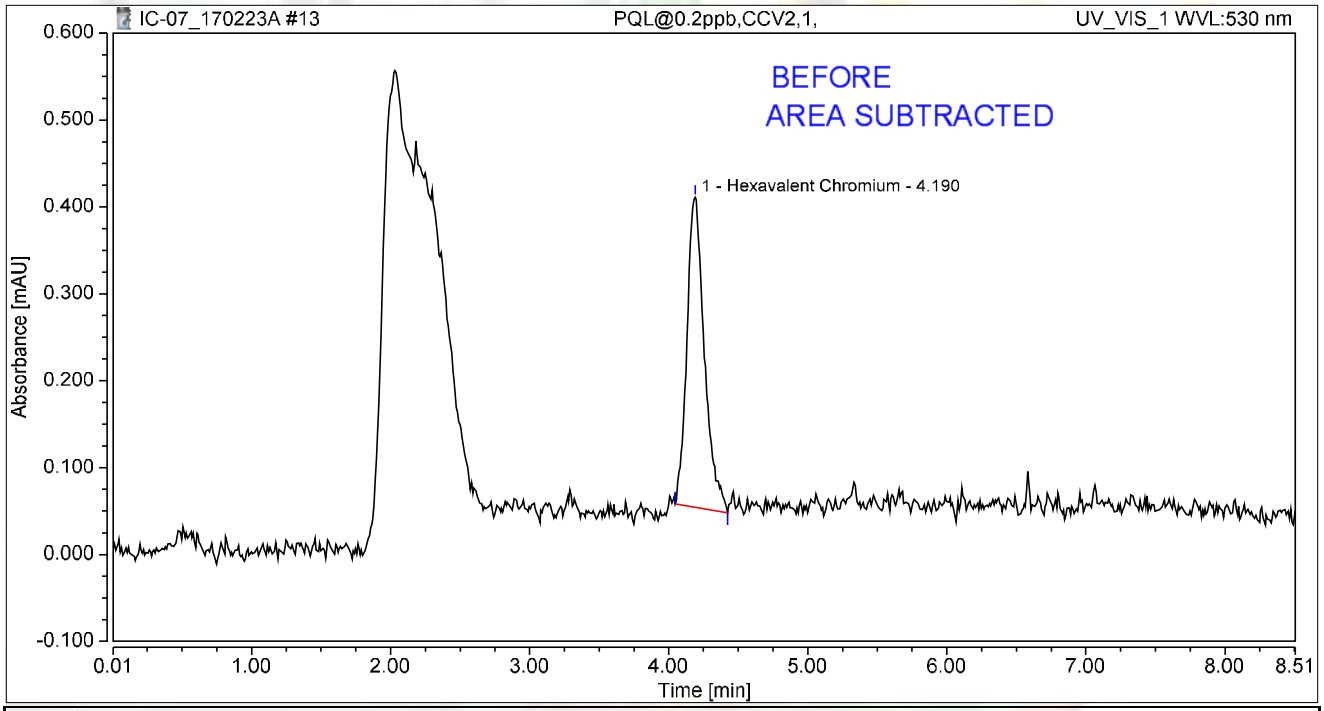
Reviewed by: Nancy 3/1/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.052	0.357	100.00	100.00	0.1955
Total:			**0.052**	**0.357**	**100.00**	**100.00**	

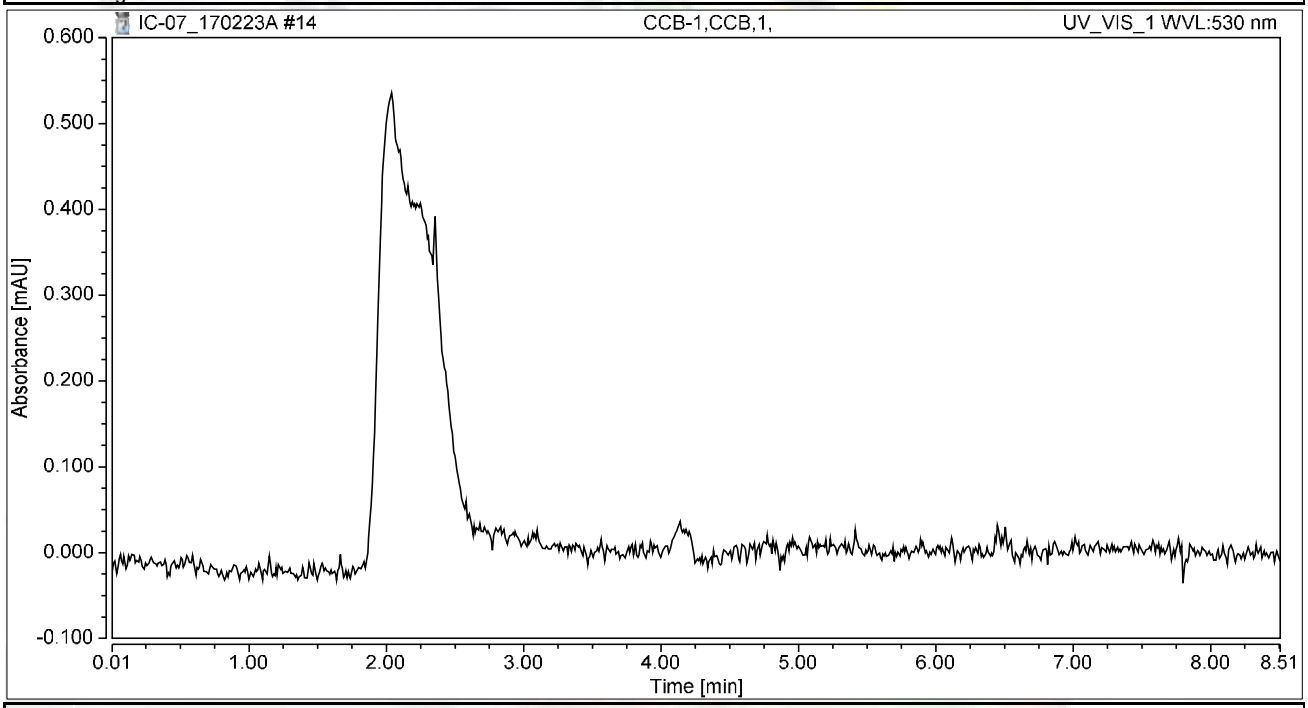
rba 2/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

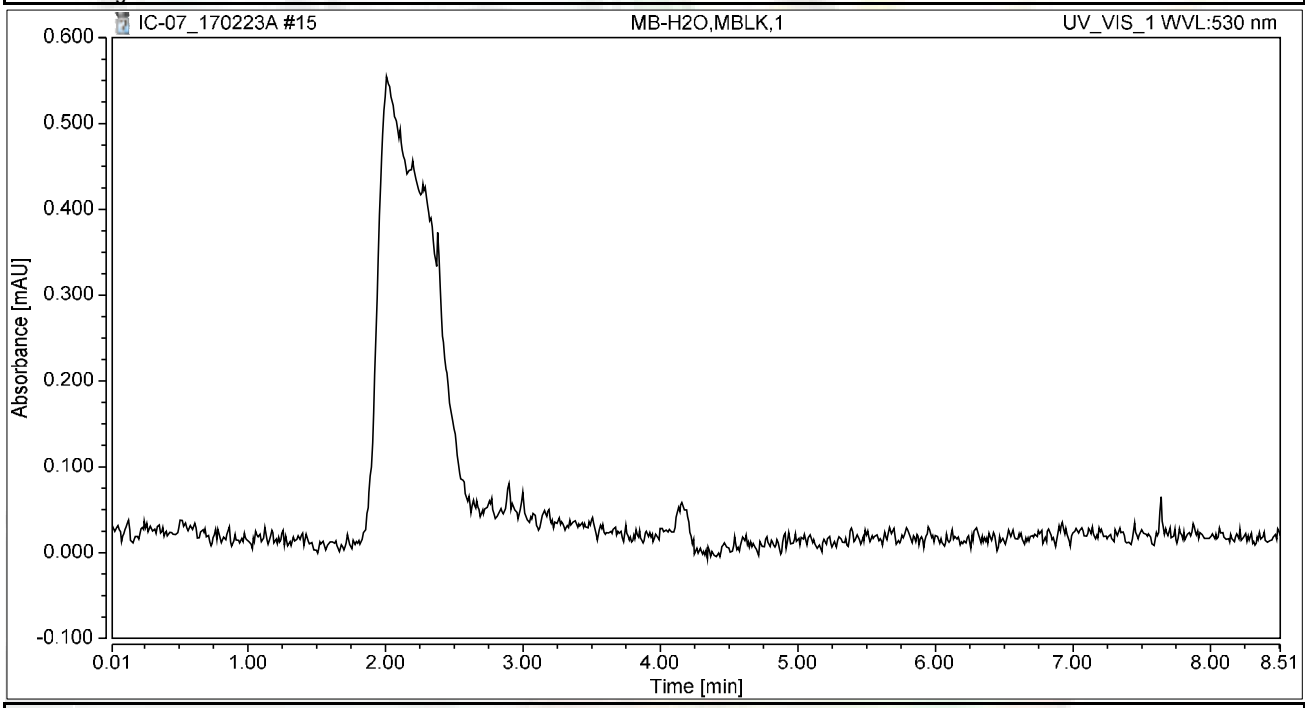
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

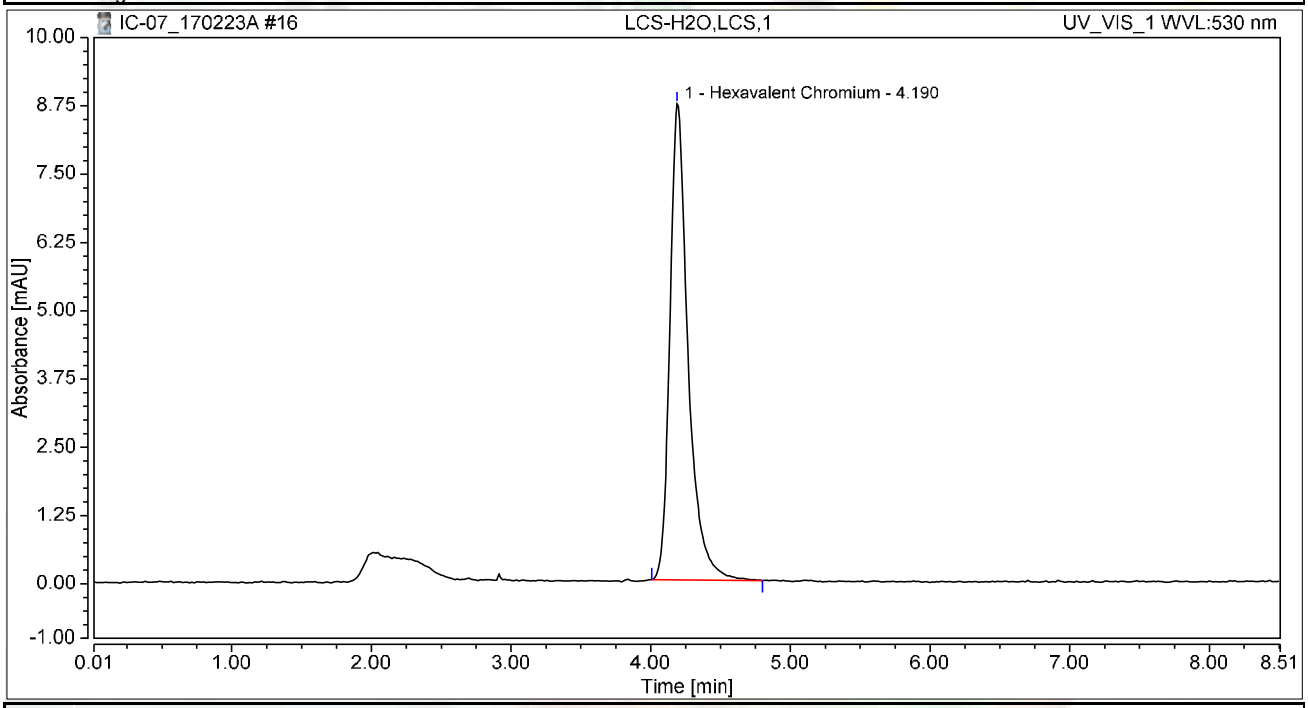
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

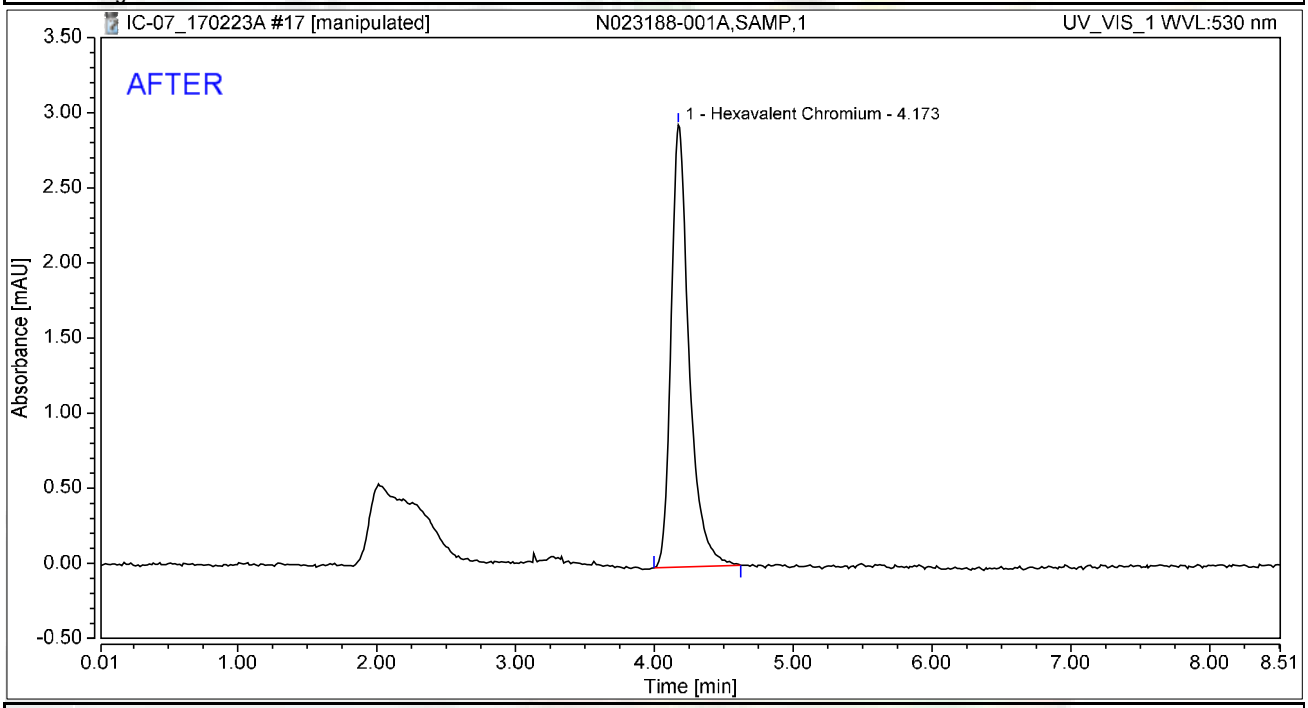
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.318	8.718	100.00	100.00	4.9695
Total:			**1.318**	**8.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023188-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.443	2.943	100.00	100.00	1.6709
Total:			**0.443**	**2.943**	**100.00**	**100.00**	

rba 2/24/2017

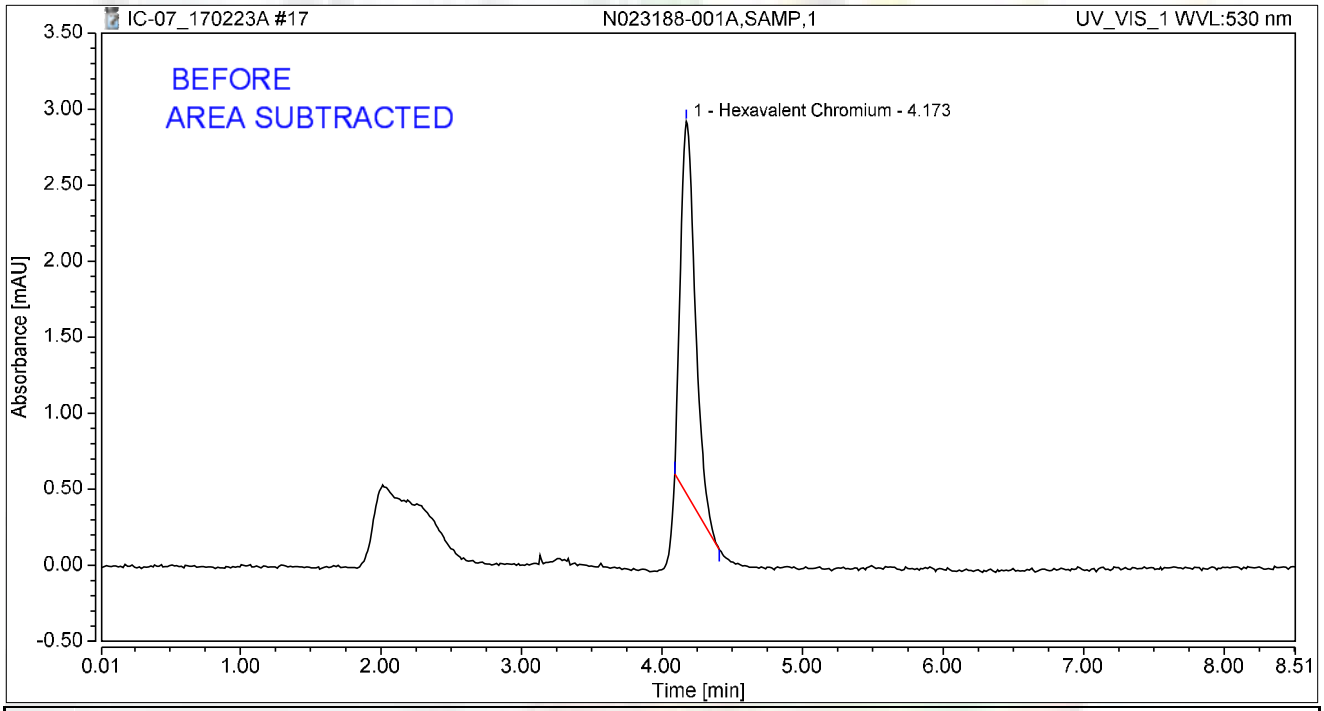
Reviewed by: Nancy 3/1/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023188-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.300	2.446	100.00	100.00	1.1308
Total:			**0.300**	**2.446**	**100.00**	**100.00**	

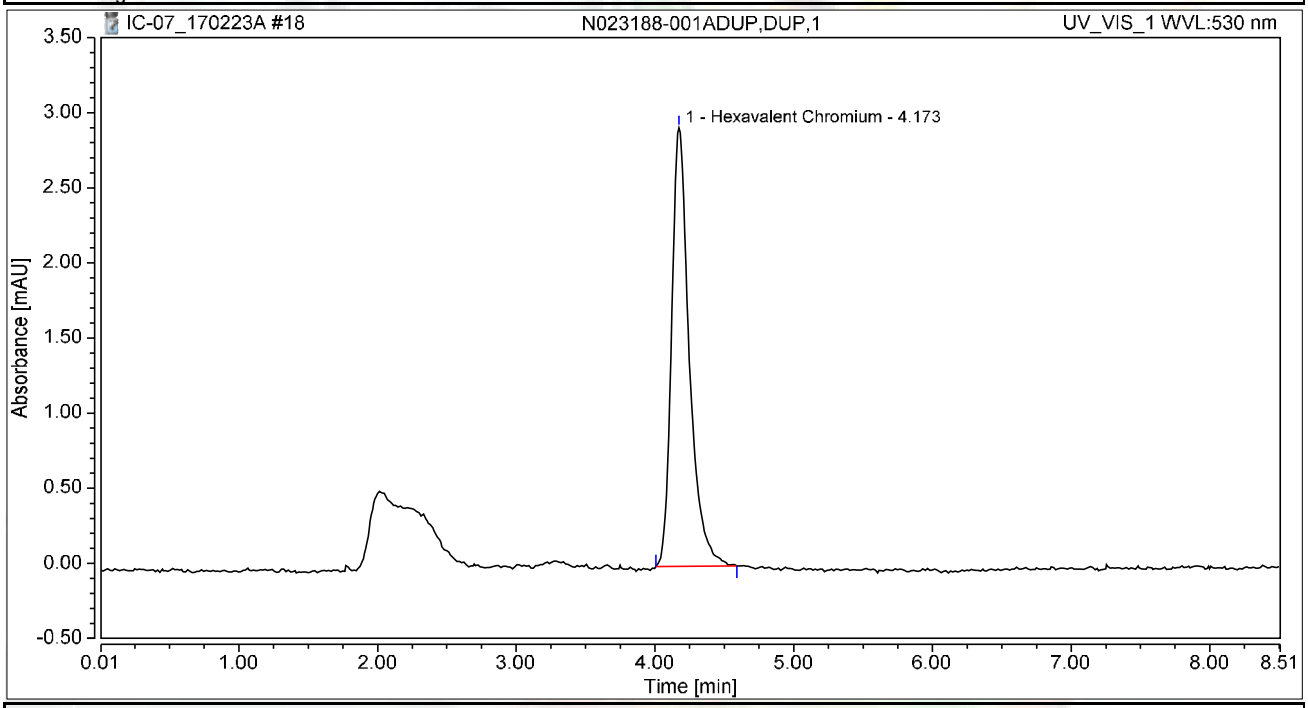
rba 2/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023188-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

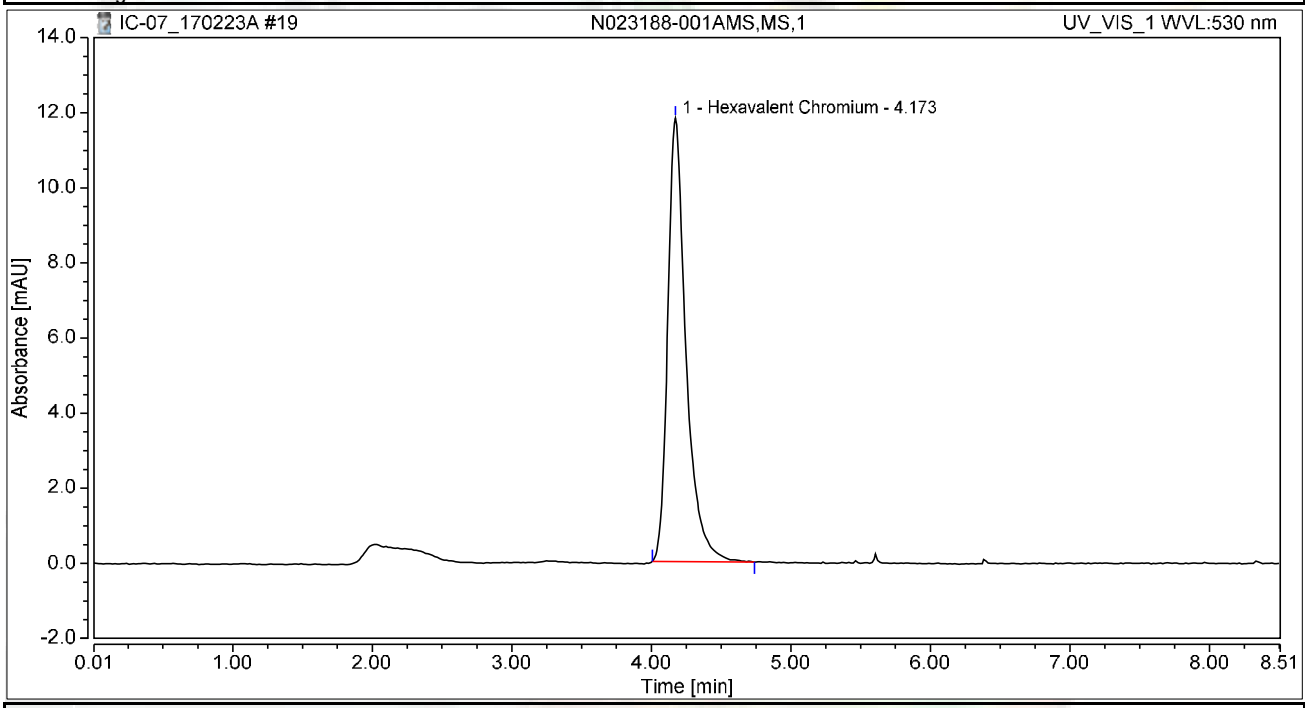
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.433	2.919	100.00	100.00	1.6328
Total:			**0.433**	**2.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023188-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

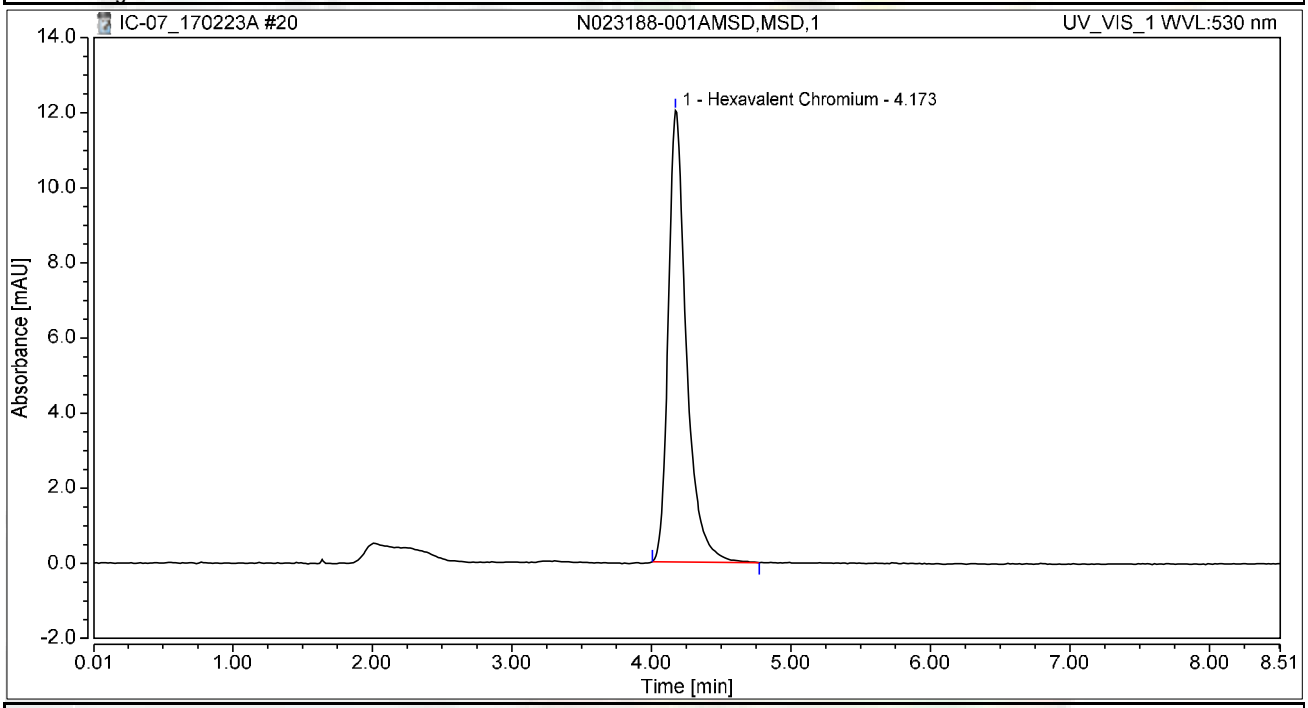
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.794	11.809	100.00	100.00	6.7641
Total:			**1.794**	**11.809**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023188-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

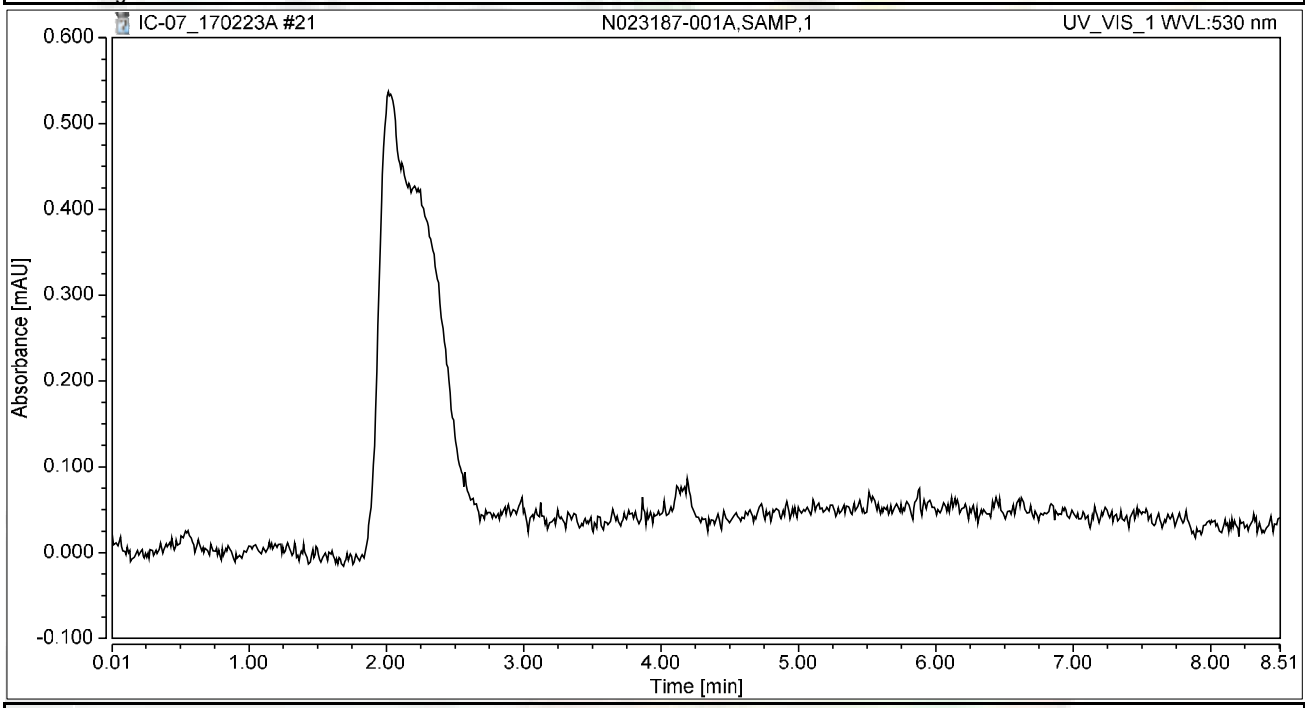
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.811	12.020	100.00	100.00	6.8282
Total:			**1.811**	**12.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

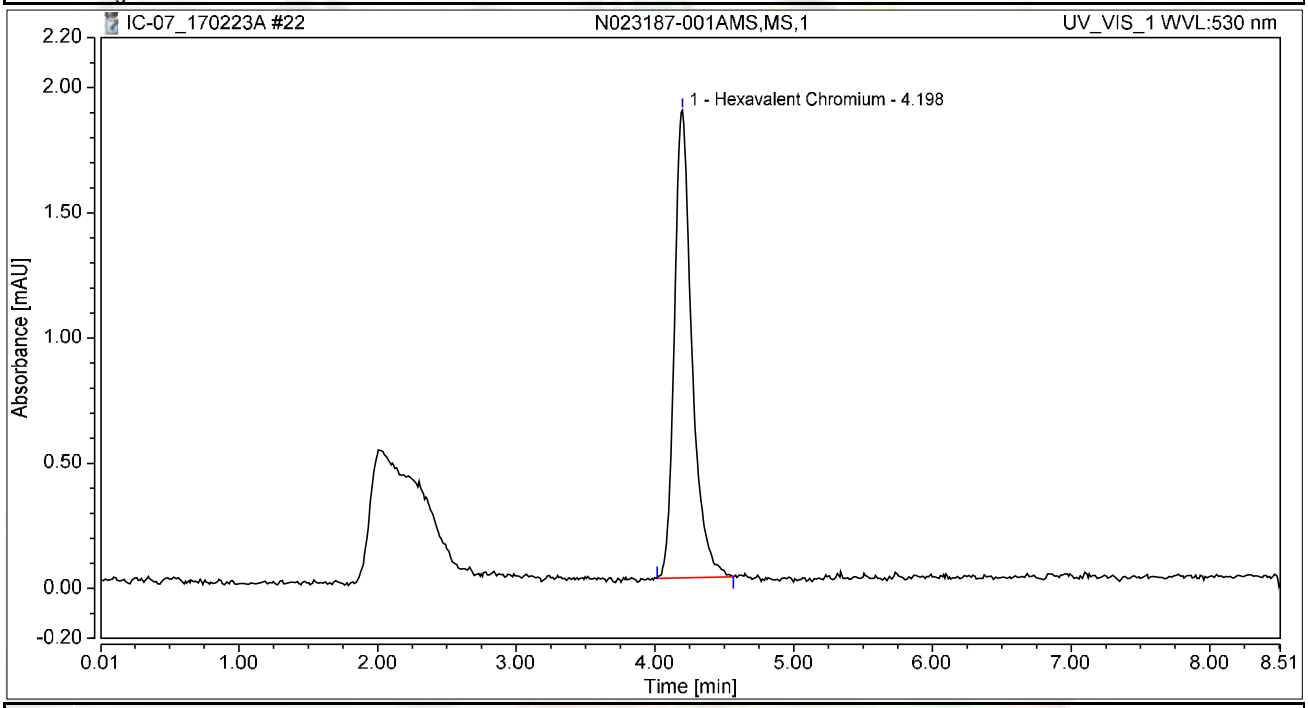
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

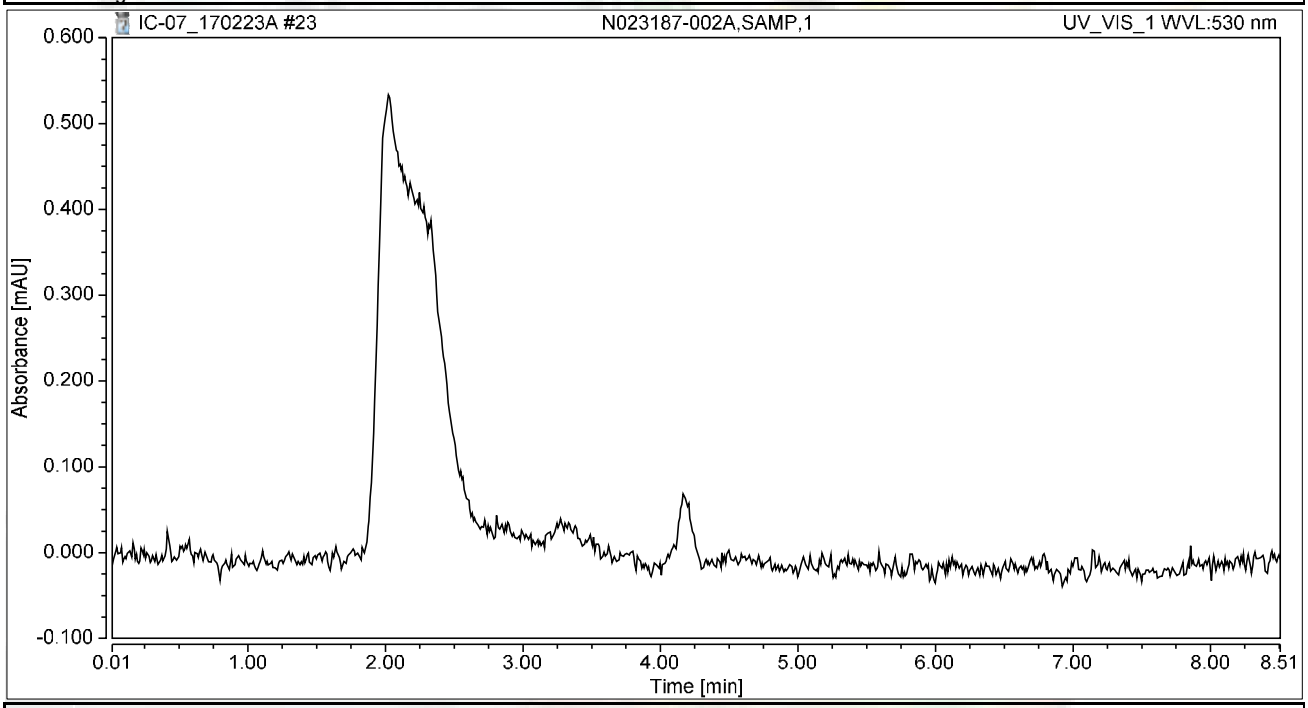
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.274	1.868	100.00	100.00	1.0345
Total:			**0.274**	**1.868**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

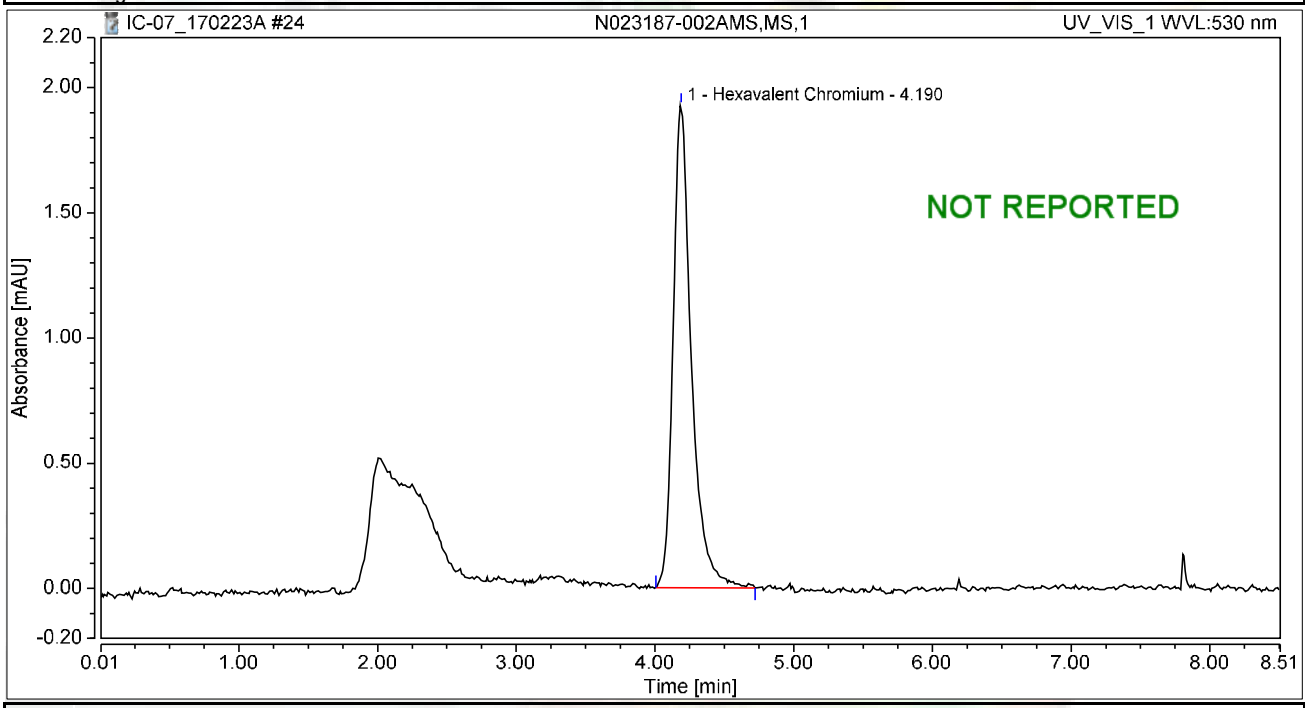
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

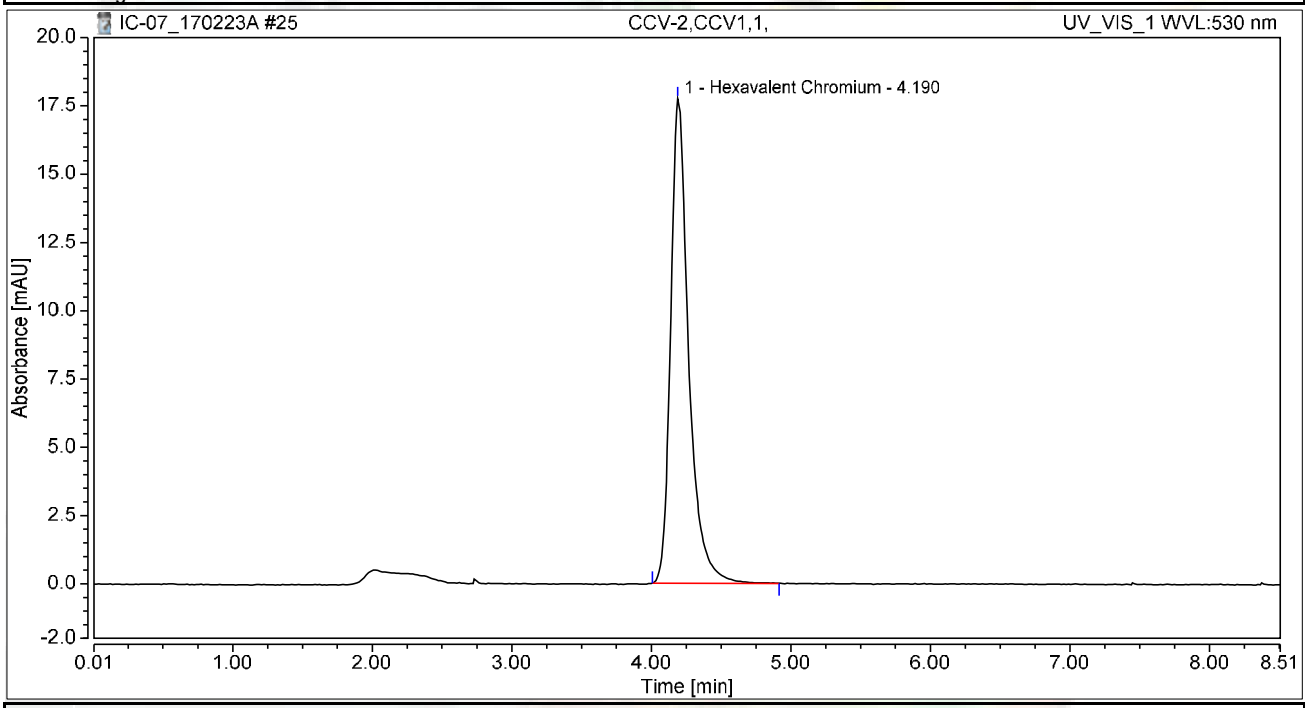
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.294	1.926	100.00	100.00	1.1096
Total:			**0.294**	**1.926**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

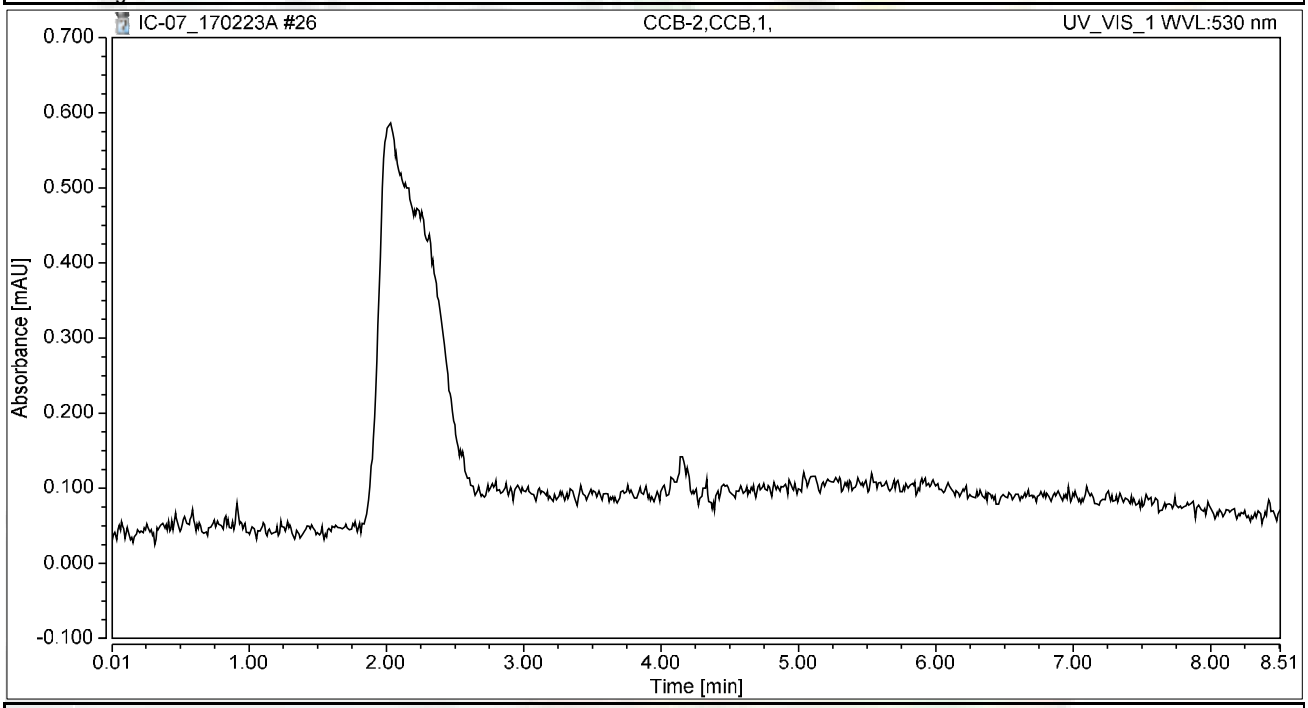
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.670	17.747	100.00	100.00	10.0676
Total:			**2.670**	**17.747**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

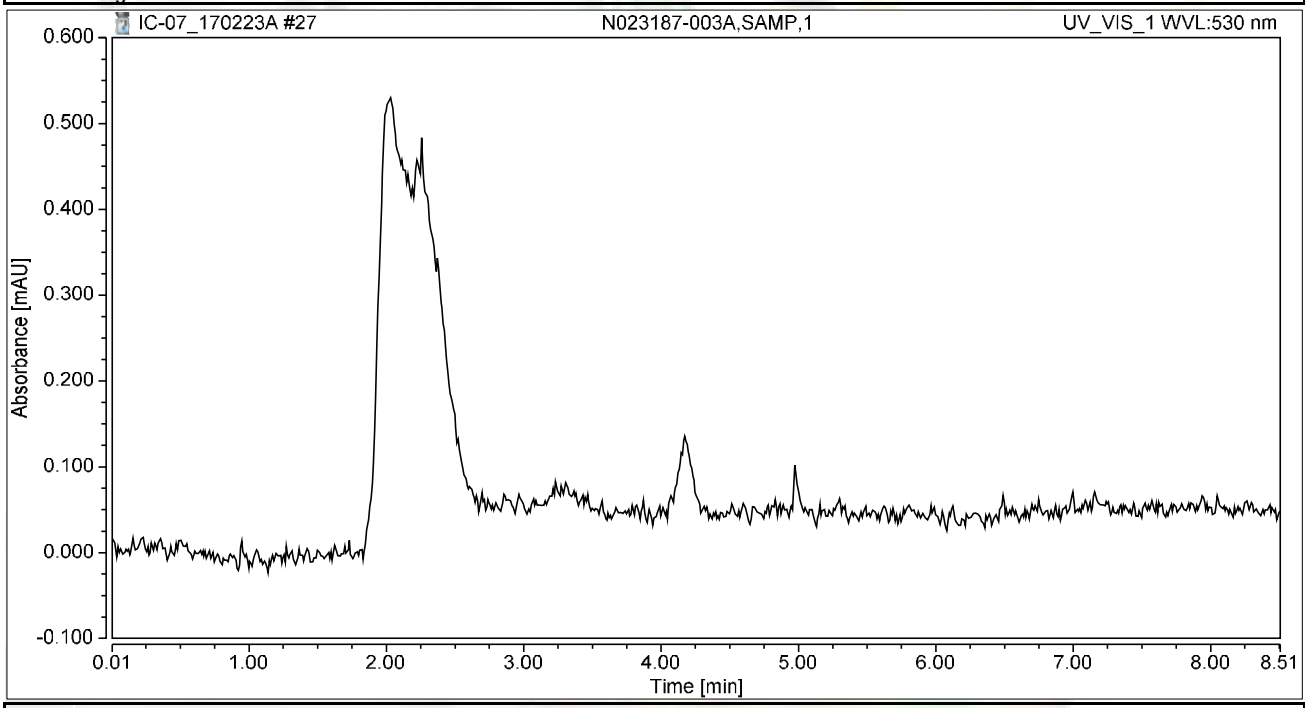
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

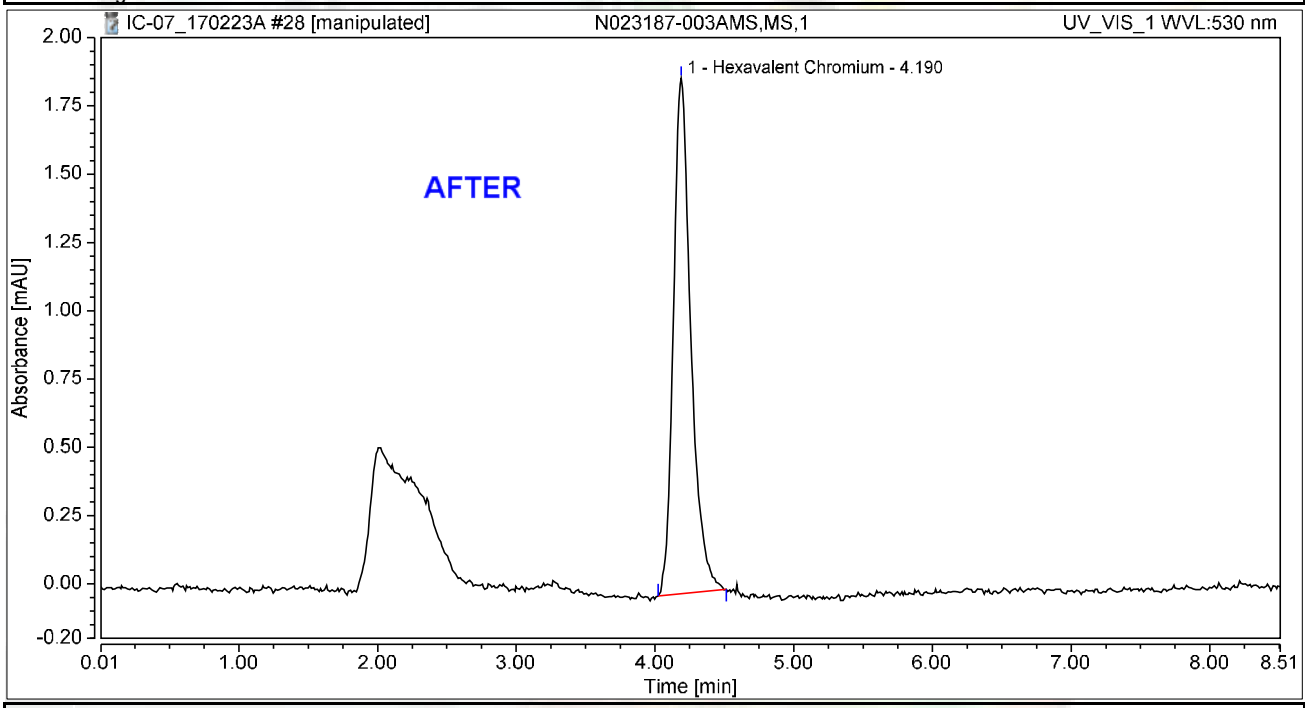
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.275	1.887	100.00	100.00	1.0385
Total:			**0.275**	**1.887**	**100.00**	**100.00**	

rba 2/24/2017

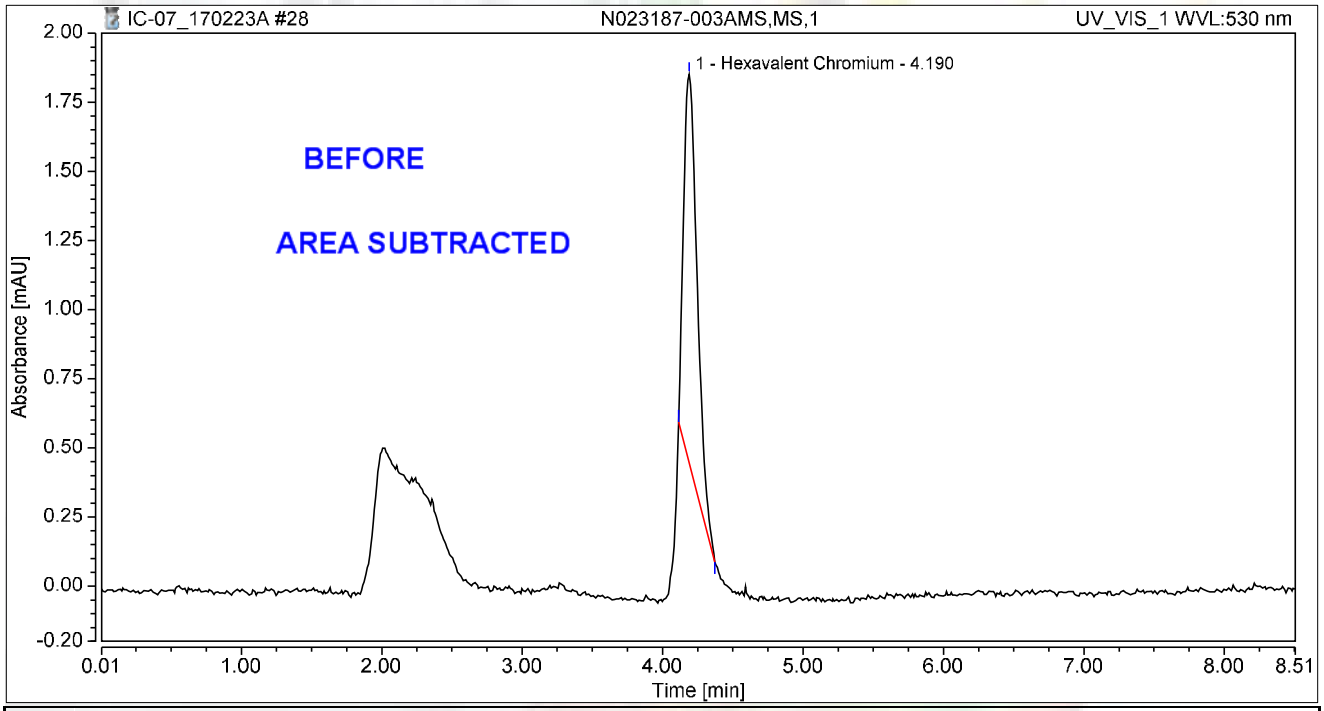
Reviewed by: 3/1/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023187-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.157	1.405	100.00	100.00	0.5914
Total:			**0.157**	**1.405**	**100.00**	**100.00**	

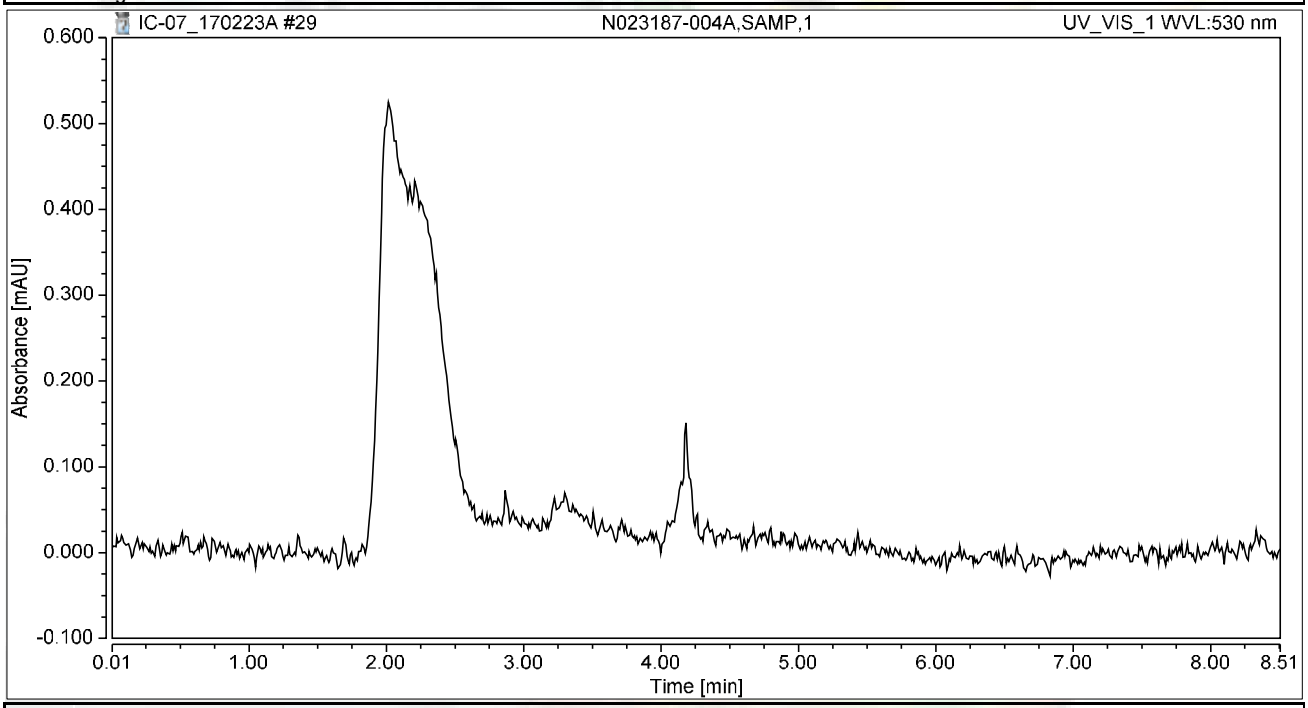
rba 2/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023187-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

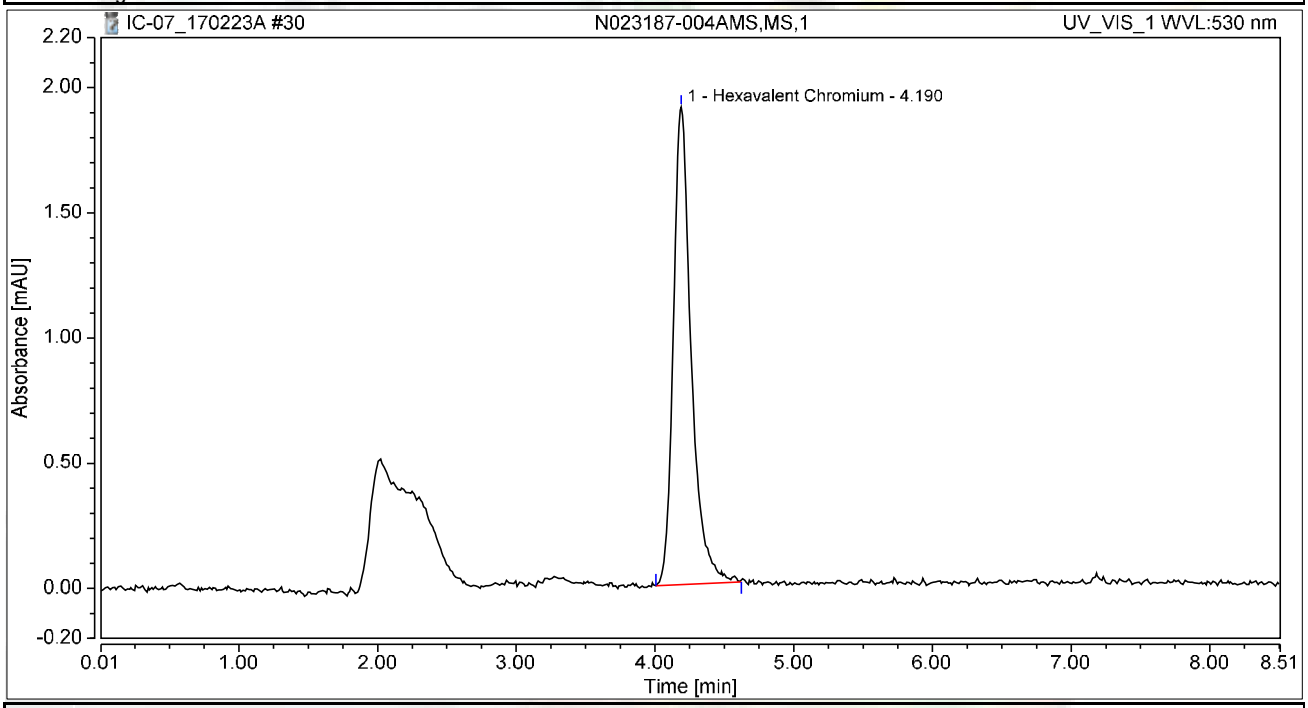
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

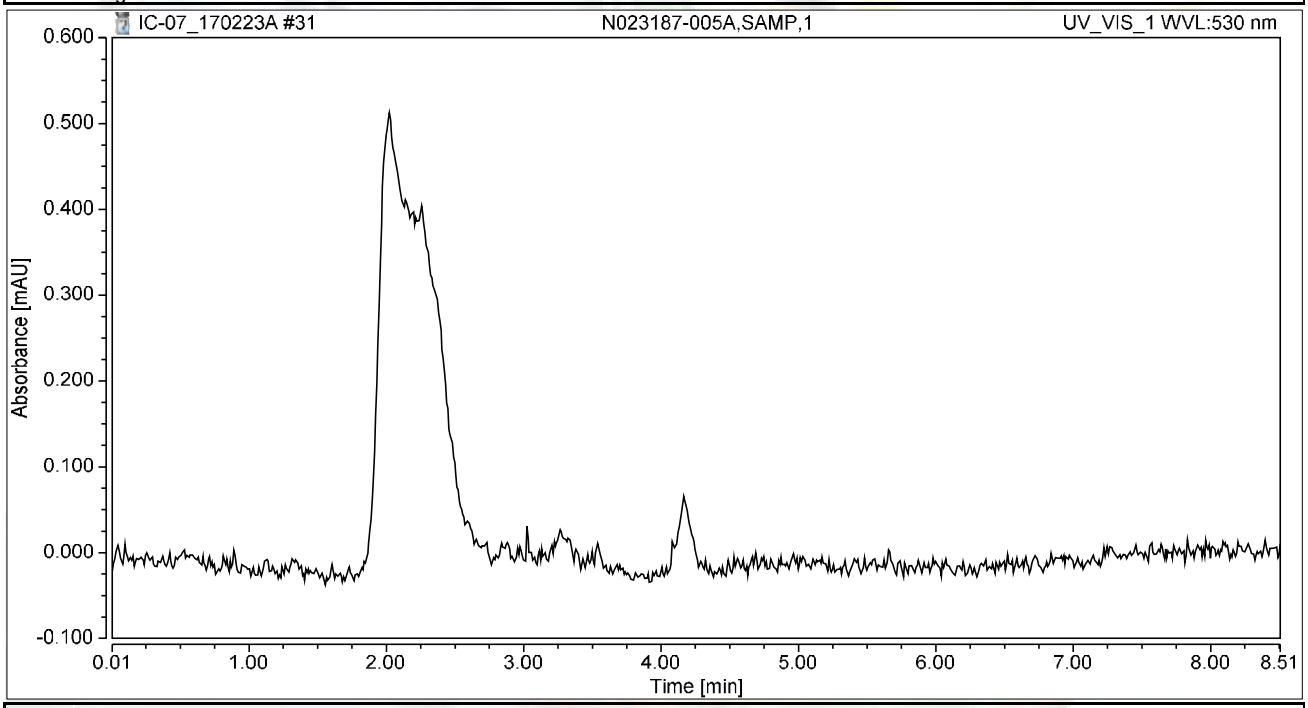
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.286	1.908	100.00	100.00	1.0770
Total:			**0.286**	**1.908**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

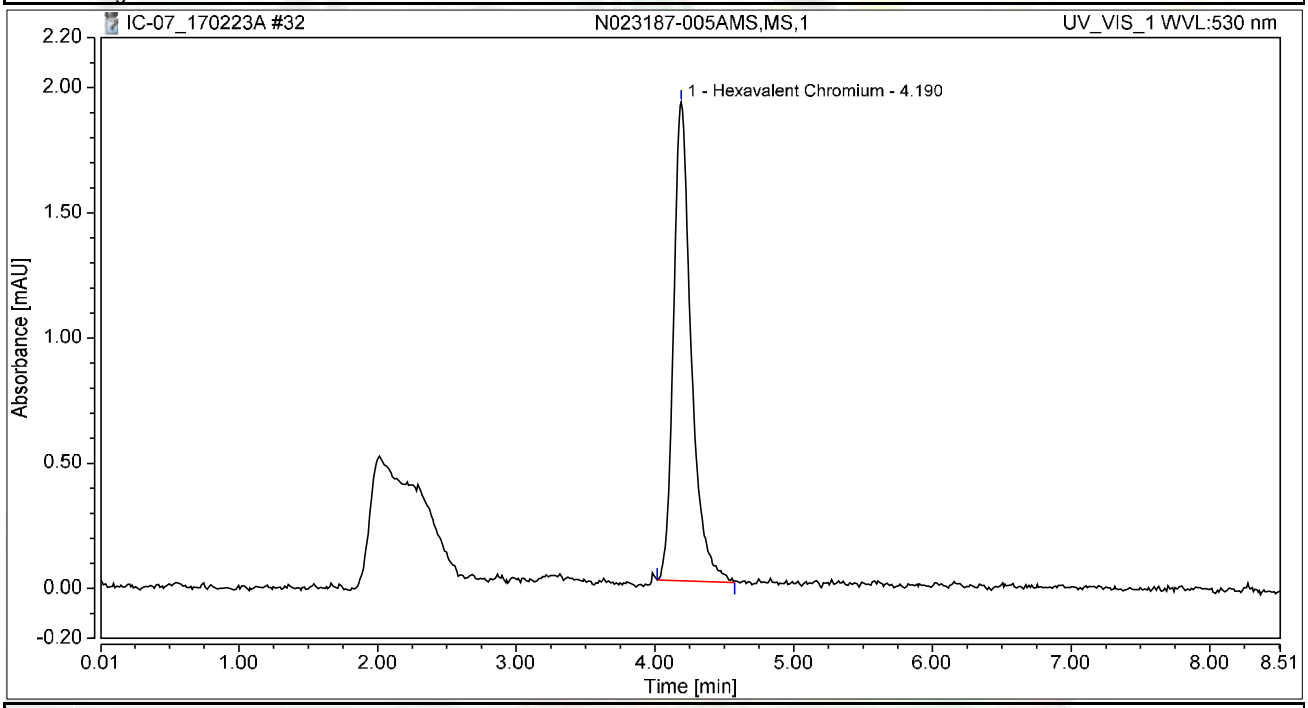
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

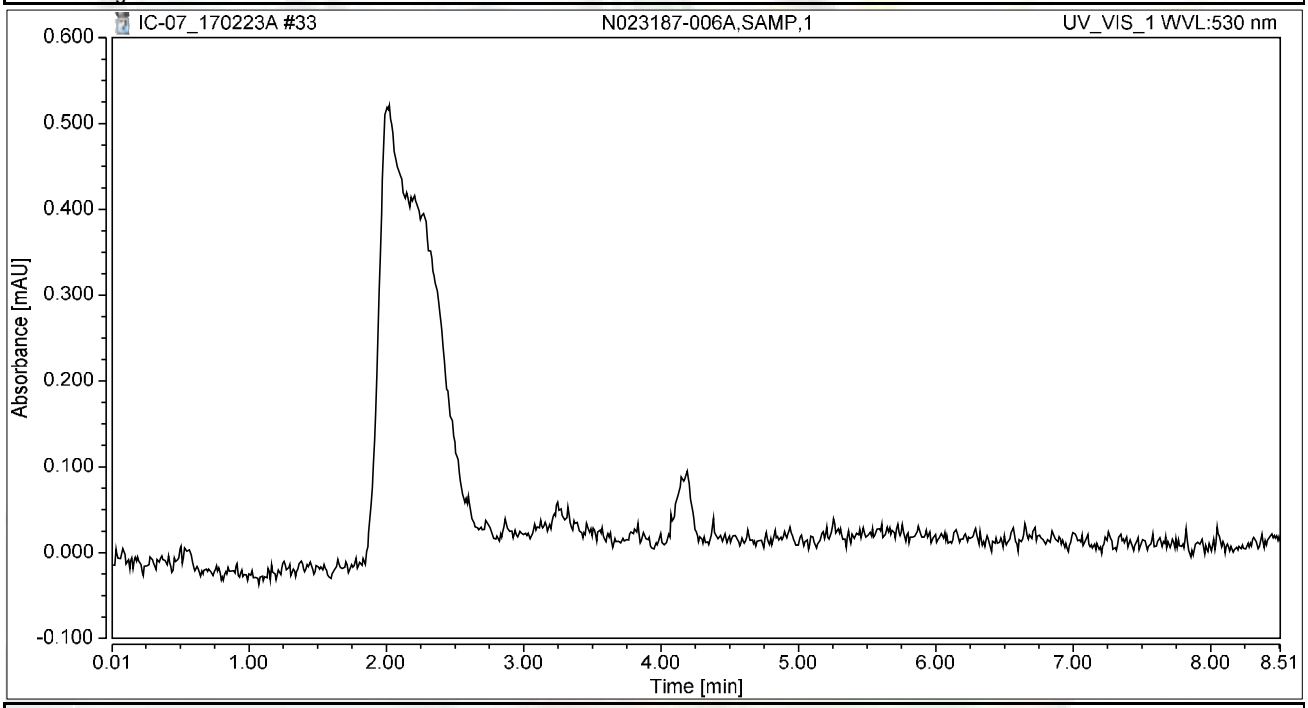
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.283	1.912	100.00	100.00	1.0686
Total:			**0.283**	**1.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

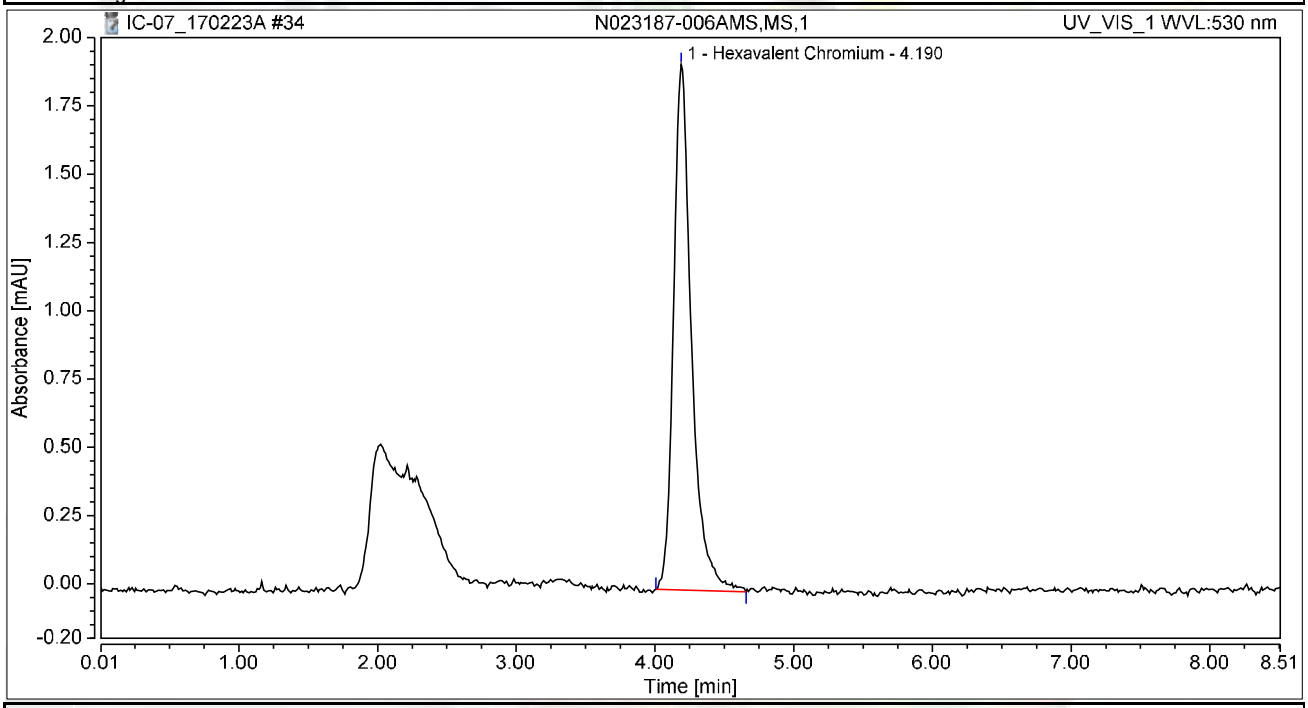
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

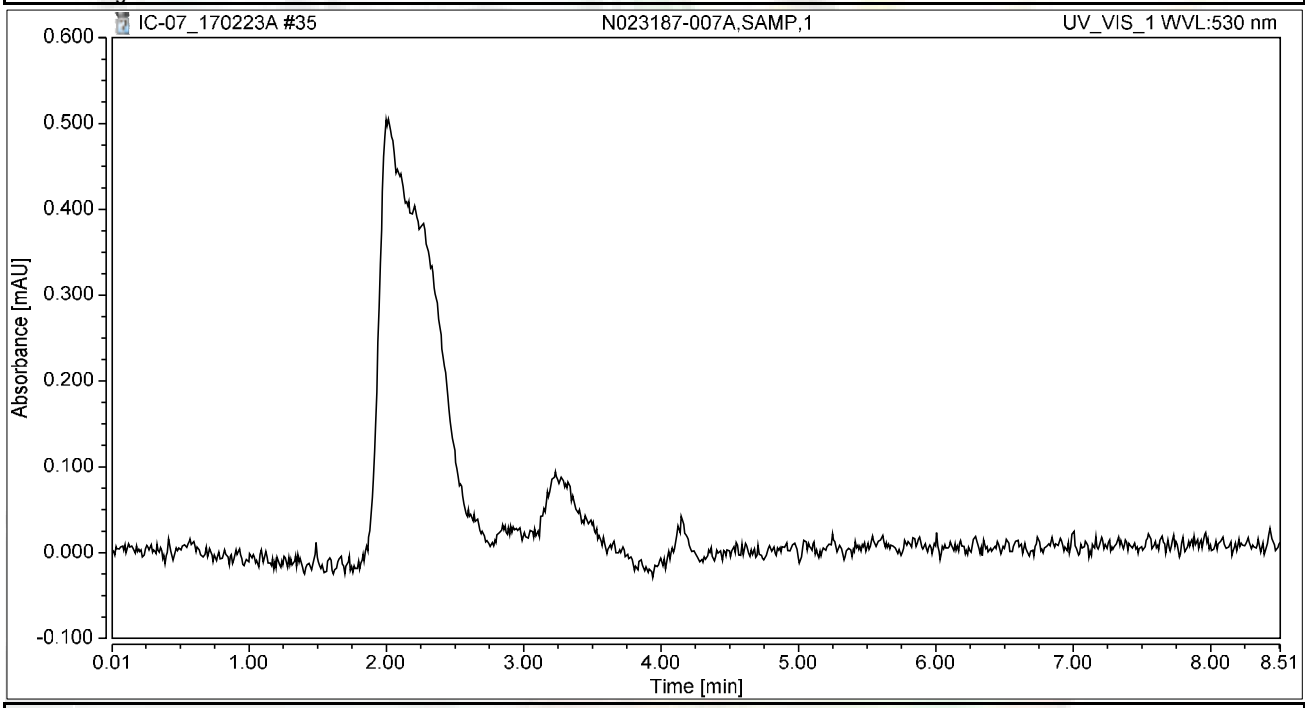
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.289	1.924	100.00	100.00	1.0891
Total:			**0.289**	**1.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

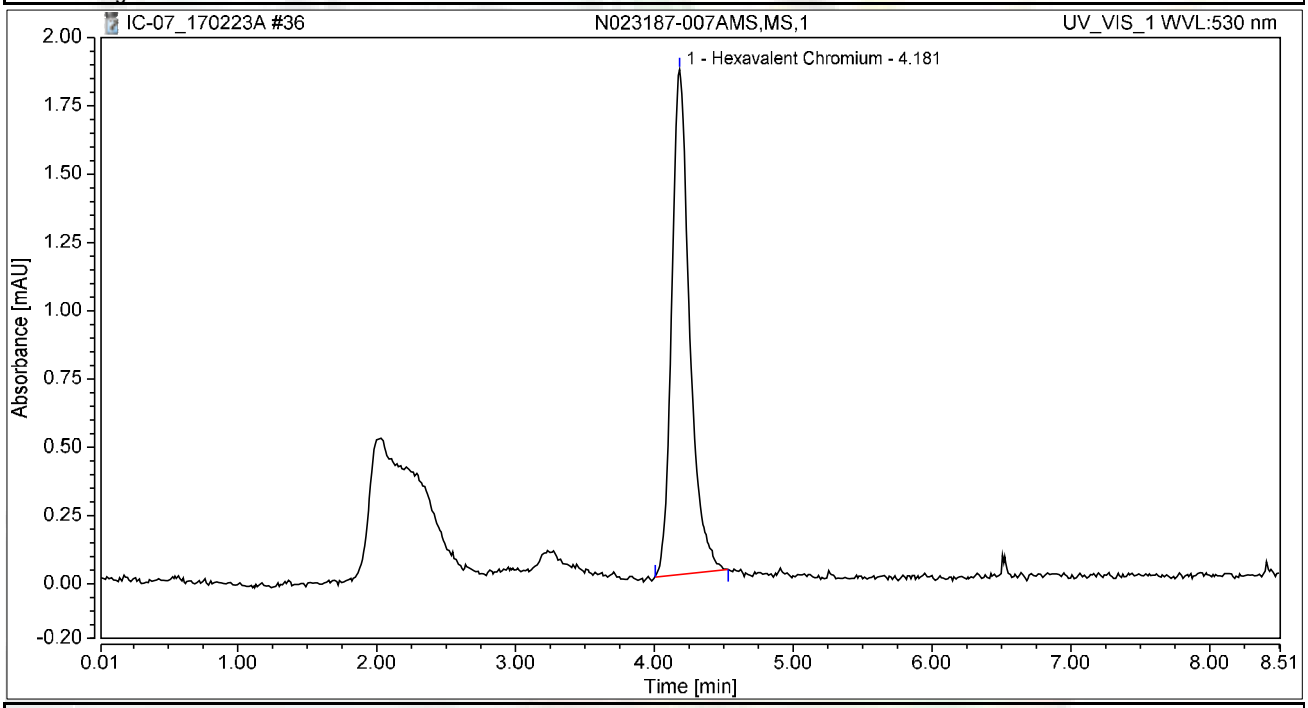
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

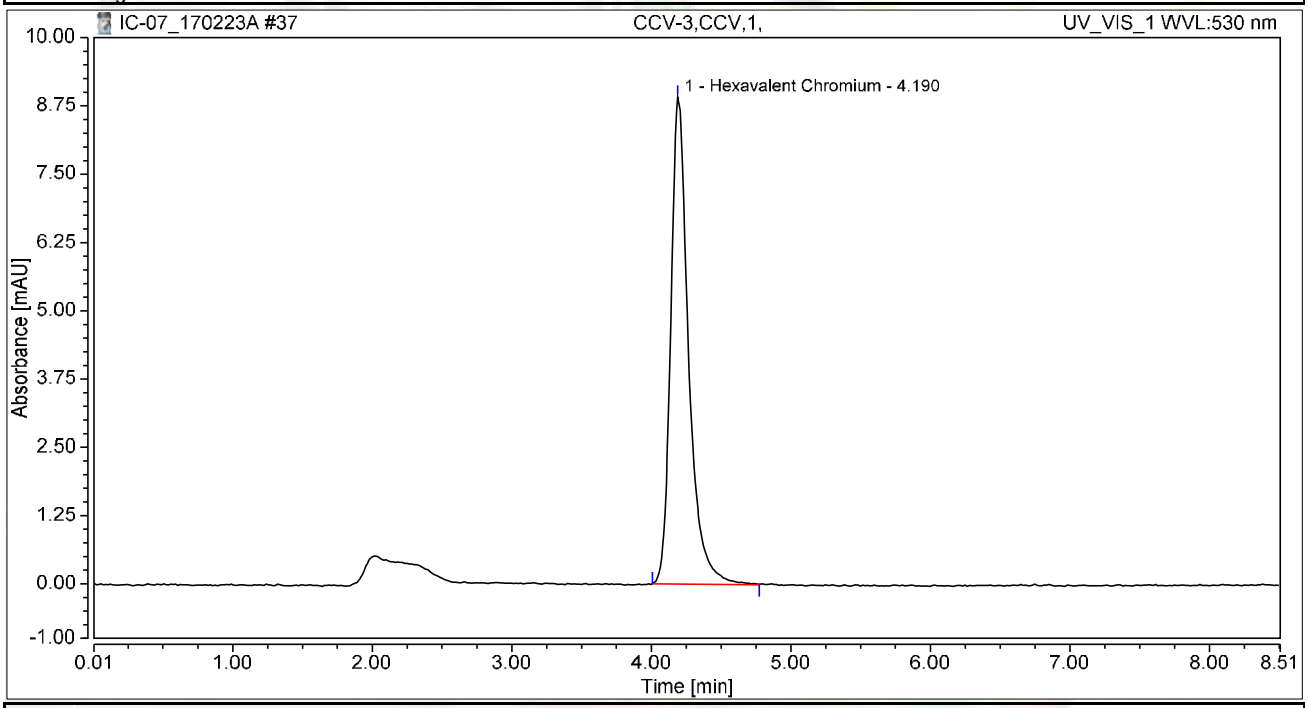
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.277	1.849	100.00	100.00	1.0439
Total:			**0.277**	**1.849**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

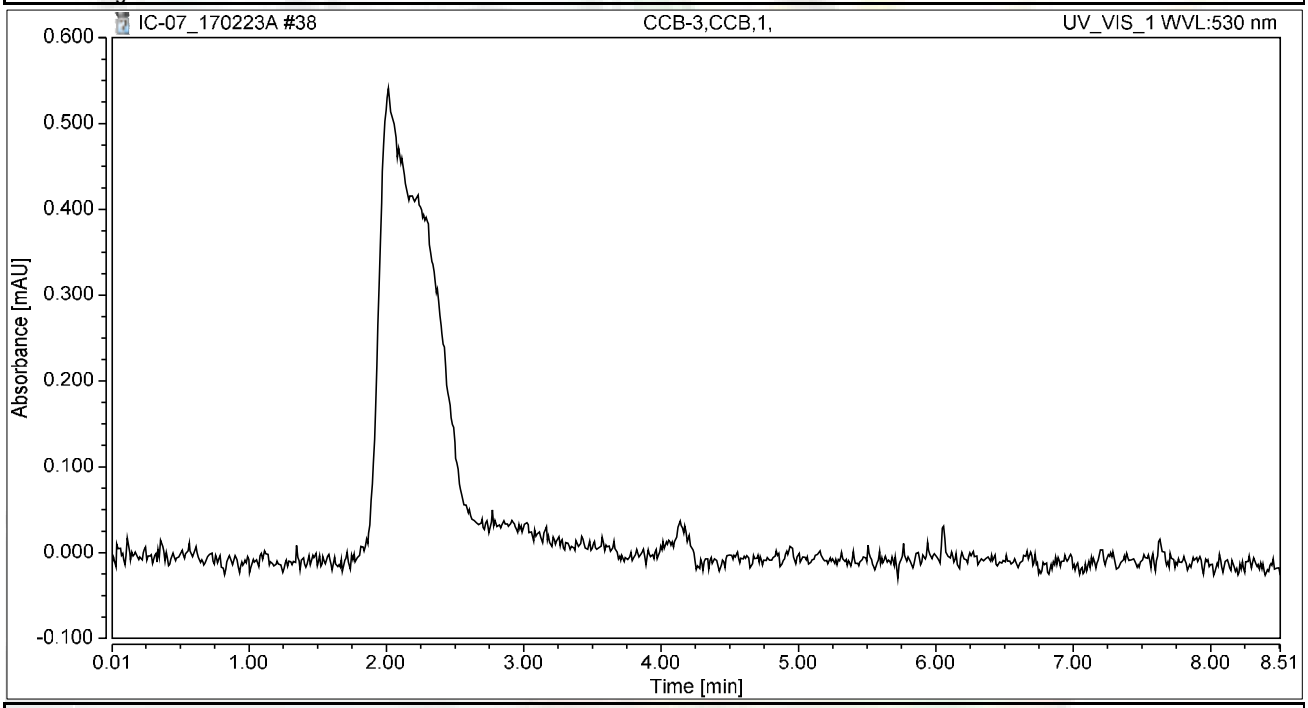
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.325	8.914	100.00	100.00	4.9951
Total:			**1.325**	**8.914**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

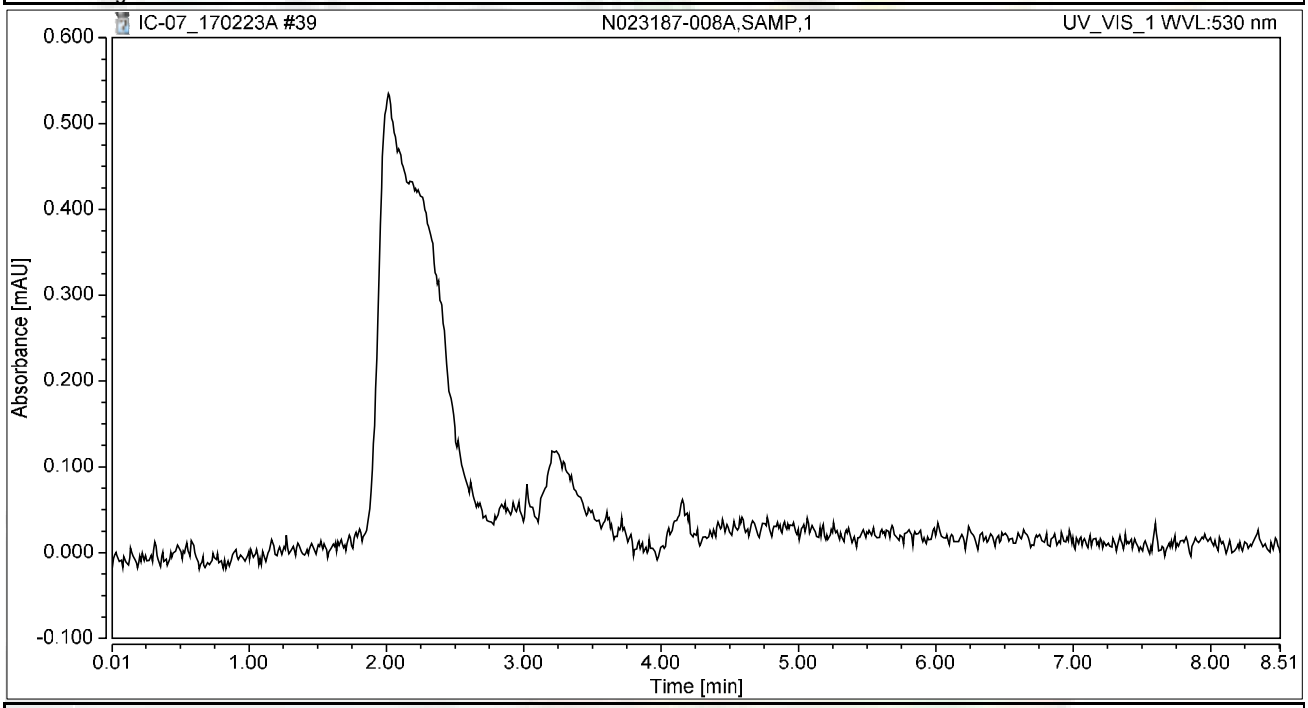
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

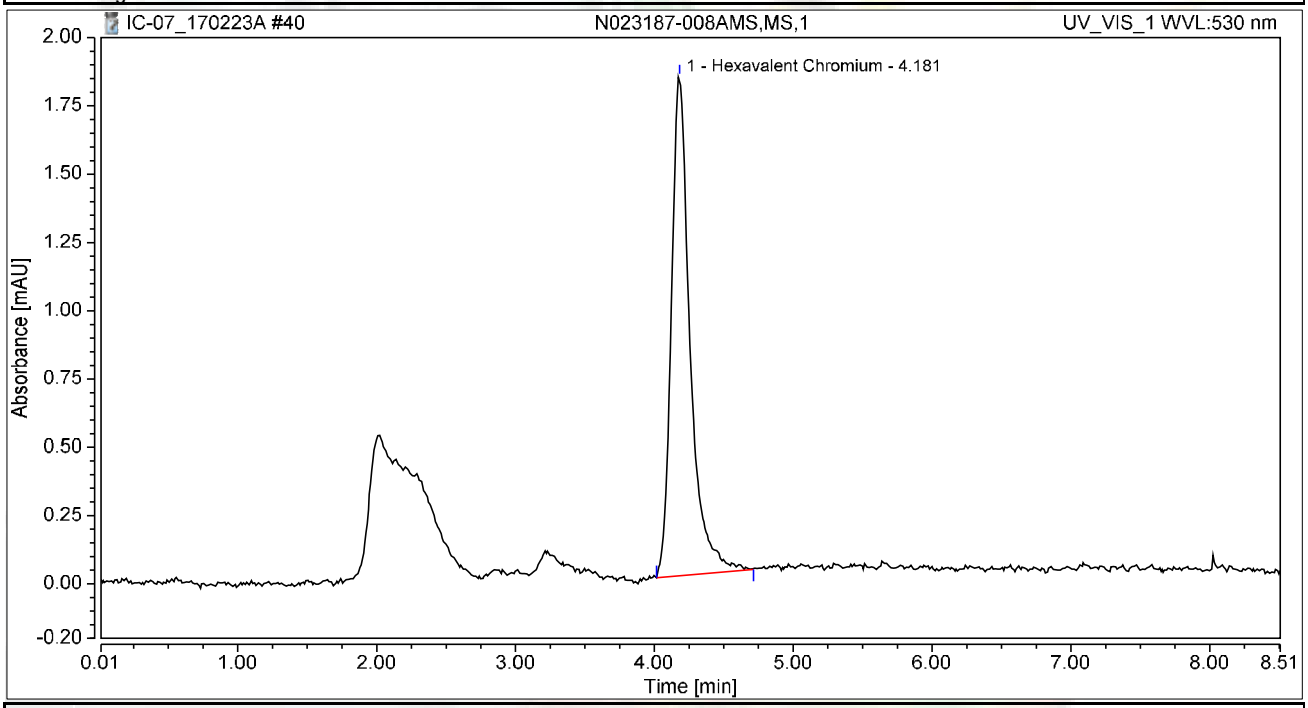
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-008AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

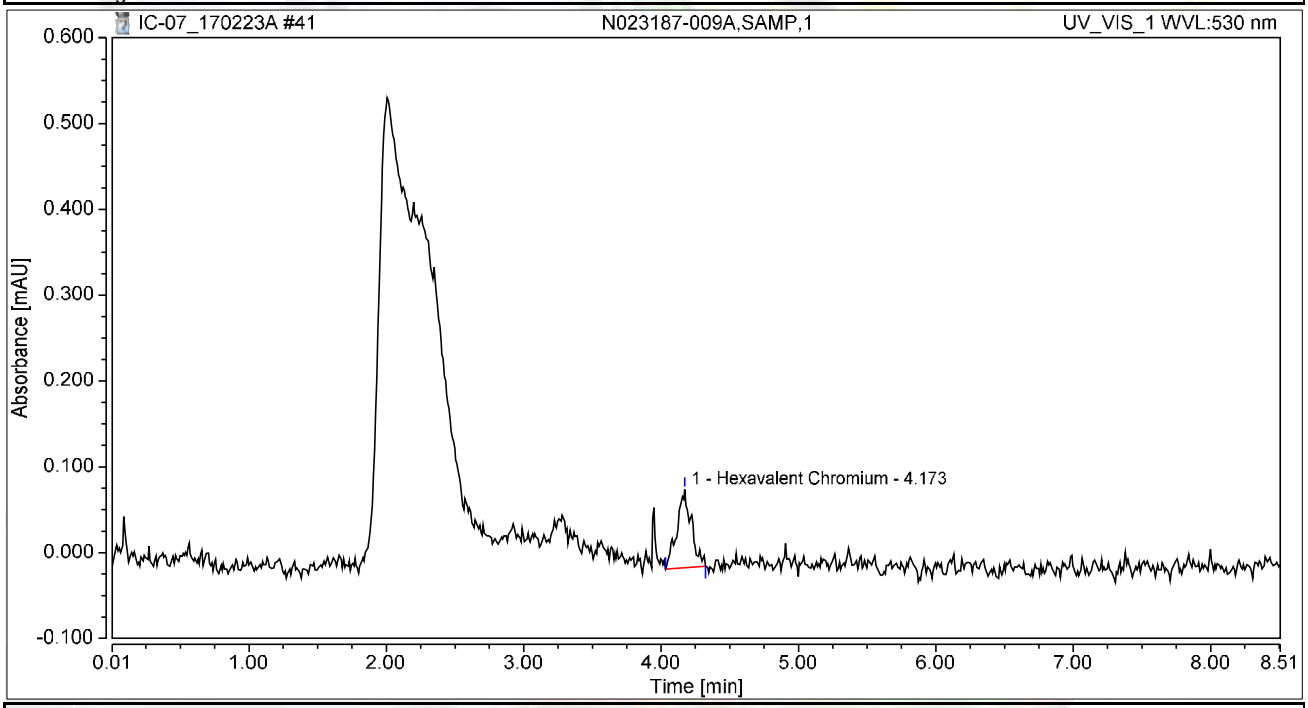
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.286	1.827	100.00	100.00	1.0781
Total:			**0.286**	**1.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

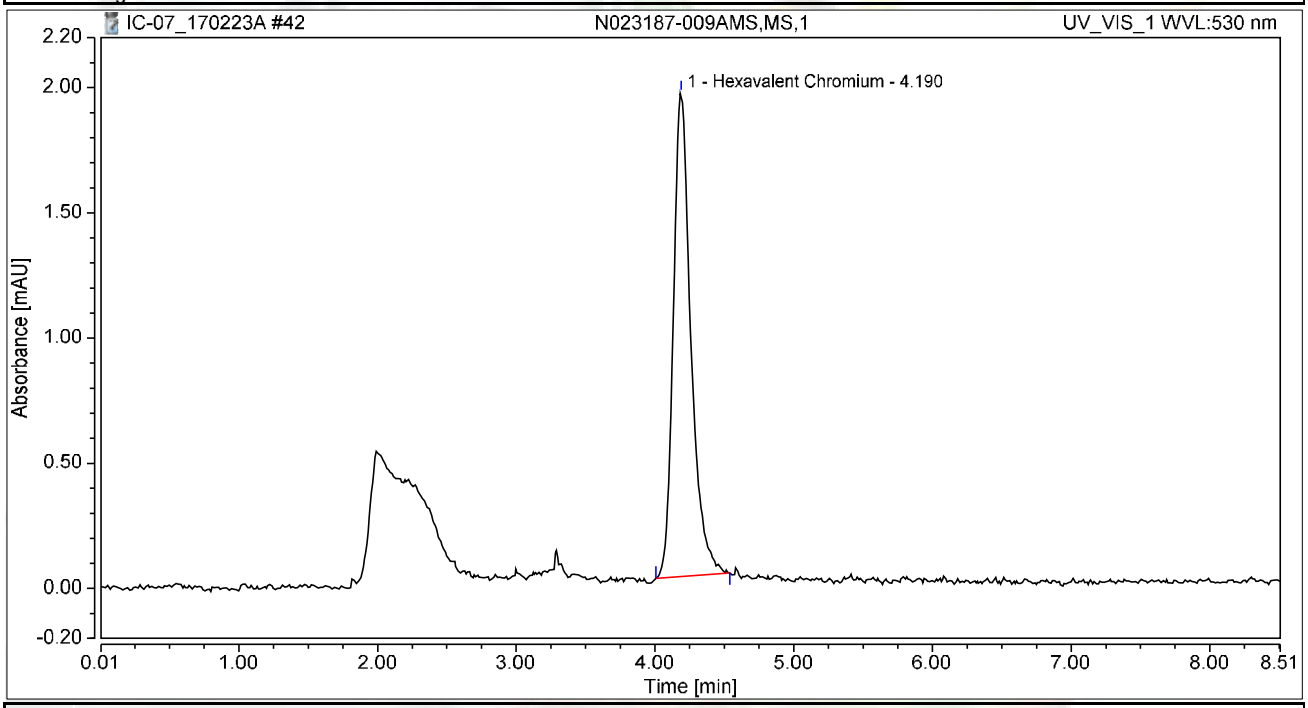
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.011	0.091	100.00	100.00	0.0418
Total:			**0.011**	**0.091**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

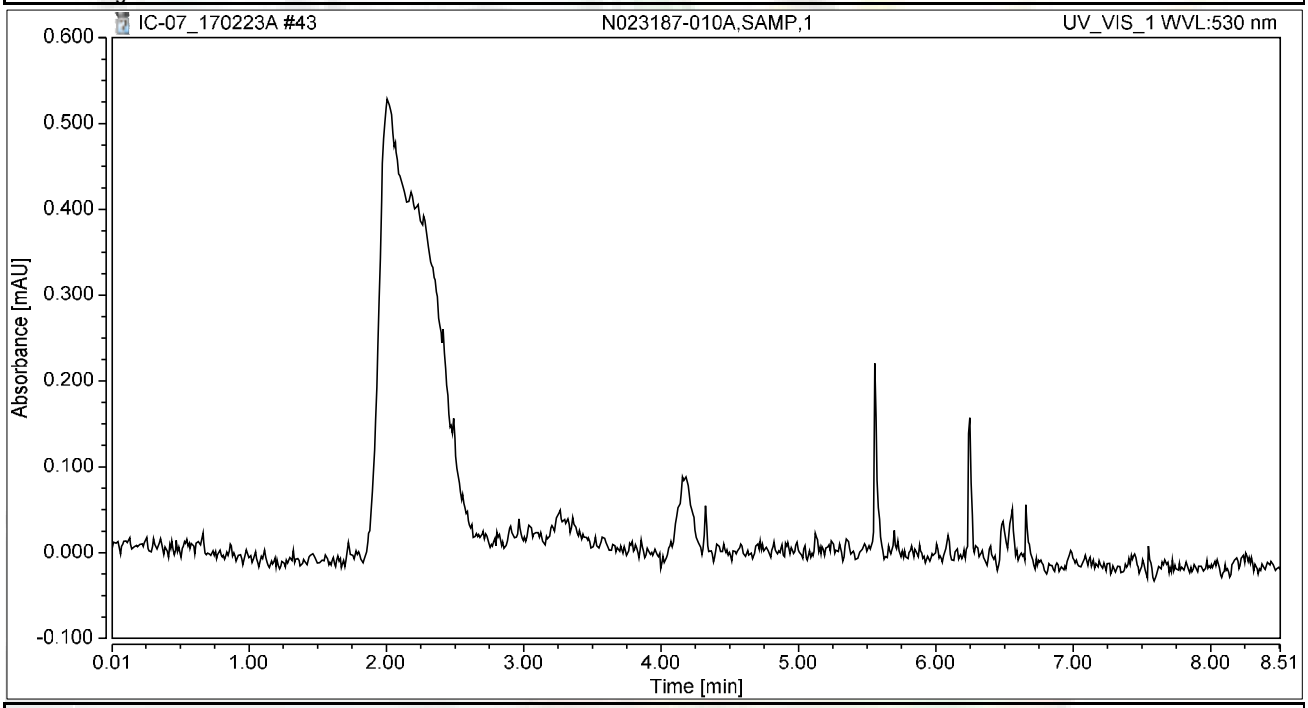
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.283	1.932	100.00	100.00	1.0687
Total:			**0.283**	**1.932**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

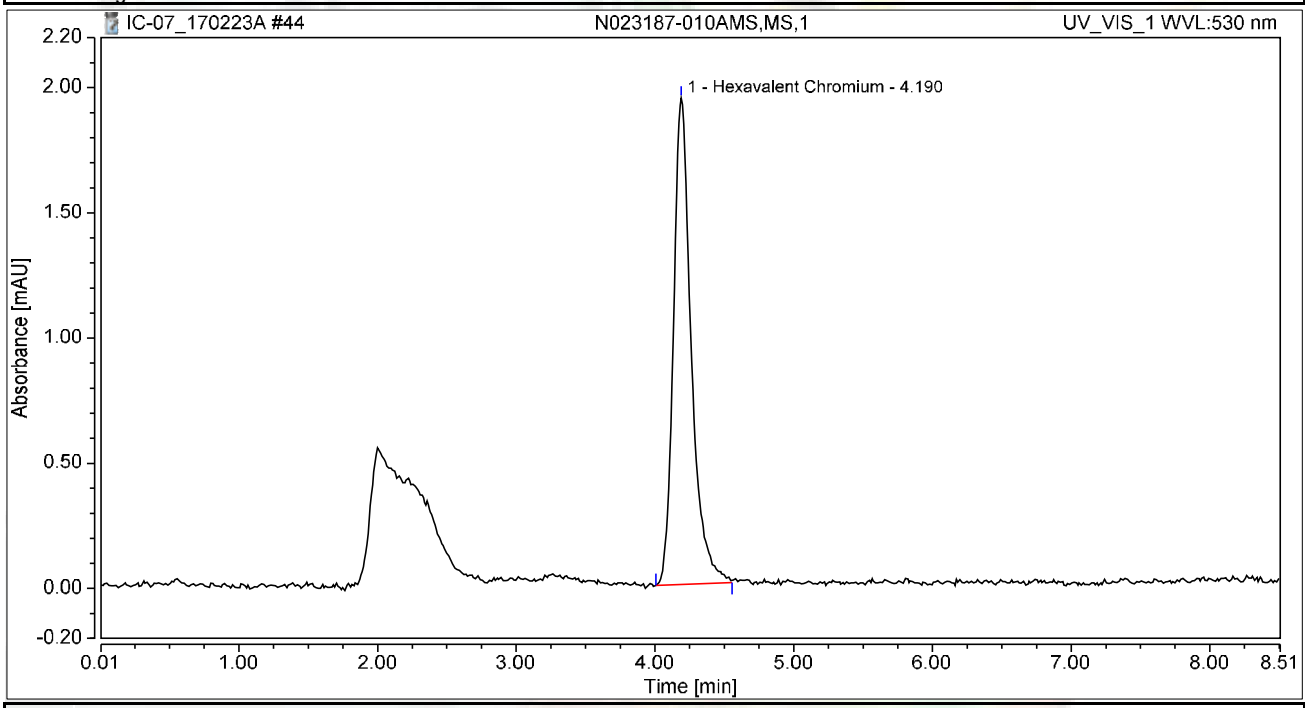
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

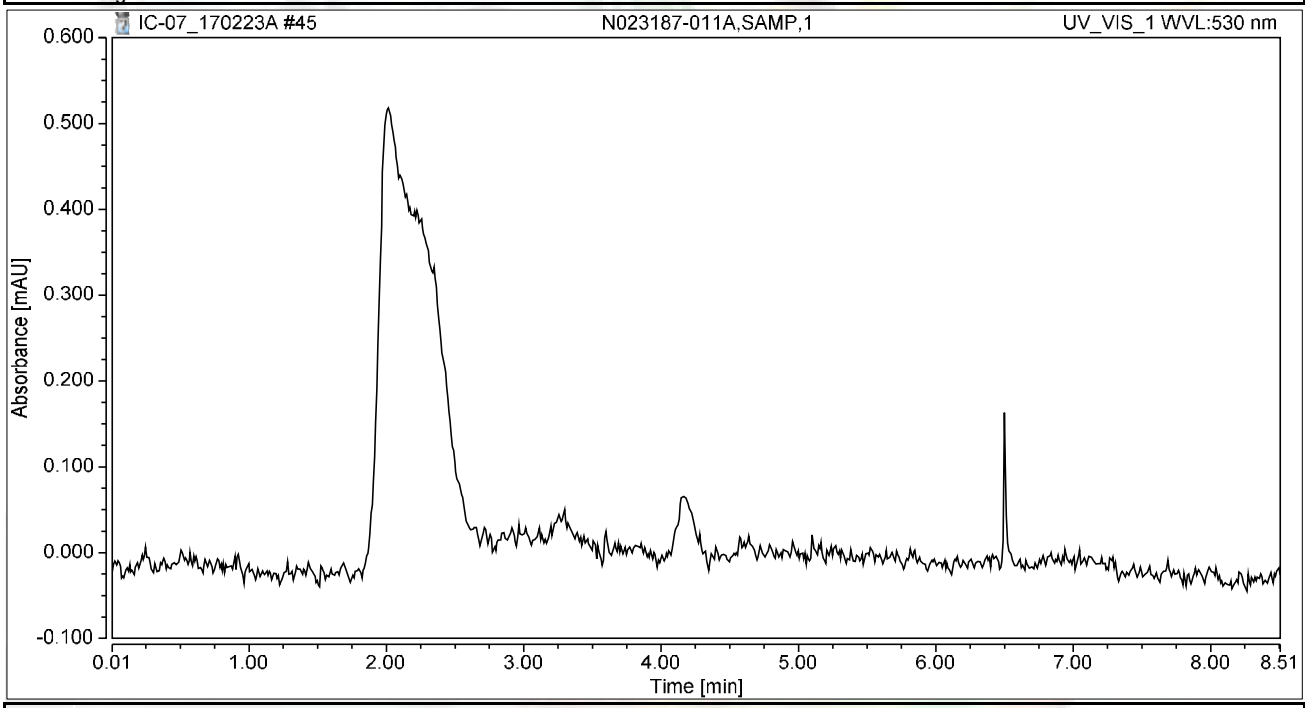
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.289	1.943	100.00	100.00	1.0904
Total:			**0.289**	**1.943**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

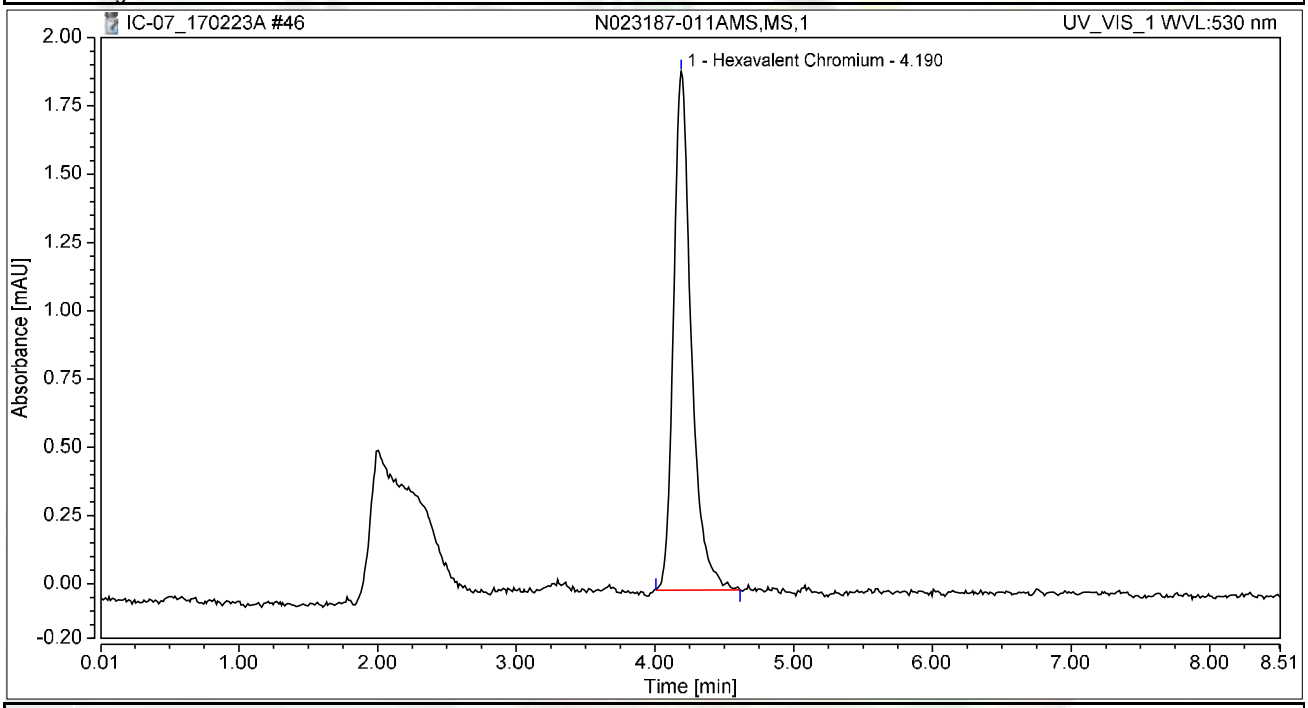
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

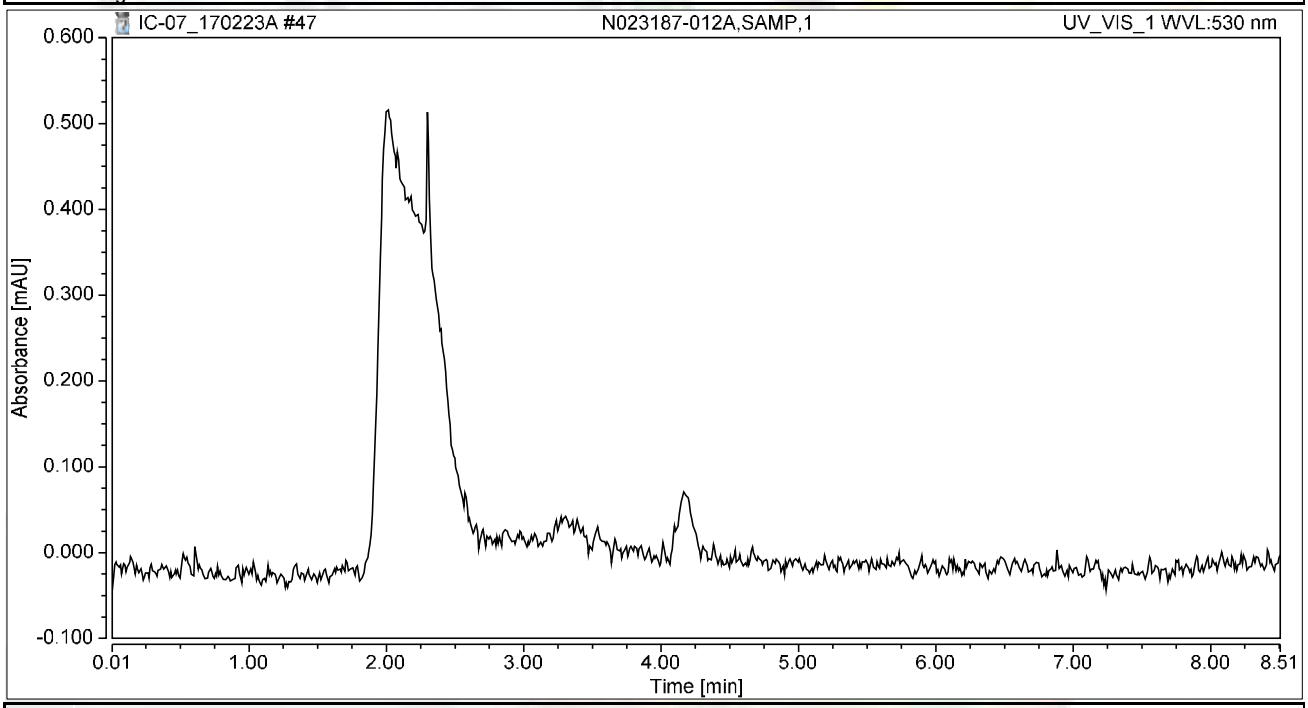
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.282	1.899	100.00	100.00	1.0630
Total:			**0.282**	**1.899**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

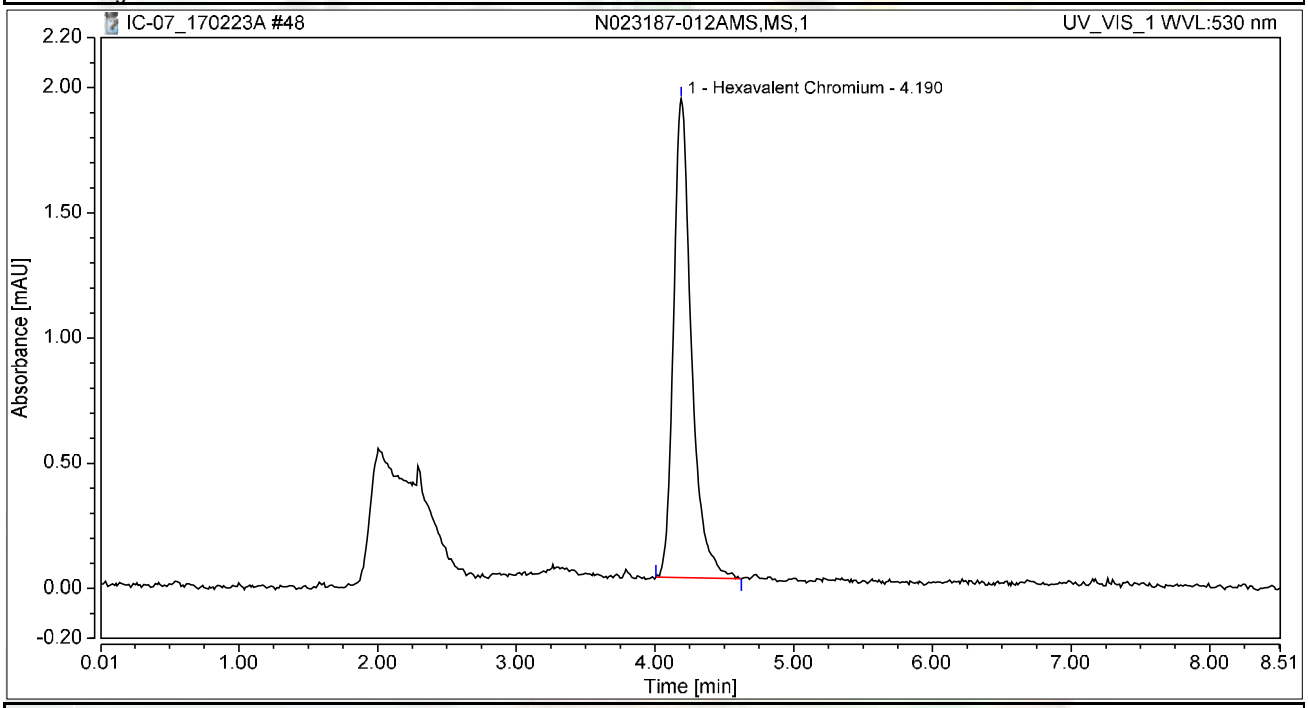
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

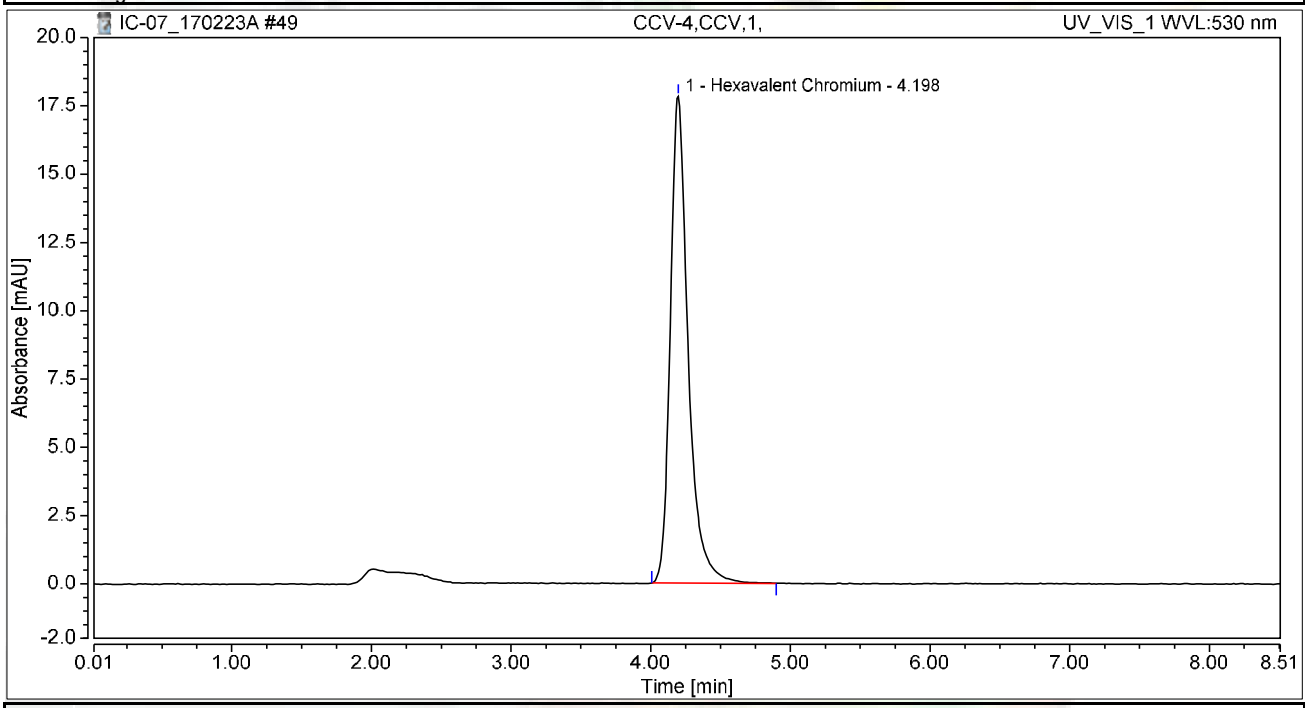
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.913	100.00	100.00	1.0801
Total:			**0.287**	**1.913**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

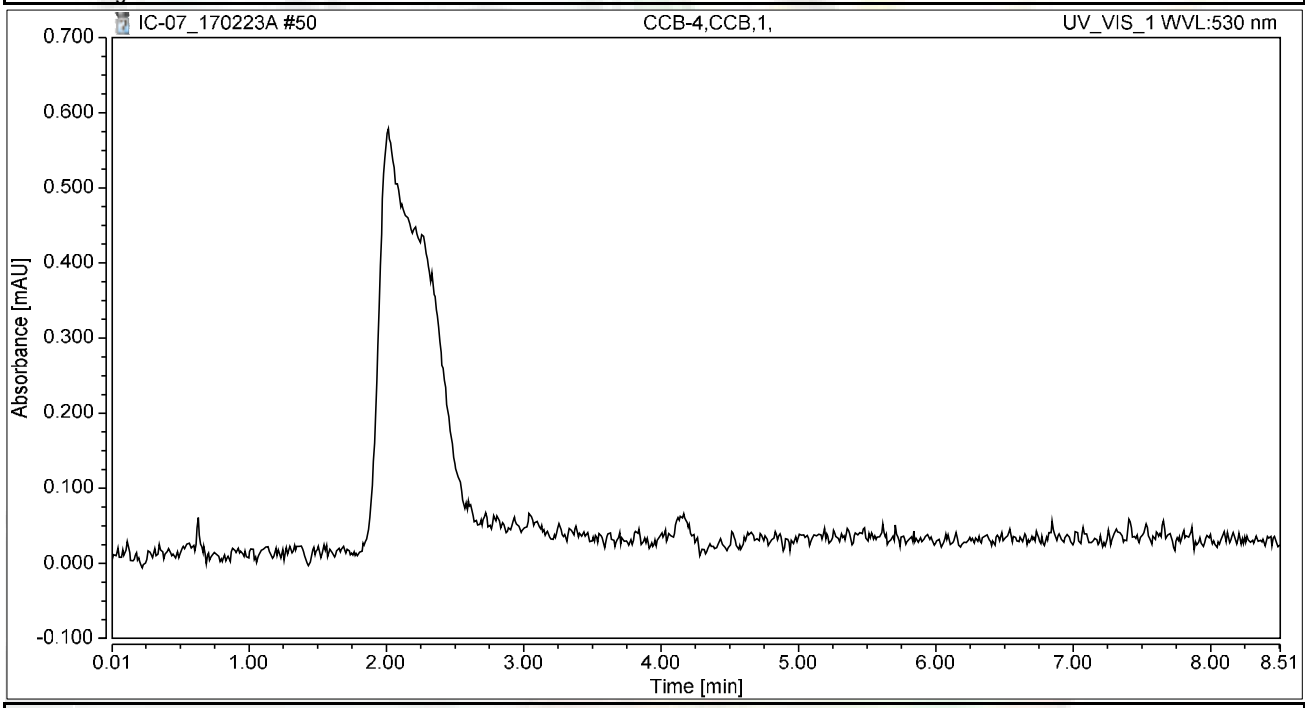
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.637	17.825	100.00	100.00	9.9419
Total:			**2.637**	**17.825**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

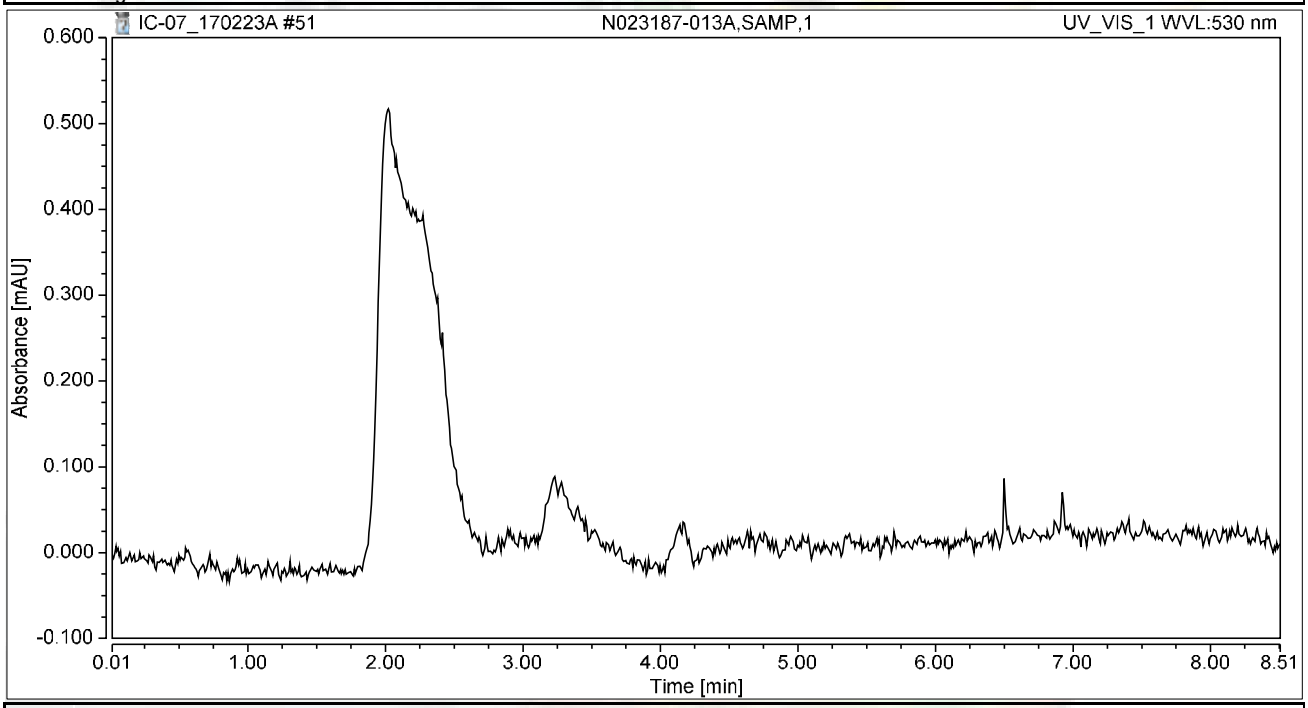
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

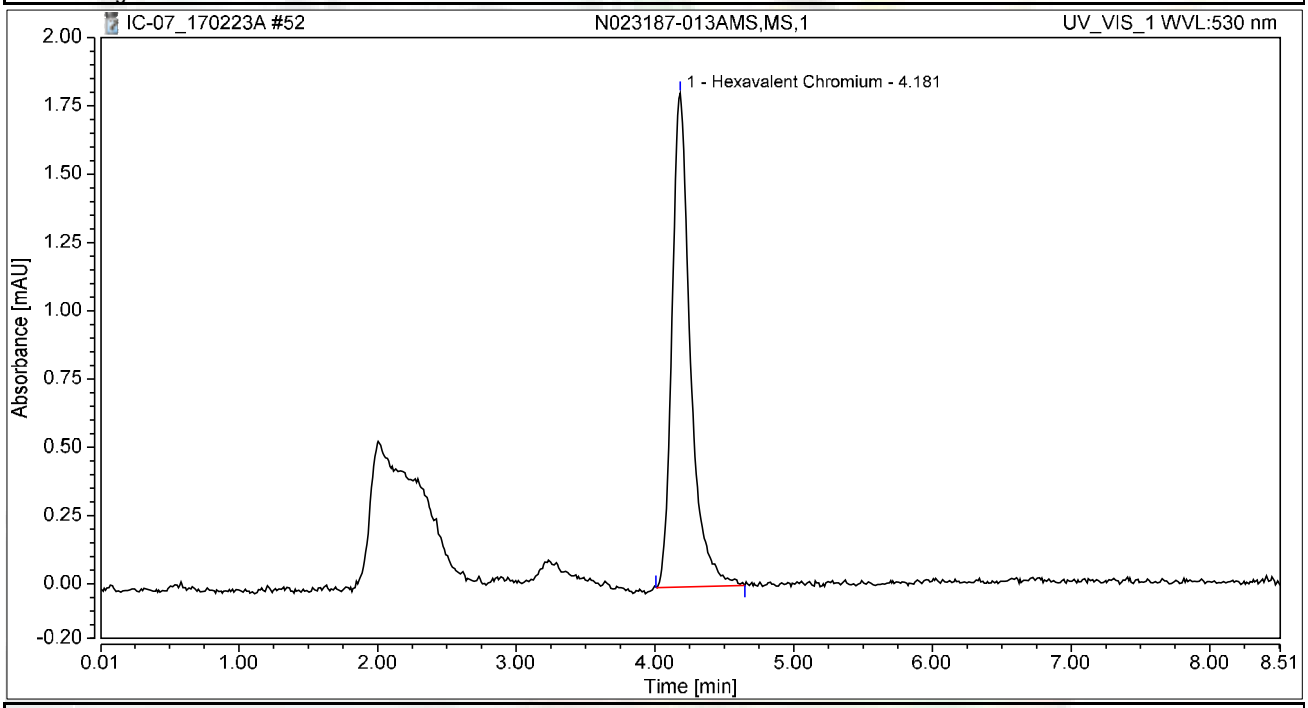
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

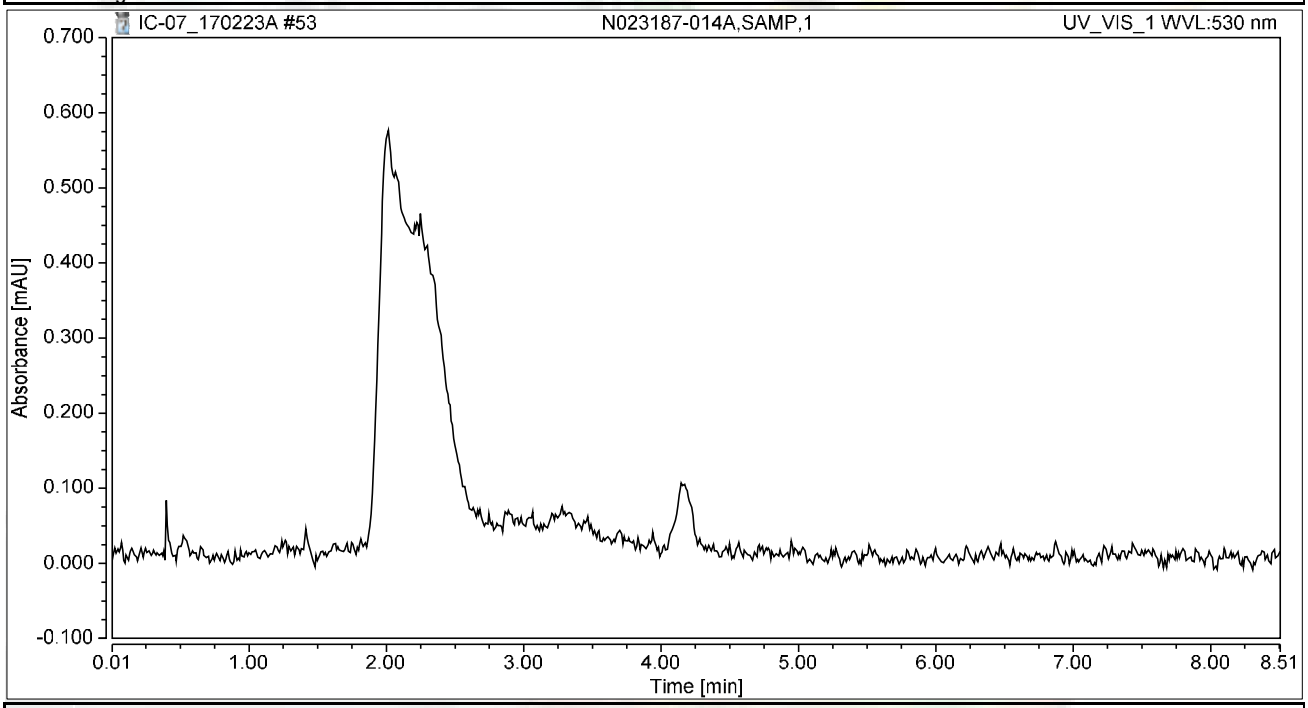
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.278	1.807	100.00	100.00	1.0470
Total:			**0.278**	**1.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-014A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

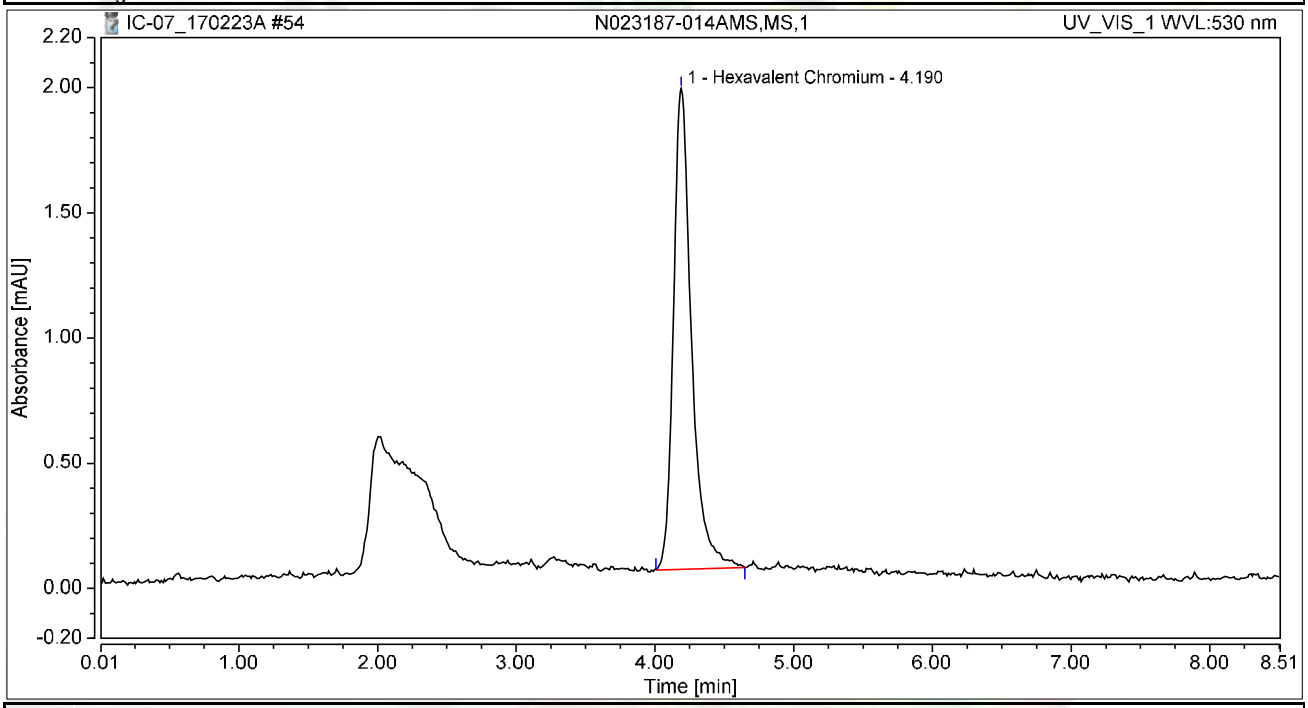
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-014AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

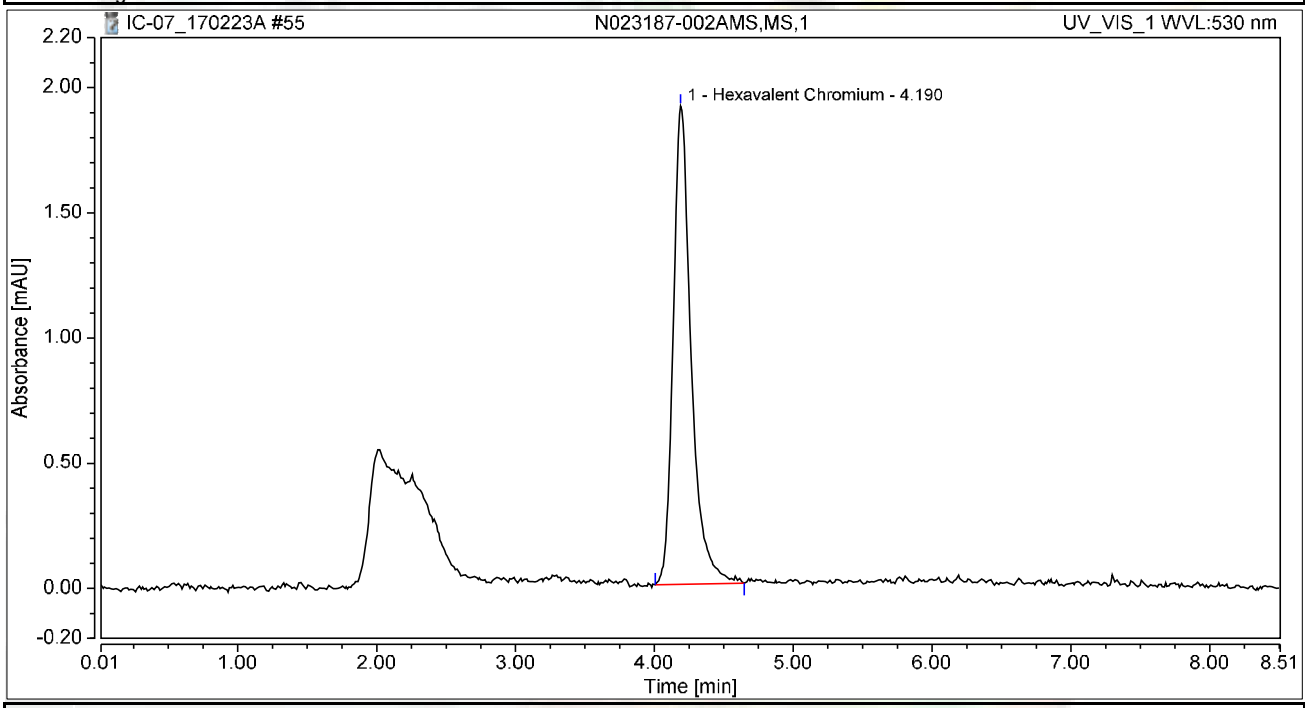
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.291	1.921	100.00	100.00	1.0967
Total:			**0.291**	**1.921**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023187-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

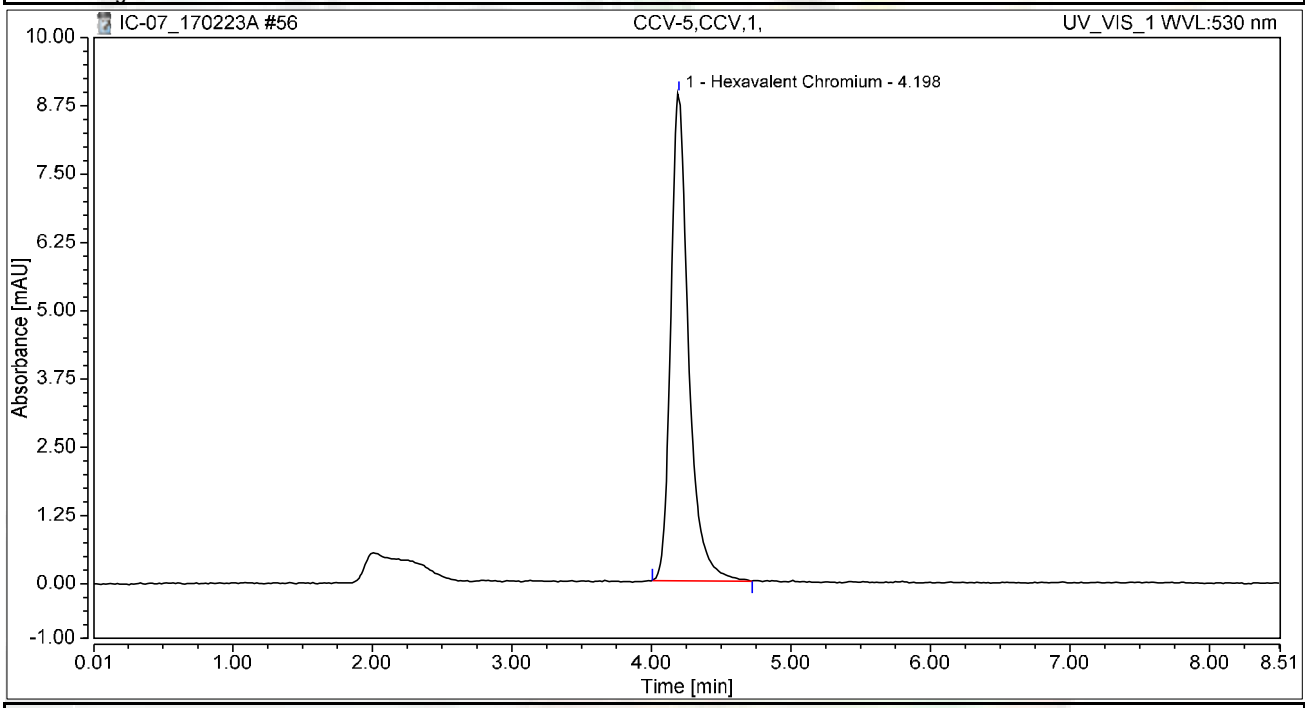
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.287	1.910	100.00	100.00	1.0806
Total:			**0.287**	**1.910**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

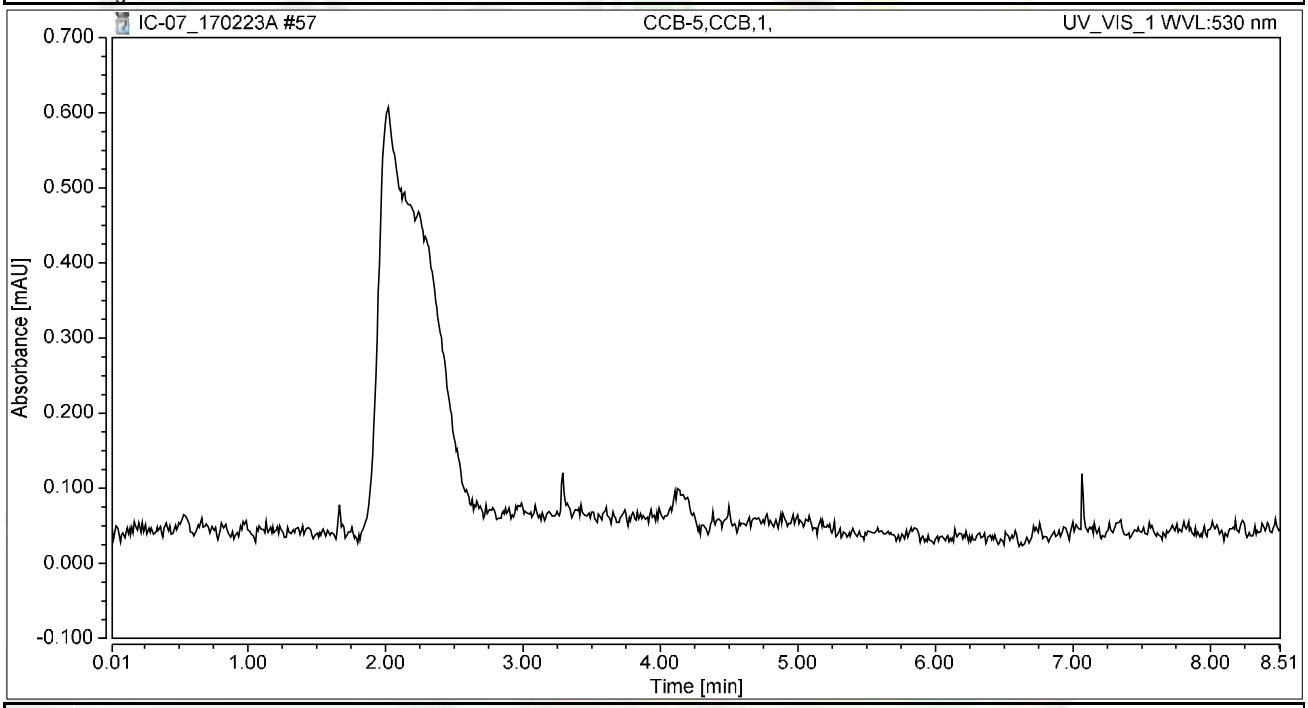
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.324	8.924	100.00	100.00	4.9910
Total:			**1.324**	**8.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170203_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113934 **Analyst:** REB

ASSET #: N023187 **Date Analyzed:** 3/7/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 03/07/17 Date:

2nd Level Reviewer Nancy 3/8/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023187-002E** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4457*1

= 0.4457 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 0.45

RB 03/07/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

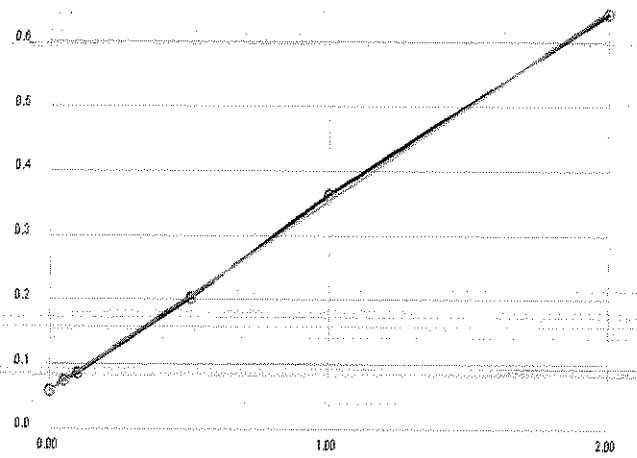
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2941x + 0.0593
Correlation	.999769

Calibrant	Energy	Set	Conc
1	0.0585	0.0000	-0.0028
2	0.0741	0.0500	0.0502
3	0.0869	0.1000	0.0938
4	0.2033	0.5000	0.4896
5	0.3630	1.0000	1.0327
6	0.6435	2.0000	1.9866



Notes:

2% CuSO4- R170227C
R1 Buffer- R170227D
R2 Coloring reagent- R170222A

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 03/07/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ICV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.519	0.050	0.5000	0	104	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCV** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **ICB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.033	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **113934**
Client ID: **CCB** Batch ID: **R113934** TestNo: **SM4500-NO3** Analysis Date: **3/7/2017** SeqNo: **2588281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.027	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-07-2017 10:50
Time end: 03-07-2017 13:28

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	12:51:39	0.0040		0.0605
2	<BLANK>	12:52:32	-0.0103		0.0563
3	<CAL1>	12:53:34	-0.0028	[0]	0.0585
4	<CAL2>	12:54:29	0.0502	[0.05]	0.0741
5	<CAL3>	12:55:24	0.0938	[0.1]	0.0869
6	<CAL4>	12:56:24	0.4896	[0.5]	0.2033
7	<CAL5>	12:57:20	1.0327	[1]	0.3630
8	<CAL6>	12:58:16	1.9866	[2]	0.6435
9	,BLANK,BLANK,1,	12:59:17	0.0305		0.0683
10	,ICV,ICV,1,	13:00:11	0.5188		0.2119
11	,ICB,ICB,1,	13:01:07	0.0043		0.0606
12	,MB-H2O,MBLK,1,	13:02:08	0.0033		0.0603
13	,LCS-H2O,LCS,1,	13:03:02	0.5365		0.2171
14	,N023268-002D,SAMP,5,	13:03:58	0.5573		0.2232
15	,N023268-002DDUP,DUP,5,	13:04:59	0.5637		0.2251
16	,N023268-002DMS,MS,5,	13:05:55	1.0548		0.3695
17	,N023268-002DMSD,MSD,5,	13:06:49	1.0497		0.3680
18	,N023177-015E,SAMP,1,	13:07:51	0.4702		0.1976
19	,N023187-002E,SAMP,1,	13:08:46	0.4457		0.1904
20	,N023187-003E,SAMP,1,	13:09:40	0.4416		0.1892
21	,BLANK,BLANK,1	13:10:42	0.0067		0.0613
22	,CCV-1,CCV,1,	13:11:37	0.5202		0.2123
23	,CCB-1,CCB,1,	13:12:25	0.0155		0.0639
24	,N023187-005E,SAMP,1,	13:13:09	0.4430		0.1896
25	,N023187-006E,SAMP,1,	13:13:58	0.4430		0.1896
26	,N023187-007E,SAMP,1,	13:14:40	0.2349		0.1284

RJB 03/07/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N023187-008E,SAMP,1,	13:15:24	0.1155		0.0933
28	,N023187-009E,SAMP,1,	13:16:12	0.4665		0.1965
29	,N023187-010E,SAMP,1,	13:16:55	0.4090		0.1796
30	,N023187-011E,SAMP,1,	13:17:37	0.4447		0.1901
31	,N023187-012E,SAMP,1,	13:18:27	0.4637		0.1957
32	,N023187-013E,SAMP,1,	13:19:10	0.1356		0.0992
33	,BLANK,BLANK,1	13:19:52	0.0203		0.0653
34	,CCV-2,CCV,1,	13:20:42	0.5039		0.2075
35	,CCB-2,CCB,1,	13:21:24	0.0329		0.0690
36	,N023187-014E,SAMP,1,	13:22:07	0.4321		0.1864
37	,N023187-004E,SAMP,1,	13:22:55	0.4342		0.1870
38	,BLANK,	13:23:38	0.0213		0.0656
39	,CCV-3,CCV,1,	13:24:28	0.5035		0.2074
40	,CCV-3,CCV,1, not used	13:25:10	0.4889		0.2031
41	,CCB-3,CCB,1,	13:25:53	0.0271		0.0673

RB 03/07/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 03/07/17
Time Analyzed: 010:50 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170227D
Color reagent: R170222A
2% Copper Sulfate: R170227C
Ammonium Hydroxide: CINV-160607C

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023177-015E		7.64						
2)	N023187-002E		7.03						
3)	N023187-003E		8.16						
4)	N023187-004E		6.96						
5)	N023187-005E		7.35						
6)	N023187-006E		8.08						
7)	N023187-007E		7.28						
8)	N023187-008E		8.89						
9)	N023187-009E		7.39						
10)	N023187-010E		8.61						
11)	N023187-011E		8.17						
12)	N023187-012E		7.38						
13)	N023187-013E		7.57						
14)	N023187-014E		7.59						
15)	N023268-002D		8.67						
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 03/07/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61379
ASSET #: N023187
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/24/2017

Method:
[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 3/8/2017 Date: _____
2nd Level Reviewer _____ 3/8/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023187-002B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03104 * 1 * (25/25) * 1000

Iron , ug/L = 31.04

Reporting results in two significant figures,

Iron , ug/L = 31

% RSD SUMMARY

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	6.26	15	PASS
Standard1	ICAL	1	Fe	0.02	2.0088	15	PASS
Standard2	ICAL	1	Fe	0.05	1.34	15	PASS
Standard3	ICAL	1	Fe	2	0.35	15	PASS
Standard4	ICAL	1	Fe	5	0.2	15	PASS
Standard5	ICAL	1	Fe	7.5	0.17	15	PASS
Standard6	ICAL	1	Fe	10	0.097	15	PASS
Standard7	ICAL	1	Fe	20	0.029	15	PASS
ICV	ICV	1	Fe	9.82	0.13	15	PASS
ICB	ICB	1	Fe	0.0004	153.15	15	<PQL
LLICV	CCV1	1	Fe	0.02	3.88	20	PASS
ICSA1	ICSA	1	Fe	168.72	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	193.86	0.19	15	PASS
CCV1	CCV	1	Fe	9.36	0.093	15	PASS
CCB1	CCB	1	Fe	0.0011	43.39	15	<PQL
CCV2	CCV	1	Fe	9.36	0.15	15	PASS
CCB2	CCB	1	Fe	0.001	14.2	15	PASS
CCV3	CCV	1	Fe	9.5	0.12	15	PASS
CCB3	CCB	1	Fe	0.00049	201.13	15	<PQL
CCB3	CCB	1	Fe	-0.00067	117.82	15	<PQL
CCV4	CCV	1	Fe	10.031	0.22	15	PASS
CCB4	CCB	1	Fe	0.00061	98.46	15	<PQL
CCV5	CCV	1	Fe	10.005	0.2	15	PASS
CCB5	CCB	1	Fe	0.00047	71.76	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.38	20	PASS
ICSA2	ICSA	1	Fe	169.63	0.19	15	PASS
ICSAB2	ICSAB	1	Fe	195.68	0.11	15	PASS
ICV	ICV	1	Fe	90.22	50.88	15	NR!
ICB	ICB	1	Fe	0.00053	62.4	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.047	20	PASS
ICSA2	ICSA	1	Fe	169.68	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	195.64	0.11	15	PASS
CCV6	CCV	1	Fe	9.92	0.16	15	PASS
CCB6	CCB	1	Fe	0.00044	61.82	15	<PQL
CCV7	CCV	1	Fe	9.97	0.12	15	PASS
CCB7	CCB	1	Fe	0.00028	55.54	15	<PQL
CCV8	CCV	1	Fe	9.97	0.19	15	PASS
CCB8	CCB	1	Fe	0.00075	76.45	15	<PQL
MB-61379	MBLK	1	Fe	-0.0012	17.039	15	<PQL
LCS-61379	LCS	1	Fe	0.11	0.19	15	PASS
CCV9	CCV	1	Fe	10.035	0.23	15	PASS
CCB9	CCB	1	Fe	0.00044	182.21	15	<PQL

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV2	CCV2	1	Fe	0.021	1.76	20	PASS
ICSA3	ICSA	1	Fe	171.37	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	196.61	0.22	15	PASS
N023187-002B	SAMP	1	Fe	0.031	13.34	15	PASS
N023187-002B	SAMP	5	Fe	0.0057	8.029	15	PASS
N023187-002B-PS	PS	1	Fe	0.12	0.57	15	PASS
N023187-002B-MS	MS	1	Fe	0.12	1.45	15	PASS
N023187-002B-MSD	MSD	1	Fe	0.12	0.44	15	PASS
N023187-003B	SAMP	1	Fe	0.017	1.065	15	PASS
N023187-004B	SAMP	1	Fe	0.011	3.43	15	PASS
N023187-005B	SAMP	1	Fe	0.005	18.23	15	<PQL
N023187-006B	SAMP	1	Fe	0.017	2.63	15	PASS
N023187-007B	SAMP	1	Fe	0.23	0.02	15	PASS
CCV10	CCV	1	Fe	10.028	0.071	15	PASS
CCB10	CCB	1	Fe	0.0008	136.81	15	<PQL
N023187-008B	SAMP	1	Fe	0.019	1.85	15	PASS
N023187-009B	SAMP	1	Fe	0.0063	5.69	15	PASS
N023187-010B	SAMP	1	Fe	0.0053	5.85	15	PASS
N023187-011B	SAMP	1	Fe	0.008	2.96	15	PASS
N023187-012B	SAMP	1	Fe	0.0077	9.69	15	PASS
N023187-013B	SAMP	1	Fe	0.011	5.74	15	PASS
N023187-014B	SAMP	1	Fe	0.01	11.44	15	PASS
CCV11	CCV	1	Fe	10.061	0.032	15	PASS
CCB11	CCB	1	Fe	0.00032	302.18	15	<PQL
CCV12	CCV	1	Fe	10.069	0.12	15	PASS
CCB12	CCB	1	Fe	0.0018	33.86	15	<PQL
CCV13	CCV	1	Fe	10.14	0.21	15	PASS
CCB13	CCB	1	Fe	0.0023	20.16	15	<PQL
LLCCV3	CCV2	1	Fe	0.022	1.71	20	PASS
ICSA4	ICSA	1	Fe	172.45	0.13	15	PASS
ICSAB4	ICSAB	1	Fe	191.86	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170224B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/24/2017	02:26:30 PM
2	Standard1	ICAL	1	02/24/2017	02:30:31 PM
3	Standard2	ICAL	1	02/24/2017	02:35:02 PM
4	Standard3	ICAL	1	02/24/2017	02:39:33 PM
5	Standard4	ICAL	1	02/24/2017	02:44:07 PM
6	Standard5	ICAL	1	02/24/2017	02:49:41 PM
7	Standard6	ICAL	1	02/24/2017	02:54:47 PM
8	Standard7	ICAL	1	02/24/2017	02:59:55 PM
9	ICV	ICV	1	02/24/2017	03:05:05 PM
1	ICB	ICB	1	02/24/2017	03:10:13 PM
2	LLICV	CCV1	1	02/24/2017	03:22:14 PM
4	ICSA1	ICSA	1	02/24/2017	03:26:46 PM
5	ICSAB1	ICSAB	1	02/24/2017	03:32:29 PM
74	MB-1	MBLK	1	02/24/2017	03:37:44 PM
75	MB-61353 STLC	MBLK	5	02/24/2017	03:42:18 PM
76	LCS-1	LCS	1	02/24/2017	03:46:21 PM
77	N023138-002A	SAMP	5	02/24/2017	03:51:30 PM
78	N023138-008A	SAMP	5	02/24/2017	03:56:06 PM
79	N022940-001A	SAMP	5	02/24/2017	04:01:41 PM
80	N022939-003F	SAMP	5	02/24/2017	04:06:16 PM
81	N023138-002A	SAMP	25	02/24/2017	04:11:51 PM
82	N023138-002A-MS	MS	5	02/24/2017	04:16:25 PM
83	N023138-002A-MSD	MSD	5	02/24/2017	04:21:01 PM
7	CCV1	CCV	1	02/24/2017	04:25:37 PM
1	CCB1	CCB	1	02/24/2017	04:30:45 PM
38	MB-61294	MBLK	1	02/24/2017	04:37:48 PM
64	LCS-61294	LCS	1	02/24/2017	04:41:50 PM
52	N023100-001A	SAMP	1	02/24/2017	04:47:25 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N023100-002A	SAMP	1	02/24/2017	04:52:27 PM
54	N023100-003A	SAMP	1	02/24/2017	04:58:00 PM
55	N023100-004A	SAMP	1	02/24/2017	05:02:33 PM
56	N023100-005A	SAMP	1	02/24/2017	05:08:06 PM
57	N023100-006A	SAMP	1	02/24/2017	05:13:11 PM
58	N023100-007A	SAMP	1	02/24/2017	05:18:16 PM
59	N023100-008A	SAMP	1	02/24/2017	05:23:51 PM
7	CCV2	CCV	1	02/24/2017	05:28:57 PM
1	CCB2	CCB	1	02/24/2017	05:34:02 PM
40	N023101-001A	SAMP	1	02/24/2017	05:38:33 PM
41	N023101-002A	SAMP	1	02/24/2017	05:44:06 PM
42	N023101-003A	SAMP	1	02/24/2017	05:49:38 PM
43	N023101-004A	SAMP	1	02/24/2017	05:55:11 PM
44	N023101-005A	SAMP	1	02/24/2017	06:07:05 PM
45	N023101-006A	SAMP	1	02/24/2017	06:12:09 PM
46	N023101-007A	SAMP	1	02/24/2017	06:17:13 PM
47	N023101-008A	SAMP	1	02/24/2017	06:22:17 PM
48	N023101-009A	SAMP	1	02/24/2017	06:27:51 PM
49	N023101-010A	SAMP	1	02/24/2017	06:33:26 PM
7	CCV3	CCV	1	02/24/2017	06:38:32 PM
1	CCB3	CCB	1	02/24/2017	06:43:39 PM
1	CCB3	CCB	1	02/24/2017	06:48:36 PM
50	N023101-011A	SAMP	1	02/24/2017	06:53:06 PM
51	N023101-012A	SAMP	1	02/24/2017	06:58:12 PM
65	N023100-001A	SAMP	5	02/24/2017	07:03:16 PM
66	N023100-001A-PS	PS	1	02/24/2017	07:07:51 PM
67	N023100-001A-MS1	MS	1	02/24/2017	07:12:59 PM
68	N023100-001A-MSD1	MSD	1	02/24/2017	07:18:38 PM
69	N023100-001A	SAMP	25	02/24/2017	07:23:46 PM
70	N023100-001A-PS	PS	5	02/24/2017	07:28:19 PM
71	N023100-001A-MS1	MS	5	02/24/2017	07:33:53 PM
72	N023100-001A-MSD1	MSD	5	02/24/2017	07:39:27 PM
7	CCV4	CCV	1	02/24/2017	07:45:02 PM
1	CCB4	CCB	1	02/24/2017	07:50:10 PM
54	N023100-003A	SAMP	1	02/24/2017	07:54:40 PM
73	N023101-005A	SAMP	5	02/24/2017	07:59:13 PM
74	N023101-006A	SAMP	5	02/24/2017	08:04:48 PM
75	N023101-007A	SAMP	5	02/24/2017	08:10:23 PM
76	N023101-010A	SAMP	5	02/24/2017	08:15:57 PM
7	CCV5	CCV	1	02/24/2017	08:21:31 PM
1	CCB5	CCB	1	02/24/2017	08:26:38 PM
2	LLCCV1	CCV2	1	02/24/2017	08:31:08 PM
4	ICSA2	ICSA	1	02/24/2017	08:35:41 PM
5	ICSAB2	ICSAB	1	02/24/2017	08:41:24 PM
9	ICV	ICV	1	02/24/2017	09:25:59 PM
1	ICB	ICB	1	02/24/2017	09:31:30 PM

NR

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	02/24/2017	09:40:55 PM
4	ICSA2	ICSA	1	02/24/2017	09:45:27 PM
5	ICSAB2	ICSAB	1	02/24/2017	09:51:10 PM
98	MB-61365	MBLK	1	02/24/2017	10:25:07 PM
99	LCS-61365	LCS	1	02/24/2017	10:29:12 PM
100	N023177-001B	SAMP	1	02/24/2017	10:34:48 PM
101	N023177-001B	SAMP	5	02/24/2017	10:39:23 PM
102	N023177-001B-PS	PS	1	02/24/2017	10:43:57 PM
103	N023177-001B-MS	MS	1	02/24/2017	10:49:34 PM
104	N023177-001B-MSD	MSD	1	02/24/2017	10:55:11 PM
105	N023177-002B	SAMP	1	02/24/2017	11:00:48 PM
106	N023177-003B	SAMP	1	02/24/2017	11:05:23 PM
107	N023177-004B	SAMP	1	02/24/2017	11:09:58 PM
7	CCV6	CCV	1	02/24/2017	11:14:33 PM
1	CCB6	CCB	1	02/24/2017	11:19:41 PM
108	N023177-005B	SAMP	1	02/24/2017	11:24:11 PM
109	N023177-006B	SAMP	1	02/24/2017	11:28:47 PM
110	N023177-007B	SAMP	1	02/24/2017	11:33:22 PM
111	N023177-008B	SAMP	1	02/24/2017	11:37:57 PM
112	N023177-009B	SAMP	1	02/24/2017	11:42:33 PM
113	N023177-012B	SAMP	1	02/24/2017	11:47:09 PM
114	N023177-013B	SAMP	1	02/24/2017	11:51:45 PM
115	N023177-014B	SAMP	1	02/24/2017	11:56:21 PM
116	N023177-015B	SAMP	1	02/25/2017	12:00:57 AM
117	MB-61364	MBLK	1	02/25/2017	12:05:33 AM
7	CCV7	CCV	1	02/25/2017	12:09:38 AM
1	CCB7	CCB	1	02/25/2017	12:14:46 AM
118	LCS-61364	LCS	1	02/25/2017	12:19:16 AM
119	N023177-001C	SAMP	1	02/25/2017	12:24:52 AM
120	N023177-001C	SAMP	5	02/25/2017	12:29:28 AM
121	N023177-001C-PS	PS	1	02/25/2017	12:34:03 AM
122	N023177-001C-MS	MS	1	02/25/2017	12:39:40 AM
123	N023177-001C-MSD	MSD	1	02/25/2017	12:45:17 AM
124	N023177-002C	SAMP	1	02/25/2017	12:50:54 AM
125	N023177-003C	SAMP	1	02/25/2017	12:55:29 AM
126	N023177-004C	SAMP	1	02/25/2017	01:00:04 AM
127	N023177-005C	SAMP	1	02/25/2017	01:04:39 AM
7	CCV8	CCV	1	02/25/2017	01:09:14 AM
1	CCB8	CCB	1	02/25/2017	01:14:21 AM
128	N023177-006C	SAMP	1	02/25/2017	01:18:51 AM
129	N023177-007C	SAMP	1	02/25/2017	01:23:26 AM
130	N023177-008C	SAMP	1	02/25/2017	01:28:01 AM
131	N023177-009C	SAMP	1	02/25/2017	01:32:36 AM
132	N023177-012C	SAMP	1	02/25/2017	01:37:11 AM
133	N023177-013C	SAMP	1	02/25/2017	01:41:46 AM
134	N023177-014C	SAMP	1	02/25/2017	01:46:21 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
135	N023177-015C	SAMP	1	02/25/2017	01:50:57 AM
136	MB-61379	MBLK	1	02/25/2017	01:55:32 AM
137	LCS-61379	LCS	1	02/25/2017	01:59:36 AM
7	CCV9	CCV	1	02/25/2017	02:04:56 AM
1	CCB9	CCB	1	02/25/2017	02:10:03 AM
2	LLCCV2	CCV2	1	02/25/2017	02:14:33 AM
4	ICSA3	ICSA	1	02/25/2017	02:19:06 AM
5	ICSAB3	ICSAB	1	02/25/2017	02:24:49 AM
138	N023187-002B	SAMP	1	02/25/2017	02:30:05 AM
139	N023187-002B	SAMP	5	02/25/2017	02:34:42 AM
140	N023187-002B-PS	PS	1	02/25/2017	02:39:17 AM
141	N023187-002B-MS	MS	1	02/25/2017	02:44:55 AM
142	N023187-002B-MSD	MSD	1	02/25/2017	02:50:33 AM
143	N023187-003B	SAMP	1	02/25/2017	02:56:11 AM
144	N023187-004B	SAMP	1	02/25/2017	03:00:47 AM
145	N023187-005B	SAMP	1	02/25/2017	03:05:23 AM
146	N023187-006B	SAMP	1	02/25/2017	03:09:59 AM
147	N023187-007B	SAMP	1	02/25/2017	03:14:35 AM
7	CCV10	CCV	1	02/25/2017	03:20:11 AM
1	CCB10	CCB	1	02/25/2017	03:25:18 AM
148	N023187-008B	SAMP	1	02/25/2017	03:29:48 AM
149	N023187-009B	SAMP	1	02/25/2017	03:35:25 AM
150	N023187-010B	SAMP	1	02/25/2017	03:40:01 AM
151	N023187-011B	SAMP	1	02/25/2017	03:44:37 AM
152	N023187-012B	SAMP	1	02/25/2017	03:49:13 AM
153	N023187-013B	SAMP	1	02/25/2017	03:53:49 AM
154	N023187-014B	SAMP	1	02/25/2017	03:59:25 AM
74	MB-61378	MBLK	1	02/25/2017	04:04:01 AM
75	LCS-61378	LCS	1	02/25/2017	04:09:35 AM
76	N023187-002C	SAMP	1	02/25/2017	04:15:09 AM
7	CCV11	CCV	1	02/25/2017	04:20:43 AM
1	CCB11	CCB	1	02/25/2017	04:25:50 AM
77	N023187-002C	SAMP	5	02/25/2017	04:30:20 AM
78	N023187-002C-PS	PS	1	02/25/2017	04:35:52 AM
79	N023187-002C-MS	MS	1	02/25/2017	04:41:24 AM
80	N023187-002C-MSD	MSD	1	02/25/2017	04:46:56 AM
81	N023187-003C	SAMP	1	02/25/2017	04:52:28 AM
82	N023187-004C	SAMP	1	02/25/2017	04:58:00 AM
83	N023187-005C	SAMP	1	02/25/2017	05:03:32 AM
84	N023187-006C	SAMP	1	02/25/2017	05:09:04 AM
85	N023187-007C	SAMP	1	02/25/2017	05:14:36 AM
86	N023187-008C	SAMP	1	02/25/2017	05:19:10 AM
7	CCV12	CCV	1	02/25/2017	05:23:13 AM
1	CCB12	CCB	1	02/25/2017	05:28:20 AM
87	N023187-009C	SAMP	1	02/25/2017	05:32:50 AM
88	N023187-010C	SAMP	1	02/25/2017	05:37:24 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
89	N023187-011C	SAMP	1	02/25/2017	05:42:33 AM
90	N023187-012C	SAMP	1	02/25/2017	05:47:09 AM
91	N023187-013C	SAMP	1	02/25/2017	05:52:43 AM
92	N023187-014C	SAMP	1	02/25/2017	05:57:19 AM
7	CCV13	CCV	1	02/25/2017	06:02:54 AM
1	CCB13	CCB	1	02/25/2017	06:08:01 AM
2	LLCCV3	CCV2	1	02/25/2017	06:12:31 AM
4	ICSA4	ICSA	1	02/25/2017	06:17:03 AM
5	ICSAB4	ICSAB	1	02/25/2017	06:22:46 AM
155	MB-61378	MBLK	1	02/25/2017	06:35:13 AM
156	LCS-61378	LCS	1	02/25/2017	06:39:18 AM
157	N023187-002C	SAMP	1	02/25/2017	06:44:54 AM
14	N023187-002C	SAMP	5	02/25/2017	06:49:30 AM
15	N023187-002C-PS	PS	1	02/25/2017	06:54:01 AM
16	N023187-002C-MS	MS	1	02/25/2017	06:59:34 AM
17	N023187-002C-MSD	MSD	1	02/25/2017	07:05:07 AM
18	N023187-003C	SAMP	1	02/25/2017	07:10:40 AM
19	N023187-004C	SAMP	1	02/25/2017	07:15:12 AM
20	N023187-005C	SAMP	1	02/25/2017	07:19:44 AM
7	CCV14	CCV	1	02/25/2017	07:24:17 AM
1	CCB14	CCB	1	02/25/2017	07:29:24 AM
21	N023187-006C	SAMP	1	02/25/2017	07:33:54 AM
22	N023187-007C	SAMP	1	02/25/2017	07:38:27 AM
23	N023187-008C	SAMP	1	02/25/2017	07:44:01 AM
24	N023187-009C	SAMP	1	02/25/2017	07:49:37 AM
25	N023187-010C	SAMP	1	02/25/2017	07:54:11 AM
26	N023187-011C	SAMP	1	02/25/2017	07:58:45 AM
27	N023187-012C	SAMP	1	02/25/2017	08:03:17 AM
28	N023187-013C	SAMP	1	02/25/2017	08:07:49 AM
29	N023187-014C	SAMP	1	02/25/2017	08:13:21 AM
7	CCV15	CCV	1	02/25/2017	08:17:53 AM
1	CCB15	CCB	1	02/25/2017	08:22:58 AM
2	LLCCV4	CCV2	1	02/25/2017	08:27:28 AM
4	ICSA5	ICSA	1	02/25/2017	08:32:00 AM
5	ICSAB5	ICSAB	1	02/25/2017	08:37:41 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 8:02:39**
Prep End Date: **2/24/2017 12:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: for 3/8/2017

Prep Batch **61379** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61379	Aqueous		25	☐	0	0	25	1.000		
MB-61379	Aqueous		25	☐	0	0	25	1.000		
N023187-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8752	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 8:02:39**
Prep End Date: **2/24/2017 12:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: for 3/8/2017

Prep Batch **61379** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023187-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8752	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170224B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/24/2017	02:26:30 PM	Fe	273.953	-151	0.00	mg/L	
Standard1	02/24/2017	02:30:31 PM	Fe	273.953	636	0.0200	mg/L	
Standard2	02/24/2017	02:35:02 PM	Fe	273.953	2113	0.050	mg/L	
Standard3	02/24/2017	02:39:33 PM	Fe	273.953	54290	2.000	mg/L	
Standard4	02/24/2017	02:44:07 PM	Fe	273.953	137941	5.000	mg/L	
Standard5	02/24/2017	02:49:41 PM	Fe	273.953	190807	7.500	mg/L	
Standard6	02/24/2017	02:54:47 PM	Fe	273.953	244405	10.000	mg/L	
Standard7	02/24/2017	02:59:55 PM	Fe	273.953	531389	20.000	mg/L	0.9994

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9821.759	20	10000	0	98.2	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.172	20	20.00	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9360.084	20	10000	0	93.6	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9362.661	20	10000	0	93.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9501.326	20	10000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10030.818	20	10000	0	100	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10004.823	20	10000	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.202	20	20.00	0	101	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9924.671	20	10000	0	99.2	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.828	20	10000	0	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9966.626	20	10000	0	99.7	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10034.877	20	10000	0	100	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ZZZZZZ** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.605	20	20.00	0	103	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10028.071	20	10000	0	100	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCV** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10060.695	20	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCV12	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCV	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10068.658	20	10000	0	101	90	110				

Sample ID	CCV13	SampType:	CCV	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCV	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579116

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10139.200	20	10000	0	101	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	ZZZZZZ	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.777	20	20.00	0	109	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.398	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.130	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.050	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.669112	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.606	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.468	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.444	20									

Sample ID **CCB7** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.280	20									

Sample ID **CCB8** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.745	20									

Sample ID **CCB9** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **CCB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.441	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	CCB10	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.798	20									

Sample ID	CCB11	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.321	20									

Sample ID	CCB12	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.779	20									

Sample ID	CCB13	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	113758
Client ID:	CCB	Batch ID:	R113758	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.322	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498538.831	50	500000	0	99.7	80	120				
Calcium	495252.064	500	500000	0	99.1	80	120				
Iron	168716.997	20	200000	0	84.4	80	120				
Magnesium	474099.585	100	500000	0	94.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2578958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	569636.202	50	500000	0	114	80	120				
Calcium	565868.636	500	500000	0	113	80	120				
Iron	193861.394	20	200000	0	96.9	80	120				
Magnesium	543479.421	100	500000	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502685.321	50	500000	0	101	80	120				
Calcium	495347.079	500	500000	0	99.1	80	120				
Iron	169676.315	20	200000	0	84.8	80	120				
Magnesium	473336.103	100	500000	0	94.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575855.499	50	500000	0	115	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	567519.645	500	500000	0	114	80	120				
Iron	195643.934	20	200000	0	97.8	80	120				
Magnesium	540688.824	100	500000	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502796.458	50	500000	0	101	80	120				
Calcium	509298.042	500	500000	0	102	80	120				
Iron	171365.442	20	200000	0	85.7	80	120				
Magnesium	499529.911	100	500000	0	99.9	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575236.818	50	500000	0	115	80	120				
Calcium	583096.631	500	500000	0	117	80	120				
Iron	196608.892	20	200000	0	98.3	80	120				
Magnesium	569084.337	100	500000	0	114	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	503155.808	50	500000	0	101	80	120				
Calcium	520373.898	500	500000	0	104	80	120				
Iron	172447.991	20	200000	0	86.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSA** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	521851.972	100	500000	0	104	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **113758**
Client ID: **ICSAB** Batch ID: **R113758** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	576417.626	50	500000	0	115	80	120				
Calcium	595654.746	500	500000	0	119	80	120				
Iron	191860.942	20	200000	0	95.9	80	120				
Magnesium	595534.163	100	500000	0	119	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.92	65-125	PASS
Standard2	ICAL	1	1.031	103.13	65-125	PASS
Standard3	ICAL	1	0.99	99.097	65-125	PASS
Standard4	ICAL	1	0.98	97.9	65-125	PASS
Standard5	ICAL	1	0.98	97.68	65-125	PASS
Standard6	ICAL	1	0.97	97.45	65-125	PASS
Standard7	ICAL	1	0.96	96.48	65-125	PASS
ICV	ICV	1	0.98	98.41	65-125	PASS
ICB	ICB	1	1.0043	100.43	65-125	PASS
LLICV	CCV1	1	1	99.8	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.88	88.17	65-125	PASS
CCV1	CCV	1	0.98	97.94	65-125	PASS
CCB1	CCB	1	1.009	100.9	65-125	PASS
CCV2	CCV	1	0.99	99.057	65-125	PASS
CCB2	CCB	1	1.02	102.04	65-125	PASS
CCV3	CCV	1	0.97	97.46	65-125	PASS
CCB3	CCB	1	1.0078	100.78	65-125	PASS
CCB3	CCB	1	0.98	98.43	65-125	PASS
CCV4	CCV	1	0.98	97.7	65-125	PASS
CCB4	CCB	1	0.99	99.4	65-125	PASS
CCV5	CCV	1	0.98	97.67	65-125	PASS
CCB5	CCB	1	0.99	99.002	65-125	PASS
LLCCV1	CCV2	1	1.013	101.26	65-125	PASS
ICSA2	ICSA	1	1	99.82	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.17	65-125	PASS
ICV	ICV	1	-0.00002	-0.002	65-125	NR!
ICB	ICB	1	1.005	100.5	65-125	PASS
LLCCV1	CCV2	1	1.018	101.79	65-125	PASS
ICSA2	ICSA	1	1	99.63	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.15	65-125	PASS
CCV6	CCV	1	0.99	98.64	65-125	PASS
CCB6	CCB	1	1	99.54	65-125	PASS
CCV7	CCV	1	0.98	98.42	65-125	PASS
CCB7	CCB	1	1	99.86	65-125	PASS
CCV8	CCV	1	0.99	98.63	65-125	PASS
CCB8	CCB	1	1.0031	100.31	65-125	PASS
MB-61379	MBLK	1	1.0083	100.83	65-125	PASS
LCS-61379	LCS	1	0.93	92.8	65-125	PASS
CCV9	CCV	1	0.99	98.74	65-125	PASS

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB9	CCB	1	1	99.98	65-125	PASS
LLCCV2	CCV2	1	1.026	102.58	65-125	PASS
ICSA3	ICSA	1	1	99.84	65-125	PASS
ICSAB3	ICSAB	1	0.87	86.96	65-125	PASS
N023187-002B	SAMP	1	0.96	95.71	65-125	PASS
N023187-002B	SAMP	5	0.99	98.55	65-125	PASS
N023187-002B-PS	PS	1	0.95	95.37	65-125	PASS
N023187-002B-MS	MS	1	0.97	96.95	65-125	PASS
N023187-002B-MSD	MSD	1	0.96	96.48	65-125	PASS
N023187-003B	SAMP	1	0.97	97.47	65-125	PASS
N023187-004B	SAMP	1	0.94	94.29	65-125	PASS
N023187-005B	SAMP	1	0.97	96.61	65-125	PASS
N023187-006B	SAMP	1	0.98	97.95	65-125	PASS
N023187-007B	SAMP	1	0.94	94.23	65-125	PASS
CCV10	CCV	1	0.98	98.29	65-125	PASS
CCB10	CCB	1	1.0005	100.05	65-125	PASS
N023187-008B	SAMP	1	0.94	93.6	65-125	PASS
N023187-009B	SAMP	1	0.94	93.87	65-125	PASS
N023187-010B	SAMP	1	0.96	96.41	65-125	PASS
N023187-011B	SAMP	1	0.95	94.8	65-125	PASS
N023187-012B	SAMP	1	0.97	97.39	65-125	PASS
N023187-013B	SAMP	1	0.94	93.72	65-125	PASS
N023187-014B	SAMP	1	0.98	97.52	65-125	PASS
CCV11	CCV	1	0.98	98.42	65-125	PASS
CCB11	CCB	1	1.0009	100.09	65-125	PASS
CCV12	CCV	1	0.98	98.34	65-125	PASS
CCB12	CCB	1	1.0034	100.34	65-125	PASS
CCV13	CCV	1	0.98	97.68	65-125	PASS
CCB13	CCB	1	1.0037	100.37	65-125	PASS
LLCCV3	CCV2	1	1.025	102.54	65-125	PASS
ICSA4	ICSA	1	1	99.61	65-125	PASS
ICSAB4	ICSAB	1	0.87	86.73	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023187
Test Method: EPA 6010B
Analysis Date: 2/24/2017

Matrix: Groundwater
Batch No.: 61379

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023187-002B DT 5X	Iron	ug/L	28.53792	NA	31.04196	8.07%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N023187-002B-PS**	SampType:	**PS**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**113758**
Client ID:	**ZZZZZZ**	Batch ID:	**61379**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/25/2017**	SeqNo:	**2579076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.765	20	100.0	31.04	88.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61378 **Instrument ID:** ICP-02
ASSET #: N023187 **Analyst:** CEI
Method: **Date Analyzed:** 2/24/2017

[X] EPA 6010B / 200.7 TOTAL [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/8/2017 Date:
2nd Level Reviewer 3/8/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023187-002C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02695 * 1 * (25/25) * 1000

Iron , ug/L = 26.95

Reporting results in two significant figures,

Iron , ug/L = 27

% RSD SUMMARY

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	6.26	15	PASS
Standard1	ICAL	1	Fe	0.02	2.0088	15	PASS
Standard2	ICAL	1	Fe	0.05	1.34	15	PASS
Standard3	ICAL	1	Fe	2	0.35	15	PASS
Standard4	ICAL	1	Fe	5	0.2	15	PASS
Standard5	ICAL	1	Fe	7.5	0.17	15	PASS
Standard6	ICAL	1	Fe	10	0.097	15	PASS
Standard7	ICAL	1	Fe	20	0.029	15	PASS
ICV	ICV	1	Fe	9.82	0.13	15	PASS
ICB	ICB	1	Fe	0.0004	153.15	15	<PQL
LLICV	CCV1	1	Fe	0.02	3.88	20	PASS
ICSA1	ICSA	1	Fe	168.72	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	193.86	0.19	15	PASS
CCV1	CCV	1	Fe	9.36	0.093	15	PASS
CCB1	CCB	1	Fe	0.0011	43.39	15	<PQL
CCV2	CCV	1	Fe	9.36	0.15	15	PASS
CCB2	CCB	1	Fe	0.001	14.2	15	PASS
CCV3	CCV	1	Fe	9.5	0.12	15	PASS
CCB3	CCB	1	Fe	0.00049	201.13	15	<PQL
CCB3	CCB	1	Fe	-0.00067	117.82	15	<PQL
CCV4	CCV	1	Fe	10.031	0.22	15	PASS
CCB4	CCB	1	Fe	0.00061	98.46	15	<PQL
CCV5	CCV	1	Fe	10.005	0.2	15	PASS
CCB5	CCB	1	Fe	0.00047	71.76	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.38	20	PASS
ICSA2	ICSA	1	Fe	169.63	0.19	15	PASS
ICSAB2	ICSAB	1	Fe	195.68	0.11	15	PASS
ICV	ICV	1	Fe	90.22	50.88	15	NR!
ICB	ICB	1	Fe	0.00053	62.4	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.047	20	PASS
ICSA2	ICSA	1	Fe	169.68	0.087	15	PASS
ICSAB2	ICSAB	1	Fe	195.64	0.11	15	PASS
CCV6	CCV	1	Fe	9.92	0.16	15	PASS
CCB6	CCB	1	Fe	0.00044	61.82	15	<PQL
CCV7	CCV	1	Fe	9.97	0.12	15	PASS
CCB7	CCB	1	Fe	0.00028	55.54	15	<PQL
CCV8	CCV	1	Fe	9.97	0.19	15	PASS
CCB8	CCB	1	Fe	0.00075	76.45	15	<PQL
CCV9	CCV	1	Fe	10.035	0.23	15	PASS
CCB9	CCB	1	Fe	0.00044	182.21	15	<PQL
LLCCV2	CCV2	1	Fe	0.021	1.76	20	PASS
ICSA3	ICSA	1	Fe	171.37	0.23	15	PASS

RSD SUMMARY: 170224B

Instrument ID: ICP-02

	Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
	ICSAB3	ICSAB	1	Fe	196.61	0.22	15	PASS
	CCV10	CCV	1	Fe	10.028	0.071	15	PASS
	CCB10	CCB	1	Fe	0.0008	136.81	15	<PQL
	MB-61378	MBLK	1	Fe	0.015	3.93	15	PASS
NR	LCS-61378	LCS	1	Fe	0.015	2.32	15	PASS
	N023187-002C	SAMP	1	Fe	0.012	4.3	15	PASS
	CCV11	CCV	1	Fe	10.061	0.032	15	PASS
	CCB11	CCB	1	Fe	0.00032	302.18	15	<PQL
	N023187-002C	SAMP	5	Fe	117.72	47.33	15	NR!
	N023187-002C-PS	PS	1	Fe	120.96	68.39	15	NR!
	N023187-002C-MS	MS	1	Fe	82.32	9.94	15	PASS
	N023187-002C-MSD	MSD	1	Fe	62.056	17.75	15	NR!
	N023187-003C	SAMP	1	Fe	84.45	34.46	15	NR!
NR	N023187-004C	SAMP	1	Fe	69.12	22.21	15	NR!
	N023187-005C	SAMP	1	Fe	80.3	20.51	15	NR!
	N023187-006C	SAMP	1	Fe	68.89	13.8	15	PASS
	N023187-007C	SAMP	1	Fe	0.028	5.44	15	PASS
	N023187-008C	SAMP	1	Fe	0.0013	11.58	15	PASS
	CCV12	CCV	1	Fe	10.069	0.12	15	PASS
	CCB12	CCB	1	Fe	0.0018	33.86	15	<PQL
	N023187-009C	SAMP	1	Fe	0.00023	76.088	15	<PQL
	N023187-010C	SAMP	1	Fe	10.41	0.17	15	PASS
	N023187-011C	SAMP	1	Fe	21.13	0.31	15	PASS
NR	N023187-012C	SAMP	1	Fe	37.38	0.5	15	PASS
	N023187-013C	SAMP	1	Fe	66.28	0.18	15	PASS
	N023187-014C	SAMP	1	Fe	6.67	0.32	15	PASS
	CCV13	CCV	1	Fe	10.14	0.21	15	PASS
	CCB13	CCB	1	Fe	0.0023	20.16	15	<PQL
	LLCCV3	CCV2	1	Fe	0.022	1.71	20	PASS
	ICSA4	ICSA	1	Fe	172.45	0.13	15	PASS
	ICSAB4	ICSAB	1	Fe	191.86	0.26	15	PASS
	MB-61378	MBLK	1	Fe	0.0037	16.56	15	<PQL
	LCS-61378	LCS	1	Fe	0.11	0.58	15	PASS
	N023187-002C	SAMP	1	Fe	0.027	2.59	15	PASS
	N023187-002C	SAMP	5	Fe	0.0062	14.66	15	PASS
	N023187-002C-PS	PS	1	Fe	0.14	0.85	15	PASS
	N023187-002C-MS	MS	1	Fe	0.13	0.15	15	PASS
	N023187-002C-MSD	MSD	1	Fe	0.13	0.36	15	PASS
	N023187-003C	SAMP	1	Fe	0.066	0.6	15	PASS
	N023187-004C	SAMP	1	Fe	0.14	0.26	15	PASS
	N023187-005C	SAMP	1	Fe	0.029	1.41	15	PASS
	CCV14	CCV	1	Fe	10.1	0.1	15	PASS

RSD SUMMARY: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB14	CCB	1	Fe	0.0014	14.22	15	PASS
N023187-006C	SAMP	1	Fe	0.023	2.071	15	PASS
N023187-007C	SAMP	1	Fe	1.59	0.23	15	PASS
N023187-008C	SAMP	1	Fe	3.11	0.61	15	PASS
N023187-009C	SAMP	1	Fe	0.033	1.019	15	PASS
N023187-010C	SAMP	1	Fe	0.054	1.3	15	PASS
N023187-011C	SAMP	1	Fe	0.052	0.69	15	PASS
N023187-012C	SAMP	1	Fe	0.034	0.79	15	PASS
N023187-013C	SAMP	1	Fe	2.99	0.55	15	PASS
N023187-014C	SAMP	1	Fe	0.024	2.57	15	PASS
CCV15	CCV	1	Fe	10.17	0.057	15	PASS
CCB15	CCB	1	Fe	0.00049	194.69	15	<PQL
LLCCV4	CCV2	1	Fe	0.021	2.53	20	PASS
ICSA5	ICSA	1	Fe	174.8	0.031	15	PASS
ICSAB5	ICSAB	1	Fe	194.22	0.13	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170224B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/24/2017	02:26:30 PM
2	Standard1	ICAL	1	02/24/2017	02:30:31 PM
3	Standard2	ICAL	1	02/24/2017	02:35:02 PM
4	Standard3	ICAL	1	02/24/2017	02:39:33 PM
5	Standard4	ICAL	1	02/24/2017	02:44:07 PM
6	Standard5	ICAL	1	02/24/2017	02:49:41 PM
7	Standard6	ICAL	1	02/24/2017	02:54:47 PM
8	Standard7	ICAL	1	02/24/2017	02:59:55 PM
9	ICV	ICV	1	02/24/2017	03:05:05 PM
1	ICB	ICB	1	02/24/2017	03:10:13 PM
2	LLICV	CCV1	1	02/24/2017	03:22:14 PM
4	ICSA1	ICSA	1	02/24/2017	03:26:46 PM
5	ICSAB1	ICSAB	1	02/24/2017	03:32:29 PM
74	MB-1	MBLK	1	02/24/2017	03:37:44 PM
75	MB-61353 STLC	MBLK	5	02/24/2017	03:42:18 PM
76	LCS-1	LCS	1	02/24/2017	03:46:21 PM
77	N023138-002A	SAMP	5	02/24/2017	03:51:30 PM
78	N023138-008A	SAMP	5	02/24/2017	03:56:06 PM
79	N022940-001A	SAMP	5	02/24/2017	04:01:41 PM
80	N022939-003F	SAMP	5	02/24/2017	04:06:16 PM
81	N023138-002A	SAMP	25	02/24/2017	04:11:51 PM
82	N023138-002A-MS	MS	5	02/24/2017	04:16:25 PM
83	N023138-002A-MSD	MSD	5	02/24/2017	04:21:01 PM
7	CCV1	CCV	1	02/24/2017	04:25:37 PM
1	CCB1	CCB	1	02/24/2017	04:30:45 PM
38	MB-61294	MBLK	1	02/24/2017	04:37:48 PM
64	LCS-61294	LCS	1	02/24/2017	04:41:50 PM
52	N023100-001A	SAMP	1	02/24/2017	04:47:25 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
53	N023100-002A	SAMP	1	02/24/2017	04:52:27 PM
54	N023100-003A	SAMP	1	02/24/2017	04:58:00 PM
55	N023100-004A	SAMP	1	02/24/2017	05:02:33 PM
56	N023100-005A	SAMP	1	02/24/2017	05:08:06 PM
57	N023100-006A	SAMP	1	02/24/2017	05:13:11 PM
58	N023100-007A	SAMP	1	02/24/2017	05:18:16 PM
59	N023100-008A	SAMP	1	02/24/2017	05:23:51 PM
7	CCV2	CCV	1	02/24/2017	05:28:57 PM
1	CCB2	CCB	1	02/24/2017	05:34:02 PM
40	N023101-001A	SAMP	1	02/24/2017	05:38:33 PM
41	N023101-002A	SAMP	1	02/24/2017	05:44:06 PM
42	N023101-003A	SAMP	1	02/24/2017	05:49:38 PM
43	N023101-004A	SAMP	1	02/24/2017	05:55:11 PM
44	N023101-005A	SAMP	1	02/24/2017	06:07:05 PM
45	N023101-006A	SAMP	1	02/24/2017	06:12:09 PM
46	N023101-007A	SAMP	1	02/24/2017	06:17:13 PM
47	N023101-008A	SAMP	1	02/24/2017	06:22:17 PM
48	N023101-009A	SAMP	1	02/24/2017	06:27:51 PM
49	N023101-010A	SAMP	1	02/24/2017	06:33:26 PM
7	CCV3	CCV	1	02/24/2017	06:38:32 PM
1	CCB3	CCB	1	02/24/2017	06:43:39 PM
1	CCB3	CCB	1	02/24/2017	06:48:36 PM
50	N023101-011A	SAMP	1	02/24/2017	06:53:06 PM
51	N023101-012A	SAMP	1	02/24/2017	06:58:12 PM
65	N023100-001A	SAMP	5	02/24/2017	07:03:16 PM
66	N023100-001A-PS	PS	1	02/24/2017	07:07:51 PM
67	N023100-001A-MS1	MS	1	02/24/2017	07:12:59 PM
68	N023100-001A-MSD1	MSD	1	02/24/2017	07:18:38 PM
69	N023100-001A	SAMP	25	02/24/2017	07:23:46 PM
70	N023100-001A-PS	PS	5	02/24/2017	07:28:19 PM
71	N023100-001A-MS1	MS	5	02/24/2017	07:33:53 PM
72	N023100-001A-MSD1	MSD	5	02/24/2017	07:39:27 PM
7	CCV4	CCV	1	02/24/2017	07:45:02 PM
1	CCB4	CCB	1	02/24/2017	07:50:10 PM
54	N023100-003A	SAMP	1	02/24/2017	07:54:40 PM
73	N023101-005A	SAMP	5	02/24/2017	07:59:13 PM
74	N023101-006A	SAMP	5	02/24/2017	08:04:48 PM
75	N023101-007A	SAMP	5	02/24/2017	08:10:23 PM
76	N023101-010A	SAMP	5	02/24/2017	08:15:57 PM
7	CCV5	CCV	1	02/24/2017	08:21:31 PM
1	CCB5	CCB	1	02/24/2017	08:26:38 PM
2	LLCCV1	CCV2	1	02/24/2017	08:31:08 PM
4	ICSA2	ICSA	1	02/24/2017	08:35:41 PM
5	ICSAB2	ICSAB	1	02/24/2017	08:41:24 PM
9	ICV	ICV	1	02/24/2017	09:25:59 PM
1	ICB	ICB	1	02/24/2017	09:31:30 PM

NR

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	02/24/2017	09:40:55 PM
4	ICSA2	ICSA	1	02/24/2017	09:45:27 PM
5	ICSAB2	ICSAB	1	02/24/2017	09:51:10 PM
98	MB-61365	MBLK	1	02/24/2017	10:25:07 PM
99	LCS-61365	LCS	1	02/24/2017	10:29:12 PM
100	N023177-001B	SAMP	1	02/24/2017	10:34:48 PM
101	N023177-001B	SAMP	5	02/24/2017	10:39:23 PM
102	N023177-001B-PS	PS	1	02/24/2017	10:43:57 PM
103	N023177-001B-MS	MS	1	02/24/2017	10:49:34 PM
104	N023177-001B-MSD	MSD	1	02/24/2017	10:55:11 PM
105	N023177-002B	SAMP	1	02/24/2017	11:00:48 PM
106	N023177-003B	SAMP	1	02/24/2017	11:05:23 PM
107	N023177-004B	SAMP	1	02/24/2017	11:09:58 PM
7	CCV6	CCV	1	02/24/2017	11:14:33 PM
1	CCB6	CCB	1	02/24/2017	11:19:41 PM
108	N023177-005B	SAMP	1	02/24/2017	11:24:11 PM
109	N023177-006B	SAMP	1	02/24/2017	11:28:47 PM
110	N023177-007B	SAMP	1	02/24/2017	11:33:22 PM
111	N023177-008B	SAMP	1	02/24/2017	11:37:57 PM
112	N023177-009B	SAMP	1	02/24/2017	11:42:33 PM
113	N023177-012B	SAMP	1	02/24/2017	11:47:09 PM
114	N023177-013B	SAMP	1	02/24/2017	11:51:45 PM
115	N023177-014B	SAMP	1	02/24/2017	11:56:21 PM
116	N023177-015B	SAMP	1	02/25/2017	12:00:57 AM
117	MB-61364	MBLK	1	02/25/2017	12:05:33 AM
7	CCV7	CCV	1	02/25/2017	12:09:38 AM
1	CCB7	CCB	1	02/25/2017	12:14:46 AM
118	LCS-61364	LCS	1	02/25/2017	12:19:16 AM
119	N023177-001C	SAMP	1	02/25/2017	12:24:52 AM
120	N023177-001C	SAMP	5	02/25/2017	12:29:28 AM
121	N023177-001C-PS	PS	1	02/25/2017	12:34:03 AM
122	N023177-001C-MS	MS	1	02/25/2017	12:39:40 AM
123	N023177-001C-MSD	MSD	1	02/25/2017	12:45:17 AM
124	N023177-002C	SAMP	1	02/25/2017	12:50:54 AM
125	N023177-003C	SAMP	1	02/25/2017	12:55:29 AM
126	N023177-004C	SAMP	1	02/25/2017	01:00:04 AM
127	N023177-005C	SAMP	1	02/25/2017	01:04:39 AM
7	CCV8	CCV	1	02/25/2017	01:09:14 AM
1	CCB8	CCB	1	02/25/2017	01:14:21 AM
128	N023177-006C	SAMP	1	02/25/2017	01:18:51 AM
129	N023177-007C	SAMP	1	02/25/2017	01:23:26 AM
130	N023177-008C	SAMP	1	02/25/2017	01:28:01 AM
131	N023177-009C	SAMP	1	02/25/2017	01:32:36 AM
132	N023177-012C	SAMP	1	02/25/2017	01:37:11 AM
133	N023177-013C	SAMP	1	02/25/2017	01:41:46 AM
134	N023177-014C	SAMP	1	02/25/2017	01:46:21 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
135	N023177-015C	SAMP	1	02/25/2017	01:50:57 AM
136	MB-61379	MBLK	1	02/25/2017	01:55:32 AM
137	LCS-61379	LCS	1	02/25/2017	01:59:36 AM
7	CCV9	CCV	1	02/25/2017	02:04:56 AM
1	CCB9	CCB	1	02/25/2017	02:10:03 AM
2	LLCCV2	CCV2	1	02/25/2017	02:14:33 AM
4	ICSA3	ICSA	1	02/25/2017	02:19:06 AM
5	ICSAB3	ICSAB	1	02/25/2017	02:24:49 AM
138	N023187-002B	SAMP	1	02/25/2017	02:30:05 AM
139	N023187-002B	SAMP	5	02/25/2017	02:34:42 AM
140	N023187-002B-PS	PS	1	02/25/2017	02:39:17 AM
141	N023187-002B-MS	MS	1	02/25/2017	02:44:55 AM
142	N023187-002B-MSD	MSD	1	02/25/2017	02:50:33 AM
143	N023187-003B	SAMP	1	02/25/2017	02:56:11 AM
144	N023187-004B	SAMP	1	02/25/2017	03:00:47 AM
145	N023187-005B	SAMP	1	02/25/2017	03:05:23 AM
146	N023187-006B	SAMP	1	02/25/2017	03:09:59 AM
147	N023187-007B	SAMP	1	02/25/2017	03:14:35 AM
7	CCV10	CCV	1	02/25/2017	03:20:11 AM
1	CCB10	CCB	1	02/25/2017	03:25:18 AM
148	N023187-008B	SAMP	1	02/25/2017	03:29:48 AM
149	N023187-009B	SAMP	1	02/25/2017	03:35:25 AM
150	N023187-010B	SAMP	1	02/25/2017	03:40:01 AM
151	N023187-011B	SAMP	1	02/25/2017	03:44:37 AM
152	N023187-012B	SAMP	1	02/25/2017	03:49:13 AM
153	N023187-013B	SAMP	1	02/25/2017	03:53:49 AM
154	N023187-014B	SAMP	1	02/25/2017	03:59:25 AM
74	MB-61378	MBLK	1	02/25/2017	04:04:01 AM
75	LCS-61378	LCS	1	02/25/2017	04:09:35 AM
76	N023187-002C	SAMP	1	02/25/2017	04:15:09 AM
7	CCV11	CCV	1	02/25/2017	04:20:43 AM
1	CCB11	CCB	1	02/25/2017	04:25:50 AM
77	N023187-002C	SAMP	5	02/25/2017	04:30:20 AM
78	N023187-002C-PS	PS	1	02/25/2017	04:35:52 AM
79	N023187-002C-MS	MS	1	02/25/2017	04:41:24 AM
80	N023187-002C-MSD	MSD	1	02/25/2017	04:46:56 AM
81	N023187-003C	SAMP	1	02/25/2017	04:52:28 AM
82	N023187-004C	SAMP	1	02/25/2017	04:58:00 AM
83	N023187-005C	SAMP	1	02/25/2017	05:03:32 AM
84	N023187-006C	SAMP	1	02/25/2017	05:09:04 AM
85	N023187-007C	SAMP	1	02/25/2017	05:14:36 AM
86	N023187-008C	SAMP	1	02/25/2017	05:19:10 AM
7	CCV12	CCV	1	02/25/2017	05:23:13 AM
1	CCB12	CCB	1	02/25/2017	05:28:20 AM
87	N023187-009C	SAMP	1	02/25/2017	05:32:50 AM
88	N023187-010C	SAMP	1	02/25/2017	05:37:24 AM

NR

NR

NR

	A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
	89	N023187-011C	SAMP	1	02/25/2017	05:42:33 AM
NR	90	N023187-012C	SAMP	1	02/25/2017	05:47:09 AM
	91	N023187-013C	SAMP	1	02/25/2017	05:52:43 AM
	92	N023187-014C	SAMP	1	02/25/2017	05:57:19 AM
	7	CCV13	CCV	1	02/25/2017	06:02:54 AM
	1	CCB13	CCB	1	02/25/2017	06:08:01 AM
	2	LLCCV3	CCV2	1	02/25/2017	06:12:31 AM
	4	ICSA4	ICSA	1	02/25/2017	06:17:03 AM
	5	ICSAB4	ICSAB	1	02/25/2017	06:22:46 AM
	155	MB-61378	MBLK	1	02/25/2017	06:35:13 AM
	156	LCS-61378	LCS	1	02/25/2017	06:39:18 AM
	157	N023187-002C	SAMP	1	02/25/2017	06:44:54 AM
	14	N023187-002C	SAMP	5	02/25/2017	06:49:30 AM
	15	N023187-002C-PS	PS	1	02/25/2017	06:54:01 AM
	16	N023187-002C-MS	MS	1	02/25/2017	06:59:34 AM
	17	N023187-002C-MSD	MSD	1	02/25/2017	07:05:07 AM
	18	N023187-003C	SAMP	1	02/25/2017	07:10:40 AM
	19	N023187-004C	SAMP	1	02/25/2017	07:15:12 AM
	20	N023187-005C	SAMP	1	02/25/2017	07:19:44 AM
	7	CCV14	CCV	1	02/25/2017	07:24:17 AM
	1	CCB14	CCB	1	02/25/2017	07:29:24 AM
	21	N023187-006C	SAMP	1	02/25/2017	07:33:54 AM
	22	N023187-007C	SAMP	1	02/25/2017	07:38:27 AM
	23	N023187-008C	SAMP	1	02/25/2017	07:44:01 AM
	24	N023187-009C	SAMP	1	02/25/2017	07:49:37 AM
	25	N023187-010C	SAMP	1	02/25/2017	07:54:11 AM
	26	N023187-011C	SAMP	1	02/25/2017	07:58:45 AM
	27	N023187-012C	SAMP	1	02/25/2017	08:03:17 AM
	28	N023187-013C	SAMP	1	02/25/2017	08:07:49 AM
	29	N023187-014C	SAMP	1	02/25/2017	08:13:21 AM
	7	CCV15	CCV	1	02/25/2017	08:17:53 AM
	1	CCB15	CCB	1	02/25/2017	08:22:58 AM
	2	LLCCV4	CCV2	1	02/25/2017	08:27:28 AM
	4	ICSA5	ICSA	1	02/25/2017	08:32:00 AM
	5	ICSAB5	ICSAB	1	02/25/2017	08:37:41 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 8:02:09**
Prep End Date: **2/24/2017 12:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: for 3/8/2017

Prep Batch **61378** Prep Code: **3010_W** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61378	Aqueous		25	☐	0	0	25	1.000		
MB-61378	Aqueous		25	☐	0	0	25	1.000		
N023187-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8752	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 8:02:09**
Prep End Date: **2/24/2017 12:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: for 3/8/2017

Prep Batch **61378** Prep Code: **3010_W** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023187-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-014C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8745	HYDROCHLORIC ACID
8752	NITIRC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170224B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/24/2017	02:26:30 PM	Fe	273.953	-151	0.00	mg/L	
Standard1	02/24/2017	02:30:31 PM	Fe	273.953	636	0.0200	mg/L	
Standard2	02/24/2017	02:35:02 PM	Fe	273.953	2113	0.050	mg/L	
Standard3	02/24/2017	02:39:33 PM	Fe	273.953	54290	2.000	mg/L	
Standard4	02/24/2017	02:44:07 PM	Fe	273.953	137941	5.000	mg/L	
Standard5	02/24/2017	02:49:41 PM	Fe	273.953	190807	7.500	mg/L	
Standard6	02/24/2017	02:54:47 PM	Fe	273.953	244405	10.000	mg/L	
Standard7	02/24/2017	02:59:55 PM	Fe	273.953	531389	20.000	mg/L	0.9994

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9821.759	20	10000	0	98.2	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.172	20	20.00	0	101	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9360.084	20	10000	0	93.6	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9362.661	20	10000	0	93.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9501.326	20	10000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10030.818	20	10000	0	100	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10004.823	20	10000	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.202	20	20.00	0	101	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9924.671	20	10000	0	99.2	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9973.828	20	10000	0	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV8** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9966.626	20	10000	0	99.7	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10034.877	20	10000	0	100	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ZZZZZZ** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.605	20	20.00	0	103	70	130				

Sample ID **CCV10** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10028.071	20	10000	0	100	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCV** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10060.695	20	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	CCV12	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	113759
Client ID:	CCV	Batch ID:	R113759	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10068.658	20	10000	0	101	90	110				

Sample ID	CCV13	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	113759
Client ID:	CCV	Batch ID:	R113759	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10139.200	20	10000	0	101	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	113759
Client ID:	ZZZZZZ	Batch ID:	R113759	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579311

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.777	20	20.00	0	109	70	130				

Sample ID	CCV14	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	113759
Client ID:	CCV	Batch ID:	R113759	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10101.925	20	10000	0	101	90	110				

Sample ID	CCV15	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	113759
Client ID:	CCV	Batch ID:	R113759	TestNo:	EPA 6010B			Analysis Date:	2/25/2017	SeqNo:	2579335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10168.823	20	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**LLCCV4**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:			RunNo:	**113759**
Client ID:	**ZZZZZZ**	Batch ID:	**R113759**	TestNo:	**EPA 6010B**			Analysis Date:	**2/25/2017**		SeqNo:	**2579337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.306	20	20.00	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.398	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.130	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.050	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.669112	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.606	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB5	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/24/2017**	SeqNo: **2579207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.468	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB6	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/24/2017**	SeqNo: **2579227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.444	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB7	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.280	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB8	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.745	20									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB9	**CCB**	**6010_WPGE**	**ug/L**		**113759**
Client ID: **CCB**	Batch ID: **R113759**	TestNo: **EPA 6010B**		Analysis Date: **2/25/2017**	SeqNo: **2579263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.441	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB10** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.798	20									

Sample ID **CCB11** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.321	20									

Sample ID **CCB12** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.779	20									

Sample ID **CCB13** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	2.322	20									

Sample ID **CCB14** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.426	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB15** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **CCB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.493	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498538.831	50	500000	0	99.7	80	120				
Calcium	495252.064	500	500000	0	99.1	80	120				
Iron	168716.997	20	200000	0	84.4	80	120				
Magnesium	474099.585	100	500000	0	94.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	569636.202	50	500000	0	114	80	120				
Calcium	565868.636	500	500000	0	113	80	120				
Iron	193861.394	20	200000	0	96.9	80	120				
Magnesium	543479.421	100	500000	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502685.321	50	500000	0	101	80	120				
Calcium	495347.079	500	500000	0	99.1	80	120				
Iron	169676.315	20	200000	0	84.8	80	120				
Magnesium	473336.103	100	500000	0	94.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575855.499	50	500000	0	115	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/24/2017** SeqNo: **2579215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	567519.645	500	500000	0	114	80	120				
Iron	195643.934	20	200000	0	97.8	80	120				
Magnesium	540688.824	100	500000	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502796.458	50	500000	0	101	80	120				
Calcium	509298.042	500	500000	0	102	80	120				
Iron	171365.442	20	200000	0	85.7	80	120				
Magnesium	499529.911	100	500000	0	99.9	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	575236.818	50	500000	0	115	80	120				
Calcium	583096.631	500	500000	0	117	80	120				
Iron	196608.892	20	200000	0	98.3	80	120				
Magnesium	569084.337	100	500000	0	114	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	503155.808	50	500000	0	101	80	120				
Calcium	520373.898	500	500000	0	104	80	120				
Iron	172447.991	20	200000	0	86.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	521851.972	100	500000	0	104	80	120				

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	576417.626	50	500000	0	115	80	120				
Calcium	595654.746	500	500000	0	119	80	120				
Iron	191860.942	20	200000	0	95.9	80	120				
Magnesium	595534.163	100	500000	0	119	80	120				

Sample ID **ICSA5** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSA** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508366.201	50	500000	0	102	80	120				
Calcium	519794.929	500	500000	0	104	80	120				
Iron	174797.338	20	200000	0	87.4	80	120				
Magnesium	518898.061	100	500000	0	104	80	120				

Sample ID **ICSAB5** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **113759**
Client ID: **ICSAB** Batch ID: **R113759** TestNo: **EPA 6010B** Analysis Date: **2/25/2017** SeqNo: **2579339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	583664.801	50	500000	0	117	80	120				
Calcium	596796.293	500	500000	0	119	80	120				
Iron	194215.763	20	200000	0	97.1	80	120				
Magnesium	595324.919	100	500000	0	119	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.92	65-125	PASS
Standard2	ICAL	1	1.031	103.13	65-125	PASS
Standard3	ICAL	1	0.99	99.097	65-125	PASS
Standard4	ICAL	1	0.98	97.9	65-125	PASS
Standard5	ICAL	1	0.98	97.68	65-125	PASS
Standard6	ICAL	1	0.97	97.45	65-125	PASS
Standard7	ICAL	1	0.96	96.48	65-125	PASS
ICV	ICV	1	0.98	98.41	65-125	PASS
ICB	ICB	1	1.0043	100.43	65-125	PASS
LLICV	CCV1	1	1	99.8	65-125	PASS
ICSA1	ICSA	1	0.99	99.49	65-125	PASS
ICSAB1	ICSAB	1	0.88	88.17	65-125	PASS
CCV1	CCV	1	0.98	97.94	65-125	PASS
CCB1	CCB	1	1.009	100.9	65-125	PASS
CCV2	CCV	1	0.99	99.057	65-125	PASS
CCB2	CCB	1	1.02	102.04	65-125	PASS
CCV3	CCV	1	0.97	97.46	65-125	PASS
CCB3	CCB	1	1.0078	100.78	65-125	PASS
CCB3	CCB	1	0.98	98.43	65-125	PASS
CCV4	CCV	1	0.98	97.7	65-125	PASS
CCB4	CCB	1	0.99	99.4	65-125	PASS
CCV5	CCV	1	0.98	97.67	65-125	PASS
CCB5	CCB	1	0.99	99.002	65-125	PASS
LLCCV1	CCV2	1	1.013	101.26	65-125	PASS
ICSA2	ICSA	1	1	99.82	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.17	65-125	PASS
ICV	ICV	1	-0.00002	-0.002	65-125	NR!
ICB	ICB	1	1.005	100.5	65-125	PASS
LLCCV1	CCV2	1	1.018	101.79	65-125	PASS
ICSA2	ICSA	1	1	99.63	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.15	65-125	PASS
CCV6	CCV	1	0.99	98.64	65-125	PASS
CCB6	CCB	1	1	99.54	65-125	PASS
CCV7	CCV	1	0.98	98.42	65-125	PASS
CCB7	CCB	1	1	99.86	65-125	PASS
CCV8	CCV	1	0.99	98.63	65-125	PASS
CCB8	CCB	1	1.0031	100.31	65-125	PASS
CCV9	CCV	1	0.99	98.74	65-125	PASS
CCB9	CCB	1	1	99.98	65-125	PASS
LLCCV2	CCV2	1	1.026	102.58	65-125	PASS

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

	Sample Name	Type	DF	Yttrium, 1.0 mg/L			
				Reported Conc	%REC	Criteria	Comment
	ICSA3	ICSA	1	1	99.84	65-125	PASS
	ICSAB3	ICSAB	1	0.87	86.96	65-125	PASS
	CCV10	CCV	1	0.98	98.29	65-125	PASS
	CCB10	CCB	1	1.0005	100.05	65-125	PASS
	MB-61378	MBLK	1	0.92	91.6	65-125	PASS
NR	LCS-61378	LCS	1	0.9	90.23	65-125	PASS
	N023187-002C	SAMP	1	0.91	91.21	65-125	PASS
	CCV11	CCV	1	0.98	98.42	65-125	PASS
	CCB11	CCB	1	1.0009	100.09	65-125	PASS
	N023187-002C	SAMP	5	-0.00002	-0.002	65-125	NR!
	N023187-002C-PS	PS	1	-0.00002	-0.002	65-125	NR!
	N023187-002C-MS	MS	1	-0.00003	-0.003	65-125	NR!
	N023187-002C-MSD	MSD	1	-0.00004	-0.004	65-125	NR!
NR	N023187-003C	SAMP	1	-0.00003	-0.003	65-125	NR!
	N023187-004C	SAMP	1	-0.00004	-0.004	65-125	NR!
	N023187-005C	SAMP	1	-0.00003	-0.003	65-125	NR!
	N023187-006C	SAMP	1	-0.00004	-0.004	65-125	NR!
	N023187-007C	SAMP	1	1.065	106.5	65-125	PASS
	N023187-008C	SAMP	1	1	99.98	65-125	PASS
	CCV12	CCV	1	0.98	98.34	65-125	PASS
	CCB12	CCB	1	1.0034	100.34	65-125	PASS
	N023187-009C	SAMP	1	0.99	99.21	65-125	PASS
	N023187-010C	SAMP	1	0.98	97.75	65-125	PASS
NR	N023187-011C	SAMP	1	0.9	90.25	65-125	PASS
	N023187-012C	SAMP	1	0.85	84.86	65-125	PASS
	N023187-013C	SAMP	1	0.8	80.39	65-125	PASS
	N023187-014C	SAMP	1	0.85	84.67	65-125	PASS
	CCV13	CCV	1	0.98	97.68	65-125	PASS
	CCB13	CCB	1	1.0037	100.37	65-125	PASS
	LLCCV3	CCV2	1	1.025	102.54	65-125	PASS
	ICSA4	ICSA	1	1	99.61	65-125	PASS
	ICSAB4	ICSAB	1	0.87	86.73	65-125	PASS
	MB-61378	MBLK	1	1.0008	100.08	65-125	PASS
	LCS-61378	LCS	1	0.91	91.4	65-125	PASS
	N023187-002C	SAMP	1	0.97	97.085	65-125	PASS
	N023187-002C	SAMP	5	0.98	98.15	65-125	PASS
	N023187-002C-PS	PS	1	0.95	95.18	65-125	PASS
	N023187-002C-MS	MS	1	0.97	97.041	65-125	PASS
	N023187-002C-MSD	MSD	1	0.97	96.61	65-125	PASS
	N023187-003C	SAMP	1	0.97	96.89	65-125	PASS
	N023187-004C	SAMP	1	0.97	96.95	65-125	PASS

INTERNAL STANDARD: 170224B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N023187-005C	SAMP	1	0.98	97.58	65-125	PASS
CCV14	CCV	1	1	99.76	65-125	PASS
CCB14	CCB	1	1.0054	100.54	65-125	PASS
N023187-006C	SAMP	1	0.96	95.53	65-125	PASS
N023187-007C	SAMP	1	0.94	94.23	65-125	PASS
N023187-008C	SAMP	1	0.92	91.81	65-125	PASS
N023187-009C	SAMP	1	0.98	97.82	65-125	PASS
N023187-010C	SAMP	1	0.97	96.95	65-125	PASS
N023187-011C	SAMP	1	0.98	98.31	65-125	PASS
N023187-012C	SAMP	1	0.98	98.024	65-125	PASS
N023187-013C	SAMP	1	0.94	94.21	65-125	PASS
N023187-014C	SAMP	1	0.97	97.46	65-125	PASS
CCV15	CCV	1	1.0047	100.47	65-125	PASS
CCB15	CCB	1	0.99	98.98	65-125	PASS
LLCCV4	CCV2	1	1.039	103.9	65-125	PASS
ICSA5	ICSA	1	1.017	101.73	65-125	PASS
ICSAB5	ICSAB	1	0.88	88.29	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023187
Test Method: EPA 6010B
Analysis Date: 2/24/2017

Matrix: Groundwater
Batch No.: 61378

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023187-002C DT 5X	Iron	ug/L	31.03682	NA	26.95084	15.16%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N023187-002C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**113759**
Client ID:	**ZZZZZZ**	Batch ID:	**61378**	TestNo:	**EPA 6010B**		**EPA 3010A**	Analysis Date:	**2/25/2017**	SeqNo:	**2579318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	136.293	20	100.0	26.95	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61386 **Instrument ID:** ICPMS-02
ASSET #: N023187 **Analyst:** CEI
Method: **Date Analyzed:** 3/3/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X				
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ba in LLCCV2 failed, bias high. However Ba have high concentration, thus reported.
%RSD of Se in STD 2 failed > 15%. However %RSD of LLICV passed criteria.
Ba & Mn in N023187-007B, 008B & 013B is over linear range. For dilution.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/8/2017 Date: –
2nd Level Reviewer 3/8/2017 Date: –

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61386
ASSET #: N023187
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 3/6/2017

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X				
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ba & Mn in N023187-007B, 008B & 013B only.
%Rec of Ba in LLICV failed, bias high. However Ba have high concentration, thus reported.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 3/8/2017 Date: _____

2nd Level Reviewer _____ 3/8/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023187-002B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.15695 * 1 * (25/25)

Arsenic , ug/L = 2.15695

Reporting results in two significant figures,

Arsenic , ug/L = 2.2

% RSD SUMMARY

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.18	1.067	15	PASS	0.11	5.072	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	1.79	15	PASS	0.5	2.82	15	PASS
Std3-5/50 ppb	ICAL	1	5.096	0.5	15	PASS	5.029	0.95	15	PASS
Std4-10/100 ppb	ICAL	1	10.071	0.37	15	PASS	10.11	0.84	15	PASS
Std5-20/200 ppb	ICAL	1	19.93	0.25	15	PASS	20.24	0.5	15	PASS
Std6-40/400 ppb	ICAL	1	39.56	0.72	15	PASS	39.89	0.87	15	PASS
Std7-100/1000 ppb	ICAL	1	100.18	1.033	15	PASS	99.98	0.98	15	PASS
Std8-200/2000 ppb	ICAL	1	196.99	0.59	15	PASS	194.71	1.51	15	PASS
ICV	ICV	1	99.67	0.77	15	PASS	9.74	0.52	15	PASS
ICB	ICB	1	0.0037	97.39	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.95	0.24	20	PASS	0.91	2.98	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.015	65.58	15	<PQL
ICSAB1	ICSAB	1	19.89	0.47	15	PASS	18.63	1.28	15	PASS
CCV1	CCV	1	20.13	0.53	15	PASS	20.23	0.66	15	PASS
CCB1	CCB	1	0.011	78.78	15	<PQL	0.02	25.44	15	<PQL
CCV2	CCV	1	20.42	0.62	15	PASS	20.33	0.51	15	PASS
CCB2	CCB	1	0.01	6.8	15	PASS	0.025	27.85	15	<PQL
MB-61386	MBLK	1	<0.000	N/A	15	<PQL	0.009	41.29	15	<PQL
LCS-61386	LCS	1	103.27	0.96	15	PASS	9.92	1.82	15	PASS
N023187-002B	SAMP	1	124.093	0.26	15	PASS	0.022	27.74	15	<PQL
N023187-002B	SAMP	5	26.6	0.66	15	PASS	0.026	27.44	15	<PQL
N023187-002B-PS	PS	1	219.29	0.26	15	PASS	9.039	0.69	15	PASS
CCV3	CCV	1	20.34	0.64	15	PASS	20.28	0.76	15	PASS
CCB3	CCB	1	0.012	33.87	15	<PQL	0.01	55.4	15	<PQL
LLCCV1	CCV2	1	0.96	1.3	20	PASS	0.93	3.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.96	0.17	15	PASS	18.59	0.83	15	PASS
N023187-002B-MS	MS	1	235.96	0.81	15	PASS	8.66	0.1	15	PASS
N023187-002B-MSD	MSD	1	234.59	0.54	15	PASS	8.72	0.075	15	PASS
N023187-003B	SAMP	1	132.15	0.24	15	PASS	0.0075	134.58	15	<PQL
N023187-004B	SAMP	1	127.56	0.6	15	PASS	0.01	29.087	15	<PQL
N023187-005B	SAMP	1	126.25	0.91	15	PASS	0.022	37.17	15	<PQL
N023187-006B	SAMP	1	125.12	1.18	15	PASS	0.02	9.28	15	PASS
N023187-007B	SAMP	1	191.52	0.22	15	PASS	0.16	4.27	15	PASS
N023187-008B	SAMP	1	216.17	0.15	15	PASS	<0.000	N/A	15	<PQL
N023187-009B	SAMP	1	125.44	1.17	15	PASS	0.044	6.27	15	PASS
N023187-010B	SAMP	1	129.18	0.75	15	PASS	0.043	19.11	15	<PQL
CCV4	CCV	1	21.62	0.67	15	PASS	19.89	1.21	15	PASS
CCB4	CCB	1	0.014	12.17	15	PASS	0.0079	13.76	15	PASS
N023187-011B	SAMP	1	125.89	0.48	15	PASS	0.058	10.7	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023187-012B	SAMP	1	124.6	0.53	15	PASS	0.024	3.12	15	PASS
N023187-013B	SAMP	1	206.56	0.2	15	PASS	0.042	15.36	15	<PQL
N023187-014B	SAMP	1	126.3	0.55	15	PASS	0.047	9.63	15	PASS
N023187-002B	SAMP	25	5.8	0.81	15	PASS	0.023	25.58	15	<PQL
N023187-002B-PS	PS	5	49.32	0.83	15	PASS	2.031	2.06	15	PASS
N023187-002B-MS	MS	5	51.57	0.19	15	PASS	2.095	2.62	15	PASS
N023187-002B-MSD	MSD	5	51.34	0.24	15	PASS	2.069	0.45	15	PASS
CCV5	CCV	1	21.41	0.46	15	PASS	20.028	0.8	15	PASS
CCB5	CCB	1	0.017	11.84	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.49	1.62	20	PASS	0.93	4.74	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.15	0.61	15	PASS	18.52	0.68	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	0.96	15	PASS	0.099	22.89	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	2.17	15	PASS	0.51	5.3	15	PASS
Std3-5/50 ppb	ICAL	1	5.1	0.57	15	PASS	5	2.46	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.53	15	PASS	10.16	2.21	15	PASS
Std5-20/200 ppb	ICAL	1	20.36	0.62	15	PASS	20.18	0.14	15	PASS
Std6-40/400 ppb	ICAL	1	40.26	0.26	15	PASS	40.16	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	99.79	0.85	15	PASS	99.45	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	197.26	0.79	15	PASS	200.22	1.027	15	PASS
ICV	ICV	1	98.29	0.55	15	PASS	10.065	1.94	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.018	26.59	15	<PQL
LLICV	CCV1	1	0.47	4.85	20	PASS	0.099	17.065	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.029	35.58	15	<PQL
ICSAB1	ICSAB	1	23.35	1.36	15	PASS	20.28	1.11	15	PASS
CCV1	CCV	1	20.067	1.051	15	PASS	19.79	1.4	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0053	78.7	15	<PQL
CCV2	CCV	1	19.94	1.43	15	PASS	19.65	0.28	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-61386	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-61386	LCS	1	97.44	0.48	15	PASS	9.85	1.87	15	PASS
N023187-002B	SAMP	1	0.72	7.73	15	PASS	2.16	1.7	15	PASS
N023187-002B	SAMP	5	0.14	18.72	15	<PQL	0.47	2.44	15	PASS
N023187-002B-PS	PS	1	89.37	0.68	15	PASS	11.87	1.38	15	PASS
CCV3	CCV	1	19.99	1.069	15	PASS	19.94	1.53	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0068	58.42	15	<PQL
LLCCV1	CCV2	1	0.45	2.051	20	PASS	0.084	4.45	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.029	99.41	15	<PQL
ICSAB2	ICSAB	1	23.77	1.18	15	PASS	20.16	1.039	15	PASS
N023187-002B-MS	MS	1	90.62	0.69	15	PASS	12.13	0.29	15	PASS
N023187-002B-MSD	MSD	1	91.68	0.29	15	PASS	11.8	1.48	15	PASS
N023187-003B	SAMP	1	1.8	1.38	15	PASS	2.21	2.22	15	PASS
N023187-004B	SAMP	1	2.69	1.98	15	PASS	2.18	2.57	15	PASS
N023187-005B	SAMP	1	0.019	93.11	15	<PQL	2.16	2.28	15	PASS
N023187-006B	SAMP	1	0.083	73.16	15	<PQL	2.15	1.3	15	PASS
N023187-007B	SAMP	1	343.92	1.095	15	PASS	3.04	4.42	15	PASS
N023187-008B	SAMP	1	414.68	1.49	15	PASS	2.15	4.52	15	PASS
N023187-009B	SAMP	1	0.5	3.81	15	PASS	2.1	4.42	15	PASS
N023187-010B	SAMP	1	0.46	6.6	15	PASS	2.31	2.65	15	PASS
CCV4	CCV	1	19.8	0.86	15	PASS	19.7	1.59	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.00098	541.25	15	<PQL
N023187-011B	SAMP	1	0.56	2.073	15	PASS	2.14	2.52	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023187-012B	SAMP	1	0.63	4.84	15	PASS	2.16	1.56	15	PASS
N023187-013B	SAMP	1	406.28	0.77	15	PASS	2.18	2.91	15	PASS
N023187-014B	SAMP	1	0.75	2.79	15	PASS	2.17	1.56	15	PASS
N023187-002B	SAMP	25	0.017	102.19	15	<PQL	0.11	14.84	15	PASS
N023187-002B-PS	PS	5	20.23	0.92	15	PASS	2.48	2.32	15	PASS
N023187-002B-MS	MS	5	20.83	1.24	15	PASS	2.63	1.69	15	PASS
N023187-002B-MSD	MSD	5	20.69	1.72	15	PASS	2.63	1.15	15	PASS
CCV5	CCV	1	20.17	0.97	15	PASS	19.97	0.36	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0019	192.21	15	<PQL
LLCCV2	CCV2	1	0.5	0.37	20	PASS	0.097	11.098	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.032	14.34	15	PASS
ICSAB3	ICSAB	1	23.72	0.73	15	PASS	20.13	1.62	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.07	56.72	15	<PQL	0.098	14.17	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	15.11	15	NR!	0.5	2.63	15	PASS
Std3-5/50 ppb	ICAL	1	5.19	1.27	15	PASS	5.028	1.0042	15	PASS
Std4-10/100 ppb	ICAL	1	10.16	1.15	15	PASS	10.043	1.28	15	PASS
Std5-20/200 ppb	ICAL	1	20.16	0.63	15	PASS	20.087	0.44	15	PASS
Std6-40/400 ppb	ICAL	1	39.58	3.72	15	PASS	39.97	0.26	15	PASS
Std7-100/1000 ppb	ICAL	1	99.96	1.35	15	PASS	101.9	0.32	15	PASS
Std8-200/2000 ppb	ICAL	1	200.074	1.21	15	PASS	199.046	1.97	15	PASS
ICV	ICV	1	10.071	1.19	15	PASS	10.42	0.69	15	PASS
ICB	ICB	1	0.054	81.9	15	<PQL	0.18	1.73	15	PASS
LLICV	CCV1	1	0.46	19.48	20	PASS	0.51	0.53	20	PASS
ICSA1	ICSA	1	0.0029	242.1	15	<PQL	0.095	16.47	15	<PQL
ICSAB1	ICSAB	1	18.84	2.35	15	PASS	23.58	0.56	15	PASS
CCV1	CCV	1	20.59	2.39	15	PASS	19.93	0.79	15	PASS
CCB1	CCB	1	0.0099	454.46	15	<PQL	0.079	13.011	15	PASS
CCV2	CCV	1	20.26	1.37	15	PASS	19.99	0.32	15	PASS
CCB2	CCB	1	0.019	176.29	15	<PQL	0.083	11.49	15	PASS
MB-61386	MBLK	1	<0.000	N/A	15	<PQL	0.0063	108.57	15	<PQL
LCS-61386	LCS	1	10.31	2.84	15	PASS	9.67	0.86	15	PASS
N023187-002B	SAMP	1	1.64	7.49	15	PASS	5.35	0.57	15	PASS
N023187-002B	SAMP	5	0.39	17.69	15	<PQL	1.037	0.3	15	PASS
N023187-002B-PS	PS	1	11.04	5.36	15	PASS	15.97	1.98	15	PASS
CCV3	CCV	1	20.46	5.39	15	PASS	20	0.95	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.09	4.66	15	PASS
LLCCV1	CCV2	1	0.49	28.072	20	<PQL	0.46	1.16	20	PASS
ICSA2	ICSA	1	0.049	67.78	15	<PQL	0.17	0.86	15	PASS
ICSAB2	ICSAB	1	18.33	0.68	15	PASS	23.71	0.42	15	PASS
N023187-002B-MS	MS	1	10.097	3.43	15	PASS	16.86	1.27	15	PASS
N023187-002B-MSD	MSD	1	10.25	1.09	15	PASS	16.83	0.92	15	PASS
N023187-003B	SAMP	1	1.63	9.28	15	PASS	5.83	1.78	15	PASS
N023187-004B	SAMP	1	1.57	2.64	15	PASS	5.5	0.75	15	PASS
N023187-005B	SAMP	1	1.62	0.88	15	PASS	5.44	2.026	15	PASS
N023187-006B	SAMP	1	1.61	7.62	15	PASS	5.35	1.63	15	PASS
N023187-007B	SAMP	1	0.98	5.79	15	PASS	7.017	2.092	15	PASS
N023187-008B	SAMP	1	0.64	14.59	15	PASS	7.65	1.57	15	PASS
N023187-009B	SAMP	1	1.47	5.69	15	PASS	5.3	1.25	15	PASS
N023187-010B	SAMP	1	1.67	4.38	15	PASS	5.45	0.68	15	PASS
CCV4	CCV	1	20.16	0.78	15	PASS	20.73	0.18	15	PASS
CCB4	CCB	1	0.0081	104.14	15	<PQL	0.066	6.23	15	PASS
N023187-011B	SAMP	1	1.53	2.59	15	PASS	5.39	0.79	15	PASS

PERCENT RSD SUMMARY: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023187-012B	SAMP	1	1.67	4.99	15	PASS	5.24	2.63	15	PASS
N023187-013B	SAMP	1	0.7	7.37	15	PASS	7.42	3.32	15	PASS
N023187-014B	SAMP	1	1.58	5.91	15	PASS	5.45	1.89	15	PASS
N023187-002B	SAMP	25	0.076	53.36	15	<PQL	0.22	5.74	15	PASS
N023187-002B-PS	PS	5	2.4	4.87	15	PASS	3.31	0.91	15	PASS
N023187-002B-MS	MS	5	2.53	6.084	15	PASS	3.38	1.44	15	PASS
N023187-002B-MSD	MSD	5	2.31	6.25	15	PASS	3.4	1.3	15	PASS
CCV5	CCV	1	19.87	1.34	15	PASS	20.59	0.57	15	PASS
CCB5	CCB	1	0.0043	451.13	15	<PQL	0.067	10.06	15	PASS
LLCCV2	CCV2	1	0.4	17.013	20	PASS	0.44	1.62	20	PASS
ICSA3	ICSA	1	0.036	2.61	15	PASS	0.11	3.36	15	PASS
ICSAB3	ICSAB	1	18.58	2.32	15	PASS	23.77	1.14	15	PASS

PERCENT RSD SUMMARY: 170306B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.52	34.68	15	<PQL	0.14	10.13	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.83	1.32	15	PASS	0.54	1.65	15	PASS
Std3-5/50 ppb	ICAL	1	5.49	0.73	15	PASS	5.44	6.41	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	0.48	15	PASS	10.17	1.59	15	PASS
Std5-20/200 ppb	ICAL	1	20.13	0.8	15	PASS	20.36	1.0017	15	PASS
Std6-40/400 ppb	ICAL	1	39.81	0.55	15	PASS	40.54	0.65	15	PASS
Std7-100/1000 ppb	ICAL	1	96.65	0.44	15	PASS	99.67	0.91	15	PASS
Std8-200/2000 ppb	ICAL	1	189.11	0.085	15	PASS	193.73	1.46	15	PASS
ICV	ICV	1	99.93	0.85	15	PASS	97.95	1.089	15	PASS
ICB	ICB	1	0.082	14.23	15	PASS	0.058	31.17	15	<PQL
LLICV	CCV1	1	1.2	1.65	20	PASS	0.67	5.34	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.81	0.065	15	PASS	21.87	1.15	15	PASS
CCV1	CCV	1	20.34	0.32	15	PASS	20.32	1.058	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.66	0.47	15	PASS	20.018	2.49	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N023187-007B	SAMP	5	42.069	0.22	15	PASS	87.18	1.33	15	PASS
N023187-008B	SAMP	5	46.58	0.59	15	PASS	103.15	1.58	15	PASS
N023187-013B	SAMP	5	41.59	0.69	15	PASS	92.49	1.083	15	PASS
CCV3	CCV	1	20.019	0.77	15	PASS	19.35	1.76	15	PASS
CCB3	CCB	1	0.003	81.24	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.21	0.58	20	PASS	0.63	4.1	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.99	0.92	15	PASS	22.63	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170303A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0303001.D	RINSE	RINSE	1	03/03/17 1:14 PM
A0303002.D	Cal Blank	IBLK	1	03/03/17 1:20 PM
A0303003.D	Std1-0.1/1 ppb	ICAL	1	03/03/17 1:25 PM
A0303004.D	Std2-0.5/5 ppb	ICAL	1	03/03/17 1:31 PM
A0303005.D	Std3-5/50 ppb	ICAL	1	03/03/17 1:36 PM
A0303006.D	Std4-10/100 ppb	ICAL	1	03/03/17 1:42 PM
A0303007.D	Std5-20/200 ppb	ICAL	1	03/03/17 1:48 PM
A0303008.D	Std6-40/400 ppb	ICAL	1	03/03/17 1:53 PM
A0303009.D	Std7-100/1000 ppb	ICAL	1	03/03/17 1:59 PM
A0303010.D	Std8-200/2000 ppb	ICAL	1	03/03/17 2:04 PM
A0303011.D	ICV	ICV	1	03/03/17 2:10 PM
A0303012.D	ICB	ICB	1	03/03/17 2:15 PM
A0303013.D	LLICV	CCV1	1	03/03/17 2:21 PM
A0303014.D	ICSA1	ICSA	1	03/03/17 2:27 PM
A0303015.D	ICSAB1	ICSAB	1	03/03/17 2:34 PM
A0303016.D	MB-61362	MBLK	1	03/03/17 2:48 PM
A0303017.D	LCS-61362	LCS	1	03/03/17 2:54 PM
A0303018.D	N023177-001B	SAMP	1	03/03/17 3:00 PM
A0303019.D	N023177-001B	SAMP	5	03/03/17 3:05 PM
A0303020.D	N023177-001B-PS	PS	1	03/03/17 3:13 PM
A0303021.D	N023177-001B-MS	MS	1	03/03/17 3:18 PM
A0303022.D	N023177-001B-MSD	MSD	1	03/03/17 3:24 PM
A0303023.D	N023177-002B	SAMP	1	03/03/17 3:29 PM
A0303024.D	N023177-003B	SAMP	1	03/03/17 3:35 PM
A0303025.D	N023177-004B	SAMP	1	03/03/17 3:40 PM
A0303026.D	CCV1	CCV	1	03/03/17 3:46 PM
A0303027.D	CCB1	CCB	1	03/03/17 3:52 PM
A0303028.D	N023177-005B	SAMP	1	03/03/17 3:57 PM
A0303029.D	N023177-006B	SAMP	1	03/03/17 4:03 PM
A0303030.D	N023177-007B	SAMP	1	03/03/17 4:08 PM
A0303031.D	N023177-008B	SAMP	1	03/03/17 4:14 PM
A0303032.D	N023177-009B	SAMP	1	03/03/17 4:19 PM
A0303033.D	N023177-010B	SAMP	1	03/03/17 4:25 PM
A0303034.D	N023177-011B	SAMP	1	03/03/17 4:30 PM
A0303035.D	N023177-012B	SAMP	1	03/03/17 4:36 PM
A0303036.D	N023177-013B	SAMP	1	03/03/17 4:41 PM
A0303037.D	N023177-014B	SAMP	1	03/03/17 4:47 PM
A0303038.D	CCV2	CCV	1	03/03/17 4:53 PM
A0303039.D	CCB2	CCB	1	03/03/17 4:58 PM
A0303040.D	N023177-015B	SAMP	1	03/03/17 5:04 PM
A0303041.D	N023177-001B	SAMP	25	03/03/17 5:09 PM
A0303042.D	N023177-001B-PS	PS	5	03/03/17 5:15 PM

INJECTION LOG: 170303A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0303043.D	N023177-001B-MS	MS	5	03/03/17 5:20 PM
A0303044.D	N023177-001B-MSD	MSD	5	03/03/17 5:26 PM
A0303045.D	MB-61386	MBLK	1	03/03/17 5:31 PM
A0303046.D	LCS-61386	LCS	1	03/03/17 5:37 PM
A0303047.D	N023187-002B	SAMP	1	03/03/17 5:42 PM
A0303048.D	N023187-002B	SAMP	5	03/03/17 5:48 PM
A0303049.D	N023187-002B-PS	PS	1	03/03/17 5:53 PM
A0303050.D	CCV3	CCV	1	03/03/17 5:59 PM
A0303051.D	CCB3	CCB	1	03/03/17 6:05 PM
A0303052.D	LLCCV1	CCV2	1	03/03/17 6:10 PM
A0303053.D	ICSA2	ICSA	1	03/03/17 6:14 PM
A0303054.D	ICSAB2	ICSAB	1	03/03/17 6:20 PM
A0303055.D	N023187-002B-MS	MS	1	03/03/17 6:25 PM
A0303056.D	N023187-002B-MSD	MSD	1	03/03/17 6:31 PM
A0303057.D	N023187-003B	SAMP	1	03/03/17 6:37 PM
A0303058.D	N023187-004B	SAMP	1	03/03/17 6:43 PM
A0303059.D	N023187-005B	SAMP	1	03/03/17 6:48 PM
A0303060.D	N023187-006B	SAMP	1	03/03/17 6:54 PM
A0303061.D	N023187-007B	SAMP	1	03/03/17 6:59 PM
A0303062.D	N023187-008B	SAMP	1	03/03/17 7:06 PM
A0303063.D	N023187-009B	SAMP	1	03/03/17 7:11 PM
A0303064.D	N023187-010B	SAMP	1	03/03/17 7:16 PM
A0303065.D	CCV4	CCV	1	03/03/17 7:22 PM
A0303066.D	CCB4	CCB	1	03/03/17 7:27 PM
A0303067.D	N023187-011B	SAMP	1	03/03/17 7:33 PM
A0303068.D	N023187-012B	SAMP	1	03/03/17 7:38 PM
A0303069.D	N023187-013B	SAMP	1	03/03/17 7:44 PM
A0303070.D	N023187-014B	SAMP	1	03/03/17 7:49 PM
A0303071.D	N023187-002B	SAMP	25	03/03/17 7:55 PM
A0303072.D	N023187-002B-PS	PS	5	03/03/17 8:00 PM
A0303073.D	N023187-002B-MS	MS	5	03/03/17 8:06 PM
A0303074.D	N023187-002B-MSD	MSD	5	03/03/17 8:11 PM
A0303075.D	CCV5	CCV	1	03/03/17 8:17 PM
A0303076.D	CCB5	CCB	1	03/03/17 8:23 PM
A0303077.D	LLCCV2	CCV2	1	03/03/17 8:29 PM
A0303078.D	ICSA3	ICSA	1	03/03/17 8:34 PM
A0303079.D	ICSAB3	ICSAB	1	03/03/17 8:40 PM

INJECTION LOG: 170306B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0306001.D	RINSE	RINSE	1	03/06/17 5:45 PM
B0306002.D	Cal Blank	IBLK	1	03/06/17 5:51 PM
B0306003.D	Std1-0.1/1 ppb	ICAL	1	03/06/17 5:56 PM
B0306004.D	Std2-0.5/5 ppb	ICAL	1	03/06/17 6:02 PM
B0306005.D	Std3-5/50 ppb	ICAL	1	03/06/17 6:07 PM
B0306006.D	Std4-10/100 ppb	ICAL	1	03/06/17 6:13 PM
B0306007.D	Std5-20/200 ppb	ICAL	1	03/06/17 6:18 PM
B0306008.D	Std6-40/400 ppb	ICAL	1	03/06/17 6:24 PM
B0306009.D	Std7-100/1000 ppb	ICAL	1	03/06/17 6:29 PM
B0306010.D	Std8-200/2000 ppb	ICAL	1	03/06/17 6:35 PM
B0306011.D	ICV	ICV	1	03/06/17 6:41 PM
B0306012.D	ICB	ICB	1	03/06/17 6:47 PM
B0306013.D	LLICV	CCV1	1	03/06/17 6:53 PM
B0306014.D	ICSA1	ICSA	1	03/06/17 6:57 PM
B0306015.D	ICSAB1	ICSAB	1	03/06/17 7:04 PM
B0306016.D	MB-61450	MBLK	1	03/06/17 7:09 PM
B0306017.D	LCS-61450	LCS	1	03/06/17 7:15 PM
B0306018.D	N023268-001C	SAMP	1	03/06/17 7:20 PM
B0306019.D	N023268-001C	SAMP	5	03/06/17 7:26 PM
B0306020.D	N023268-001C	SAMP	25	03/06/17 7:30 PM
B0306021.D	N023268-001C-PS	PS	1	03/06/17 7:36 PM
B0306022.D	N023268-001C-PS	PS	5	03/06/17 7:41 PM
B0306023.D	N023268-001C-MS	MS	1	03/06/17 7:47 PM
B0306024.D	N023268-001C-MS	MS	5	03/06/17 7:52 PM
B0306025.D	N023268-001C-MSD	MSD	1	03/06/17 7:58 PM
B0306026.D	CCV1	CCV	1	03/06/17 8:05 PM
B0306027.D	CCB1	CCB	1	03/06/17 8:09 PM
B0306028.D	N023268-001C-MSD	MSD	5	03/06/17 8:15 PM
B0306029.D	N023268-002E	SAMP	1	03/06/17 8:20 PM
B0306030.D	N023268-002E	SAMP	5	03/06/17 8:26 PM
B0306031.D	N023266-001B	SAMP	1	03/06/17 8:31 PM
B0306032.D	N023266-002B	SAMP	1	03/06/17 8:37 PM
B0306033.D	N023266-002B	SAMP	5	03/06/17 8:42 PM
B0306034.D	N023266-002B	SAMP	10	03/06/17 8:48 PM
B0306035.D	N023266-003B	SAMP	1	03/06/17 8:53 PM
B0306036.D	N023266-003B	SAMP	5	03/06/17 8:59 PM
B0306037.D	N023266-003B	SAMP	10	03/06/17 9:04 PM
B0306038.D	CCV2	CCV	1	03/06/17 9:10 PM
B0306039.D	CCB2	CCB	1	03/06/17 9:15 PM
B0306040.D	N023187-007B	SAMP	5	03/06/17 9:21 PM
B0306041.D	N023187-008B	SAMP	5	03/06/17 9:26 PM
B0306042.D	N023187-013B	SAMP	5	03/06/17 9:32 PM

INJECTION LOG: 170306B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0306043.D	CCV3	CCV	1	03/06/17 10:06 PM
B0306044.D	CCB3	CCB	1	03/06/17 10:12 PM
B0306045.D	LLCCV1	CCV2	1	03/06/17 10:18 PM
B0306046.D	ICSA2	ICSA	1	03/06/17 10:24 PM
B0306047.D	ICSAB2	ICSAB	1	03/06/17 10:29 PM
B0306048.D	MB-61448	MBLK	1	03/06/17 10:52 PM
B0306049.D	LCS-61448	LCS	1	03/06/17 10:58 PM
B0306050.D	N023289-005A	SAMP	1	03/06/17 11:03 PM
B0306051.D	N023289-005A	SAMP	5	03/06/17 11:09 PM
B0306052.D	N023289-005A	SAMP	25	03/06/17 11:14 PM
B0306053.D	N023289-005A	SAMP	125	03/06/17 11:20 PM
B0306054.D	N023289-005A-PS	PS	1	03/06/17 11:25 PM
B0306055.D	N023289-005A-PS	PS	5	03/06/17 11:31 PM
B0306056.D	N023289-005A-PS	PS	25	03/06/17 11:36 PM
B0306057.D	N023289-005A-MS	MS	1	03/06/17 11:42 PM
B0306058.D	CCV4	CCV	1	03/06/17 11:48 PM
B0306059.D	CCB4	CCB	1	03/06/17 11:53 PM
B0306060.D	N023289-005A-MS	MS	5	03/06/17 11:59 PM
B0306061.D	N023289-005A-MS	MS	25	03/07/17 12:05 AM
B0306062.D	N023289-005A-MSD	MSD	1	03/07/17 12:10 AM
B0306063.D	N023289-005A-MSD	MSD	5	03/07/17 12:16 AM
B0306064.D	N023289-005A-MSD	MSD	25	03/07/17 12:22 AM
B0306065.D	N023289-005A	SAMP	500	03/07/17 12:28 AM
B0306066.D	N023289-005A	SAMP	2500	03/07/17 12:33 AM
B0306067.D	N023289-005A-PS	PS	500	03/07/17 12:39 AM
B0306068.D	N023289-005A-MS	MS	500	03/07/17 12:44 AM
B0306069.D	N023289-005A-MSD	MSD	500	03/07/17 12:50 AM
B0306070.D	CCV5	CCV	1	03/07/17 12:55 AM
B0306071.D	CCB5	CCB	1	03/07/17 1:01 AM
B0306072.D	N022911-001A	SAMP	1	03/07/17 1:07 AM
B0306073.D	N022911-001A	SAMP	5	03/07/17 1:12 AM
B0306074.D	N022911-001A	SAMP	25	03/07/17 1:18 AM
B0306075.D	N022911-001A	SAMP	125	03/07/17 1:23 AM
B0306076.D	N022911-001A	SAMP	625	03/07/17 1:29 AM
B0306077.D	N022911-001A-DUP	DUP	1	03/07/17 1:34 AM
B0306078.D	N022911-001A-DUP	DUP	5	03/07/17 1:40 AM
B0306079.D	N022911-001A-DUP	DUP	25	03/07/17 1:46 AM
B0306080.D	N022911-001A-DUP	DUP	125	03/07/17 1:51 AM
B0306081.D	N022911-001A-DUP	DUP	625	03/07/17 1:57 AM
B0306082.D	CCV6	CCV	1	03/07/17 2:02 AM
B0306083.D	CCB6	CCB	1	03/07/17 2:08 AM
B0306084.D	N022911-001A	SAMP	1	03/07/17 2:13 AM

INJECTION LOG: 170306B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0306085.D	N022911-001A	SAMP	5	03/07/17 2:19 AM
B0306086.D	N022911-001A	SAMP	25	03/07/17 2:25 AM
B0306087.D	N022911-001A	SAMP	125	03/07/17 2:30 AM
B0306088.D	N022911-001A	SAMP	625	03/07/17 2:36 AM
B0306089.D	CCV7	CCV	1	03/07/17 2:42 AM
B0306090.D	CCB7	CCB	1	03/07/17 2:48 AM
B0306091.D	LLCCV2	CCV2	1	03/07/17 2:53 AM
B0306092.D	ICSA3	ICSA	1	03/07/17 2:59 AM
B0306093.D	ICSAB3	ICSAB	1	03/07/17 3:04 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 1:00:00**
Prep End Date: **2/24/2017 5:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: 3/8/2017

Prep Batch **61386** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61386	Aqueous		25	☐	0	0	25	1.000		
MB-61386	Aqueous		25	☐	0	0	25	1.000		
N023187-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/24/2017 1:00:00**
Prep End Date: **2/24/2017 5:30:00**

Reviewed/ Date: 3/8/2017

Initials/ Date: 3/8/2017

Prep Batch **61386** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023187-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N023187-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 3 Mar 2017 10:59:36 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	158304.00	0.00	
24 Mg	686666.00	0.00	
25 Mg	91509.50	0.00	
26 Mg	105098.00	0.00	
59 Co	1016960.00	0.00	
115 In	1675790.00	0.00	
206 Pb	467343.00	0.00	
207 Pb	407044.00	0.00	
208 Pb	1008360.00	0.00	

RSD (%)

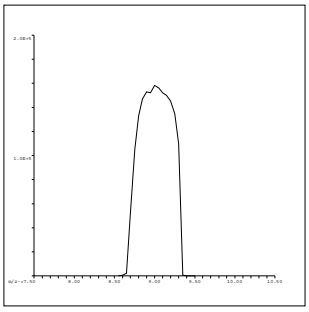
Element	Actual	Required	Flag
9 Be	0.36	5.00	
24 Mg	3.02	5.00	
25 Mg	3.44	5.00	
26 Mg	1.07	5.00	
59 Co	0.42	5.00	
115 In	0.91	5.00	
206 Pb	0.78	5.00	
207 Pb	0.38	5.00	
208 Pb	0.56	5.00	

Ion Ratio

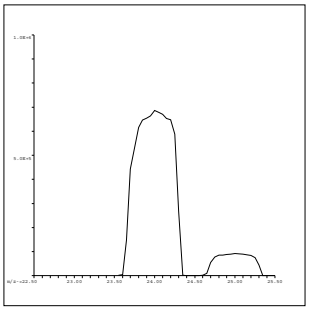
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

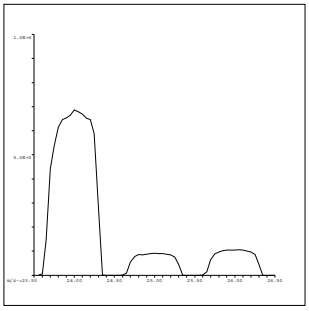
Element	Actual	Required	Flag



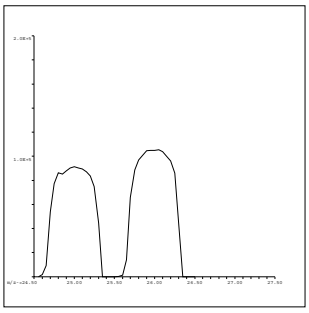
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



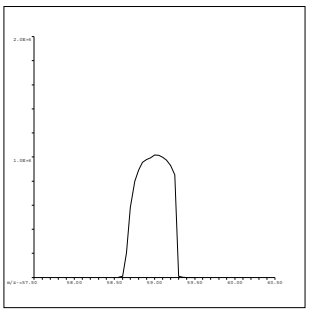
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



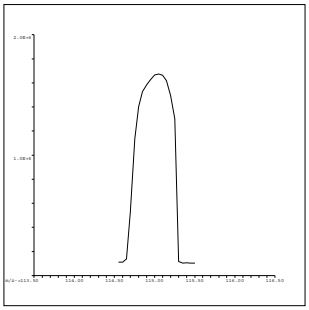
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



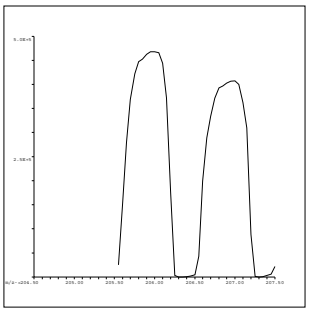
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



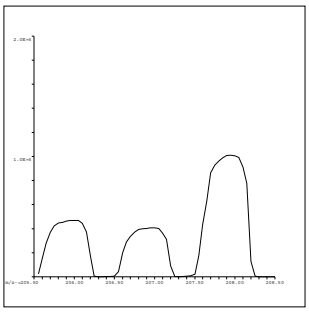
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



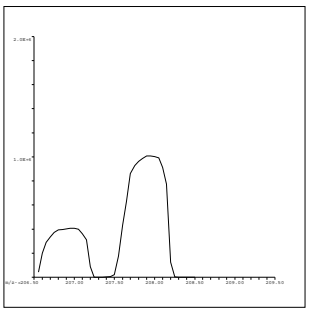
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 6 Mar 2017 08:31:28 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	137320.00	0.00	
24 Mg	741527.00	0.00	
25 Mg	99105.60	0.00	
26 Mg	116289.00	0.00	
59 Co	1058950.00	0.00	
115 In	1946410.00	0.00	
206 Pb	538717.00	0.00	
207 Pb	471745.00	0.00	
208 Pb	1157570.00	0.00	

RSD (%)

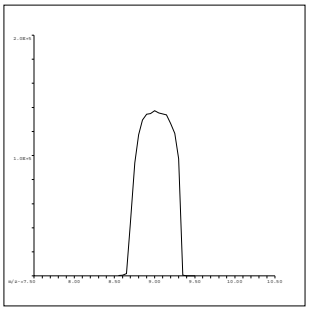
Element	Actual	Required	Flag
9 Be	1.15	5.00	
24 Mg	0.32	5.00	
25 Mg	0.52	5.00	
26 Mg	0.99	5.00	
59 Co	0.57	5.00	
115 In	1.44	5.00	
206 Pb	0.92	5.00	
207 Pb	0.97	5.00	
208 Pb	1.13	5.00	

Ion Ratio

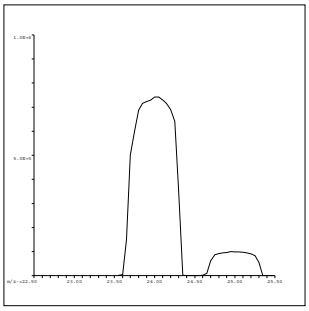
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

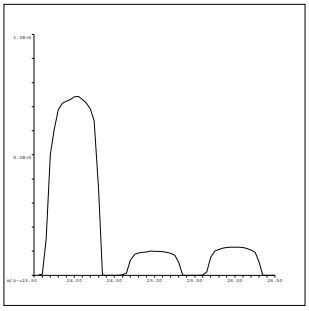
Element	Actual	Required	Flag



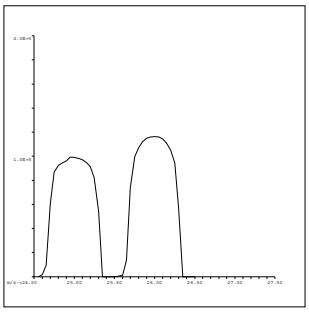
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



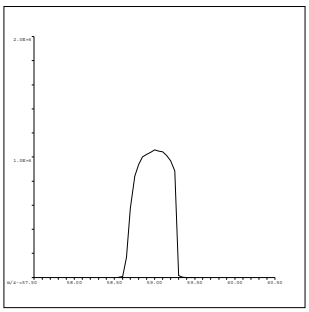
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



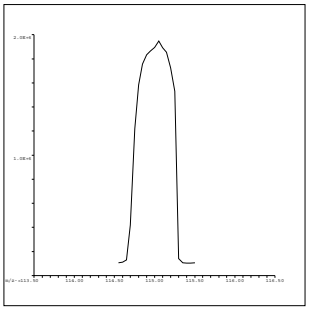
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



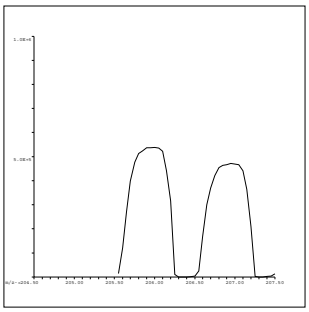
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



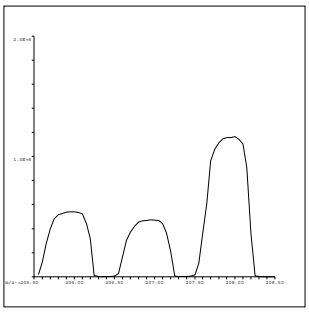
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



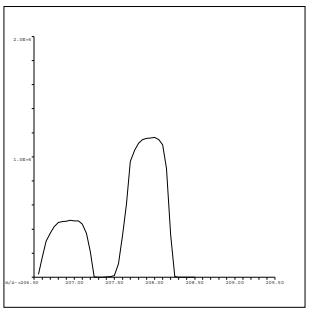
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170303A

Instrument ID: ICPMS-02

Analyte	Data File	A0303002.D	A0303003.D	A0303004.D	A0303005.D	A0303006.D	A0303007.D	A0303008.D	A0303009.D	A0303010.D	
	Acq. Date-Time	03/03/2017 01:20 PM	03/03/2017 01:25 PM	03/03/2017 01:31 PM	03/03/2017 01:36 PM	03/03/2017 01:42 PM	03/03/2017 01:48 PM	03/03/2017 01:53 PM	03/03/2017 01:59 PM	03/03/2017 02:04 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	137629.7		144032.1	144404.7	143573.9	140379.3	143570.7	143716.3	141675.8	
55 Mn [2]	CPS	641.2		4086.6	33867.9	67298.2	129412.6	261059.4	646813	1259835.8	1.0000
52 Cr [2]	CPS	542.2		7130.6	66528.9	132387	258585.8	520805.1	1305828.1	2506554.2	1.0000
72 Ge (ISTD) [1]	CPS	114126.4		121445.6	119841.9	119959.3	118930.3	122257.5	119568.7	119491.9	
78 Se [1]	CPS	18.9		341.1	3052.6	5963.5	11710.2	23614.7	58299.9	116581.3	1.0000
72 Ge (ISTD) [2]	CPS	93987.7	99204.9	98548.6	98101.5	98446.9	96851.1	98253.7	98477.7	95793.5	
75 As [2]	CPS	25.3	139.6	602.7	5675.7	11557.1	22556.5	45519.6	112940.3	221126	1.0000
103 Rh (ISTD) [2]	CPS	3488544.3		3630252	3645363.8	3631228.8	3575297.3	3636707.4	3594217.4	3536028.1	
95 Mo [2]	CPS	208.9		4260.7	40700.3	80775.5	158847.3	321287.9	809160.1	1555129.5	0.9999
159 Tb (ISTD) [3]	CPS	12070086.8		12869715.4	12775454.5	12867935.2	12639532.9	12831020.6	12957211.5	12825587.9	
137 Ba [3]	CPS	1054.3		11497.3	101280.2	200528	388698.9	782199.4	1998201.6	3888485.4	1.0000

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170306B

Instrument ID: ICPMS-02

Analyte	Data File	B0306002.D	B0306004.D	B0306005.D	B0306006.D	B0306007.D	B0306008.D	B0306009.D	B0306010.D	
	Acq. Date-Time	03/06/2017 05:51 PM	03/06/2017 06:02 PM	03/06/2017 06:07 PM	03/06/2017 06:13 PM	03/06/2017 06:18 PM	03/06/2017 06:24 PM	03/06/2017 06:29 PM	03/06/2017 06:35 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	113949.1	107784	102401.5	98361.8	95333.3	92829	91895.3	92476.3	
55 Mn [2]	CPS	231.6	2785.1	24799	44307.1	85825.6	166221.1	404291.7	790485.9	1.0000
159 Tb (ISTD) [3]	CPS	11339029.1	10934557.8	10831656.2	10702793.5	10607814.8	10501432.2	10471579.1	10483793.7	
137 Ba [3]	CPS	109.9	15034.4	97960.3	180046.8	351331.4	687799.8	1664827.9	3261193	0.9999

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.065	0.10	10.00	0	101	90	110				
Barium	99.674	1.0	100.0	0	99.7	90	110				
Manganese	98.289	0.50	100.0	0	98.3	90	110				
Molybdenum	10.424	0.50	10.00	0	104	90	110				
Selenium	10.071	0.50	10.00	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.099	0.10	0.1000	0	98.9	80	120				
Barium	0.948	1.0	1.000	0	94.8	80	120				
Manganese	0.466	0.50	0.5000	0	93.1	80	120				
Molybdenum	0.508	0.50	0.5000	0	102	80	120				
Selenium	0.465	0.50	0.5000	0	93.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.791	0.10	20.00	0	99.0	90	110				
Barium	20.132	1.0	20.00	0	101	90	110				
Manganese	20.067	0.50	20.00	0	100	90	110				
Molybdenum	19.933	0.50	20.00	0	99.7	90	110				
Selenium	20.591	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.649	0.10	20.00	0	98.2	90	110				
Barium	20.419	1.0	20.00	0	102	90	110				
Manganese	19.937	0.50	20.00	0	99.7	90	110				
Molybdenum	19.987	0.50	20.00	0	99.9	90	110				
Selenium	20.262	0.50	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.942	0.10	20.00	0	99.7	90	110				
Barium	20.340	1.0	20.00	0	102	90	110				
Manganese	19.991	0.50	20.00	0	100	90	110				
Molybdenum	19.998	0.50	20.00	0	100	90	110				
Selenium	20.464	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.084	0.10	0.1000	0	84.4	70	130				
Barium	0.963	1.0	1.000	0	96.3	70	130				
Manganese	0.453	0.50	0.5000	0	90.7	70	130				
Molybdenum	0.464	0.50	0.5000	0	92.8	70	130				
Selenium	0.492	0.50	0.5000	0	98.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.701	0.10	20.00	0	98.5	90	110				
Barium	21.618	1.0	20.00	0	108	90	110				
Manganese	19.798	0.50	20.00	0	99.0	90	110				
Molybdenum	20.727	0.50	20.00	0	104	90	110				
Selenium	20.155	0.50	20.00	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.969	0.10	20.00	0	99.8	90	110				
Barium	21.412	1.0	20.00	0	107	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.594	0.50	20.00	0	103	90	110				
Selenium	19.868	0.50	20.00	0	99.3	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.097	0.10	0.1000	0	96.8	70	130				
Barium	1.492	1.0	1.000	0	149	70	130				S
Manganese	0.502	0.50	0.5000	0	100	70	130				
Molybdenum	0.441	0.50	0.5000	0	88.1	70	130				
Selenium	0.402	0.50	0.5000	0	80.3	70	130				

Ba on LLCCV2 is biased high however, samples for this analyte are greater than the regular CCV which passed QC criteria.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Mary 3/8/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ICV** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	99.927	1.0	100.0	0	99.9	90	110				
Manganese	97.952	0.50	100.0	0	98.0	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ZZZZZZ** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.198	1.0	1.000	0	120	80	120				
Manganese	0.665	0.50	0.5000	0	133	80	120				S

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **CCV** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.335	1.0	20.00	0	102	90	110				
Manganese	20.316	0.50	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **CCV** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.660	1.0	20.00	0	103	90	110				
Manganese	20.018	0.50	20.00	0	100	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **CCV** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	20.019	1.0	20.00	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Mn on LLICV is biased high however, samples for this analyte are greater than the regular CCV which passed QC criteria.

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113940
Client ID:	CCV	Batch ID:	R113940	TestNo:	EPA 6020			Analysis Date:	3/6/2017	SeqNo:	2588505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.351	0.50	20.00	0	96.8	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	113940
Client ID:	ZZZZZZ	Batch ID:	R113940	TestNo:	EPA 6020			Analysis Date:	3/6/2017	SeqNo:	2588507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.209	1.0	1.000	0	121	70	130				
Manganese	0.632	0.50	0.5000	0	126	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.738	1.0	10.00	0	97.4	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.910	1.0	1.000	0	91.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.227	1.0	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.333	1.0	20.00	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCV** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.281	1.0	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2585960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.932	1.0	1.000	0	93.2	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCV	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2585973

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.887	1.0	20.00	0	99.4	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	CCV	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2585983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.028	1.0	20.00	0	100	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	113892
Client ID:	ZZZZZZ	Batch ID:	R113892	TestNo:	EPA 6020			Analysis Date:	3/3/2017	SeqNo:	2585985

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.932	1.0	1.000	0	93.2	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.178	0.50									
Selenium	0.054	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.079	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.090	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.066	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.067	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**6020_DIS**	**µg/L**		**113940**
Client ID: **ICB**	Batch ID: **R113940**	TestNo: **EPA 6020**		Analysis Date: **3/6/2017**	SeqNo: **2588474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.082	1.0									
Manganese	0.058	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB1	**CCB**	**6020_DIS**	**µg/L**		**113940**
Client ID: **CCB**	Batch ID: **R113940**	TestNo: **EPA 6020**		Analysis Date: **3/6/2017**	SeqNo: **2588489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB2	**CCB**	**6020_DIS**	**µg/L**		**113940**
Client ID: **CCB**	Batch ID: **R113940**	TestNo: **EPA 6020**		Analysis Date: **3/6/2017**	SeqNo: **2588501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB3	**CCB**	**6020_DIS**	**µg/L**		**113940**
Client ID: **CCB**	Batch ID: **R113940**	TestNo: **EPA 6020**		Analysis Date: **3/6/2017**	SeqNo: **2588506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585920**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.020	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **CCB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.029	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.095	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.277	0.10	20.00	0	101	80	120				
Barium	19.888	1.0	20.00	0	99.4	80	120				
Manganese	23.355	0.50	20.00	0	117	80	120				
Molybdenum	23.584	0.50	20.00	0	118	80	120				
Selenium	18.837	0.50	20.00	0	94.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.029	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.169	0.50									
Selenium	0.049	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.162	0.10	20.00	0	101	80	120				
Barium	19.962	1.0	20.00	0	99.8	80	120				
Manganese	23.771	0.50	20.00	0	119	80	120				
Molybdenum	23.711	0.50	20.00	0	119	80	120				
Selenium	18.331	0.50	20.00	0	91.7	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.032	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.110	0.50									
Selenium	0.036	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2586063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.128	0.10	20.00	0	101	80	120				
Barium	20.149	1.0	20.00	0	101	80	120				
Manganese	23.724	0.50	20.00	0	119	80	120				
Molybdenum	23.770	0.50	20.00	0	119	80	120				
Selenium	18.583	0.50	20.00	0	92.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ICSA** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ICSAB** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.809	1.0	20.00	0	89.0	80	120				
Manganese	21.867	0.50	20.00	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ICSA** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113940**
Client ID: **ICSAB** Batch ID: **R113940** TestNo: **EPA 6020** Analysis Date: **3/6/2017** SeqNo: **2588509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	17.992	1.0	20.00	0	90.0	80	120				
Manganese	22.628	0.50	20.00	0	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.633	1.0	20.00	0	93.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.586	1.0	20.00	0	92.9	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSA** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ICSAB** Batch ID: **R113892** TestNo: **EPA 6020** Analysis Date: **3/3/2017** SeqNo: **2585987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.524	1.0	20.00	0	92.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	12070086.8	12070086.8	100	PASS	70-125	137629.7	137629.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	12909761.9	12070086.8	106.96	PASS	70-125	145045.7	137629.7	105.39	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	12869715.4	12070086.8	106.62	PASS	70-125	144032.1	137629.7	104.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	12775454.5	12070086.8	105.84	PASS	70-125	144404.7	137629.7	104.92	PASS	70-125
Std4-10/100 ppb	ICAL	1	12867935.2	12070086.8	106.61	PASS	70-125	143573.9	137629.7	104.32	PASS	70-125
Std5-20/200 ppb	ICAL	1	12639532.9	12070086.8	104.72	PASS	70-125	140379.3	137629.7	102	PASS	70-125
Std6-40/400 ppb	ICAL	1	12831020.6	12070086.8	106.3	PASS	70-125	143570.7	137629.7	104.32	PASS	70-125
Std7-100/1000 ppb	ICAL	1	12957211.5	12070086.8	107.35	PASS	70-125	143716.3	137629.7	104.42	PASS	70-125
Std8-200/2000 ppb	ICAL	1	12825587.9	12070086.8	106.26	PASS	70-125	141675.8	137629.7	102.94	PASS	70-125
ICV	ICV	1	12022986.3	12070086.8	99.61	PASS	70-125	128927.7	137629.7	93.68	PASS	70-125
ICB	ICB	1	12204058.4	12070086.8	101.11	PASS	70-125	131968.8	137629.7	95.89	PASS	70-125
LLICV	CCV1	1	12852489.7	12070086.8	106.48	PASS	70-125	138433.5	137629.7	100.58	PASS	70-125
ICSA1	ICSA	1	10808619	12070086.8	89.55	PASS	70-125	133830.6	137629.7	97.24	PASS	70-125
ICSAB1	ICSAB	1	11113881.8	12070086.8	92.078	PASS	70-125	139195.2	137629.7	101.14	PASS	70-125
CCV1	CCV	1	13370958	12070086.8	110.78	PASS	70-125	137790.2	137629.7	100.12	PASS	70-125
CCB1	CCB	1	12413412	12070086.8	102.84	PASS	70-125	119739.7	137629.7	87.001	PASS	70-125
CCV2	CCV	1	13840208.8	12070086.8	114.67	PASS	70-125	139111.8	137629.7	101.08	PASS	70-125
CCB2	CCB	1	12697539.1	12070086.8	105.2	PASS	70-125	119915.2	137629.7	87.13	PASS	70-125
MB-61386	MBLK	1	12717521.3	12070086.8	105.36	PASS	70-125	123552.2	137629.7	89.77	PASS	70-125
LCS-61386	LCS	1	12931246.5	12070086.8	107.13	PASS	70-125	123223.4	137629.7	89.53	PASS	70-125
N023187-002B	SAMP	1	13037179.4	12070086.8	108.01	PASS	70-125	141710.2	137629.7	102.96	PASS	70-125
N023187-002B	SAMP	5	12762959.3	12070086.8	105.74	PASS	70-125	125948.9	137629.7	91.51	PASS	70-125
N023187-002B-PS	PS	1	13259450.8	12070086.8	109.85	PASS	70-125	144354.5	137629.7	104.89	PASS	70-125
CCV3	CCV	1	13855827.2	12070086.8	114.79	PASS	70-125	135840.3	137629.7	98.7	PASS	70-125
CCB3	CCB	1	12890118.6	12070086.8	106.79	PASS	70-125	124986.6	137629.7	90.81	PASS	70-125
LLCCV1	CCV2	1	13518004.7	12070086.8	112	PASS	70-125	129877.4	137629.7	94.37	PASS	70-125
ICSA2	ICSA	1	11071743	12070086.8	91.73	PASS	70-125	133485.8	137629.7	96.99	PASS	70-125
ICSAB2	ICSAB	1	11080341.9	12070086.8	91.8	PASS	70-125	142426	137629.7	103.48	PASS	70-125
N023187-002B-MS	MS	1	13034384.9	12070086.8	107.99	PASS	70-125	155629.5	137629.7	113.08	PASS	70-125
N023187-002B-MSD	MSD	1	13045117.3	12070086.8	108.08	PASS	70-125	148618.3	137629.7	107.98	PASS	70-125
N023187-003B	SAMP	1	13708540.9	12070086.8	113.57	PASS	70-125	165612.6	137629.7	120.33	PASS	70-125
N023187-004B	SAMP	1	13811185.4	12070086.8	114.42	PASS	70-125	162593.7	137629.7	118.14	PASS	70-125
N023187-005B	SAMP	1	13935311.6	12070086.8	115.45	PASS	70-125	161817.4	137629.7	117.57	PASS	70-125
N023187-006B	SAMP	1	13936682.8	12070086.8	115.46	PASS	70-125	161707.1	137629.7	117.49	PASS	70-125
N023187-007B	SAMP	1	13745707.7	12070086.8	113.88	PASS	70-125	171228	137629.7	124.41	PASS	70-125
N023187-008B	SAMP	1	12644480.9	12070086.8	104.76	PASS	70-125	142326.8	137629.7	103.41	PASS	70-125
N023187-009B	SAMP	1	13075560.6	12070086.8	108.33	PASS	70-125	143402.2	137629.7	104.19	PASS	70-125
N023187-010B	SAMP	1	13603328.8	12070086.8	112.7	PASS	70-125	162895.1	137629.7	118.36	PASS	70-125
CCV4	CCV	1	14292930.1	12070086.8	118.42	PASS	70-125	160630.7	137629.7	116.71	PASS	70-125
CCB4	CCB	1	13102502.6	12070086.8	108.55	PASS	70-125	134498.3	137629.7	97.72	PASS	70-125
N023187-011B	SAMP	1	12270888.8	12070086.8	101.66	PASS	70-125	132712.2	137629.7	96.43	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023187-012B	SAMP	1	12389698.7	12070086.8	102.65	PASS	70-125	133779.7	137629.7	97.2	PASS	70-125
N023187-013B	SAMP	1	12155776.9	12070086.8	100.71	PASS	70-125	144415	137629.7	104.93	PASS	70-125
N023187-014B	SAMP	1	13232669.2	12070086.8	109.63	PASS	70-125	150458.5	137629.7	109.32	PASS	70-125
N023187-002B	SAMP	25	13146115.6	12070086.8	108.91	PASS	70-125	138726.2	137629.7	100.8	PASS	70-125
N023187-002B-PS	PS	5	12977610.5	12070086.8	107.52	PASS	70-125	132208.1	137629.7	96.061	PASS	70-125
N023187-002B-MS	MS	5	12938255.4	12070086.8	107.19	PASS	70-125	130696.6	137629.7	94.96	PASS	70-125
N023187-002B-MSD	MSD	5	12894293.7	12070086.8	106.83	PASS	70-125	129014.6	137629.7	93.74	PASS	70-125
CCV5	CCV	1	13836868.5	12070086.8	114.64	PASS	70-125	139017.5	137629.7	101.01	PASS	70-125
CCB5	CCB	1	12791120.4	12070086.8	105.97	PASS	70-125	126886.5	137629.7	92.19	PASS	70-125
LLCCV2	CCV2	1	14186896.2	12070086.8	117.54	PASS	70-125	134824.2	137629.7	97.96	PASS	70-125
ICSA3	ICSA	1	10846904.4	12070086.8	89.87	PASS	70-125	128808.8	137629.7	93.59	PASS	70-125
ICSAB3	ICSAB	1	11045172.9	12070086.8	91.51	PASS	70-125	140084	137629.7	101.78	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	93987.7	93987.7	100	PASS	70-125	114126.4	114126.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	99204.9	93987.7	105.55	PASS	70-125	120665.7	114126.4	105.73	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	98548.6	93987.7	104.85	PASS	70-125	121445.6	114126.4	106.41	PASS	70-125
Std3-5/50 ppb	ICAL	1	98101.5	93987.7	104.38	PASS	70-125	119841.9	114126.4	105.01	PASS	70-125
Std4-10/100 ppb	ICAL	1	98446.9	93987.7	104.74	PASS	70-125	119959.3	114126.4	105.11	PASS	70-125
Std5-20/200 ppb	ICAL	1	96851.1	93987.7	103.05	PASS	70-125	118930.3	114126.4	104.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	98253.7	93987.7	104.54	PASS	70-125	122257.5	114126.4	107.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	98477.7	93987.7	104.78	PASS	70-125	119568.7	114126.4	104.77	PASS	70-125
Std8-200/2000 ppb	ICAL	1	95793.5	93987.7	101.92	PASS	70-125	119491.9	114126.4	104.7	PASS	70-125
ICV	ICV	1	88722.7	93987.7	94.4	PASS	70-125	108126.3	114126.4	94.74	PASS	70-125
ICB	ICB	1	91427.6	93987.7	97.28	PASS	70-125	111221.2	114126.4	97.45	PASS	70-125
LLICV	CCV1	1	95408.6	93987.7	101.51	PASS	70-125	117485.4	114126.4	102.94	PASS	70-125
ICSA1	ICSA	1	82727.7	93987.7	88.02	PASS	70-125	92747.2	114126.4	81.27	PASS	70-125
ICSAB1	ICSAB	1	85027.1	93987.7	90.47	PASS	70-125	98210.1	114126.4	86.054	PASS	70-125
CCV1	CCV	1	95584.6	93987.7	101.7	PASS	70-125	112066.5	114126.4	98.2	PASS	70-125
CCB1	CCB	1	86165.1	93987.7	91.68	PASS	70-125	99103.2	114126.4	86.84	PASS	70-125
CCV2	CCV	1	99011.7	93987.7	105.35	PASS	70-125	113209	114126.4	99.2	PASS	70-125
CCB2	CCB	1	87135.5	93987.7	92.71	PASS	70-125	100018.4	114126.4	87.64	PASS	70-125
MB-61386	MBLK	1	89396.3	93987.7	95.11	PASS	70-125	102208.1	114126.4	89.56	PASS	70-125
LCS-61386	LCS	1	90208.6	93987.7	95.98	PASS	70-125	102937.2	114126.4	90.2	PASS	70-125
N023187-002B	SAMP	1	94370.8	93987.7	100.41	PASS	70-125	104824.1	114126.4	91.85	PASS	70-125
N023187-002B	SAMP	5	90448.9	93987.7	96.23	PASS	70-125	101256.8	114126.4	88.72	PASS	70-125
N023187-002B-PS	PS	1	95249.6	93987.7	101.34	PASS	70-125	106002.8	114126.4	92.88	PASS	70-125
CCV3	CCV	1	96768.3	93987.7	102.96	PASS	70-125	111083.7	114126.4	97.33	PASS	70-125
CCB3	CCB	1	90863.5	93987.7	96.68	PASS	70-125	103618.4	114126.4	90.79	PASS	70-125
LLCCV1	CCV2	1	94055.5	93987.7	100.07	PASS	70-125	109631.8	114126.4	96.062	PASS	70-125
ICSA2	ICSA	1	83214.6	93987.7	88.54	PASS	70-125	95760	114126.4	83.91	PASS	70-125
ICSAB2	ICSAB	1	90168.3	93987.7	95.94	PASS	70-125	108966	114126.4	95.48	PASS	70-125
N023187-002B-MS	MS	1	102720.5	93987.7	109.29	PASS	70-125	130681.2	114126.4	114.51	PASS	70-125
N023187-002B-MSD	MSD	1	100401.2	93987.7	106.82	PASS	70-125	127441.7	114126.4	111.67	PASS	70-125
N023187-003B	SAMP	1	109294.7	93987.7	116.29	PASS	70-125	133178.8	114126.4	116.69	PASS	70-125
N023187-004B	SAMP	1	107745.3	93987.7	114.64	PASS	70-125	129618.2	114126.4	113.57	PASS	70-125
N023187-005B	SAMP	1	107603.3	93987.7	114.49	PASS	70-125	126017.1	114126.4	110.42	PASS	70-125
N023187-006B	SAMP	1	107692.4	93987.7	114.58	PASS	70-125	125474.5	114126.4	109.94	PASS	70-125
N023187-007B	SAMP	1	107980.9	93987.7	114.89	PASS	70-125	122525.2	114126.4	107.36	PASS	70-125
N023187-008B	SAMP	1	89400.3	93987.7	95.12	PASS	70-125	100302.9	114126.4	87.89	PASS	70-125
N023187-009B	SAMP	1	96402.7	93987.7	102.57	PASS	70-125	121326.7	114126.4	106.31	PASS	70-125
N023187-010B	SAMP	1	107083.9	93987.7	113.93	PASS	70-125	124192.3	114126.4	108.82	PASS	70-125
CCV4	CCV	1	113106.5	93987.7	120.34	PASS	70-125	134405.2	114126.4	117.77	PASS	70-125
CCB4	CCB	1	98174.1	93987.7	104.45	PASS	70-125	119178.9	114126.4	104.43	PASS	70-125
N023187-011B	SAMP	1	92736.9	93987.7	98.67	PASS	70-125	107362.4	114126.4	94.073	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N023187-012B	SAMP	1	92024.2	93987.7	97.91	PASS	70-125	106659.2	114126.4	93.46	PASS	70-125
N023187-013B	SAMP	1	92882.8	93987.7	98.82	PASS	70-125	104194.1	114126.4	91.3	PASS	70-125
N023187-014B	SAMP	1	100474.6	93987.7	106.9	PASS	70-125	116534.2	114126.4	102.11	PASS	70-125
N023187-002B	SAMP	25	100843.9	93987.7	107.29	PASS	70-125	120153.4	114126.4	105.28	PASS	70-125
N023187-002B-PS	PS	5	96147.1	93987.7	102.3	PASS	70-125	113948.6	114126.4	99.84	PASS	70-125
N023187-002B-MS	MS	5	94282.8	93987.7	100.31	PASS	70-125	113948.2	114126.4	99.84	PASS	70-125
N023187-002B-MSD	MSD	5	93320.8	93987.7	99.29	PASS	70-125	111831.5	114126.4	97.99	PASS	70-125
CCV5	CCV	1	101502.4	93987.7	108	PASS	70-125	121642.3	114126.4	106.59	PASS	70-125
CCB5	CCB	1	94370.8	93987.7	100.41	PASS	70-125	113195.3	114126.4	99.18	PASS	70-125
LLCCV2	CCV2	1	97203.9	93987.7	103.42	PASS	70-125	119093.9	114126.4	104.35	PASS	70-125
ICSA3	ICSA	1	83343.9	93987.7	88.68	PASS	70-125	97301.6	114126.4	85.26	PASS	70-125
ICSAB3	ICSAB	1	89096.9	93987.7	94.8	PASS	70-125	110128.6	114126.4	96.5	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3488544.3	3488544.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	3667614	3488544.3	105.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	3630252	3488544.3	104.06	PASS	70-125
Std3-5/50 ppb	ICAL	1	3645363.8	3488544.3	104.5	PASS	70-125
Std4-10/100 ppb	ICAL	1	3631228.8	3488544.3	104.09	PASS	70-125
Std5-20/200 ppb	ICAL	1	3575297.3	3488544.3	102.49	PASS	70-125
Std6-40/400 ppb	ICAL	1	3636707.4	3488544.3	104.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	3594217.4	3488544.3	103.03	PASS	70-125
Std8-200/2000 ppb	ICAL	1	3536028.1	3488544.3	101.36	PASS	70-125
ICV	ICV	1	3321810.5	3488544.3	95.22	PASS	70-125
ICB	ICB	1	3425331.2	3488544.3	98.19	PASS	70-125
LLICV	CCV1	1	3586750.2	3488544.3	102.82	PASS	70-125
ICSA1	ICSA	1	2688715.9	3488544.3	77.073	PASS	70-125
ICSAB1	ICSAB	1	2774965.3	3488544.3	79.55	PASS	70-125
CCV1	CCV	1	3571983.9	3488544.3	102.39	PASS	70-125
CCB1	CCB	1	3264807.5	3488544.3	93.59	PASS	70-125
CCV2	CCV	1	3638777.9	3488544.3	104.31	PASS	70-125
CCB2	CCB	1	3318571	3488544.3	95.13	PASS	70-125
MB-61386	MBLK	1	3329313.3	3488544.3	95.44	PASS	70-125
LCS-61386	LCS	1	3360582.5	3488544.3	96.33	PASS	70-125
N023187-002B	SAMP	1	3185767.2	3488544.3	91.32	PASS	70-125
N023187-002B	SAMP	5	3190854.6	3488544.3	91.47	PASS	70-125
N023187-002B-PS	PS	1	3233950.3	3488544.3	92.7	PASS	70-125
CCV3	CCV	1	3602449	3488544.3	103.27	PASS	70-125
CCB3	CCB	1	3348100.5	3488544.3	95.97	PASS	70-125
LLCCV1	CCV2	1	3528624.3	3488544.3	101.15	PASS	70-125
ICSA2	ICSA	1	2725198	3488544.3	78.12	PASS	70-125
ICSAB2	ICSAB	1	2863792.4	3488544.3	82.091	PASS	70-125
N023187-002B-MS	MS	1	3279768.2	3488544.3	94.015	PASS	70-125
N023187-002B-MSD	MSD	1	3203076.4	3488544.3	91.82	PASS	70-125
N023187-003B	SAMP	1	3434087.9	3488544.3	98.44	PASS	70-125
N023187-004B	SAMP	1	3433842.2	3488544.3	98.43	PASS	70-125
N023187-005B	SAMP	1	3473815.3	3488544.3	99.58	PASS	70-125
N023187-006B	SAMP	1	3485025.6	3488544.3	99.9	PASS	70-125
N023187-007B	SAMP	1	3412632.8	3488544.3	97.82	PASS	70-125
N023187-008B	SAMP	1	2873316.1	3488544.3	82.36	PASS	70-125
N023187-009B	SAMP	1	3133542.9	3488544.3	89.82	PASS	70-125
N023187-010B	SAMP	1	3426713	3488544.3	98.23	PASS	70-125
CCV4	CCV	1	3911110.9	3488544.3	112.11	PASS	70-125
CCB4	CCB	1	3496732.7	3488544.3	100.23	PASS	70-125
N023187-011B	SAMP	1	2988716.7	3488544.3	85.67	PASS	70-125

INTERNAL STANDARD: 170303A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N023187-012B	SAMP	1	2980421.8	3488544.3	85.43	PASS	70-125
N023187-013B	SAMP	1	2979553.8	3488544.3	85.41	PASS	70-125
N023187-014B	SAMP	1	3225123.1	3488544.3	92.45	PASS	70-125
N023187-002B	SAMP	25	3466825.4	3488544.3	99.38	PASS	70-125
N023187-002B-PS	PS	5	3256111.2	3488544.3	93.34	PASS	70-125
N023187-002B-MS	MS	5	3217808.5	3488544.3	92.24	PASS	70-125
N023187-002B-MSD	MSD	5	3192250.8	3488544.3	91.51	PASS	70-125
CCV5	CCV	1	3600645.3	3488544.3	103.21	PASS	70-125
CCB5	CCB	1	3385879.6	3488544.3	97.057	PASS	70-125
LLCCV2	CCV2	1	3571467.1	3488544.3	102.38	PASS	70-125
ICSA3	ICSA	1	2659450.8	3488544.3	76.23	PASS	70-125
ICSAB3	ICSAB	1	2824027.5	3488544.3	80.95	PASS	70-125

INTERNAL STANDARD: 170306B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	11339029.1	11339029.1	100	PASS	70-125	113949.1	113949.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	11163024.3	11339029.1	98.45	PASS	70-125	111148.3	113949.1	97.54	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	10934557.8	11339029.1	96.43	PASS	70-125	107784	113949.1	94.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	10831656.2	11339029.1	95.53	PASS	70-125	102401.5	113949.1	89.87	PASS	70-125
Std4-10/100 ppb	ICAL	1	10702793.5	11339029.1	94.39	PASS	70-125	98361.8	113949.1	86.32	PASS	70-125
Std5-20/200 ppb	ICAL	1	10607814.8	11339029.1	93.55	PASS	70-125	95333.3	113949.1	83.66	PASS	70-125
Std6-40/400 ppb	ICAL	1	10501432.2	11339029.1	92.61	PASS	70-125	92829	113949.1	81.47	PASS	70-125
Std7-100/1000 ppb	ICAL	1	10471579.1	11339029.1	92.35	PASS	70-125	91895.3	113949.1	80.65	PASS	70-125
Std8-200/2000 ppb	ICAL	1	10483793.7	11339029.1	92.46	PASS	70-125	92476.3	113949.1	81.16	PASS	70-125
ICV	ICV	1	12967009.3	11339029.1	114.36	PASS	70-125	104021.1	113949.1	91.29	PASS	70-125
ICB	ICB	1	12455955.4	11339029.1	109.85	PASS	70-125	102681.5	113949.1	90.11	PASS	70-125
LLICV	CCV1	1	10879715.9	11339029.1	95.95	PASS	70-125	89598.4	113949.1	78.63	PASS	70-125
ICSA1	ICSA	1	10341416.4	11339029.1	91.2	PASS	70-125	107810	113949.1	94.61	PASS	70-125
ICSAB1	ICSAB	1	11126166.4	11339029.1	98.12	PASS	70-125	118013.7	113949.1	103.57	PASS	70-125
CCV1	CCV	1	10383845.4	11339029.1	91.58	PASS	70-125	85470.3	113949.1	75.007	PASS	70-125
CCB1	CCB	1	11655893.4	11339029.1	102.79	PASS	70-125	120128.2	113949.1	105.42	PASS	70-125
CCV2	CCV	1	11643224.4	11339029.1	102.68	PASS	70-125	115569.7	113949.1	101.42	PASS	70-125
CCB2	CCB	1	11435399.4	11339029.1	100.85	PASS	70-125	111078.2	113949.1	97.48	PASS	70-125
N023187-007B	SAMP	5	11208130.3	11339029.1	98.85	PASS	70-125	108199.1	113949.1	94.95	PASS	70-125
N023187-008B	SAMP	5	11106577.1	11339029.1	97.95	PASS	70-125	106981	113949.1	93.88	PASS	70-125
N023187-013B	SAMP	5	10874109.3	11339029.1	95.9	PASS	70-125	103554.1	113949.1	90.88	PASS	70-125
CCV3	CCV	1	10579726.1	11339029.1	93.3	PASS	70-125	90246.2	113949.1	79.2	PASS	70-125
CCB3	CCB	1	10488725.1	11339029.1	92.5	PASS	70-125	87675	113949.1	76.94	PASS	70-125
LLCCV1	CCV2	1	11647395.1	11339029.1	102.72	PASS	70-125	111890	113949.1	98.19	PASS	70-125
ICSA2	ICSA	1	11505426.2	11339029.1	101.47	PASS	70-125	122220.3	113949.1	107.26	PASS	70-125
ICSAB2	ICSAB	1	11325233.2	11339029.1	99.88	PASS	70-125	124473.4	113949.1	109.24	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023187
Test Method: EPA 6020
Analysis Date: 3/3/2017

Matrix: Groundwater
Batch No.: 61386

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023187-002B DT 5X	Arsenic	ug/L	2.357157	NA	2.156946	9.28%	10
N023187-002B DT 25X	Barium	ug/L	145.1173	PASS	132.9976	9.11%	10
N023187-002B DT 5X	Chromium	ug/L	0.131172	NA	0.021736	503.48%	10
N023187-002B DT 5X	Manganese	ug/L	0.712448	NA	0.720185	1.07%	10
N023187-002B DT 5X	Molybdenum	ug/L	5.185889	NA	5.351321	3.09%	10
N023187-002B DT 5X	Selenium	ug/L	1.932535	NA	1.639585	17.87%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023187-002B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.870	0.10	10.00	2.157	97.1	80	120				
Manganese	89.366	0.50	100.0	0.7202	88.6	80	120				
Molybdenum	15.967	0.50	10.00	5.351	106	80	120				
Selenium	11.040	0.50	10.00	1.640	94.0	80	120				

Sample ID **N023187-002B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **113892**
Client ID: **ZZZZZZ** Batch ID: **61386** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/3/2017** SeqNo: **2586056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	246.596	5.0	100.0	133.0	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023187
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N023187-002B-PS**	SampType:	**PS**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:			RunNo:	**113892**
Client ID:	**ZZZZZZ**	Batch ID:	**61386**	TestNo:	**EPA 6020**		**EPA 3010A**	Analysis Date:	**3/3/2017**		SeqNo:	**2585957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.039	1.0	10.00	0.02174	90.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

March 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023401

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N023401

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023401-001B-MS2 and N023401-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium on QC samples N023344-002B-MS1 and N023344-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *22-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N023401
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023401-001A	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001B	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001C	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001D	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-002A	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002B	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002C	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002D	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-003A	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003B	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003C	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003D	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113994**
Client ID: **ZZZZZZ** Batch ID: **R113994** TestNo: **EPA 120.1** Analysis Date: **3/9/2017** SeqNo: **2590748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	5920.000	0.10						5890	0.508	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	N023400-001DDUP	SampType:	DUP	TestCode:	150.1_4500H	Units:	pH Units	Prep Date:		RunNo:	113995
Client ID:	ZZZZZZ	Batch ID:	R113995	TestNo:	SM4500-H+B			Analysis Date:	3/9/2017	SeqNo:	2590754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.160	0.10						7.210	0.696	10	H
Temp. at time of pH Analysis	16.300	0.10						16.70	2.42	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	3/9/2017 12:40 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4600	50	50		mg/L	1	3/9/2017 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4600	50	50		mg/L	1	3/9/2017 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-61527** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **LCSW** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	941.000	10	1000	0	94.1	80	120				

Sample ID **MB-61527** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **PBW** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N023401-003CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **ZZZZZZ** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4760.000	50						4585	3.75	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.7	0.066	0.20		µg/L	1	3/9/2017 01:58 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017**							Analyst: **CEI**
Chromium	2.1	0.019	1.0		µg/L	1	3/13/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate							Analyst: **RAB**
Hexavalent Chromium	560	6.6	20		µg/L	100	3/9/2017 02:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017**							Analyst: **CEI**
Chromium	630	0.096	5.0		µg/L	5	3/13/2017 02:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate							Analyst: **RAB**
Hexavalent Chromium	570	6.6	20		µg/L	100	3/9/2017 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017**							Analyst: **CEI**
Chromium	580	0.096	5.0		µg/L	5	3/13/2017 02:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R114035** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **PBW** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R114035** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **LCSW** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	90	110				

Sample ID **N023400-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.482	0.20	1.000	0.4427	104	90	110				

Sample ID **N023401-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.807	0.20	1.000	1.749	106	90	110				

Sample ID **N023401-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1075.340	20	500.0	563.7	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023401-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1071.730	20	500.0	563.7	102	90	110	1075	0.336	20	

Sample ID **N023401-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1064.010	20	500.0	567.1	99.4	90	110				

Sample ID **N023404-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.430	0.20						4.397	0.748	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61521** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **PBW** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID **LCS-61521** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **LCSW** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.611	1.0	10.00	0	106	85	115				

Sample ID **N023343-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.629	1.0	10.00	7.474	91.5	75	125				

Sample ID **N023343-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.420	1.0	10.00	7.474	89.5	75	125	16.63	1.27	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114006** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **LCSW** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.041	5.0	100.0	0	102	85	115				

Sample ID **MB-R114006** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **PBW** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	199.546	5.0						201.8	1.13	30	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.503	5.0	100.0	156.5	102	75	125				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.236	5.0	100.0	156.5	99.8	75	125	258.5	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Chloride	1100	0.72	100		mg/L	200	3/9/2017 12:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Sulfate	380	0.64	25		mg/L	50	3/9/2017 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Chloride	2200	1.8	250		mg/L	500	3/9/2017 01:25 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Sulfate	520	0.64	25		mg/L	50	3/9/2017 01:40 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Chloride	2200	1.8	250		mg/L	500	3/9/2017 01:55 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Sulfate	520	0.64	25		mg/L	50	3/9/2017 02:11 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R114023_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **PBW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.111	0.50									

Sample ID **LCS-R114023_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **LCSW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.023	0.50	2.000	0	101	90	110				

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1637.600	250						1662	1.51	20	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3233.400	250	1000	2210	102	80	120				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3236.100	250	1000	2210	103	80	120	3233	0.0835	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R114023_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **PBW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R114023_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **LCSW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.918	0.50	4.000	0	98.0	90	110				

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	409.210	25						414.1	1.19	20	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	700.790	25	200.0	519.1	90.8	80	120				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	697.495	25	200.0	519.1	89.2	80	120	700.8	0.471	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170321D** QC Batch: **R114210** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	3/21/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170321D** QC Batch: **R114210** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	3/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170321D**	QC Batch: **R114210**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	3/21/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R114210** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **PBW** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R114210** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **LCSW** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.486	0.050	0.5000	0	97.1	85	115				

Sample ID **N023400-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.023	0.050						0.02820	0	20	

Sample ID **N023400-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0.02820	96.0	75	125				

Sample ID **N023400-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.519	0.050	0.5000	0.02820	98.1	75	125	0.5081	2.03	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	110000	28	500		ug/L	1	3/14/2017 11:59 AM
Iron	ND	1.8	20		ug/L	1	3/14/2017 11:59 AM
Magnesium	23000	4.4	100		ug/L	1	3/14/2017 11:59 AM
Sodium	800000	1300	25000		ug/L	50	3/14/2017 03:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	210000	28	500		ug/L	1	3/14/2017 12:05 PM
Iron	ND	1.8	20		ug/L	1	3/14/2017 12:05 PM
Magnesium	30000	4.4	100		ug/L	1	3/14/2017 12:05 PM
Sodium	1600000	1300	25000		ug/L	50	3/14/2017 03:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	200000	28	500		ug/L	1	3/14/2017 12:20 PM
Iron	84	1.8	20		ug/L	1	3/14/2017 12:20 PM
Magnesium	28000	4.4	100		ug/L	1	3/14/2017 12:20 PM
Sodium	1500000	1300	25000		ug/L	50	3/14/2017 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61550** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **PBW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	53.156	500									
Iron	3.163	20									
Magnesium	5.012	100									

Sample ID **LCS1-61550** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **LCSW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8707.619	500	10000	0	87.1	85	115				
Iron	106.470	20	100.0	0	106	85	115				
Magnesium	8901.543	100	10000	0	89.0	85	115				

Sample ID **N023344-002B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	123614.344	500	10000	114100	95.2	75	125				
Iron	102.653	20	100.0	12.97	89.7	75	125				
Magnesium	25865.068	100	10000	18470	73.9	75	125				S

Sample ID **N023344-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	123742.973	500	10000	114100	96.5	75	125	123600	0.104	20	
Iron	100.413	20	100.0	12.97	87.4	75	125	102.7	2.21	20	
Magnesium	25854.710	100	10000	18470	73.8	75	125	25870	0.0401	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61550** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114089**
Client ID: **PBW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-61550** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114089**
Client ID: **LCSW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19668.437	500	20000	0	98.3	85	115				

Sample ID **N023401-001B-MS2** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114089**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	868572.080	25000	20000	804500	320	75	125				S

Sample ID **N023401-001B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114089**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	863496.578	25000	20000	804500	295	75	125	868600	0.586	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	92	0.056	0.50		µg/L	1	3/13/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	13	0.056	0.50		µg/L	1	3/13/2017 01:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	12	0.056	0.50		µg/L	1	3/13/2017 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-61521	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	PBW	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593807

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	LCS-61521	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	LCSW	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	107.519	0.50	100.0	0	108	85	115				

Sample ID	N023343-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	ZZZZZZ	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.871	0.50	100.0	3.108	95.8	75	125				

Sample ID	N023343-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	ZZZZZZ	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.616	0.50	100.0	3.108	95.5	75	125	98.87	0.258	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@antigen.com	Address:	
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By:		Phone: 949-727-1400, ext 200	Fax:
Title:	Phone: 916-786-3302 / Fax:		
Signature: Date:	Sampled By: Joel Pirgandio		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - PMP	Signature:	Date: 3-8-17	
Project Number: RC000753 801A			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: Ice		
Sample Temp: 5.2°C		

Courier:
Tracking No.:

Matrix		
Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6); (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (SM3500-CrB); (NH4)2, SO4, NH4, OH (250 mL poly)	Dissolved metals (SW6020A) FF; HNO3, 500 mL poly: Cr (1 L poly)	Dissolved metals (SW6010B/SW6020A/ds) FF; HNO3: Ca, Mg, Mn, Fe, Na (1 L poly)	Dissolved metals (SW6010B/SW6020A/ds) FF; HNO3: As, Mn, Fe, Se, Mo, Ba (1 L poly)	Total metals (SW6010B); HNO3: Fe (500 mL poly)	Anions (E300.0); Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500NO3); Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023401 - 01	PE-01-0317	1236	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN
2	- 02	TW-03D-0317	1256	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN
3	- 03	MW-930-Q117	1308	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
Joel Pirgandio	3-8-17	Tony Lang	3/8/17 1400
Tony Lang	3/8/17 2000	Tony Lang	3/8/17 2000

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/8/2017	Workorder:	N023401
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH was pastholding time upon receipt.

Checklist Completed By: YR 3/10/2017

Reviewed By: MBC 3/14/2017

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-001A	PE-01-0317	3/8/2017 12:36:00 PM	3/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-001B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-001C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-001D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-002A	TW-03D-0317	3/8/2017 12:58:00 PM	3/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-002B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-002C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-002C	TW-03D-0317	3/8/2017 12:58:00 PM	3/22/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-002D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-003A	MW-930-Q117	3/8/2017 1:08:00 PM	3/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-003B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-003C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-003D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-004A	FOLDER	3/22/2017	3/22/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-004A	FOLDER	3/22/2017	3/22/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801A

ASSET Laboratories Work Order: N023401

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N023401

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-45
Sample Receiving Items	46-51
List of Analysts	52
Raw Data	
EPA 120.1	53-56
SM 4500-H+B	57-64
SM 2540C	65-74
EPA 218.6	75-174
SM 2320B	175-184
EPA 300.0	185-211
SM 4500-NO3F	212-224
EPA 6010B_Dissolved	225-268
EPA 6020_Dissolved	269-308

March 22, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N023401

RE: PG&E Topock - PMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 08, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N023401

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023401-001B-MS2 and N023401-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium on QC samples N023344-002B-MS1 and N023344-002B-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *22-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801A
Lab Order: N023401
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023401-001A	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001B	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001C	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-001D	PE-01-0317	Groundwater	3/8/2017 12:36:00 PM	3/8/2017	3/22/2017
N023401-002A	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002B	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002C	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-002D	TW-03D-0317	Groundwater	3/8/2017 12:58:00 PM	3/8/2017	3/22/2017
N023401-003A	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003B	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003C	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017
N023401-003D	MW-930-Q117	Groundwater	3/8/2017 1:08:00 PM	3/8/2017	3/22/2017

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170309A**	QC Batch: **R113994**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	3/9/2017 09:20 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

Date: *22-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **113994**
Client ID: **ZZZZZZ** Batch ID: **R113994** TestNo: **EPA 120.1** Analysis Date: **3/9/2017** SeqNo: **2590748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	5920.000	0.10						5890	0.508	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170309B**	QC Batch: **R113995**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/9/2017 09:00 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	3/9/2017 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **113995**
Client ID: **ZZZZZZ** Batch ID: **R113995** TestNo: **SM4500-H+B** Analysis Date: **3/9/2017** SeqNo: **2590754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.160	0.10						7.210	0.696	10	H
Temp. at time of pH Analysis	16.300	0.10						16.70	2.42	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	3/9/2017 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4600	50	50		mg/L	1	3/9/2017 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170309H**	QC Batch: **61527**				PrepDate	**3/9/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4600	50	50		mg/L	1	3/9/2017 12:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-61527** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **LCSW** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	941.000	10	1000	0	94.1	80	120				

Sample ID **MB-61527** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **PBW** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N023401-003CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **3/9/2017** RunNo: **114029**
Client ID: **ZZZZZZ** Batch ID: **61527** TestNo: **SM2540C** Analysis Date: **3/9/2017** SeqNo: **2591727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4760.000	50						4585	3.75	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.7	0.066	0.20		µg/L	1	3/9/2017 01:58 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017**							Analyst: **CEI**
Chromium	2.1	0.019	1.0		µg/L	1	3/13/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate Analyst: **RAB**							
Hexavalent Chromium	560	6.6	20		µg/L	100	3/9/2017 02:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017** Analyst: **CEI**							
Chromium	630	0.096	5.0		µg/L	5	3/13/2017 02:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170309A** QC Batch: **R114035** PrepDate							Analyst: **RAB**
Hexavalent Chromium	570	6.6	20		µg/L	100	3/9/2017 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D** QC Batch: **61521** PrepDate **3/9/2017**							Analyst: **CEI**
Chromium	580	0.096	5.0		µg/L	5	3/13/2017 02:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R114035** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **PBW** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R114035** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **LCSW** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	90	110				

Sample ID **N023400-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.482	0.20	1.000	0.4427	104	90	110				

Sample ID **N023401-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.807	0.20	1.000	1.749	106	90	110				

Sample ID **N023401-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1075.340	20	500.0	563.7	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023401-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1071.730	20	500.0	563.7	102	90	110	1075	0.336	20	

Sample ID **N023401-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1064.010	20	500.0	567.1	99.4	90	110				

Sample ID **N023404-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.430	0.20						4.397	0.748	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-61521** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **PBW** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID **LCS-61521** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **LCSW** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.611	1.0	10.00	0	106	85	115				

Sample ID **N023343-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.629	1.0	10.00	7.474	91.5	75	125				

Sample ID **N023343-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **3/9/2017** RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.420	1.0	10.00	7.474	89.5	75	125	16.63	1.27	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170309E**	QC Batch: **R114006**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2017 10:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114006** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **LCSW** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102.041	5.0	100.0	0	102	85	115				

Sample ID **MB-R114006** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **PBW** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	199.546	5.0						201.8	1.13	30	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.503	5.0	100.0	156.5	102	75	125				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **114006**
Client ID: **ZZZZZZ** Batch ID: **R114006** TestNo: **SM 2320 B** Analysis Date: **3/9/2017** SeqNo: **2590935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.236	5.0	100.0	156.5	99.8	75	125	258.5	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate							Analyst: **RAB**
Chloride	1100	0.72	100		mg/L	200	3/9/2017 12:54 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate							Analyst: **RAB**
Sulfate	380	0.64	25		mg/L	50	3/9/2017 01:10 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Chloride	2200	1.8	250		mg/L	500	3/9/2017 01:25 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate Analyst: **RAB**							
Sulfate	520	0.64	25		mg/L	50	3/9/2017 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate							Analyst: **RAB**
Chloride	2200	1.8	250		mg/L	500	3/9/2017 01:55 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170309A** QC Batch: **R114023** PrepDate							Analyst: **RAB**
Sulfate	520	0.64	25		mg/L	50	3/9/2017 02:11 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R114023_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **PBW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.111	0.50									

Sample ID **LCS-R114023_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **LCSW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.023	0.50	2.000	0	101	90	110				

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1637.600	250						1662	1.51	20	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3233.400	250	1000	2210	102	80	120				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3236.100	250	1000	2210	103	80	120	3233	0.0835	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R114023_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **PBW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R114023_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **LCSW** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.918	0.50	4.000	0	98.0	90	110				

Sample ID **N023400-001DDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	409.210	25						414.1	1.19	20	

Sample ID **N023401-002CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	700.790	25	200.0	519.1	90.8	80	120				

Sample ID **N023401-002CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ZZZZZZ** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	697.495	25	200.0	519.1	89.2	80	120	700.8	0.471	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170321D** QC Batch: **R114210** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	3/21/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_170321D** QC Batch: **R114210** PrepDate							Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	3/21/2017

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170321D**	QC Batch: **R114210**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	3/21/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R114210** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **PBW** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R114210** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **LCSW** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.486	0.050	0.5000	0	97.1	85	115				

Sample ID **N023400-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.023	0.050						0.02820	0	20	

Sample ID **N023400-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0.02820	96.0	75	125				

Sample ID **N023400-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ZZZZZZ** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.519	0.050	0.5000	0.02820	98.1	75	125	0.5081	2.03	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	110000	28	500		ug/L	1	3/14/2017 11:59 AM
Iron	ND	1.8	20		ug/L	1	3/14/2017 11:59 AM
Magnesium	23000	4.4	100		ug/L	1	3/14/2017 11:59 AM
Sodium	800000	1300	25000		ug/L	50	3/14/2017 03:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	210000	28	500		ug/L	1	3/14/2017 12:05 PM
Iron	ND	1.8	20		ug/L	1	3/14/2017 12:05 PM
Magnesium	30000	4.4	100		ug/L	1	3/14/2017 12:05 PM
Sodium	1600000	1300	25000		ug/L	50	3/14/2017 03:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_170314B**	QC Batch: **61550**			PrepDate	**3/13/2017**		Analyst: **CEI**
Calcium	200000	28	500		ug/L	1	3/14/2017 12:20 PM
Iron	84	1.8	20		ug/L	1	3/14/2017 12:20 PM
Magnesium	28000	4.4	100		ug/L	1	3/14/2017 12:20 PM
Sodium	1500000	1300	25000		ug/L	50	3/14/2017 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-61550** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **PBW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	53.156	500									
Iron	3.163	20									
Magnesium	5.012	100									

Sample ID **LCS1-61550** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **LCSW** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8707.619	500	10000	0	87.1	85	115				
Iron	106.470	20	100.0	0	106	85	115				
Magnesium	8901.543	100	10000	0	89.0	85	115				

Sample ID **N023344-002B-MS1** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	123614.344	500	10000	114100	95.2	75	125				
Iron	102.653	20	100.0	12.97	89.7	75	125				
Magnesium	25865.068	100	10000	18470	73.9	75	125				S

Sample ID **N023344-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **3/13/2017** RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	123742.973	500	10000	114100	96.5	75	125	123600	0.104	20	
Iron	100.413	20	100.0	12.97	87.4	75	125	102.7	2.21	20	
Magnesium	25854.710	100	10000	18470	73.8	75	125	25870	0.0401	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-61550	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/13/2017	RunNo:	114089
Client ID:	PBW	Batch ID:	61550	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/14/2017	SeqNo:	2594237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-61550	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/13/2017	RunNo:	114089
Client ID:	LCSW	Batch ID:	61550	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/14/2017	SeqNo:	2594238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19668.437	500	20000	0	98.3	85	115				

Sample ID	N023401-001B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/13/2017	RunNo:	114089
Client ID:	ZZZZZZ	Batch ID:	61550	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/14/2017	SeqNo:	2594261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	868572.080	25000	20000	804500	320	75	125				S

Sample ID	N023401-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	3/13/2017	RunNo:	114089
Client ID:	ZZZZZZ	Batch ID:	61550	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	3/14/2017	SeqNo:	2594262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	863496.578	25000	20000	804500	295	75	125	868600	0.586	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:36:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	92	0.056	0.50		µg/L	1	3/13/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0317
Lab Order:	N023401	**Collection Date:**	3/8/2017 12:58:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	13	0.056	0.50		µg/L	1	3/13/2017 01:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-Mar-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-930-Q117
Lab Order:	N023401	**Collection Date:**	3/8/2017 1:08:00 PM
Project:	PG&E Topock - PMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023401-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170313D**	QC Batch: **61521**			PrepDate	**3/9/2017**		Analyst: **CEI**
Manganese	12	0.056	0.50		µg/L	1	3/13/2017 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-61521	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	PBW	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593807

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	LCS-61521	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	LCSW	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	107.519	0.50	100.0	0	108	85	115				

Sample ID	N023343-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	ZZZZZZ	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.871	0.50	100.0	3.108	95.8	75	125				

Sample ID	N023343-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	3/9/2017	RunNo:	114071
Client ID:	ZZZZZZ	Batch ID:	61521	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/13/2017	SeqNo:	2593814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.616	0.50	100.0	3.108	95.5	75	125	98.87	0.258	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By:
Title:
Signature: Date:

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@antigen.com
Address: 1410 Rocky Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Joel Pirgandio
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 3-8-17

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

I hereby authorize ASSET Labs to perform the tests indicated below
Project Name: PG&E Topock - PMP
Project Number: RC000753 801A

EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Global ID:
Specify State:

Sample Receipt Condition (Y / N):
1. Chilled ✓
2. Headspace
3. Container Intact
4. Seal Present
5. IR number
6. Method of Cooling: Ice
Sample Temp: 5.2°C
Courier:
Tracking No.:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH 250 mL poly	Dissolved metals (SW6020A) FF; HNO3, 500 mL poly Cr 1 L poly	Dissolved metals (SW6010B/SW6020A/ds) FF; HNO3 Ca, Mg, Mn, Fe, Na 1 L poly	Dissolved metals (SW6010B/SW6020A/ds) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 1 L poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500NO3) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N023401 - 01	PE-01-0317	1236	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN	
2	- 02	TW-03D-0317	1256	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN	
3	- 03	MW-930-Q117	1308	3-8-17		X		X	X			X	X	X	X	X		X	m	4	P	BN	
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reliquished by (Signature and Printed Name): Joel Pirgandio Date/Time: 3-8-17
Reliquished by (Signature and Printed Name): Jonny Lang Date/Time: 3/8/17 1400
Reliquished by (Signature and Printed Name): Jonny Lang Date/Time: 3/8/17 2000
Reliquished by (Signature and Printed Name): Jonny Lang Date/Time: 3/8/17 2000
Reliquished by (Signature and Printed Name): Date/Time:
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)
- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/8/2017	Workorder:	N023401
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH was pastholding time upon receipt.

Checklist Completed By: YR 3/10/2017

Reviewed By: MBC 3/14/2017

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-001A	PE-01-0317	3/8/2017 12:36:00 PM	3/22/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-001B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-001C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-001D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-002A	TW-03D-0317	3/8/2017 12:58:00 PM	3/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-002B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-002C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-002C	TW-03D-0317	3/8/2017 12:58:00 PM	3/22/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-002D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-003A	MW-930-Q117	3/8/2017 1:08:00 PM	3/22/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023401-003B			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/22/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/22/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023401-003C			3/22/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			3/22/2017		SM4500-H+B	pH	☐	☐	☐	WW
			3/22/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/22/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/22/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/22/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N023401-003D			3/22/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023401-004A	FOLDER	3/22/2017	3/22/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

08-Mar-17

WorkOrder: N023401

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 3/8/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023401-004A	FOLDER	3/22/2017	3/22/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N023401**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	SM 4500-NO3F
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	SM 2320B, SM 2540C, SM 4500-H+B, EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113994 **Analyst:** LSR

ASSET #: N023401 **Date Analyzed:** 3/9/2017

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/9/2017

2nd Level Reviewer 3/22/2017 Date: ___

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 3/9/17 920

Analyst: LSR

Standard	Std ID	Reading	Comments
10.43 µS/cm	CINV - 161025C	10.42 µS/cm @21.8°C	% Rec: (90-110%)
1413	161214B	1420 @21.9°C	
10043	161220I	10070 @21.7°C	
99938	161220J	98600 @22.1°C	

	Sample ID	Matrix	Reading	Comments
1	N023400 - 001D	H_2O	5890 @18.7°C	
2	N023401 - 001C		4310 @18.7°C	
3	2C		7650 @18.5°C	
4	3C		7810 @18.3°C	
5	N023400 - 001D DUP		5920 @18.4°C	
6				
7				
8	1413 µS/cm	CINV - 170125F	1472 µS/cm @21.0°C	
9	10053	160909E	10260 @21.2°C	Julia Ramit
10	99899	161104A	103000 @21.5°C	3/9/2017
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R113995 **Instrument ID:** pH meter

ASSET #: N023401 **Analyst:** LSR

Date Analyzed: 3/9/2017

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/9/2017

2nd Level Reviewer 3/22/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 3/9/17 900
Analyst: KR

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.02 @ 21.9°C	SLOPE: 98.7%
Buffer 7	↓ 161025A	7.01 @ 21.7°C	
Buffer 10	↓ 161214A	10.04 @ 21.9°C	

	Sample ID	Matrix	pH	Comments
1	N023400-001D	H2O	7.21 @ 16.7°C	
2	N023401-001C	↓	7.58 @ 16.5°C	
3	↓ 2C	↓	7.41 @ 16.7°C	
4	↓ 3C	↓	7.39 @ 16.5°C	
5	N023400-001D DUP	↓	7.16 @ 16.3°C	
6				
7				
8				
9				Julia Ramit 3/9/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10 (Circle one)	CINV-170125D	7.00 @ 21.0°C	Accept: +/-0.1 pH units from expected value

Date: 3/9/17 940
Analyst: KR

Standard	Std ID	pH	Comments
Buffer 4	CINV-161025B	4.02 @ 21.9°C	SLOPE: 98.7%
Buffer 7	↓ 161025A	7.01 @ 21.7°C	
Buffer 10	↓ 161214A	10.04 @ 21.9°C	

	Sample ID	Matrix	pH	Comments
1	N023321-001A	Soil	9.36 @ 22.1°C	
2	↓ 1A-DUP	↓	9.37 @ 22.3°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 4, (7) 10 (Circle one)	CINV-170125D	6.98 @ 22.3°C	Accept: +/-0.1 pH units from expected value

Logbook #10

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161012C	Stannous Chloride	LSS	160624C	-	10/12/16			LSR	
CINV-161013A	CITRIC ACID	ALFA AESAR	X15A002	99-102%	10/13/16			LSR	LIMS 8652
CINV-161025A	Buffer pH 7	VWR	4609D97	-	10/25/16	11/16/16	9/2018	LSR	
B	Buffer pH 4		4608A00	-		11/15/16	7/2018		
C	Conductivity Std, 1543 µS/cm		CC15045	-			6/13/17		
D	pH electrode storage soln		A6189	-			7/2018		
E	electrode internal fill soln	Thermo Scientific	UW1	-					
CINV-161026A	Sodium Hydroxide, pellet	MACRON	7708-06	-	10/26/16			LSR	
B	Ammonium Hydroxide	VWR	7216050				6/2019		
C	Potassium Hydroxide	JT Baker	1162-09						
CINV-161026D	Sodium Hydrogen Sulfate	Sigma Aldrich	MKBR4862V	-	10/26/16			LSR	#8668
CINV-161028A	Ammonium Sulfate	LABCHEM	F258-19	-	10/28/16			LSR	
B									
C									
D									
CINV-161103A	HEXANES	EMD chemicals	56139	-	11/3/16			LSR	8686
B									8687
C									8688
D									8689
CINV-161104A	Conductivity Std, 99879 µS/cm	LSS	CC15165	-	11/4/16		5/11/17	LSR	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	Stannous Chloride	LSS	160624-C	-	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	-	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16	12/13/16	8/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161214A	Buffer, pH 10	VWR	4609D54	-	12/19/16	12/30/16	3/2018	LSR	/RBA
B	Conductivity Std, 1413 uS/cm		CC15355	-			10/3/17	LSR	
C	Turbidity Std, 5.0 NTU	Amco Clear	C692002	-			12/2017	LSR	
CINV-161220A	Methyl Alcohol	Tedia	16030308	99.9%	12/20/16			MG	
B									
C									
D									
E									
F			-	-					
G	Stannous chloride	LSS	161128-A	-					
H				-					
CINV-161220I	Conductivity Std 10,000	VWR	CC15085	-	12/16/16	1/16/17	7/8/17	MG	
J	100,000		CC15261	-	12/19/16		9/2/17		
CINV-161228A	Ammonium Hydroxide	VWR	7216080	-	12/28/16	1/3/17	1/3/19	MG	/RBA
161228B				-					
161228C	1-5 Diphenylcarbohydrazide	J.T Baker	140227	-					

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
NV-161228D	Magnesium Chloride Hexahydrate	VWR	16C524	–	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F258-19	-	12/28/16	2/9/17	2/9/20		/ NBA
F									
G									
H									
I	Methanol	Omni Soln	J6238	99.9%		3/9/17	3/9/19	–	NBA
J	Sulfuric Acid								
~~INV-1/23~~ 1/23/17									
CINV170123A	Ammonium Persulfate	BDH	3056C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C035619	85%	1/25/17			KB	
B	Buffer, pH 4	VWR	4610A50	–			9/2018	LSR	
C	Buffer, pH 7		4611C60	-			10/2018	LSR	
D	Buffer, pH 7 (LCS)	Thermo Scientific	UQ1	-		3/9/17	10/2018	LSR	
E	Conductivity Std, 10,000 uS/cm	Ricca	2611936	-			10/2018	LSR	
F	Conductivity Std, 1413 uS/cm	Mettler Toledo	16G205006	-		3/2/17	7/20/18	LSR	
CINV170215A	Citric Acid Monohydrate	ALFA AESAR	S22C041	99-102%	2/15/17			KB	
CINV170220A	Sodium Hydrogen Sulfate	Sigma-Aldrich	MKB05396V	–	–			HSC	
CINV-170227A	Stannous Chloride	LSS	161216-3C		2/27/16			MG	
CINV-170303A	Conductivity Std, 9.76 uS/cm	VWR	CC15405	–	3/3/17		10/17/17	LSR	

Advanced Technology Laboratories-Las Vegas
Logbook #2

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61527 **Analyst:** LSR

ASSET #: N023401 **Date Analyzed:** 3/9/2017

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/10/2017

2nd Level Reviewer 3/22/2017 Date: ——

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N023401-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(59.2181 - 59.1408)*1000000}{30}$$
$$= 2576.6667 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2600 mg/L

Silia Ramit 3/10/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/9/2017 12:40:21 P**
Prep End Date: **3/10/2017 11:15:00**

Reviewed/ Date: 3/22/2017

Initials/ Date: Lilia Ramit 3/10/2017

Prep Batch **61527** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61527	Water		100	☐	0	0	100	1.000		
MB-61527	Water		100	☐	0	0	100	1.000		
N023400-001D	Groundwater		20	☐	0	0	100	5.000		
N023401-001C	Groundwater		30	☐	0	0	100	3.333		
N023401-002C	Groundwater		20	☐	0	0	100	5.000		
N023401-003C	Groundwater		20	☐	0	0	100	5.000		
N023401-003C-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8835	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170213A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 3/9/2017 12:40:21 P
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 3/10/2017

Prep Batch 61527 Prep Code: 160.1_W_PRE Technician: Lilia Ramit Prep Factor Units mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61527	Water	WST170213A	100	☐	0	0	100	1.000		
MB-61527	Water		100	☐	0	0	100	1.000		
N023400-001D	Groundwater	5890	100 /20	☐	0	0	100	1.000		
N023401-001C	Groundwater	4310	100 /30	☐	0	0	100	1.000		
N023401-002C	Groundwater	7450	100 /20	☐	0	0	100	1.000		
N023401-003C	Groundwater	7810	100 /20	☐	0	0	100	1.000		
N023401-003C-DU	Groundwater	⊥	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8835

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
3/9/17 1240 2	MB 61527	100	54.9398 54.9401	54.9405 54.9404	
3	LCS 61527	100	53.5340 53.5412	53.6351 53.6353	
mm	N0234100-001D	20	60.7016 60.7019	60.7725 60.7728	
B	N0234101-001C	30	59.1405 59.1408	59.2177 59.2181	
N	2C	20	60.5987 60.5991	60.6914 60.6917	
M	3C	20	59.5759 59.5763	59.6676 59.6680	
L	3C DUP	20	59.8897 59.8901	59.9855 59.9853	
Julia Ramit	3/10/2017				

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
3/10/2017									
MB-61527	100	54.9401	54.9404	3	1	3			MBLK
LCS-61527	100	53.5412	53.6353	941	1	941			LCS
N023400-001D	20	60.7019	60.7728	709	5	3545	5890	0.602	SAMP
N023401-001C	30	59.1408	59.2181	773	3.33333333	2576.66667	4310	0.598	SAMP
N023401-002C	20	60.5991	60.6917	926	5	4630	7650	0.605	SAMP
N023401-003C	20	59.5763	59.668	917	5	4585	7810	0.587	SAMP
N023401-003CDUP	20	59.8901	59.9853	952	5	4760	7810	0.609	DUP

Julia Ramit 3/10/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R114035
ASSET #: N023401

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 3/9/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/13/2017

2nd Level Reviewer 3/21/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N023401-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 1.7493 * 1$$

$$Cr^{+6}, \mu g/L = 1.75$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 1.7}$$

rba 3/13/2017

ANALYSIS RUN LOG

INJECTION LOG: 170303A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:18 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:29 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	03/03/17 9:39 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:48 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:58 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:07 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:16 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:26 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:35 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	03/03/17 10:46 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/03/17 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	03/03/17 11:07 AM	Reported
13	MB-R113878	MBLK	1	Hexavalent Chromium	03/03/17 11:17 AM	Reported
14	LCS-R113878	LCS	1	Hexavalent Chromium	03/03/17 11:26 AM	Reported
15	N023268-001B	SAMP	100	Hexavalent Chromium	03/03/17 11:36 AM	Reported
16	N023268-001BDUP	DUP	100	Hexavalent Chromium	03/03/17 11:47 AM	Reported
17	N023268-001BMS	MS	100	Hexavalent Chromium	03/03/17 11:57 AM	Reported
18	N023268-001BMSD	MSD	100	Hexavalent Chromium	03/03/17 12:06 PM	Reported
19	N023268-002C	SAMP	1	Hexavalent Chromium	03/03/17 12:16 PM	Reported
20	N023268-002CMS	MS	1	Hexavalent Chromium	03/03/17 12:25 PM	Reported
21	CCV-1	CCV1	1	Hexavalent Chromium	03/03/17 1:03 PM	Reported
22	CCB-1	CCB	1	Hexavalent Chromium	03/03/17 1:15 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170303A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Mar/17 15:41:23**
No. of Injections:	**25**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/03/2017 09:18	Finished	
2	BLANK	2	1000	Unknown		03/03/2017 09:29	Finished	
3	iBLANK	3	1000	Unknown		03/03/2017 09:39	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/03/2017 09:48	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/03/2017 09:58	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/03/2017 10:07	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/03/2017 10:16	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	03/03/2017 10:26	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/03/2017 10:35	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		03/03/2017 10:46	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		03/03/2017 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		03/03/2017 11:07	Finished	ICB R170123B
13	MB-H2O,MBLK,1	14	1000	Unknown		03/03/2017 11:17	Finished	MB R170123B
14	LCS-H2O,LCS,1	15	1000	Unknown		03/03/2017 11:26	Finished	LCS, IWST-161114D
15	N023268-001B,SAMP	16	1000	Unknown		03/03/2017 11:36	Finished	SAMP, 0.1>10mL
16	N023268-001BDUP,D	17	1000	Unknown		03/03/2017 11:47	Finished	DUP, 0.1>10mL
17	N023268-001BMS,MS	18	1000	Unknown		03/03/2017 11:57	Finished	MS (5ppb), IWST-161114D,0.1
18	N023268-001BMSD,M	19	1000	Unknown		03/03/2017 12:06	Finished	MSD (5ppb), IWST-161114D,0.
19	N023268-002C,SAMP	20	1000	Unknown		03/03/2017 12:16	Finished	SAMP, 10mL
20	N023268-002CMS,MS	21	1000	Unknown		03/03/2017 12:25	Finished	MS (1ppb), IWST-161114D,10
21	CCV-1,CCV1,1,	22	1000	Unknown		03/03/2017 13:03	Finished	CCV @10ppb, IWST-161114C
22	CCB-1,CCB,1,	23	1000	Unknown		03/03/2017 13:15	Finished	CCB R170123B
23	SHUTDOWN	24	1000	Unknown		03/03/2017 13:24	Finished	
24	Eluent: R170228A	25	1000	Unknown		n.a.	Finished	Eluent
25	PCR: R170228B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170309A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:18 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:29 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	03/03/17 9:39 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:48 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:58 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:07 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:16 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:26 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:35 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	03/09/17 10:10 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	03/09/17 10:21 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	03/09/17 10:30 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/09/17 10:40 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	03/09/17 10:49 AM	Reported
15	MB-R114035	MBLK	1	Hexavalent Chromium	03/09/17 10:58 AM	Reported
16	LCS-R114035	LCS	1	Hexavalent Chromium	03/09/17 11:08 AM	Reported
17	N023397-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:17 AM	Reported
18	N023397-002A	SAMP	1	Hexavalent Chromium	03/09/17 11:27 AM	Reported
19	N023398-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:36 AM	Reported
20	N023398-002A	SAMP	1	Hexavalent Chromium	03/09/17 11:46 AM	Reported
21	N023402-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:55 AM	Reported
22	N023403-001A	SAMP	1	Hexavalent Chromium	03/09/17 12:05 PM	Reported
23	N023404-001A	SAMP	1	Hexavalent Chromium	03/09/17 12:14 PM	Reported
24	N023404-002A	SAMP	1	Hexavalent Chromium	03/09/17 12:24 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	03/09/17 12:33 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	03/09/17 12:43 PM	Reported
27	N023404-003A	SAMP	1	Hexavalent Chromium	03/09/17 12:52 PM	Reported
28	N023404-004A	SAMP	1	Hexavalent Chromium	03/09/17 1:02 PM	Reported
29	N023404-007A	SAMP	1	Hexavalent Chromium	03/09/17 1:11 PM	Reported
30	N023404-008A	SAMP	1	Hexavalent Chromium	03/09/17 1:20 PM	Reported
31	N023404-009A	SAMP	1	Hexavalent Chromium	03/09/17 1:30 PM	Reported
32	N023400-001A	SAMP	1	Hexavalent Chromium	03/09/17 1:39 PM	Reported
33	N023400-001AMS	MS	1	Hexavalent Chromium	03/09/17 1:49 PM	Reported
34	N023401-001A	SAMP	1	Hexavalent Chromium	03/09/17 1:58 PM	Reported
35	N023401-001AMS	MS	1	Hexavalent Chromium	03/09/17 2:08 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	03/09/17 2:17 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	03/09/17 2:27 PM	Reported
38	N023401-002A	SAMP	100	Hexavalent Chromium	03/09/17 2:36 PM	Reported
39	N023401-002AMS	MS	100	Hexavalent Chromium	03/09/17 2:46 PM	Reported
40	N023401-002AMSD	MSD	100	Hexavalent Chromium	03/09/17 2:55 PM	Reported
41	N023401-003A	SAMP	100	Hexavalent Chromium	03/09/17 3:05 PM	Reported
42	N023401-003AMS	MS	100	Hexavalent Chromium	03/09/17 3:14 PM	Reported
43	N023404-002ADUP	DUP	1	Hexavalent Chromium	03/09/17 3:23 PM	Reported
44	N023396-001A	SAMP	1	Hexavalent Chromium	03/09/17 3:33 PM	Not Reported
45	N023396-001A	SAMP	5	Hexavalent Chromium	03/09/17 4:01 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	03/09/17 4:13 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	03/09/17 4:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170309A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Mar/17 17:00:59**
No. of Injections:	**50**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/03/2017 09:18	Finished	
2	BLANK	2	1000	Unknown		03/03/2017 09:29	Finished	
3	iBLANK	3	1000	Unknown		03/03/2017 09:39	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/03/2017 09:48	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/03/2017 09:58	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/03/2017 10:07	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/03/2017 10:16	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	03/03/2017 10:26	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/03/2017 10:35	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		03/09/2017 10:10	Finished	
11	BLANK	2	1000	Unknown		03/09/2017 10:21	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		03/09/2017 10:30	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		03/09/2017 10:40	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		03/09/2017 10:49	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		03/09/2017 10:58	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		03/09/2017 11:08	Finished	LCS, IWST-161114D
17	N023397-001A,SAMF	8	1000	Unknown		03/09/2017 11:17	Finished	SAMP, 10mL
18	N023397-002A,SAMF	9	1000	Unknown		03/09/2017 11:27	Finished	SAMP, 10mL
19	N023398-001A,SAMF	10	1000	Unknown		03/09/2017 11:36	Finished	SAMP, 10mL
20	N023398-002A,SAMF	11	1000	Unknown		03/09/2017 11:46	Finished	SAMP, 10mL
21	N023402-001A,SAMF	12	1000	Unknown		03/09/2017 11:55	Finished	SAMP, 10mL
22	N023403-001A,SAMF	13	1000	Unknown		03/09/2017 12:05	Finished	SAMP, 10mL
23	N023404-001A,SAMF	14	1000	Unknown		03/09/2017 12:14	Finished	SAMP, 10mL
24	N023404-002A,SAMF	15	1000	Unknown		03/09/2017 12:24	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		03/09/2017 12:33	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		03/09/2017 12:43	Finished	CCB R170123B
27	N023404-003A,SAMF	18	1000	Unknown		03/09/2017 12:52	Finished	SAMP, 10mL
28	N023404-004A,SAMF	19	1000	Unknown		03/09/2017 13:02	Finished	SAMP, 10mL
29	N023404-007A,SAMF	20	1000	Unknown		03/09/2017 13:11	Finished	SAMP, 10mL
30	N023404-008A,SAMF	21	1000	Unknown		03/09/2017 13:20	Finished	SAMP, 10mL
31	N023404-009A,SAMF	22	1000	Unknown		03/09/2017 13:30	Finished	SAMP, 10mL
32	N023400-001A,SAMF	23	1000	Unknown		03/09/2017 13:39	Finished	SAMP, 10mL
33	N023400-001AMS,MS	24	1000	Unknown		03/09/2017 13:49	Finished	MS (1ppb), IWST-161114D,10
34	N023401-001A,SAMF	25	1000	Unknown		03/09/2017 13:58	Finished	SAMP, 10mL
35	N023401-001AMS,MS	26	1000	Unknown		03/09/2017 14:08	Finished	MS (1ppb), IWST-161114D,10
36	CCV-3,CCV,1,	27	1000	Unknown		03/09/2017 14:17	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	28	1000	Unknown		03/09/2017 14:27	Finished	CCB R170123B
38	N023401-002A,SAMF	29	1000	Unknown		03/09/2017 14:36	Finished	SAMP,0.1>10mL
39	N023401-002AMS,MS	30	1000	Unknown		03/09/2017 14:46	Finished	MS (5ppb), IWST-161114D,0.1
40	N023401-002AMSD,M	31	1000	Unknown		03/09/2017 14:55	Finished	MSD (5ppb), IWST-161114D,0.
41	N023401-003A,SAMF	32	1000	Unknown		03/09/2017 15:05	Finished	SAMP,0.1>10mL
42	N023401-003AMS,MS	33	1000	Unknown		03/09/2017 15:14	Finished	MS (5ppb), IWST-161114D,0.1
43	N023404-002ADUP,D	34	1000	Unknown		03/09/2017 15:23	Finished	DUP, 10mL
44	N023396-001A,SAMF	35	1000	Unknown		03/09/2017 15:33	Finished	SAMP, 10mL
45	N023396-001A,SAMF	37	1000	Unknown		03/09/2017 16:01	Finished	SAMP, 2>10mL
46	CCV-4,CCV1,1,	38	1000	Unknown		03/09/2017 16:13	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	39	1000	Unknown		03/09/2017 16:22	Finished	CCB R170123B
48	SHUTDOWN	40	1000	Unknown		03/09/2017 16:38	Finished	
49	Eluent: R170309A	41	1000	Unknown		n.a.	Finished	Eluent
50	PCR: R170309B	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 3/9/17
Time Prepared: 0955H
Prepared By: RBA

Slope: 98.72
pH 4: 4.02 @ 21.9°C
7: 7.01 @ 21.7°C
10: 10.04 @ 21.9°C
10: 7.00 @ 21.0°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170309A
NH4OH + NH4SO4 buffer: M170123B

6N NaOH: R170308A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023397-001A	9.50	-	~250 ml	~250 ml		
2)	2A	9.52	-				
3)	N023398-1A	9.24	9.44			+3 drps 6N NaOH	
4)	2A	9.27	9.40			+2 "	
5)	N023400-1A	9.36	-				
6)	N023401-1A	9.48	-				
7)	2A	9.42	-				
8)	3A	9.32	-				
9)	N023402-1A	9.49	-				
10)	N023403-1A	9.00	9.35			+5 drps 6N NaOH	
11)	N023404-1A	9.62	-				
12)	2A	9.39	-				
13)	3A	9.24	9.40			+2 drps "	
14)	4A	9.43	-				
15)	7A	8.97	9.48			+6 drps "	
	8A	9.60	-				

Sample Preparation

Date Prepared: 3/9/17
Time Prepared: 0955H
Prepared By: RBA

CONT'D

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CINV-161012A
NH4OH + NH4SO4 eluent: R170309A
NH4OH + NH4SO4 buffer: M170123B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N023404-9A	9.57	-	~250 ml	~250 ml		client preserved
2)	N023396-1A	9.00		~100 ml	~100 ml		
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

rba 3/13/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 3/3/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0505	0.2695	1.3436	2.6535	4.0045	5.3344	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST161114C

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ICV** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/3/2017** SeqNo: **2592045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	0.20	5.000	0	99.5	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/3/2017** SeqNo: **2592046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **CCV** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.077	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.197	0.20	0.2000	0	98.7	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ZZZZZZ** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.182	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	CCV-3	SampType:	CCV	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114035
Client ID:	CCV	Batch ID:	R114035	TestNo:	EPA 218.6			Analysis Date:	3/9/2017	SeqNo:	2592072

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	95	105				

Sample ID	CCV-4	SampType:	CCV1	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114035
Client ID:	ZZZZZZ	Batch ID:	R114035	TestNo:	EPA 218.6			Analysis Date:	3/9/2017	SeqNo:	2592081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.181	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **ICB** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/3/2017** SeqNo: **2592047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **CCB** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **CCB** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **CCB** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114035**
Client ID: **CCB** Batch ID: **R114035** TestNo: **EPA 218.6** Analysis Date: **3/9/2017** SeqNo: **2592082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 3/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.190	
CCV-3	4.190	
CCV-4	4.190	
Average	4.190	
Actual RT Window	4.110 - 4.270	
Applied RT Window	3.990 - 4.390	
MB-R114035	N.A.	N.A.
LCS-R114035	4.190	PASS
N023397-001A	4.190	PASS
N023397-002A	4.173	PASS
N023398-001A	4.165	PASS
N023398-002A	4.173	PASS
N023402-001A	4.190	PASS
N023403-001A	4.106	PASS
N023404-001A	4.173	PASS
N023404-002A	4.173	PASS
N023404-003A	4.165	PASS
N023404-004A	4.173	PASS
N023404-007A	4.165	PASS
N023404-008A	N.A.	N.A.
N023404-009A	4.181	PASS
N023400-001A	4.106	PASS
N023400-001AMS	4.098	PASS
N023401-001A	4.131	PASS
N023401-001AMS	4.131	PASS
N023401-002A	4.190	PASS
N023401-002AMS	4.190	PASS
N023401-002AMSD	4.190	PASS
N023401-003A	4.190	PASS
N023401-003AMS	4.190	PASS
N023404-002ADUP	4.173	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 3/9/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.190	
CCV-2	4.190	
CCV-3	4.190	
CCV-4	4.190	
Average	4.190	
Actual RT Window	4.110 - 4.270	
Applied RT Window	3.990 - 4.390	
N023396-001A	3.998	PASS
N023396-001A	4.148	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/18

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 5/23/2016
Analyst: Jannette Soria

Instrument Name: **IC-06**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.068	0.15	0.157

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.211	**105**

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170303A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:18 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:29 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	03/03/17 9:39 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:48 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:58 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:07 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:16 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:26 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:35 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	03/03/17 10:46 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/03/17 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	03/03/17 11:07 AM	Reported
13	MB-R113878	MBLK	1	Hexavalent Chromium	03/03/17 11:17 AM	Reported
14	LCS-R113878	LCS	1	Hexavalent Chromium	03/03/17 11:26 AM	Reported
15	N023268-001B	SAMP	100	Hexavalent Chromium	03/03/17 11:36 AM	Reported
16	N023268-001BDUP	DUP	100	Hexavalent Chromium	03/03/17 11:47 AM	Reported
17	N023268-001BMS	MS	100	Hexavalent Chromium	03/03/17 11:57 AM	Reported
18	N023268-001BMSD	MSD	100	Hexavalent Chromium	03/03/17 12:06 PM	Reported
19	N023268-002C	SAMP	1	Hexavalent Chromium	03/03/17 12:16 PM	Reported
20	N023268-002CMS	MS	1	Hexavalent Chromium	03/03/17 12:25 PM	Reported
21	CCV-1	CCV1	1	Hexavalent Chromium	03/03/17 1:03 PM	Reported
22	CCB-1	CCB	1	Hexavalent Chromium	03/03/17 1:15 PM	Reported

rba 3/6/2017

3/13/2017

Injection Log Summary

Sequence Details

Name:	**IC-07_170303A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**03/Mar/17 15:41:23**
No. of Injections:	**25**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/03/2017 09:18	Finished	
2	BLANK	2	1000	Unknown		03/03/2017 09:29	Finished	
3	iBLANK	3	1000	Unknown		03/03/2017 09:39	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/03/2017 09:48	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/03/2017 09:58	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/03/2017 10:07	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/03/2017 10:16	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	03/03/2017 10:26	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/03/2017 10:35	Finished	20 ppb, IWST161114C
10	ICV,ICV,1,	11	1000	Unknown		03/03/2017 10:46	Finished	ICV @5ppb, IWST-161114D
11	PQL@0.2ppb,CCV2,	12	1000	Unknown		03/03/2017 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		03/03/2017 11:07	Finished	ICB R170123B
13	MB-H2O,MBLK,1	14	1000	Unknown		03/03/2017 11:17	Finished	MB R170123B
14	LCS-H2O,LCS,1	15	1000	Unknown		03/03/2017 11:26	Finished	LCS, IWST-161114D
15	N023268-001B,SAMP	16	1000	Unknown		03/03/2017 11:36	Finished	SAMP, 0.1>10mL
16	N023268-001BDUP,D	17	1000	Unknown		03/03/2017 11:47	Finished	DUP, 0.1>10mL
17	N023268-001BMS,MS	18	1000	Unknown		03/03/2017 11:57	Finished	MS (5ppb), IWST-161114D,0.1
18	N023268-001BMSD,M	19	1000	Unknown		03/03/2017 12:06	Finished	MSD (5ppb), IWST-161114D,0.
19	N023268-002C,SAMP	20	1000	Unknown		03/03/2017 12:16	Finished	SAMP, 10mL
20	N023268-002CMS,MS	21	1000	Unknown		03/03/2017 12:25	Finished	MS (1ppb), IWST-161114D,10
21	CCV-1,CCV1,1,	22	1000	Unknown		03/03/2017 13:03	Finished	CCV @10ppb, IWST-161114C
22	CCB-1,CCB,1,	23	1000	Unknown		03/03/2017 13:15	Finished	CCB R170123B
23	SHUTDOWN	24	1000	Unknown		03/03/2017 13:24	Finished	
24	Eluent: R170228A	25	1000	Unknown		n.a.	Finished	Eluent
25	PCR: R170228B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

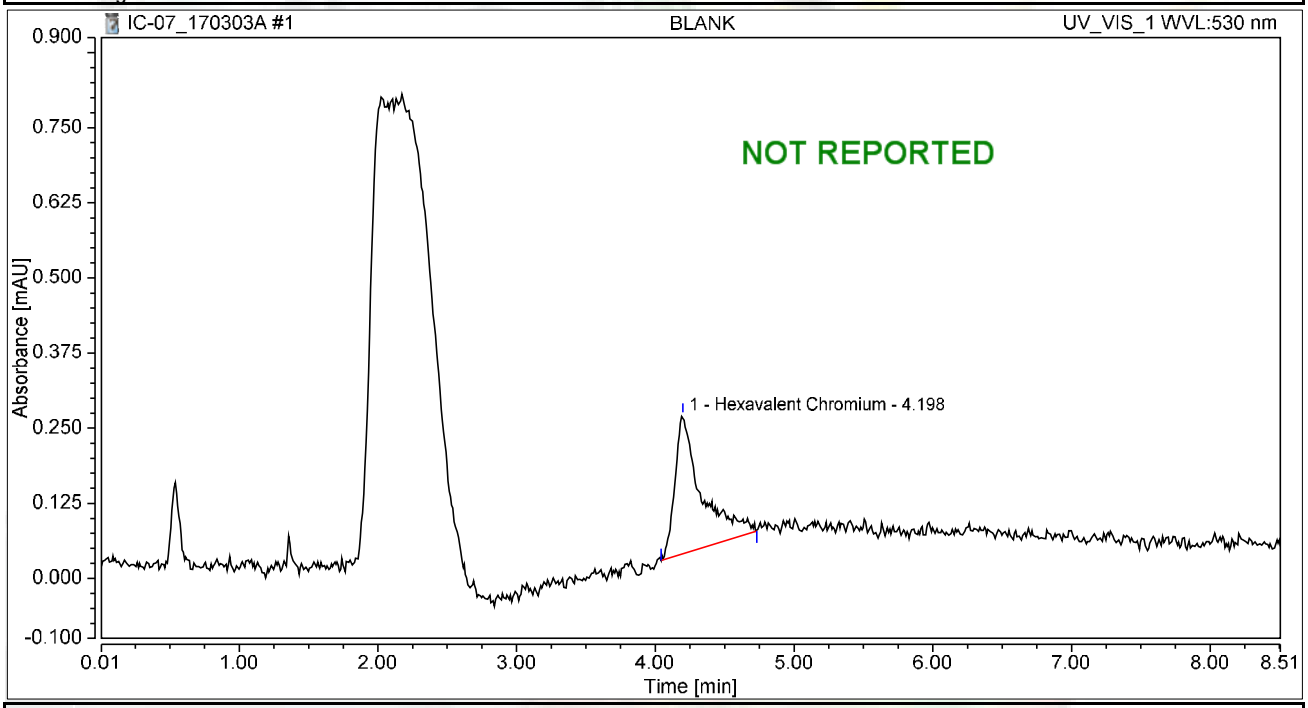
rba 3/6/2017

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

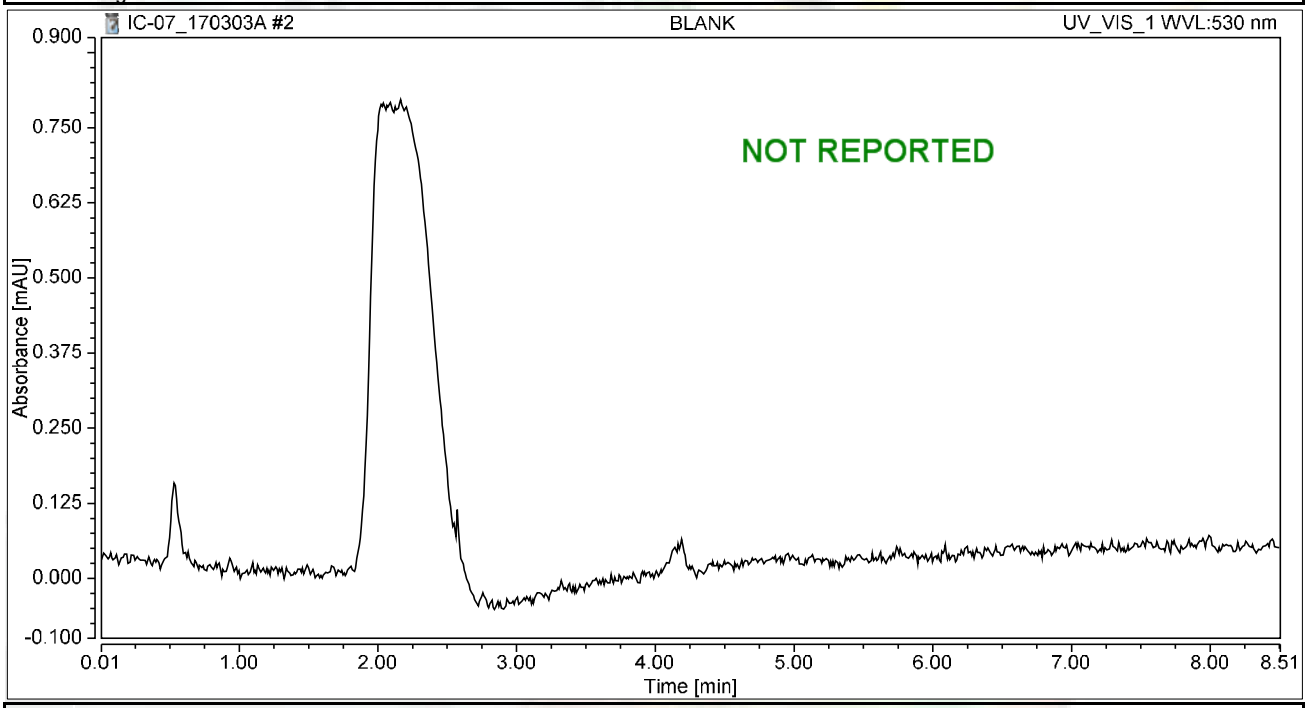
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.051	0.231	100.00	100.00	0.1918
Total:			**0.051**	**0.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

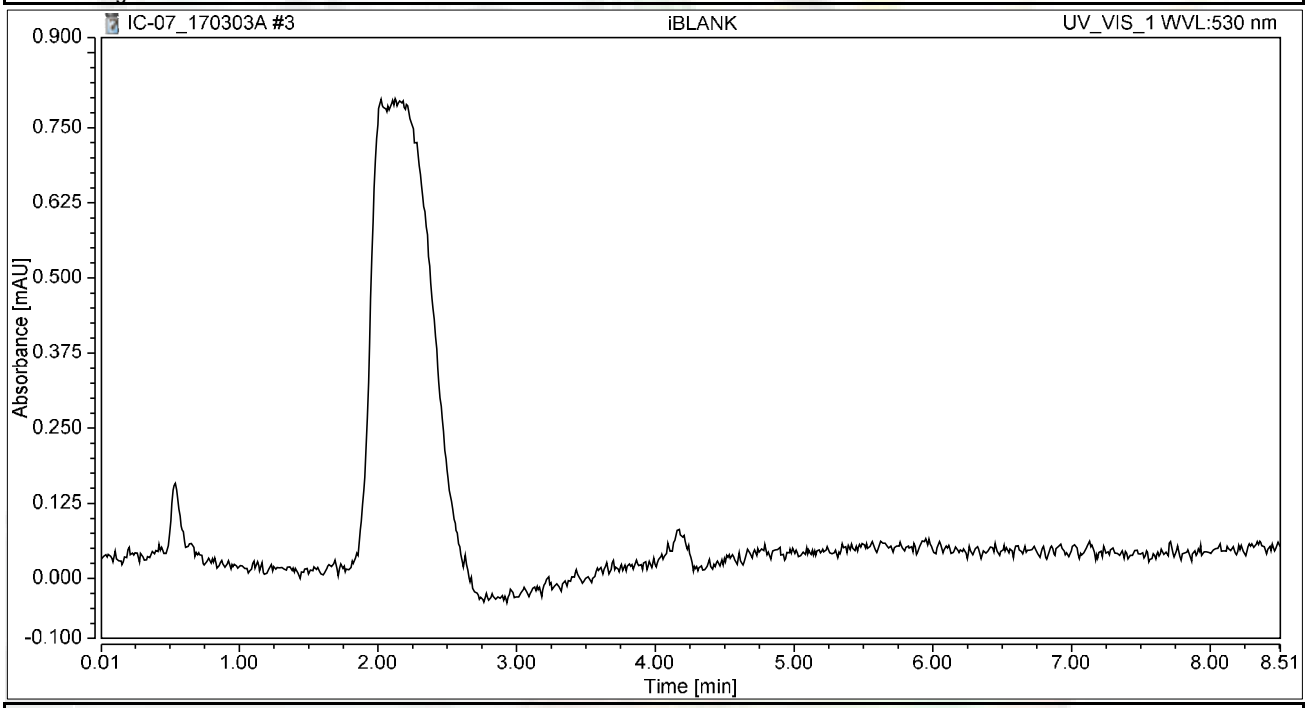
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

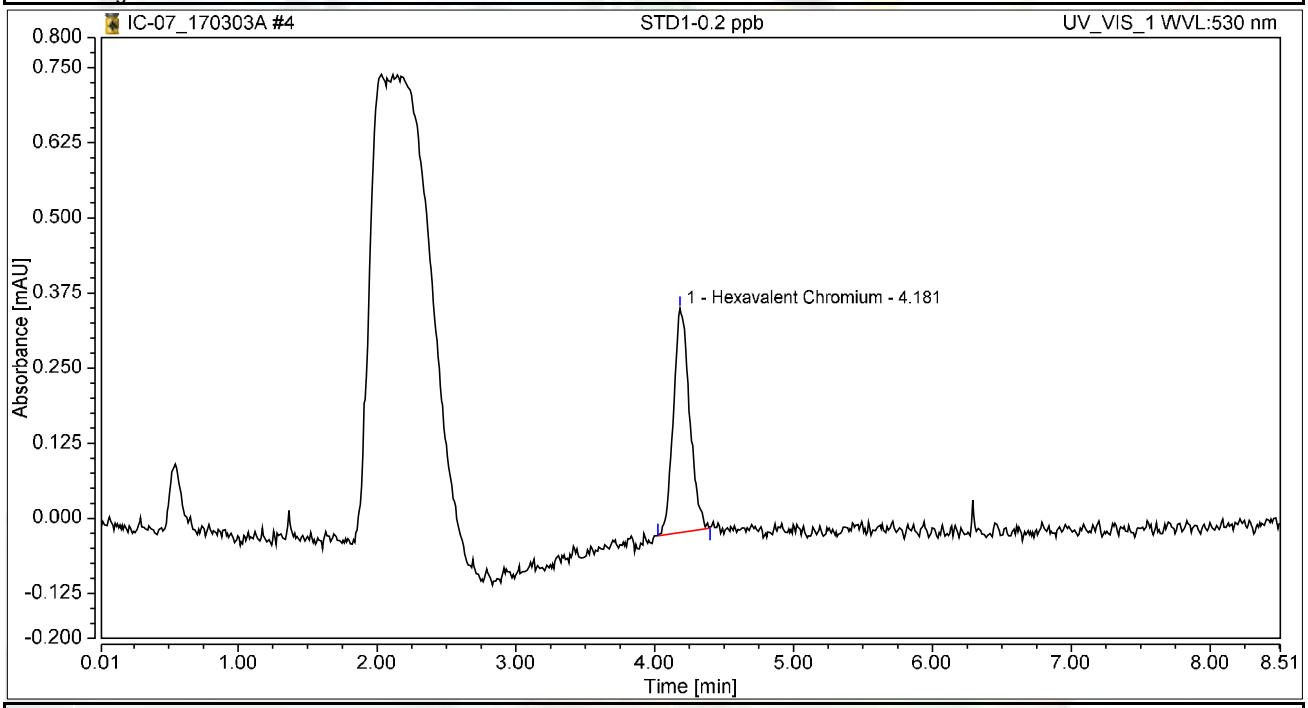
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

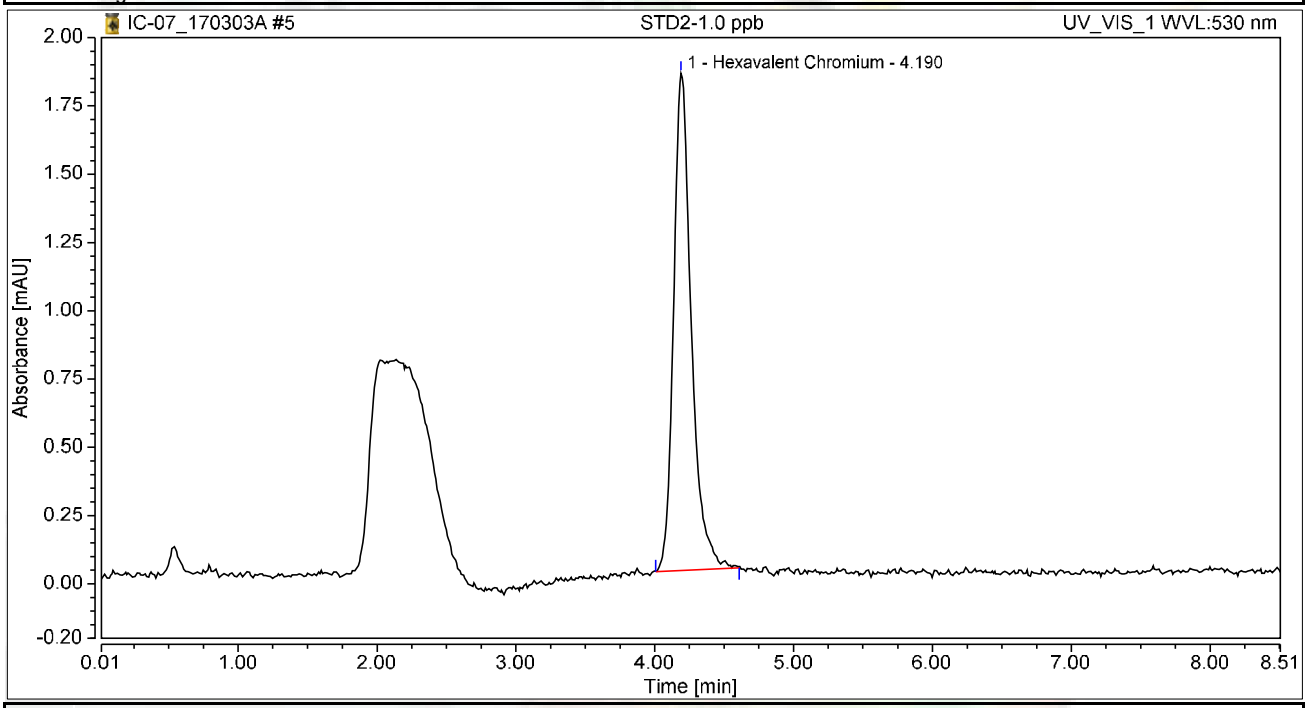
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.051	0.373	100.00	100.00	0.1895
Total:			**0.051**	**0.373**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

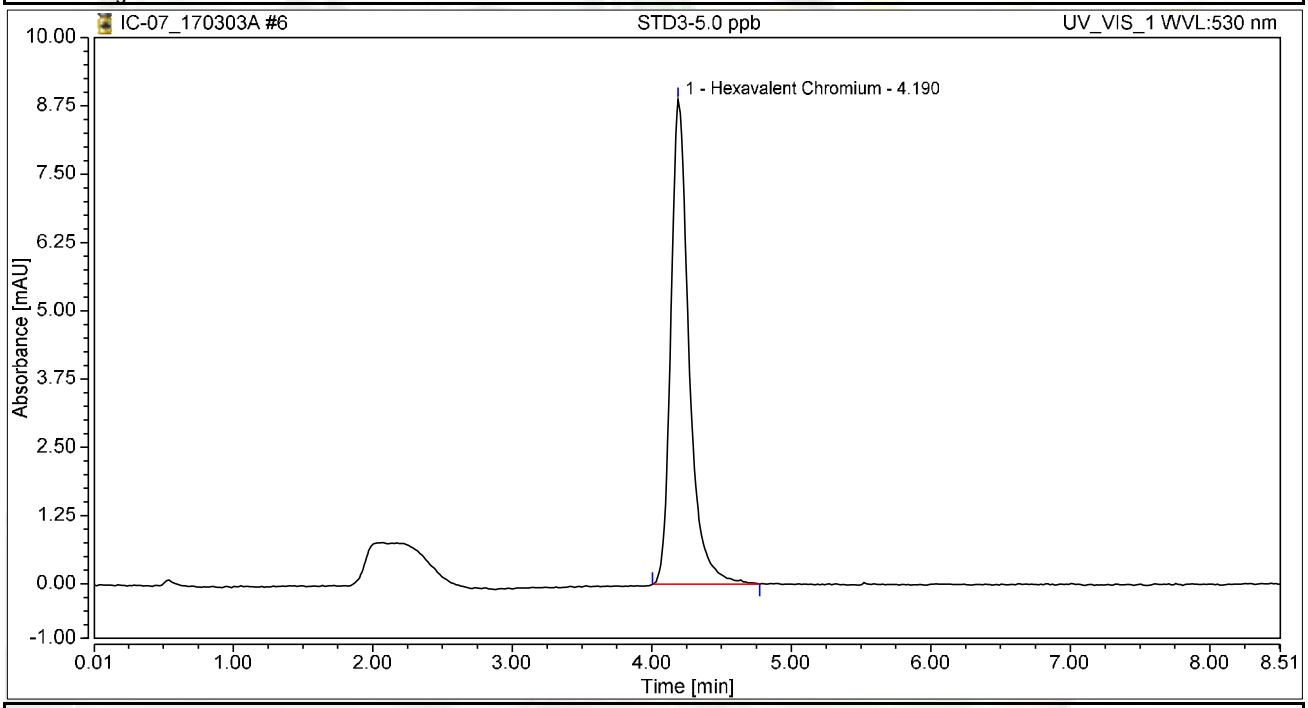
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.269	1.820	100.00	100.00	1.0104
Total:			**0.269**	**1.820**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

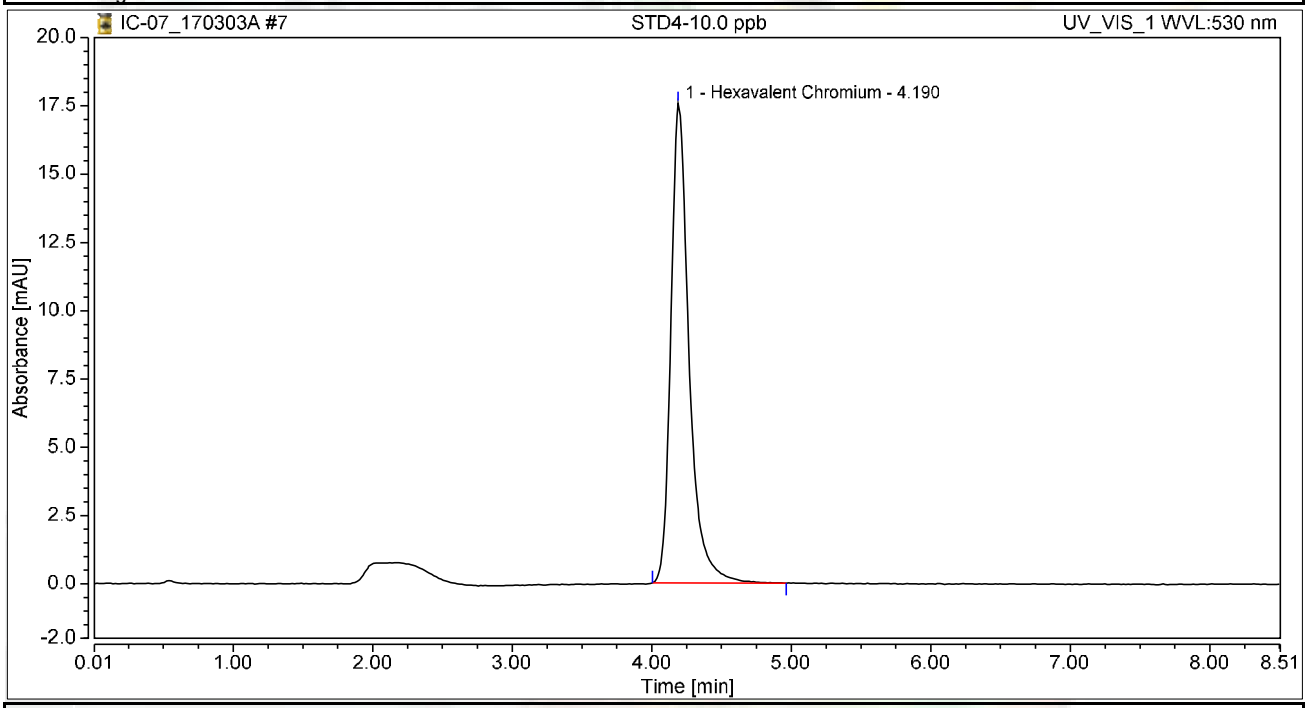
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.344	8.875	100.00	100.00	5.0382
Total:			**1.344**	**8.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

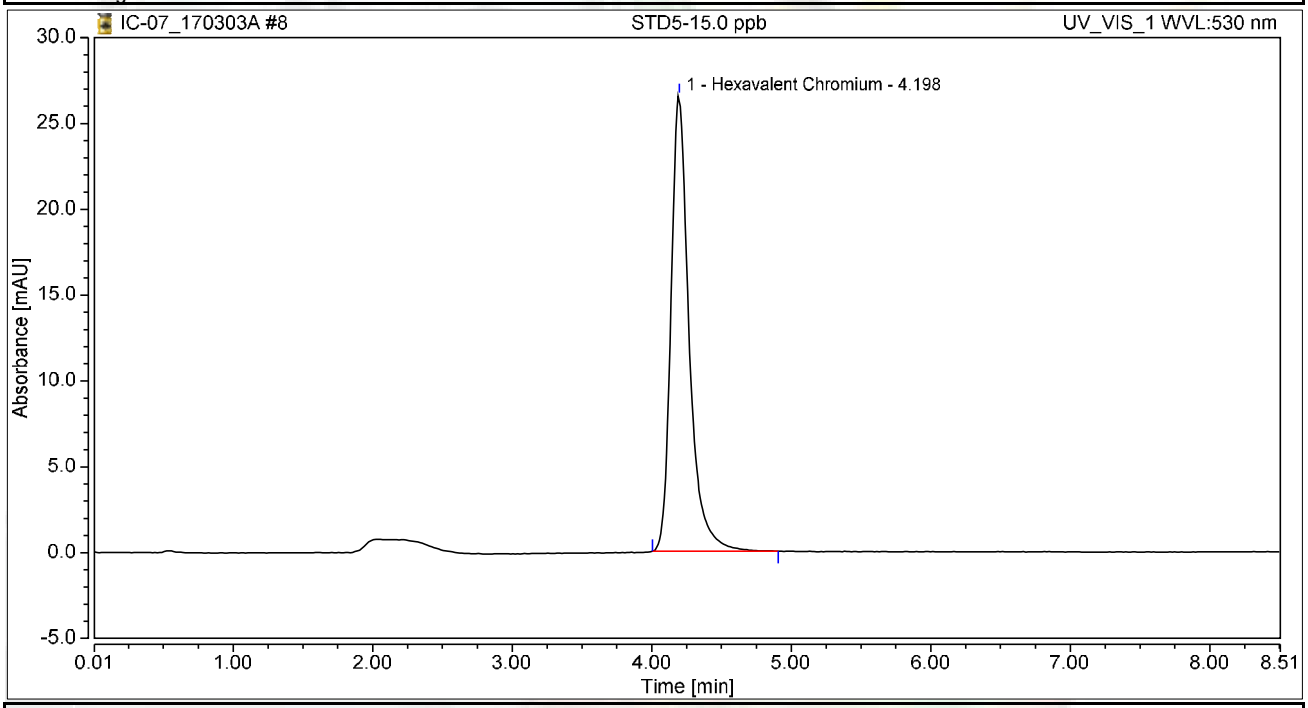
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.654	17.547	100.00	100.00	9.9502
Total:			**2.654**	**17.547**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

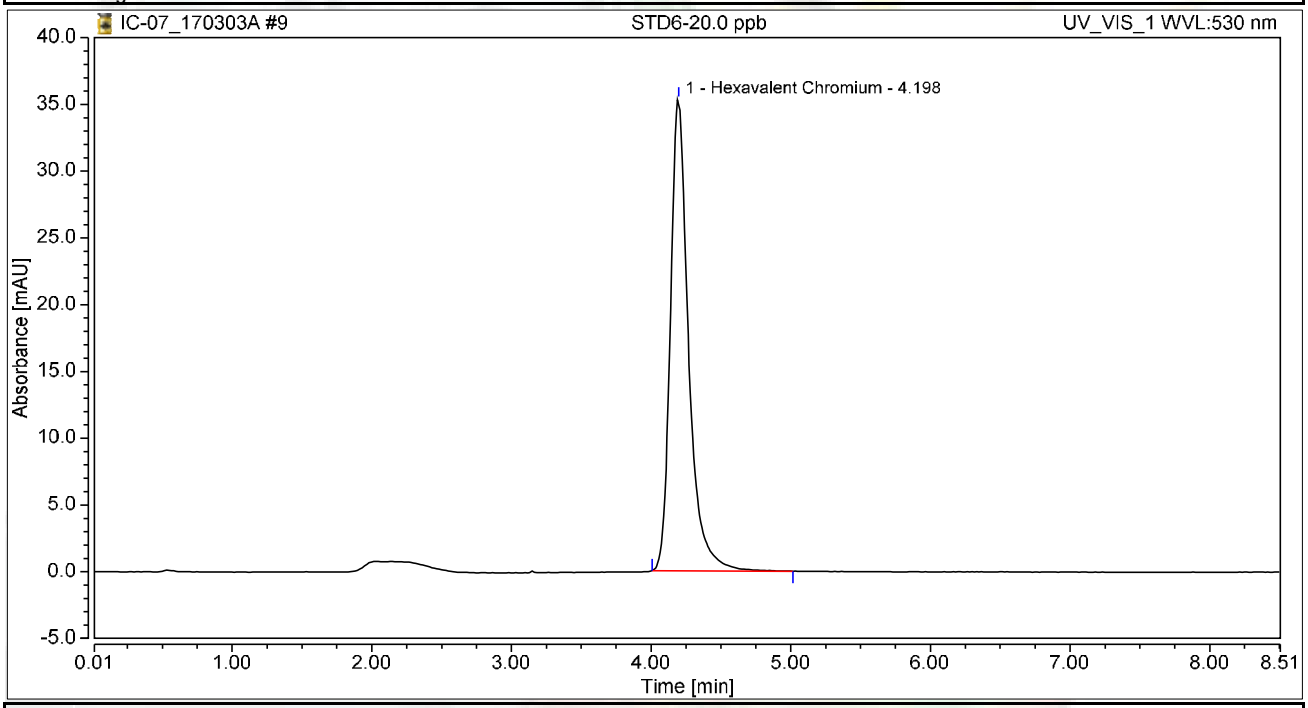
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	4.004	26.540	100.00	100.00	15.0161
Total:			**4.004**	**26.540**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



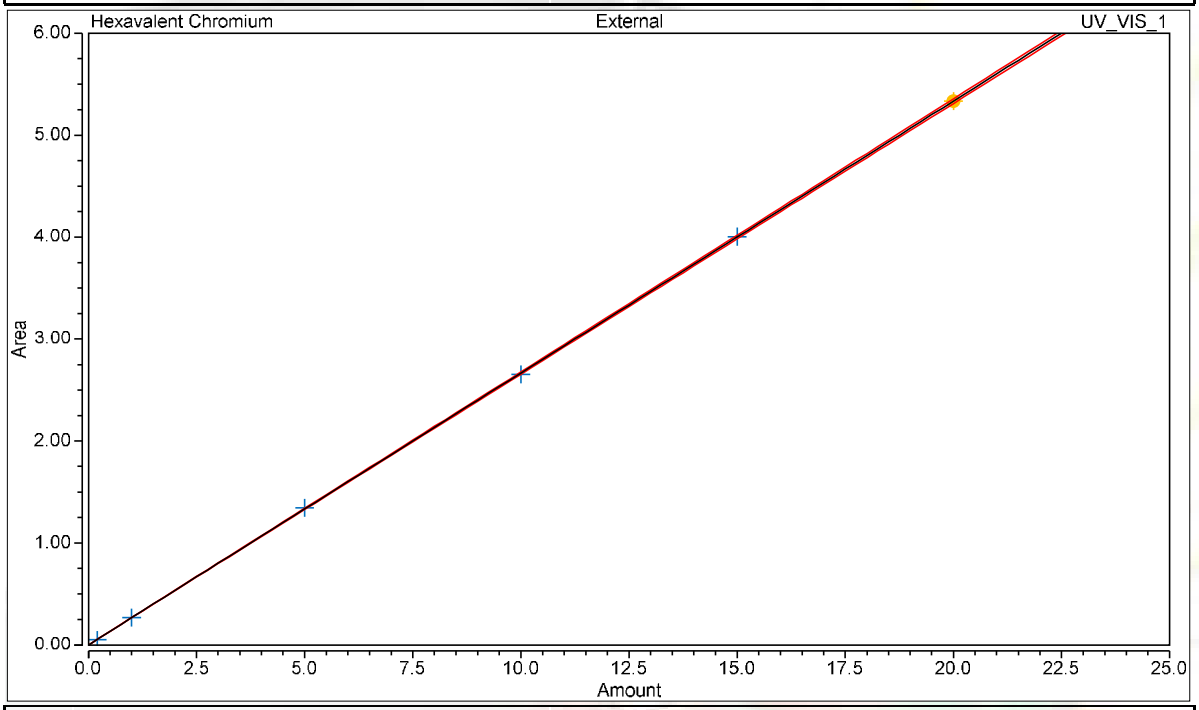
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.334	35.317	100.00	100.00	20.0029
Total:			**5.334**	**35.317**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2667
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

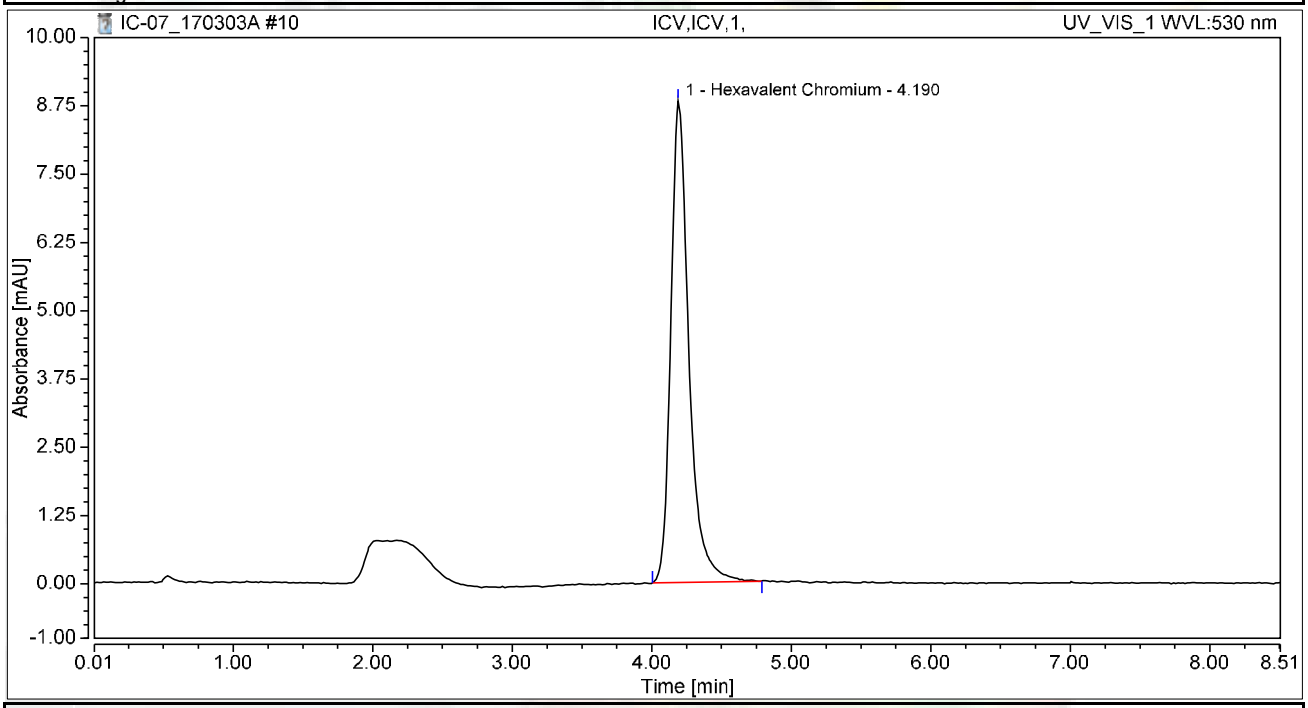
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0505	0.051	0.373
5	STD2-1.0 ppb	02	1.0000	0.2695	0.269	1.820
6	STD3-5.0 ppb	03	5.0000	1.3436	1.344	8.875
7	STD4-10.0 ppb	04	10.0000	2.6535	2.654	17.547
8	STD5-15.0 ppb	05	15.0000	4.0045	4.004	26.540
9	STD6-20.0 ppb	06	20.0000	5.3344	5.334	35.317

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

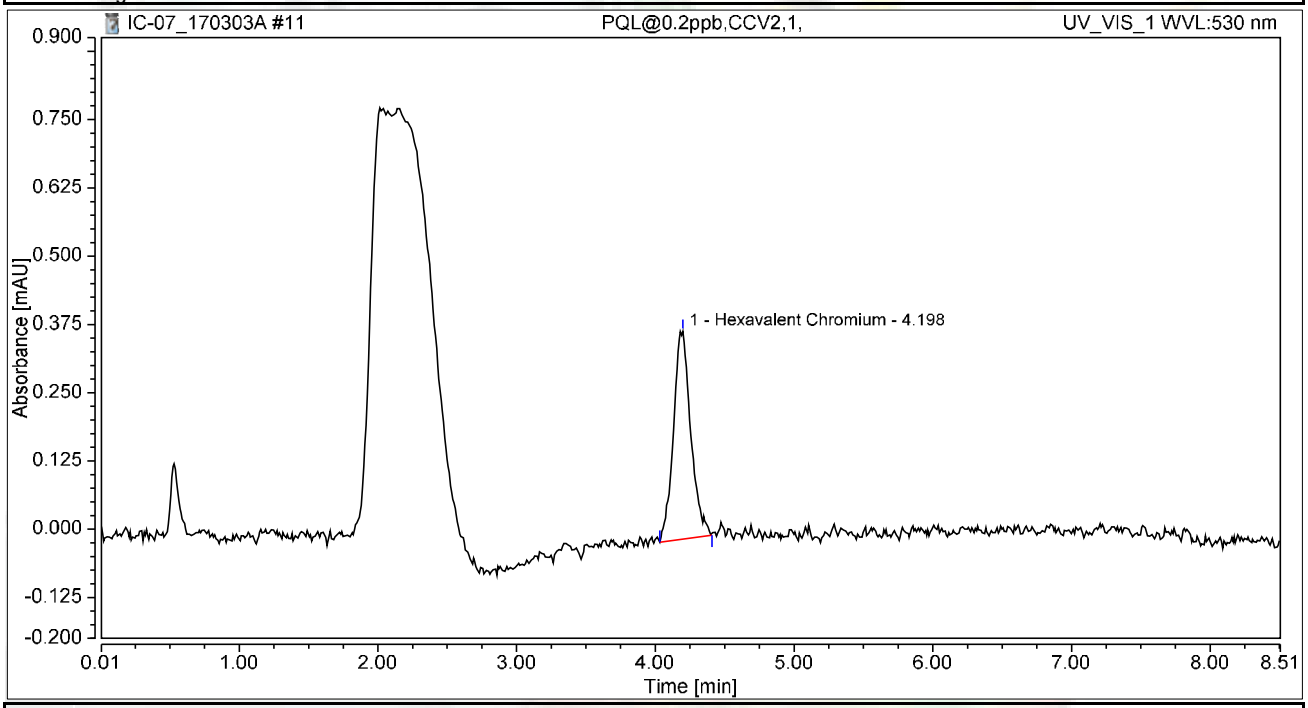
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.326	8.818	100.00	100.00	4.9729
Total:			**1.326**	**8.818**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

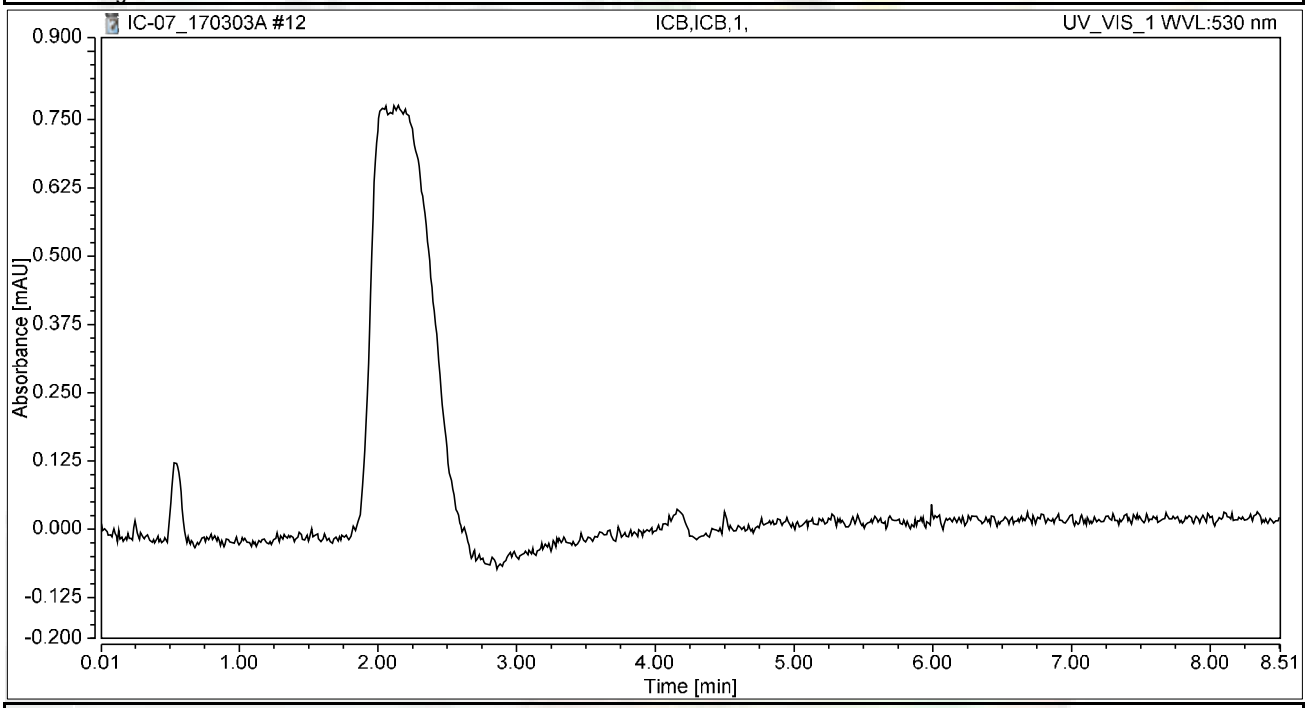
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.055	0.380	100.00	100.00	0.2063
Total:			**0.055**	**0.380**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Mar/17 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170309A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:18 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	03/03/17 9:29 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	03/03/17 9:39 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:48 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 9:58 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:07 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:16 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:26 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/03/17 10:35 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	03/09/17 10:10 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	03/09/17 10:21 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	03/09/17 10:30 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/09/17 10:40 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	03/09/17 10:49 AM	Reported
15	MB-R114035	MBLK	1	Hexavalent Chromium	03/09/17 10:58 AM	Reported
16	LCS-R114035	LCS	1	Hexavalent Chromium	03/09/17 11:08 AM	Reported
17	N023397-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:17 AM	Reported
18	N023397-002A	SAMP	1	Hexavalent Chromium	03/09/17 11:27 AM	Reported
19	N023398-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:36 AM	Reported
20	N023398-002A	SAMP	1	Hexavalent Chromium	03/09/17 11:46 AM	Reported
21	N023402-001A	SAMP	1	Hexavalent Chromium	03/09/17 11:55 AM	Reported
22	N023403-001A	SAMP	1	Hexavalent Chromium	03/09/17 12:05 PM	Reported
23	N023404-001A	SAMP	1	Hexavalent Chromium	03/09/17 12:14 PM	Reported
24	N023404-002A	SAMP	1	Hexavalent Chromium	03/09/17 12:24 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	03/09/17 12:33 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	03/09/17 12:43 PM	Reported
27	N023404-003A	SAMP	1	Hexavalent Chromium	03/09/17 12:52 PM	Reported
28	N023404-004A	SAMP	1	Hexavalent Chromium	03/09/17 1:02 PM	Reported
29	N023404-007A	SAMP	1	Hexavalent Chromium	03/09/17 1:11 PM	Reported
30	N023404-008A	SAMP	1	Hexavalent Chromium	03/09/17 1:20 PM	Reported
31	N023404-009A	SAMP	1	Hexavalent Chromium	03/09/17 1:30 PM	Reported
32	N023400-001A	SAMP	1	Hexavalent Chromium	03/09/17 1:39 PM	Reported
33	N023400-001AMS	MS	1	Hexavalent Chromium	03/09/17 1:49 PM	Reported
34	N023401-001A	SAMP	1	Hexavalent Chromium	03/09/17 1:58 PM	Reported
35	N023401-001AMS	MS	1	Hexavalent Chromium	03/09/17 2:08 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	03/09/17 2:17 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	03/09/17 2:27 PM	Reported
38	N023401-002A	SAMP	100	Hexavalent Chromium	03/09/17 2:36 PM	Reported
39	N023401-002AMS	MS	100	Hexavalent Chromium	03/09/17 2:46 PM	Reported
40	N023401-002AMSD	MSD	100	Hexavalent Chromium	03/09/17 2:55 PM	Reported
41	N023401-003A	SAMP	100	Hexavalent Chromium	03/09/17 3:05 PM	Reported
42	N023401-003AMS	MS	100	Hexavalent Chromium	03/09/17 3:14 PM	Reported
43	N023404-002ADUP	DUP	1	Hexavalent Chromium	03/09/17 3:23 PM	Reported
44	N023396-001A	SAMP	1	Hexavalent Chromium	03/09/17 3:33 PM	Not Reported
45	N023396-001A	SAMP	5	Hexavalent Chromium	03/09/17 4:01 PM	Reported
46	CCV-4	CCV1	1	Hexavalent Chromium	03/09/17 4:13 PM	Reported
47	CCB-4	CCB	1	Hexavalent Chromium	03/09/17 4:22 PM	Reported

rba 3/13/2017

Nancy 3/21/2017

Injection Log Summary

Sequence Details

Name:	**IC-07_170309A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2016**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Mar/17 17:00:59**
No. of Injections:	**50**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/03/2017 09:18	Finished	
2	BLANK	2	1000	Unknown		03/03/2017 09:29	Finished	
3	iBLANK	3	1000	Unknown		03/03/2017 09:39	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/03/2017 09:48	Finished	0.2 ppb, IWST161114C
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/03/2017 09:58	Finished	1.0 ppb, IWST161114C
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/03/2017 10:07	Finished	5.0 ppb, IWST161114C
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/03/2017 10:16	Finished	10 ppb, IWST161114C
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	03/03/2017 10:26	Finished	15 ppb, IWST161114C
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/03/2017 10:35	Finished	20 ppb, IWST161114C
10	BLANK	1	1000	Unknown		03/09/2017 10:10	Finished	
11	BLANK	2	1000	Unknown		03/09/2017 10:21	Finished	
12	CCV-1,CCV,1,	3	1000	Unknown		03/09/2017 10:30	Finished	CCV @5ppb, IWST-161114C
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		03/09/2017 10:40	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		03/09/2017 10:49	Finished	CCB R170123B
15	MB-H2O,MBLK,1	6	1000	Unknown		03/09/2017 10:58	Finished	MB R170123B
16	LCS-H2O,LCS,1	7	1000	Unknown		03/09/2017 11:08	Finished	LCS, IWST-161114D
17	N023397-001A,SAMF	8	1000	Unknown		03/09/2017 11:17	Finished	SAMP, 10mL
18	N023397-002A,SAMF	9	1000	Unknown		03/09/2017 11:27	Finished	SAMP, 10mL
19	N023398-001A,SAMF	10	1000	Unknown		03/09/2017 11:36	Finished	SAMP, 10mL
20	N023398-002A,SAMF	11	1000	Unknown		03/09/2017 11:46	Finished	SAMP, 10mL
21	N023402-001A,SAMF	12	1000	Unknown		03/09/2017 11:55	Finished	SAMP, 10mL
22	N023403-001A,SAMF	13	1000	Unknown		03/09/2017 12:05	Finished	SAMP, 10mL
23	N023404-001A,SAMF	14	1000	Unknown		03/09/2017 12:14	Finished	SAMP, 10mL
24	N023404-002A,SAMF	15	1000	Unknown		03/09/2017 12:24	Finished	SAMP, 10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		03/09/2017 12:33	Finished	CCV @10ppb, IWST-161114C
26	CCB-2,CCB,1,	17	1000	Unknown		03/09/2017 12:43	Finished	CCB R170123B
27	N023404-003A,SAMF	18	1000	Unknown		03/09/2017 12:52	Finished	SAMP, 10mL
28	N023404-004A,SAMF	19	1000	Unknown		03/09/2017 13:02	Finished	SAMP, 10mL
29	N023404-007A,SAMF	20	1000	Unknown		03/09/2017 13:11	Finished	SAMP, 10mL
30	N023404-008A,SAMF	21	1000	Unknown		03/09/2017 13:20	Finished	SAMP, 10mL
31	N023404-009A,SAMF	22	1000	Unknown		03/09/2017 13:30	Finished	SAMP, 10mL
32	N023400-001A,SAMF	23	1000	Unknown		03/09/2017 13:39	Finished	SAMP, 10mL
33	N023400-001AMS,MS	24	1000	Unknown		03/09/2017 13:49	Finished	MS (1ppb), IWST-161114D,10
34	N023401-001A,SAMF	25	1000	Unknown		03/09/2017 13:58	Finished	SAMP, 10mL
35	N023401-001AMS,MS	26	1000	Unknown		03/09/2017 14:08	Finished	MS (1ppb), IWST-161114D,10
36	CCV-3,CCV,1,	27	1000	Unknown		03/09/2017 14:17	Finished	CCV @5ppb, IWST-161114C
37	CCB-3,CCB,1,	28	1000	Unknown		03/09/2017 14:27	Finished	CCB R170123B
38	N023401-002A,SAMF	29	1000	Unknown		03/09/2017 14:36	Finished	SAMP,0.1>10mL
39	N023401-002AMS,MS	30	1000	Unknown		03/09/2017 14:46	Finished	MS (5ppb), IWST-161114D,0.1
40	N023401-002AMSD,M	31	1000	Unknown		03/09/2017 14:55	Finished	MSD (5ppb), IWST-161114D,0.
41	N023401-003A,SAMF	32	1000	Unknown		03/09/2017 15:05	Finished	SAMP,0.1>10mL
42	N023401-003AMS,MS	33	1000	Unknown		03/09/2017 15:14	Finished	MS (5ppb), IWST-161114D,0.1
43	N023404-002ADUP,D	34	1000	Unknown		03/09/2017 15:23	Finished	DUP, 10mL
44	N023396-001A,SAMF	35	1000	Unknown		03/09/2017 15:33	Finished	SAMP, 10mL
45	N023396-001A,SAMF	37	1000	Unknown		03/09/2017 16:01	Finished	SAMP, 2>10mL
46	CCV-4,CCV1,1,	38	1000	Unknown		03/09/2017 16:13	Finished	CCV @10ppb, IWST-161114C
47	CCB-4,CCB,1,	39	1000	Unknown		03/09/2017 16:22	Finished	CCB R170123B
48	SHUTDOWN	40	1000	Unknown		03/09/2017 16:38	Finished	
49	Eluent: R170309A	41	1000	Unknown		n.a.	Finished	Eluent
50	PCR: R170309B	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

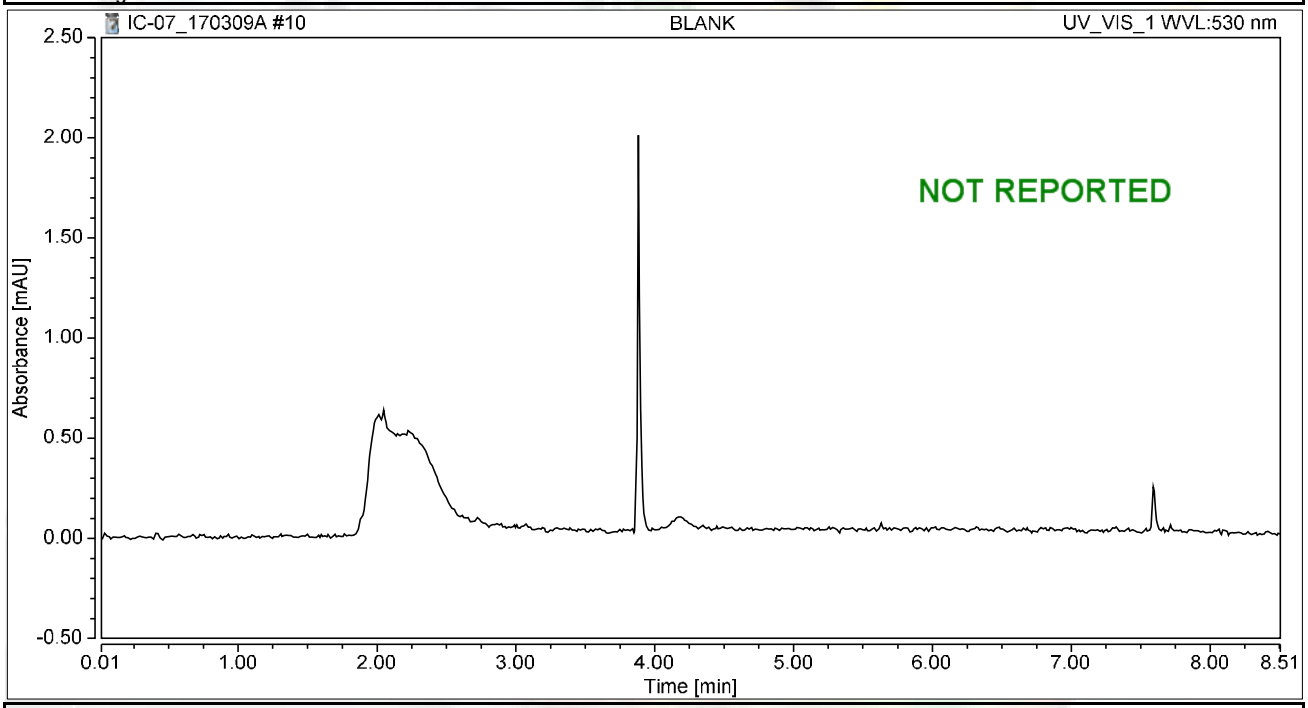
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

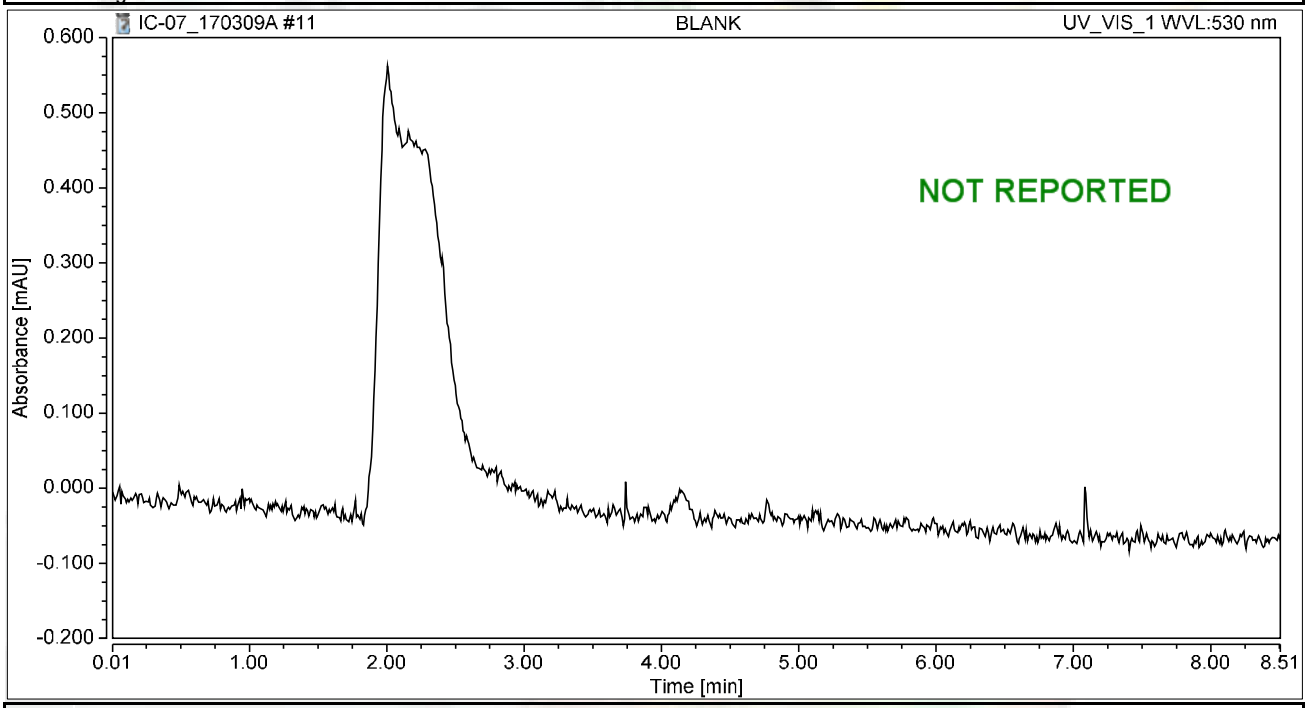
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

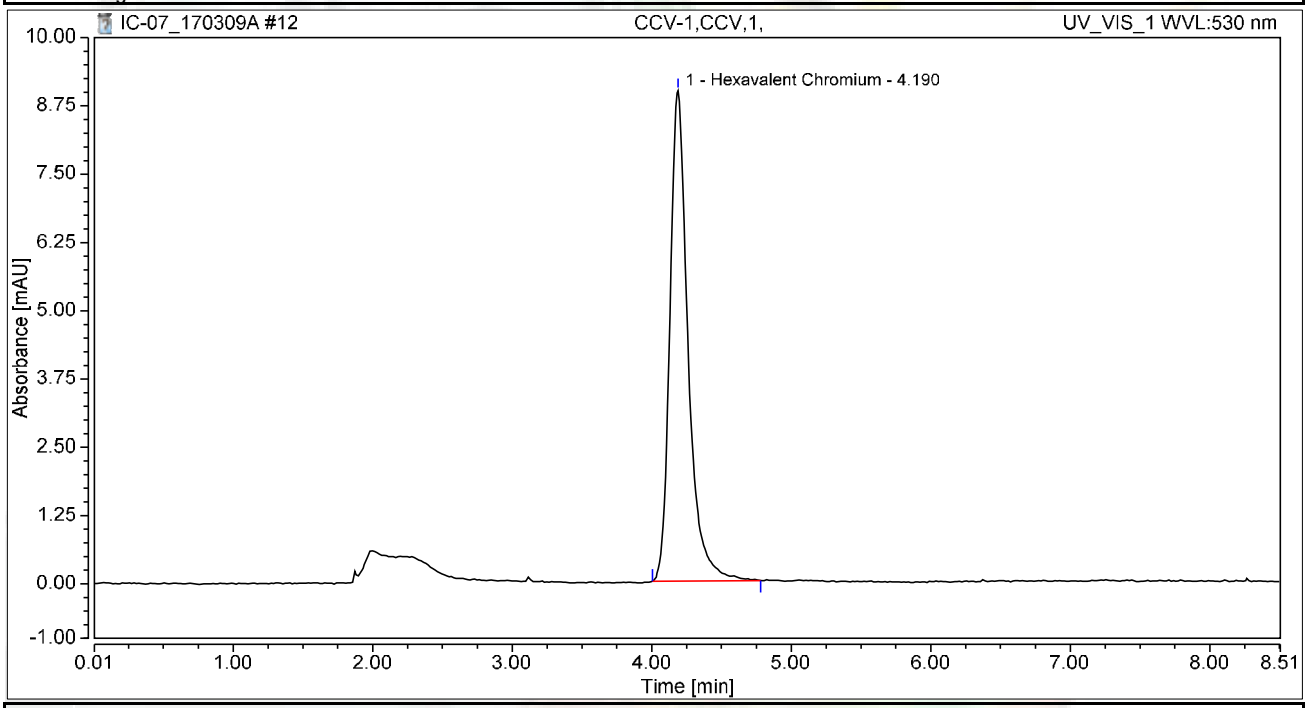
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

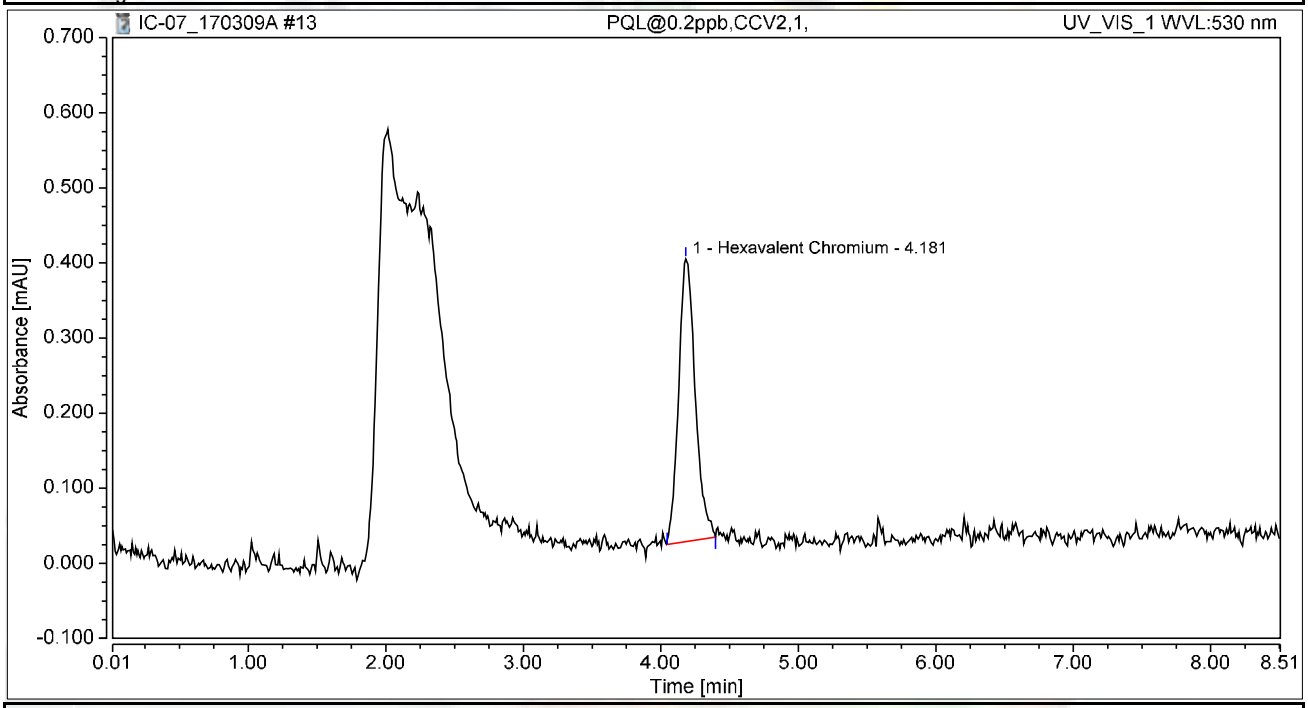
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.354	8.978	100.00	100.00	5.0766
Total:			**1.354**	**8.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

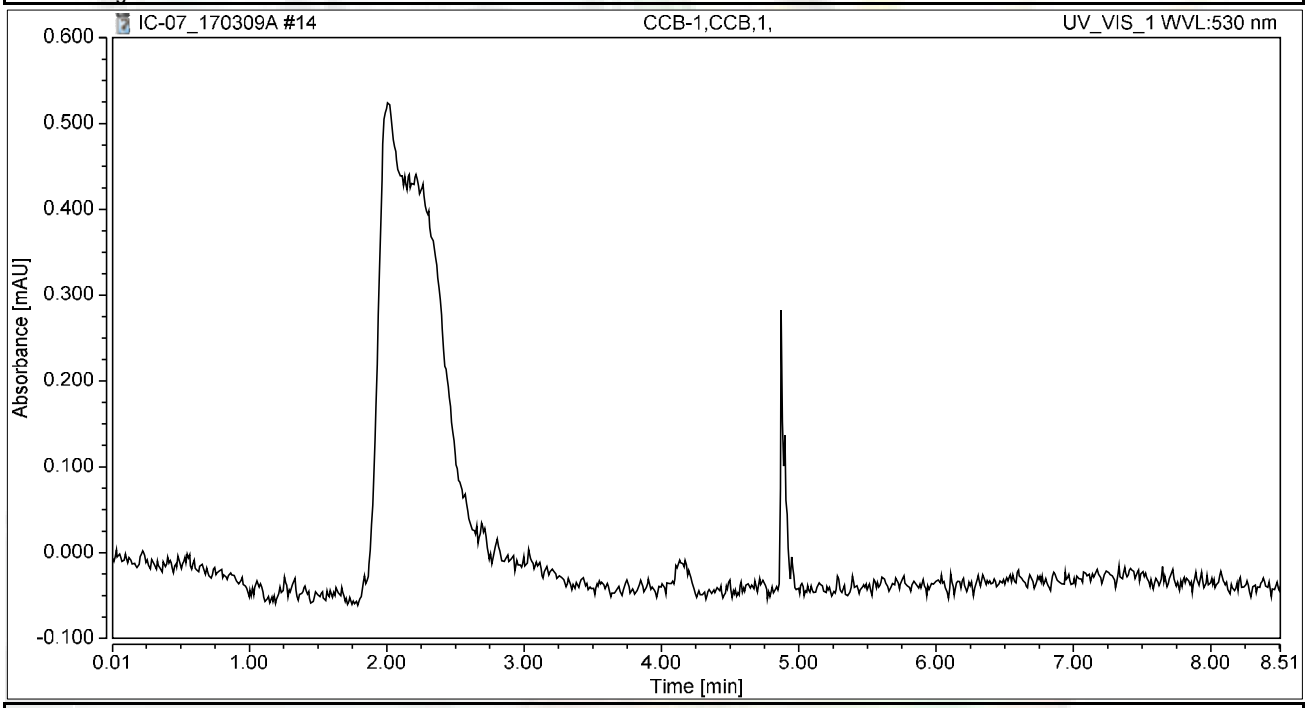
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.053	0.376	100.00	100.00	0.1974
Total:			**0.053**	**0.376**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

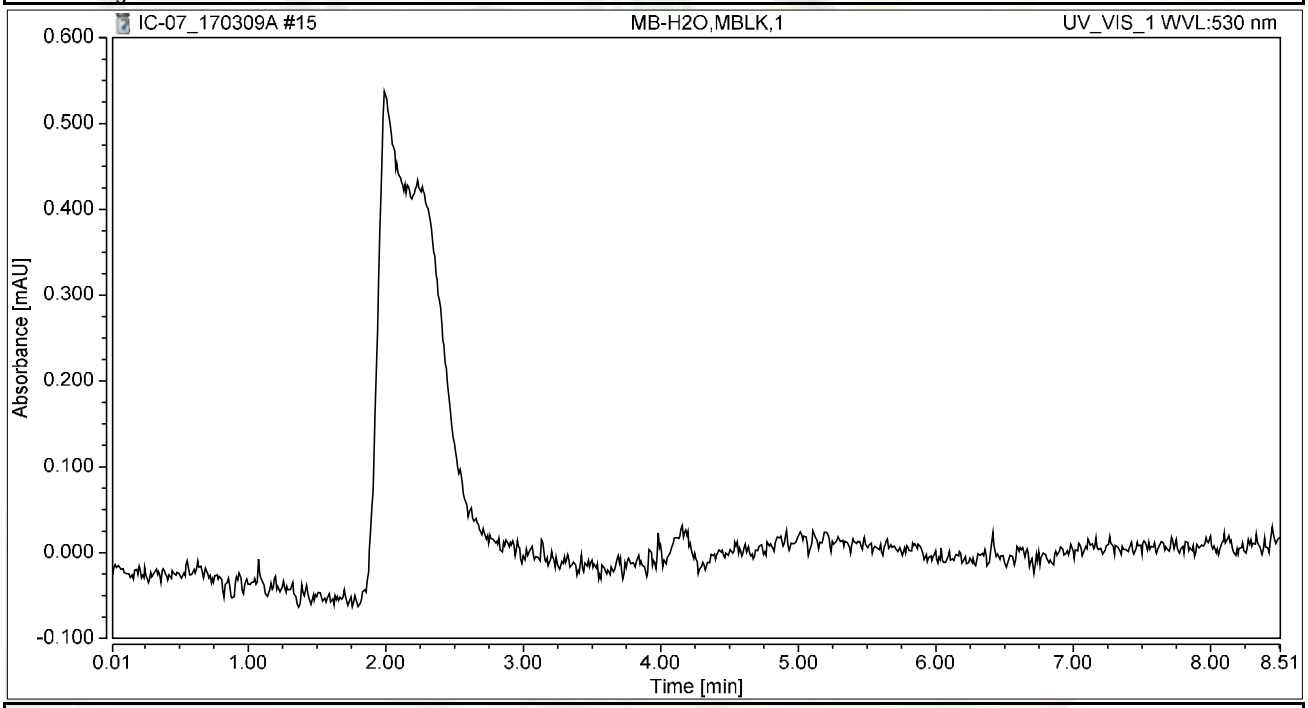
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

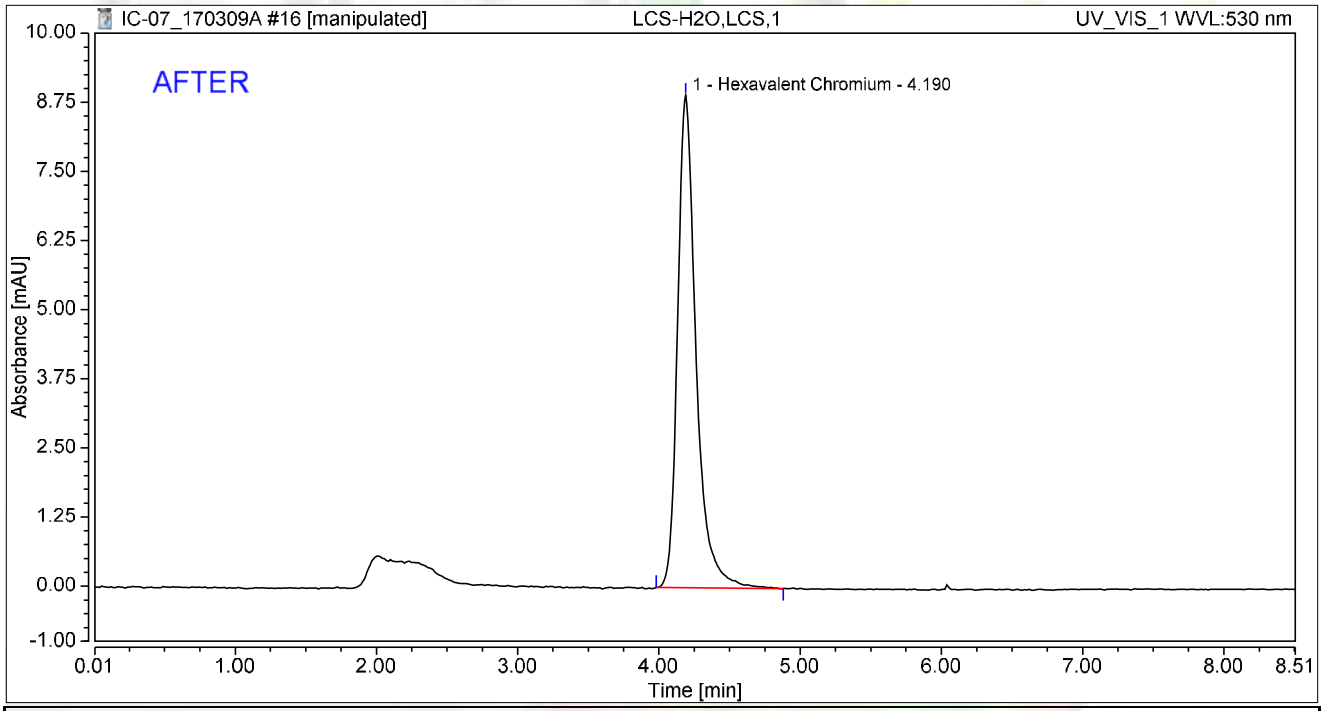
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.351	8.906	100.00	100.00	5.0654
Total:			**1.351**	**8.906**	**100.00**	**100.00**	

rba 3/13/2017

Reviewed by: Nancy 3/21/2017

My first report/Integration

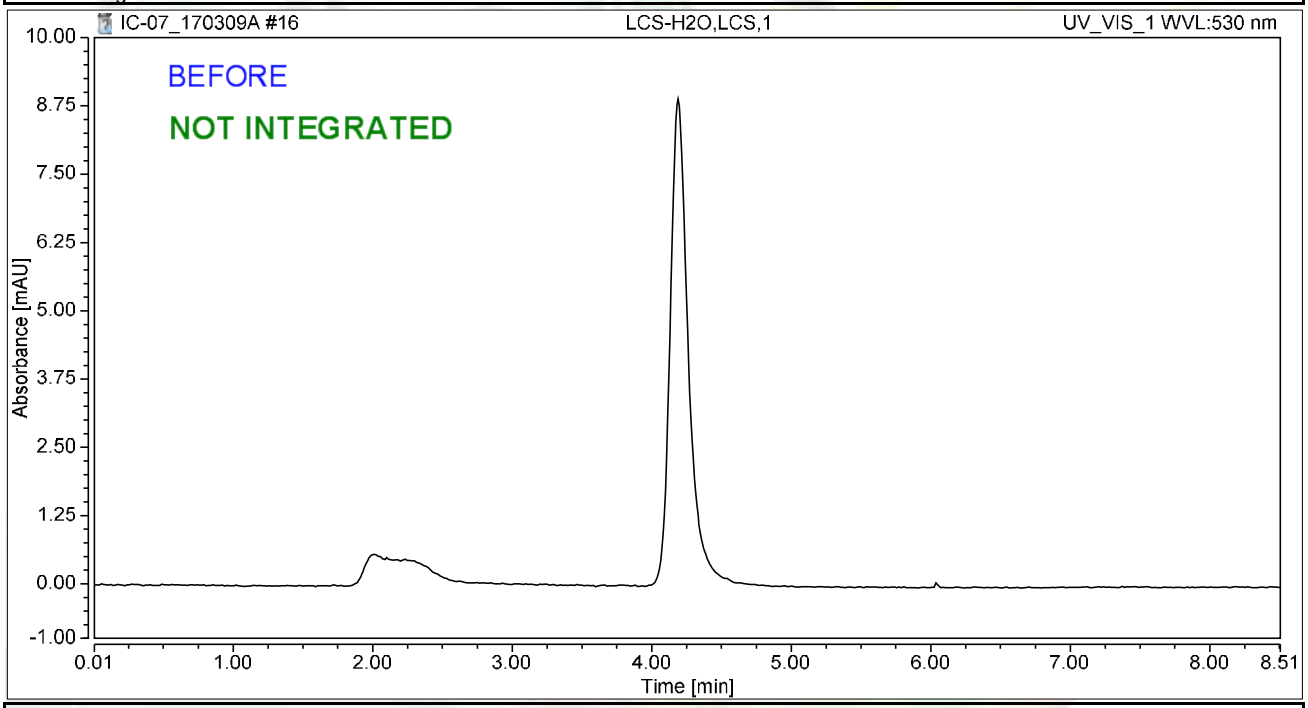
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

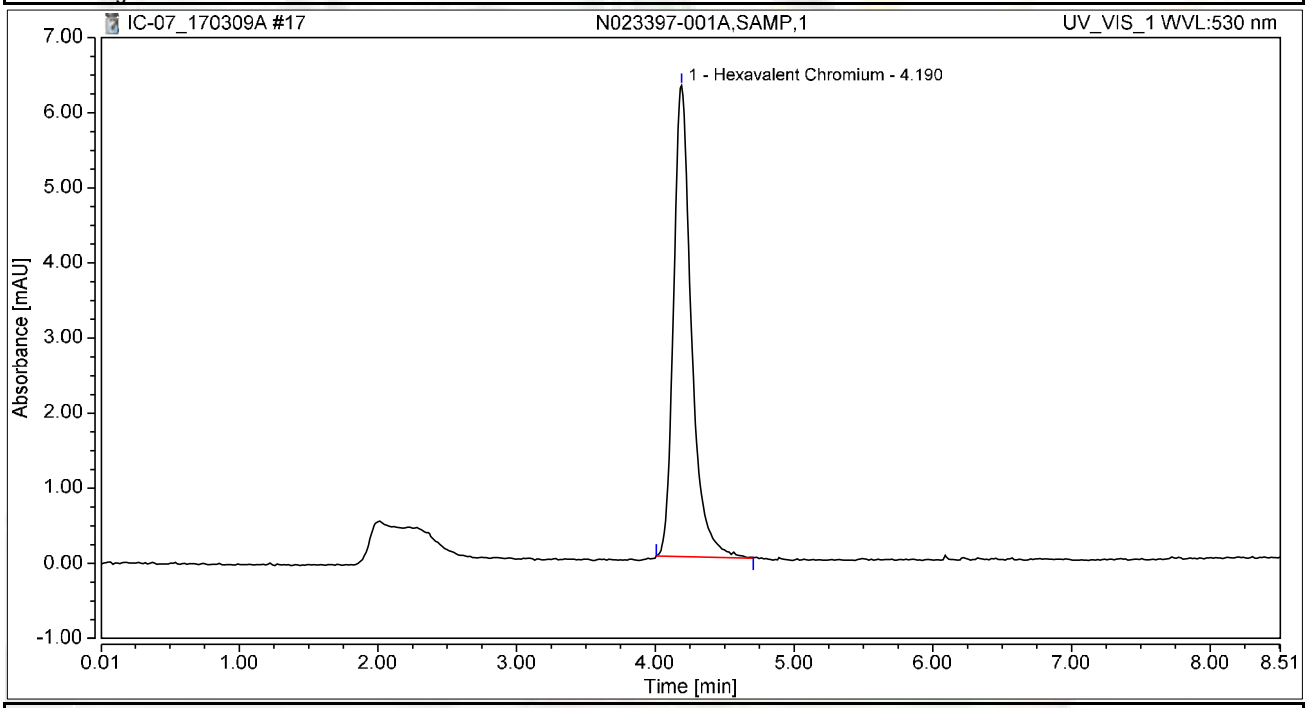
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023397-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

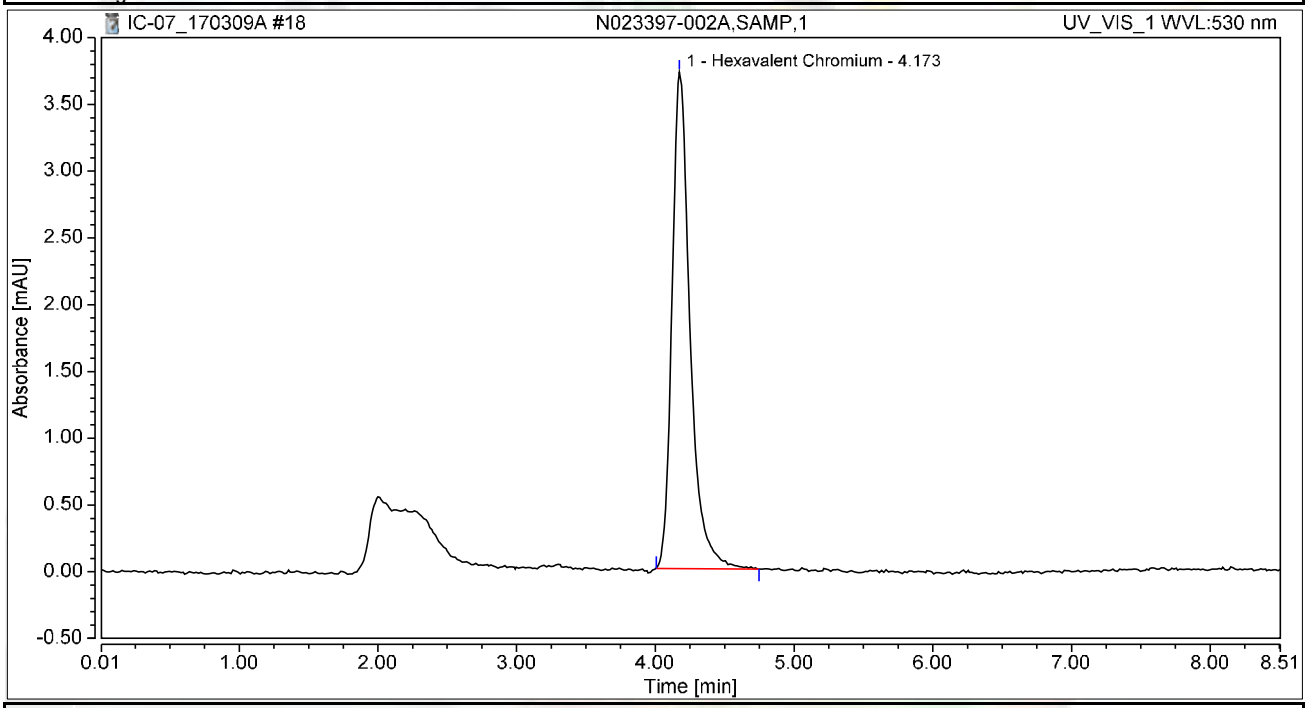
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.937	6.272	100.00	100.00	3.5121
Total:			**0.937**	**6.272**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023397-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

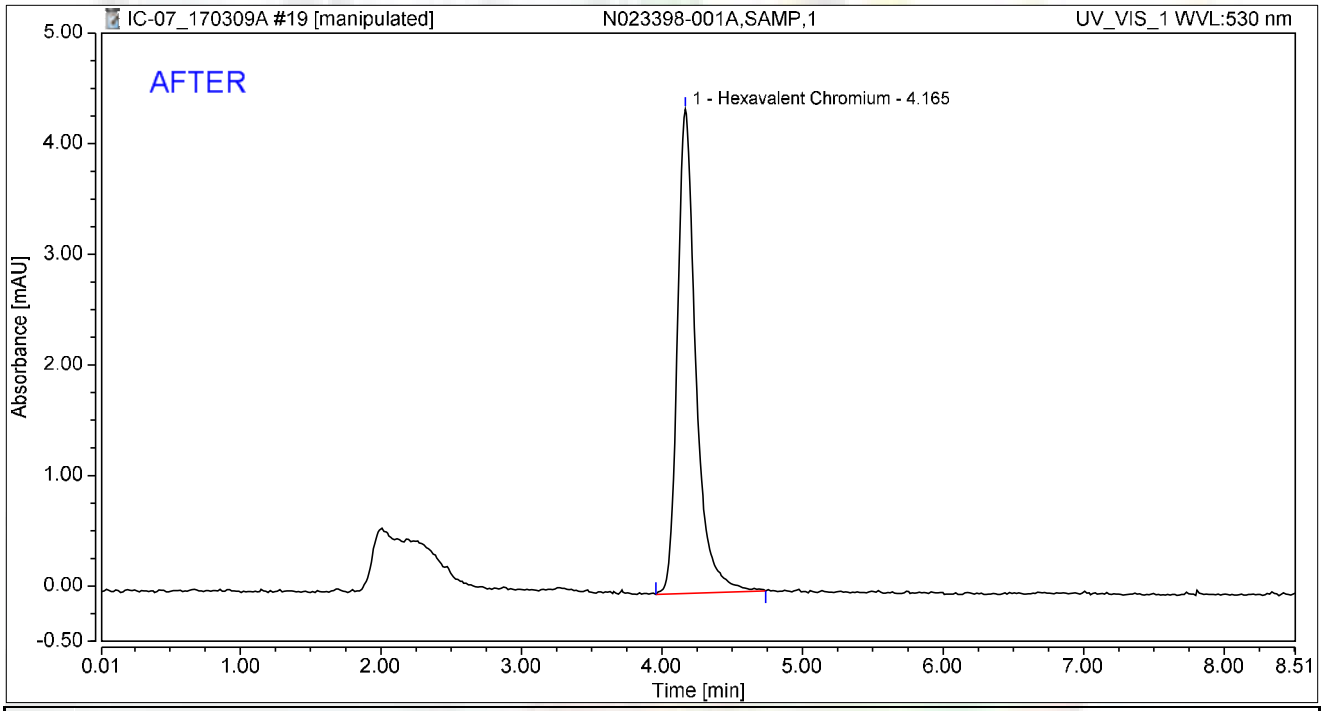
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.562	3.718	100.00	100.00	2.1079
Total:			**0.562**	**3.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023398-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.666	4.378	100.00	100.00	2.4966
Total:			**0.666**	**4.378**	**100.00**	**100.00**	

rba 3/13/2017

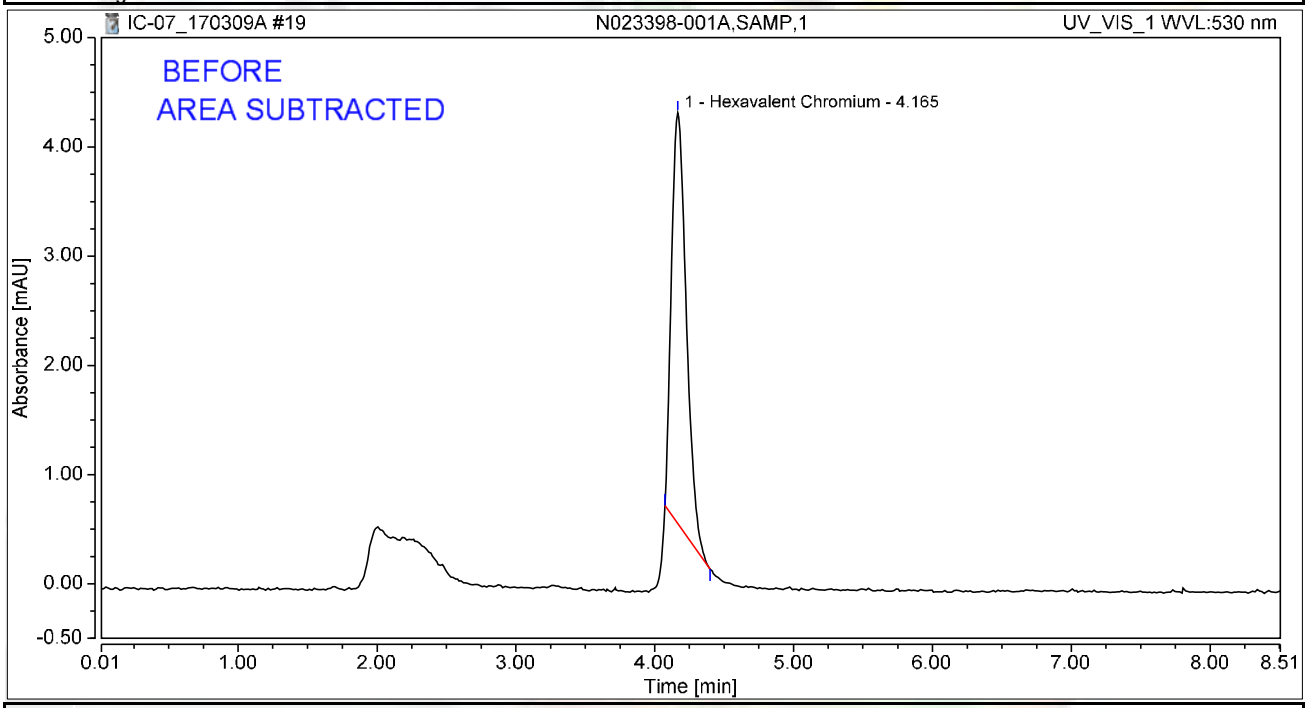
Reviewed by: Dioney 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023398-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.468	3.759	100.00	100.00	1.7554
Total:			**0.468**	**3.759**	**100.00**	**100.00**	

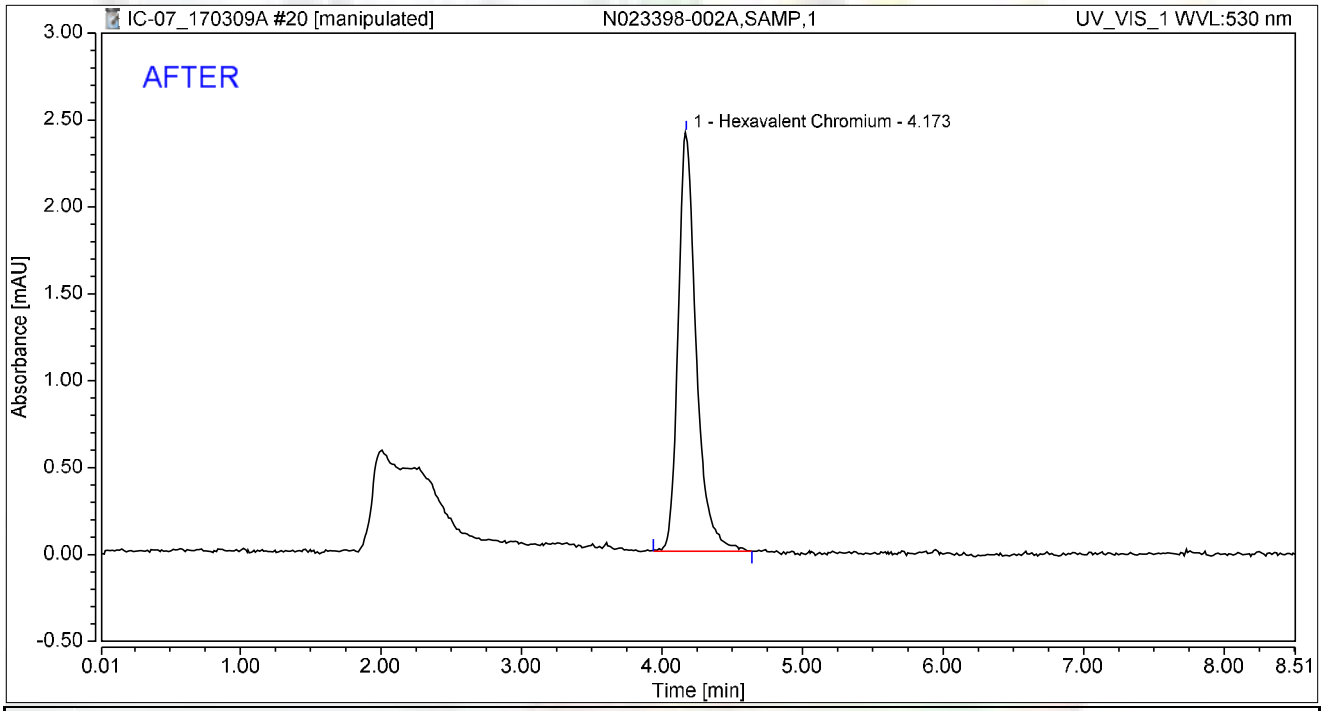
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023398-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.360	2.409	100.00	100.00	1.3507
Total:			**0.360**	**2.409**	**100.00**	**100.00**	

rba 3/13/2017

Reviewed by: Nancy 3/21/2017

My first report/Integration

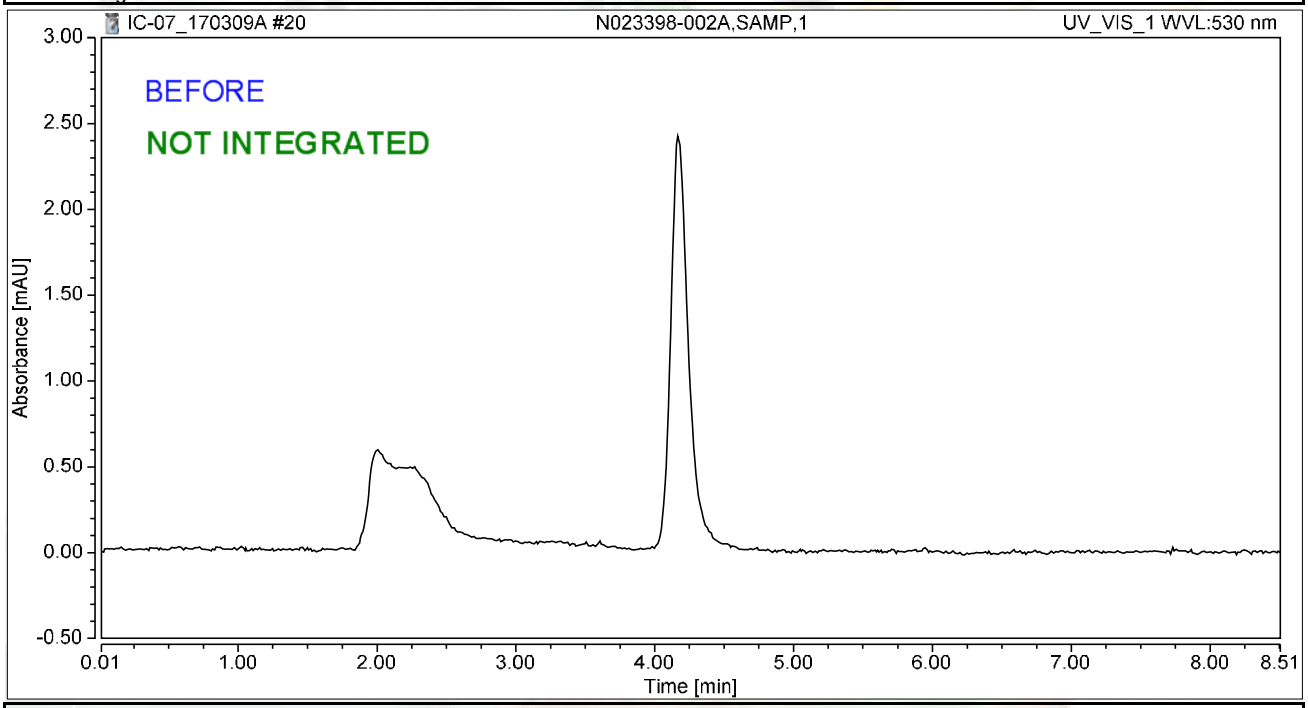
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023398-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

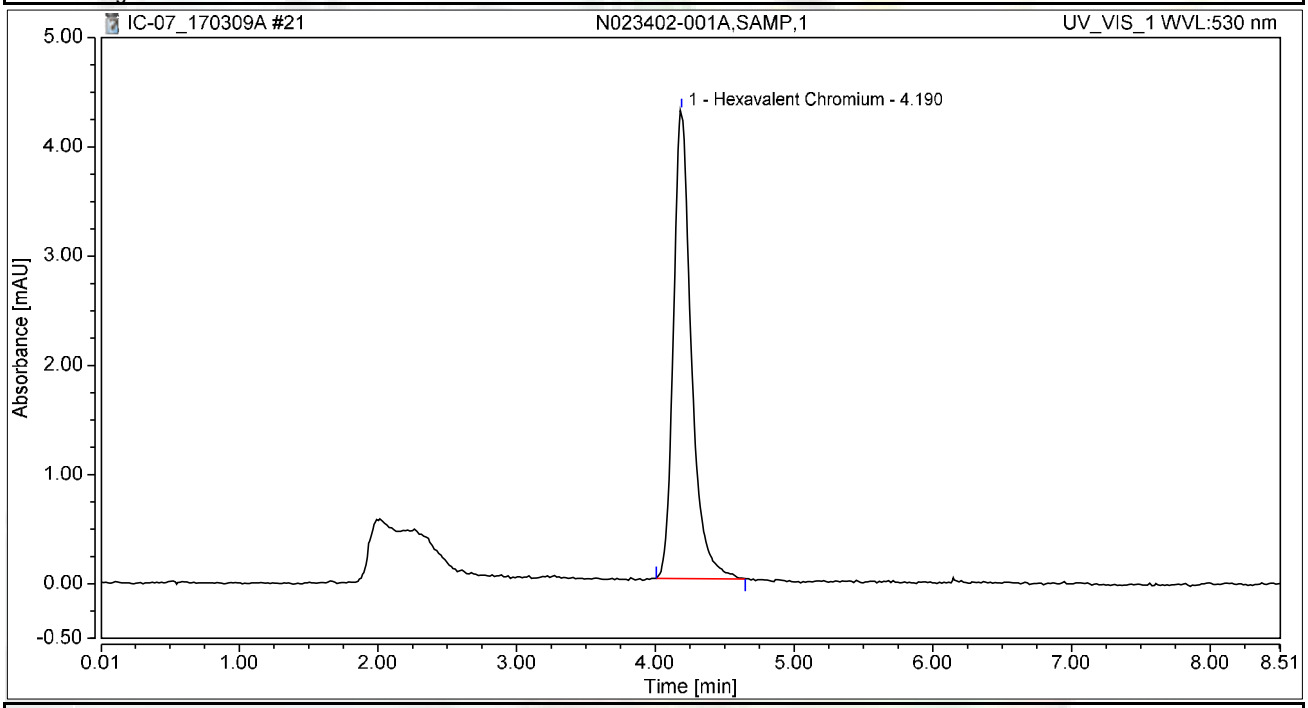
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023402-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

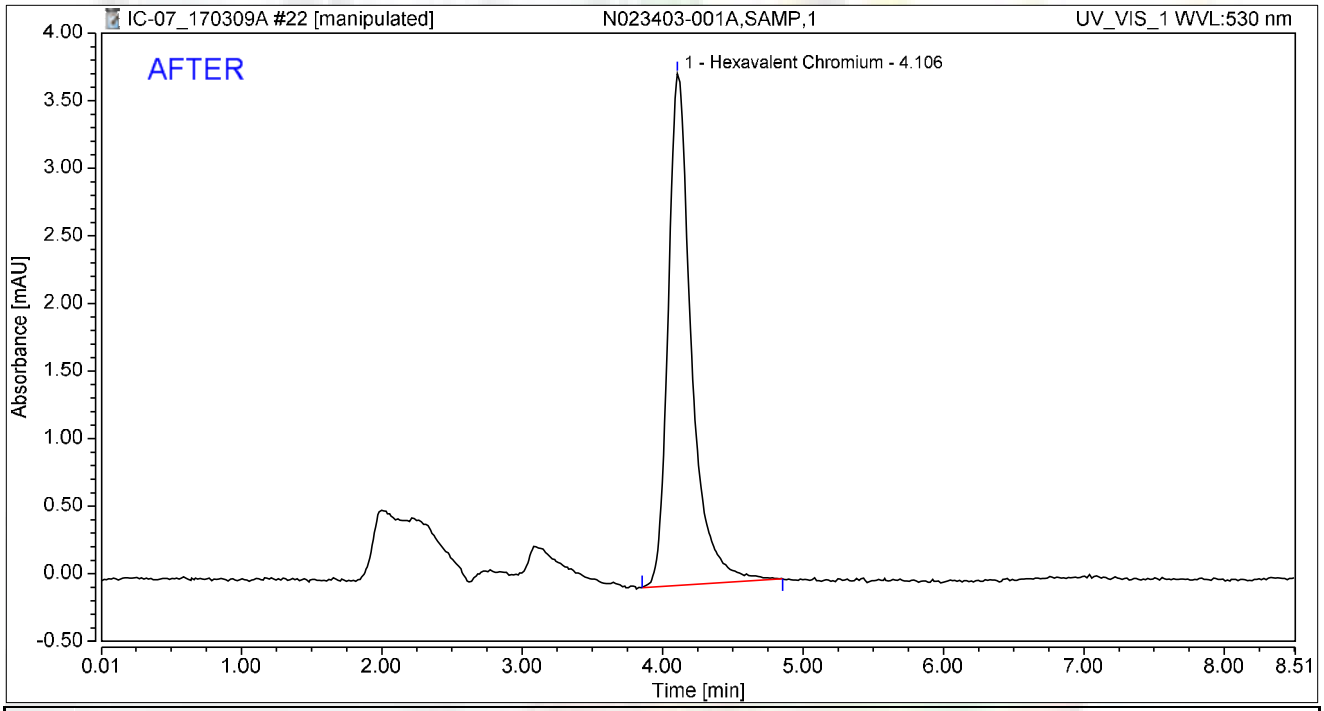
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.643	4.286	100.00	100.00	2.4098
Total:			**0.643**	**4.286**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023403-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.730	3.785	100.00	100.00	2.7361
Total:			**0.730**	**3.785**	**100.00**	**100.00**	

rba 3/13/2017

Reviewed by: Dhaney 3/21/2017

My first report/Integration

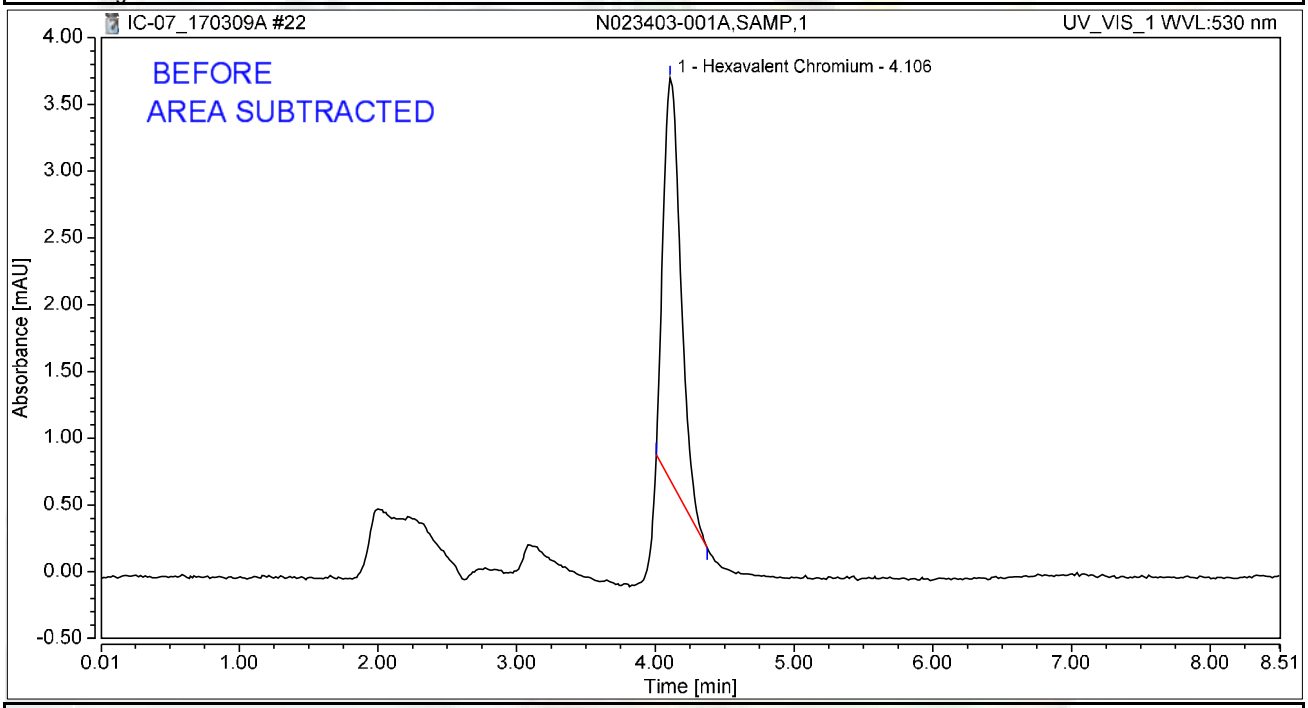
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023403-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.445	3.012	100.00	100.00	1.6698
Total:			**0.445**	**3.012**	**100.00**	**100.00**	

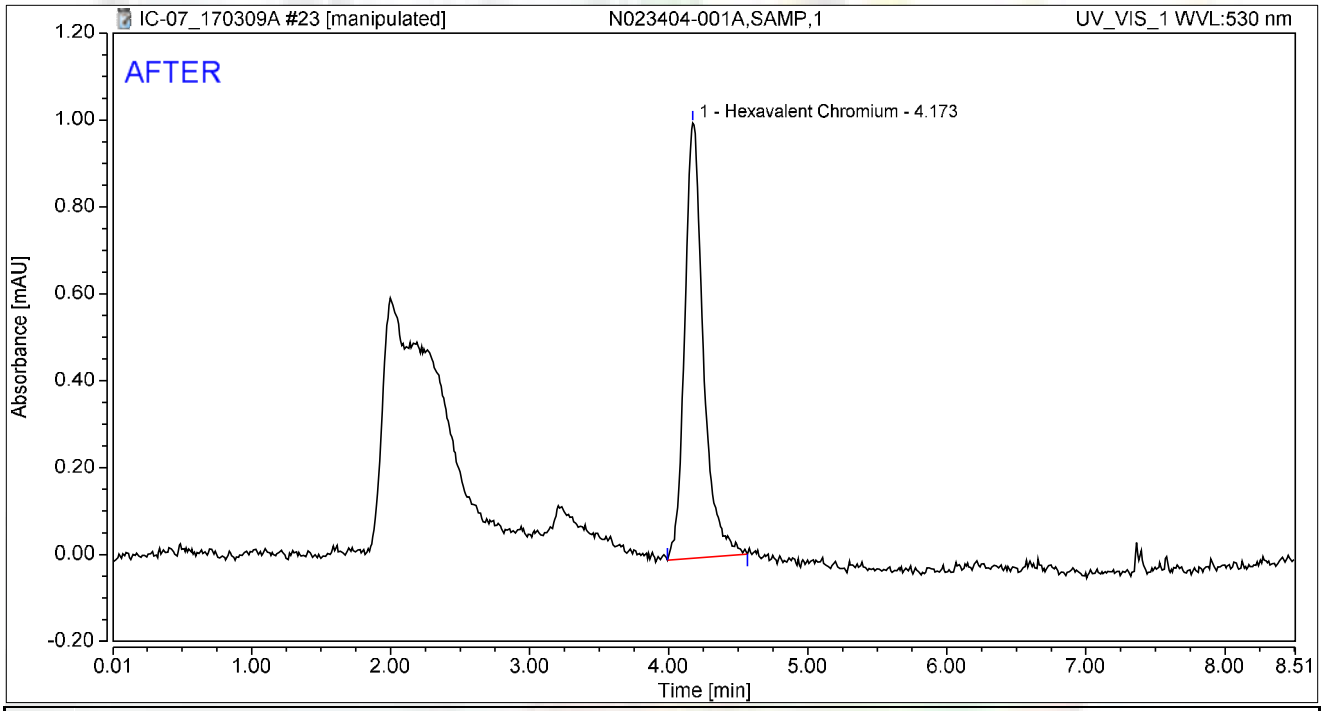
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.156	1.001	100.00	100.00	0.5834
Total:			**0.156**	**1.001**	**100.00**	**100.00**	

rba 3/13/2017

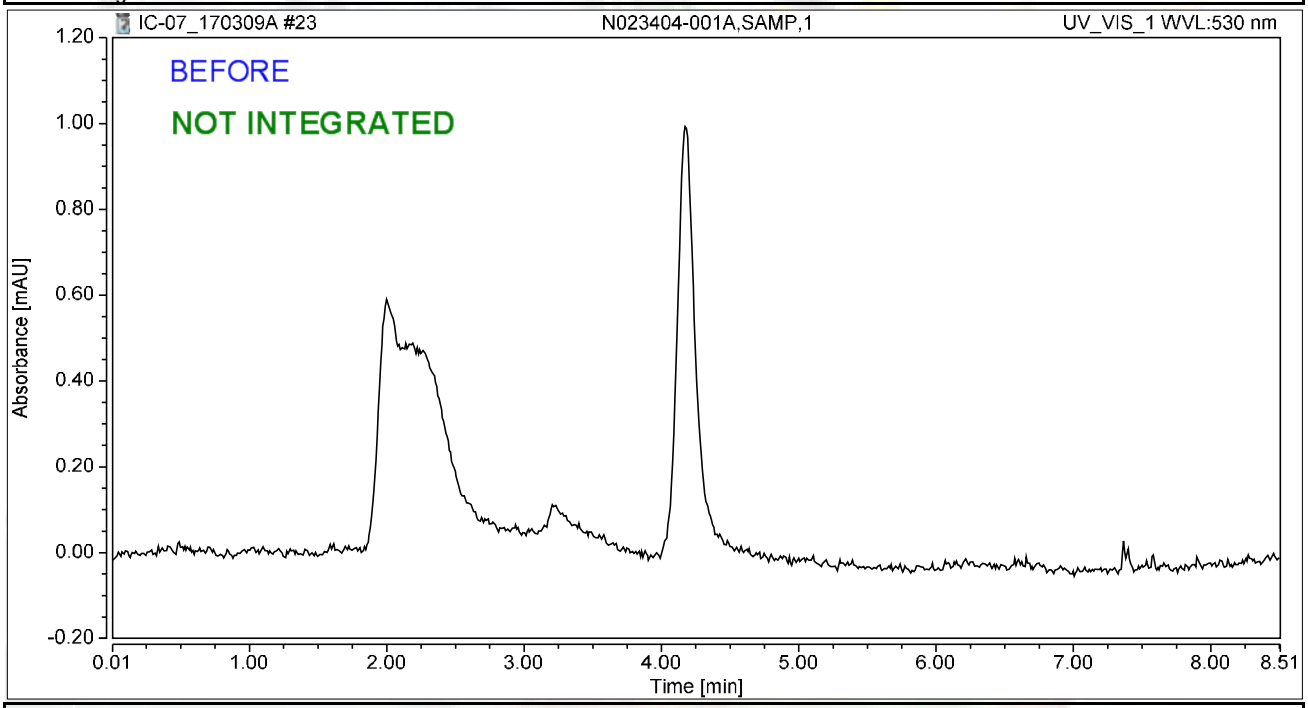
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

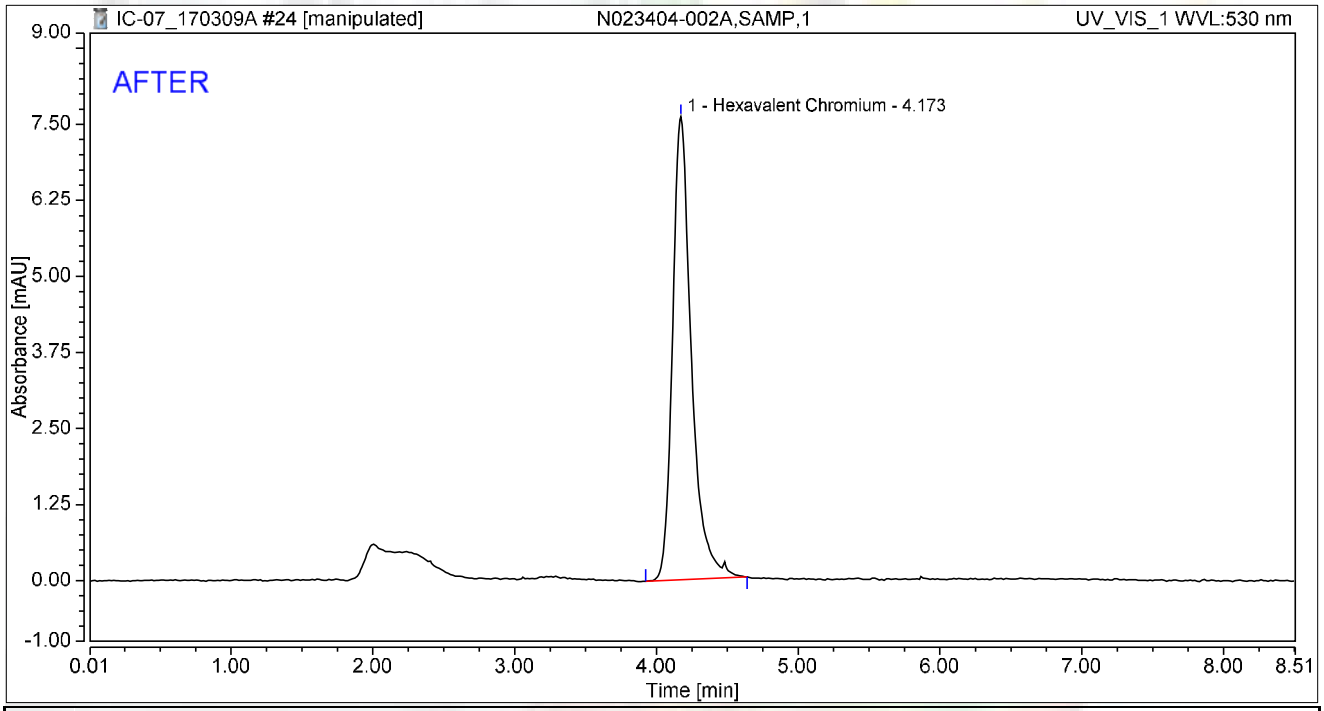
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.173	7.612	100.00	100.00	4.3972
Total:			**1.173**	**7.612**	**100.00**	**100.00**	

rba 3/13/2017

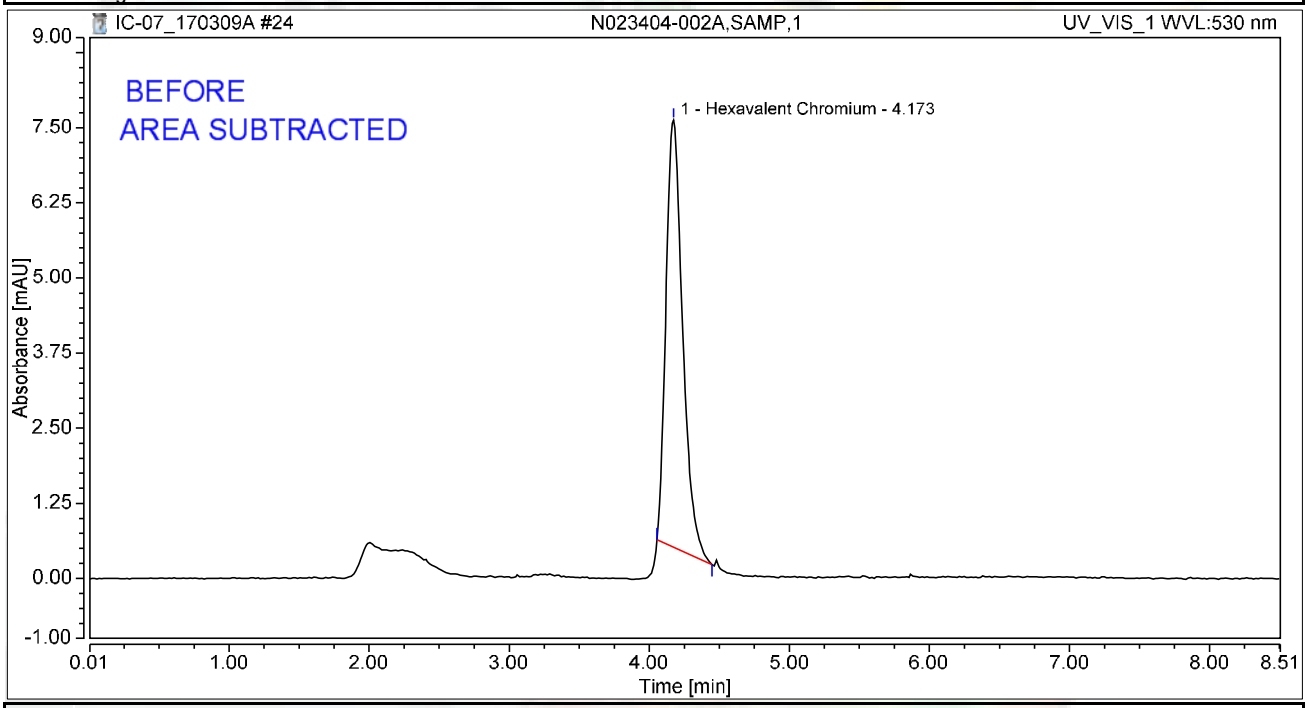
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.981	7.105	100.00	100.00	3.6772
Total:			**0.981**	**7.105**	**100.00**	**100.00**	

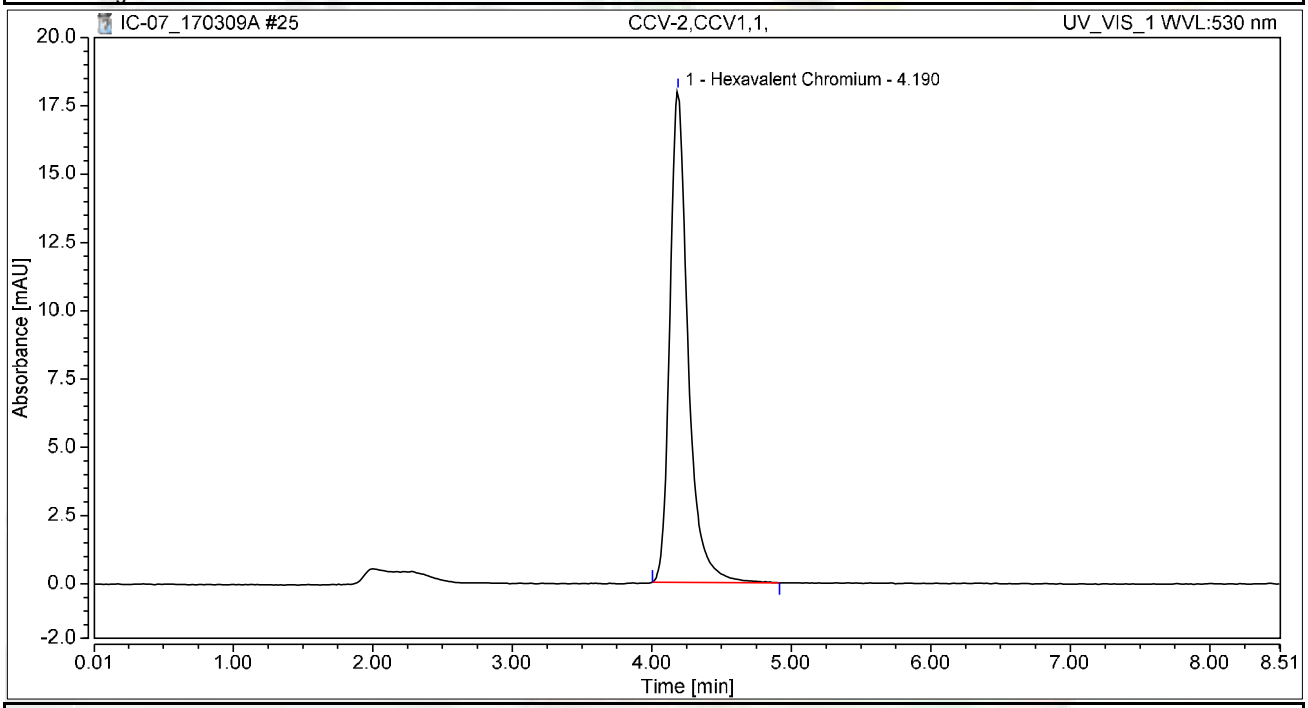
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

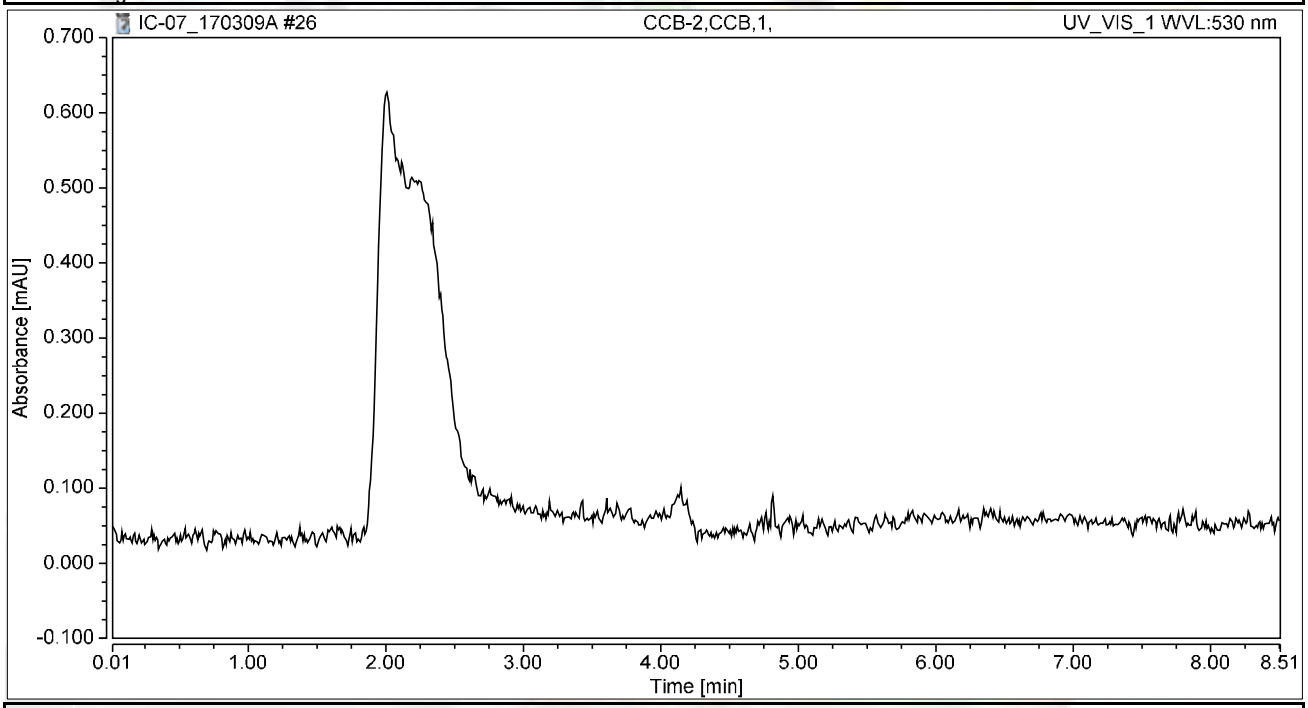
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.715	18.000	100.00	100.00	10.1818
Total:			**2.715**	**18.000**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

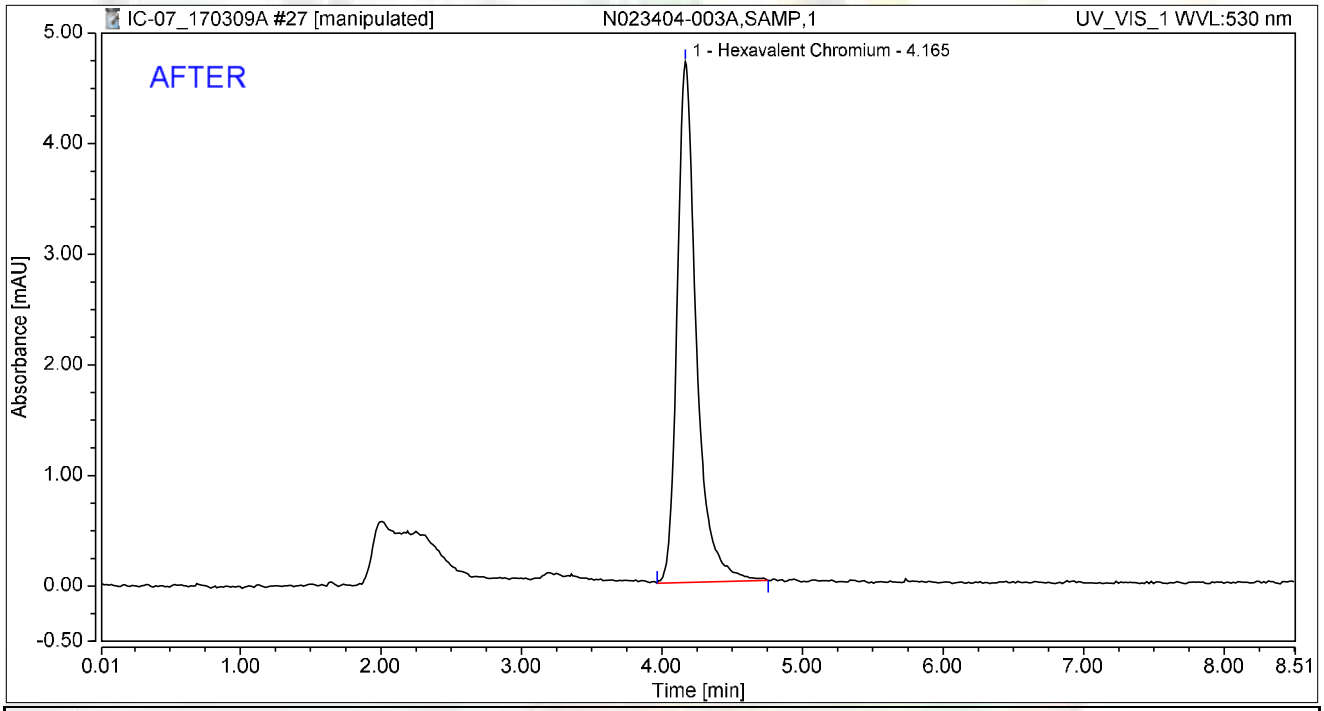
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023404-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.747	4.709	100.00	100.00	2.8005
Total:			**0.747**	**4.709**	**100.00**	**100.00**	

rba **3/13/2017**

Reviewed by: Dionex 3/21/2017

My first report/Integration

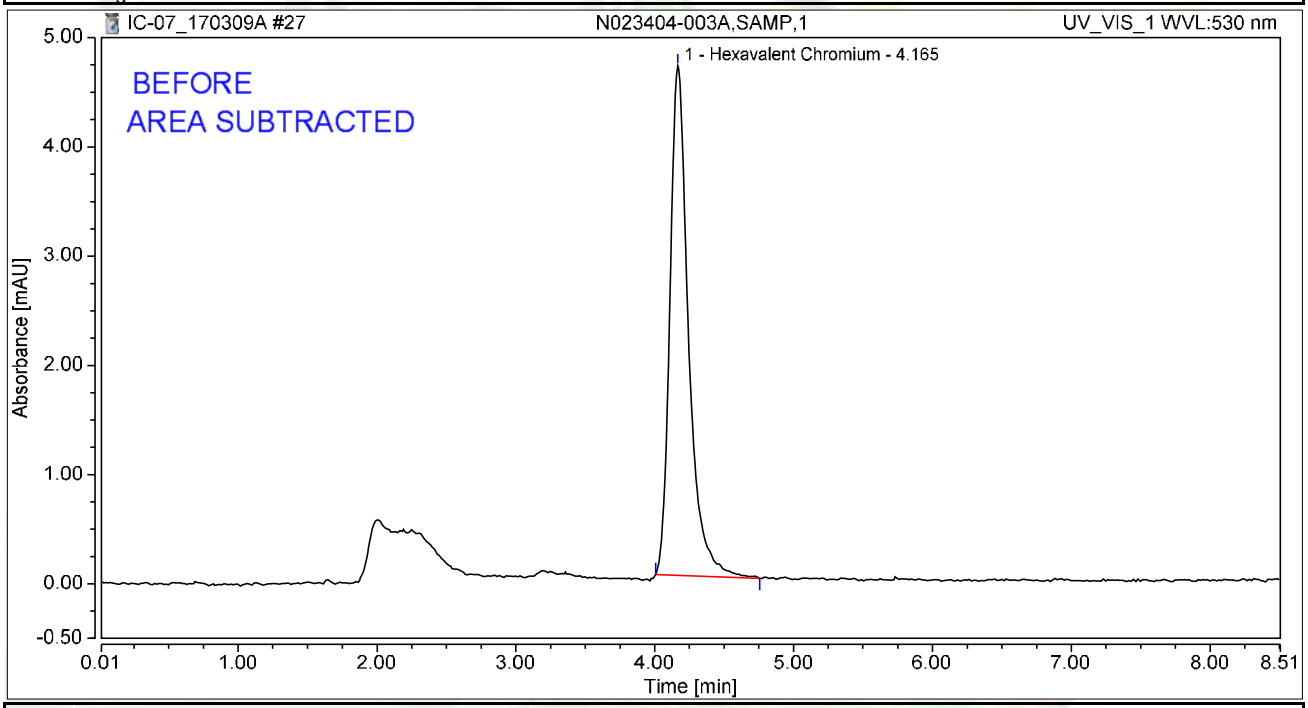
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023404-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.725	4.666	100.00	100.00	2.7191
Total:			**0.725**	**4.666**	**100.00**	**100.00**	

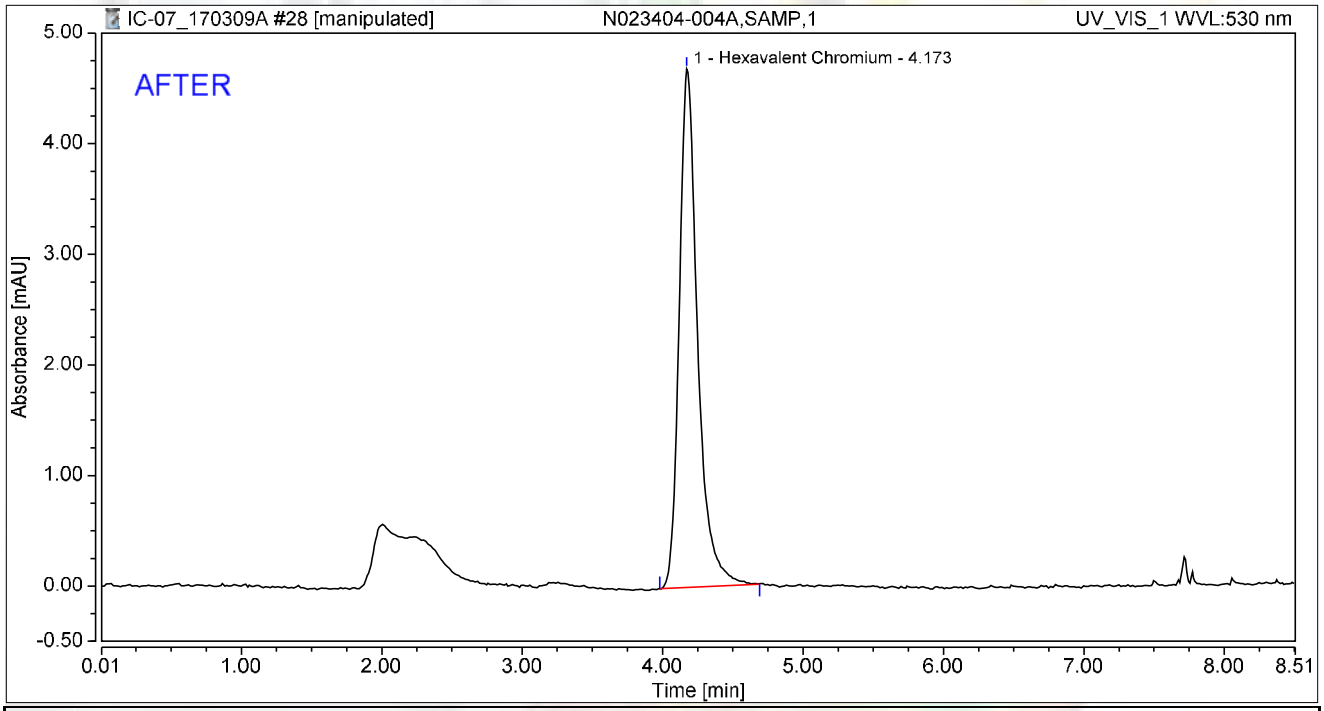
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.712	4.688	100.00	100.00	2.6684
Total:			**0.712**	**4.688**	**100.00**	**100.00**	

rba 3/13/2017

Reviewed by: Dionex 3/21/2017

My first report/Integration

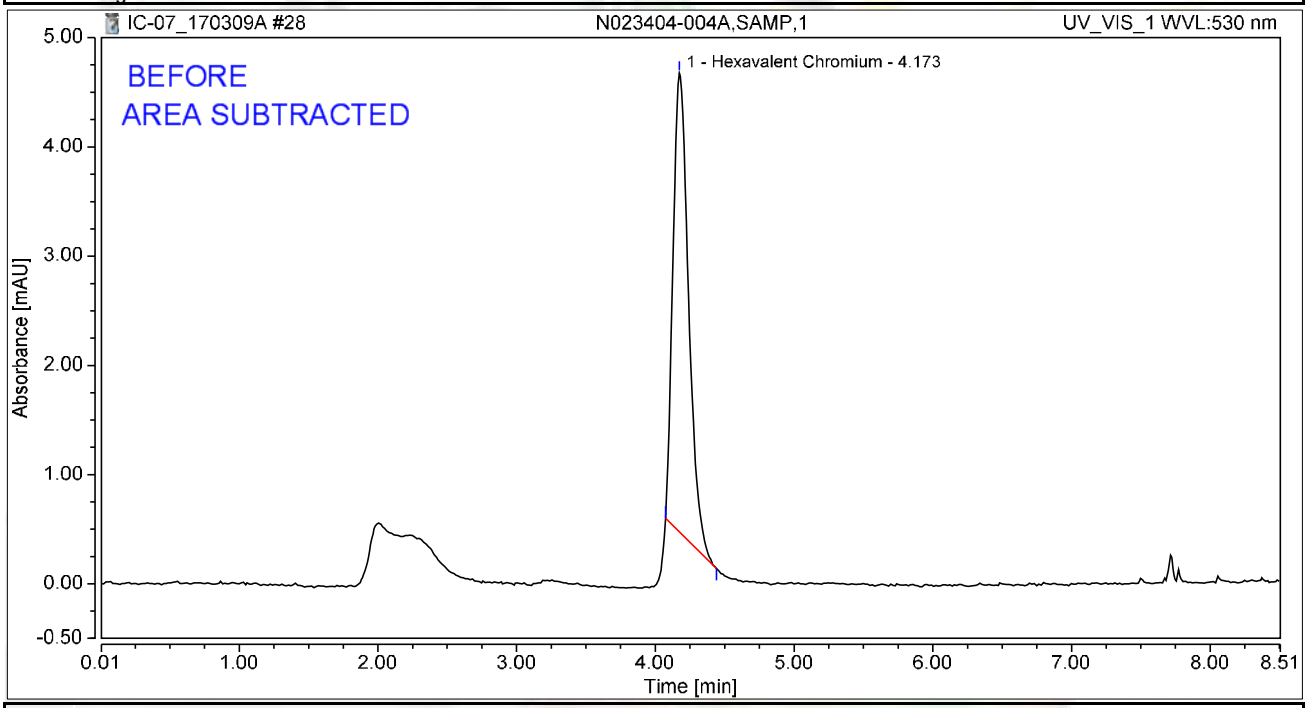
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023404-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.548	4.200	100.00	100.00	2.0539
Total:			**0.548**	**4.200**	**100.00**	**100.00**	

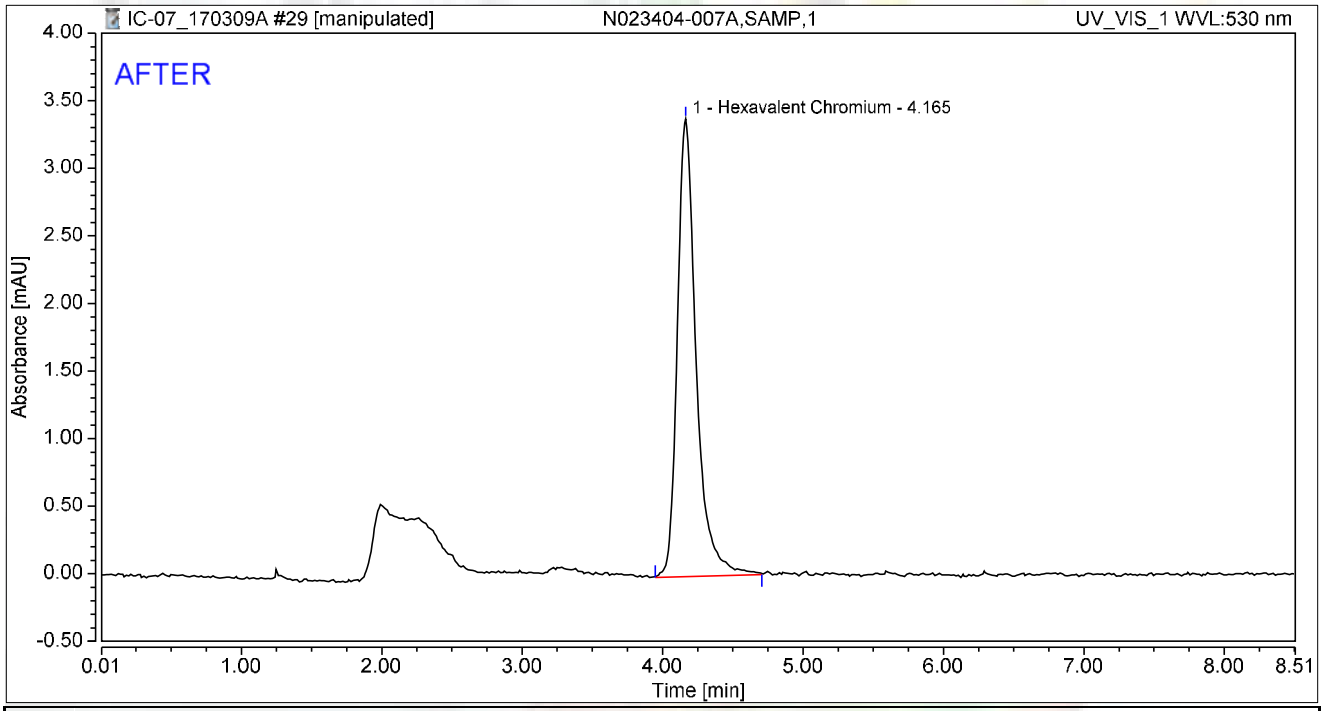
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.525	3.385	100.00	100.00	1.9693
Total:			**0.525**	**3.385**	**100.00**	**100.00**	

rba 3/13/2017

Reviewed by: Nancy 3/21/2017

My first report/Integration

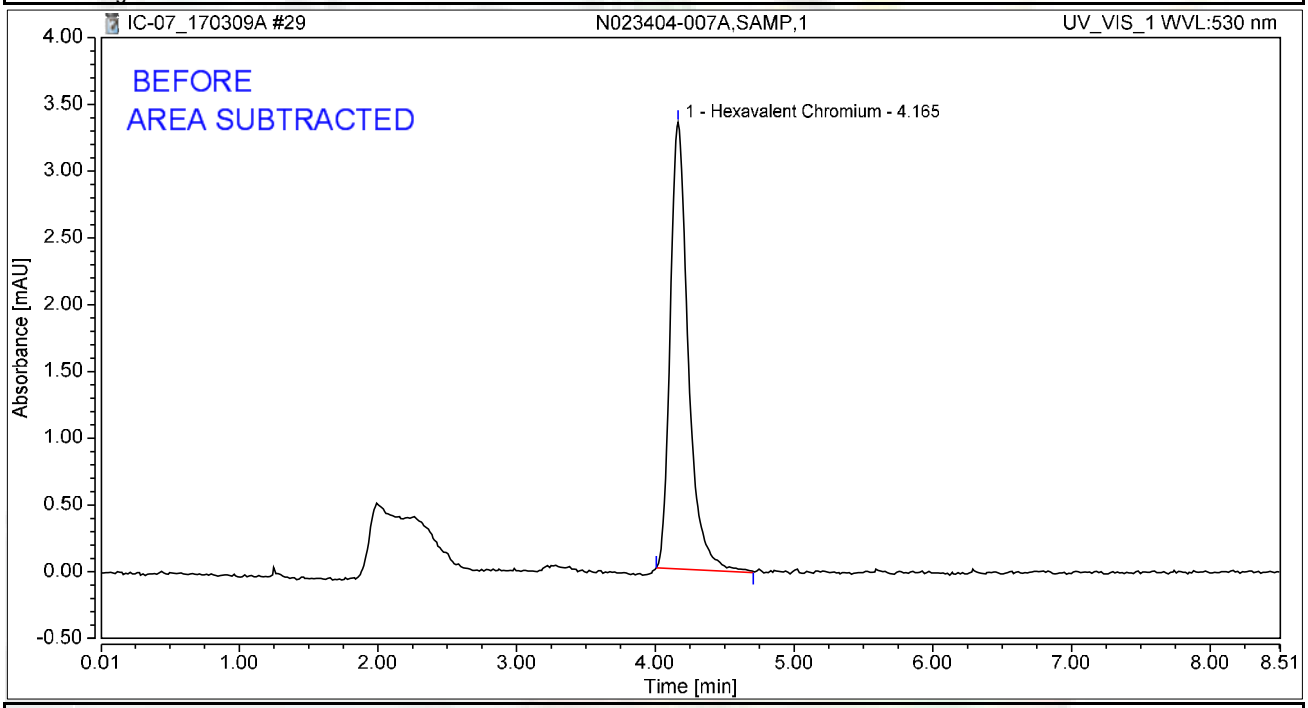
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023404-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.505	3.344	100.00	100.00	1.8950
Total:			**0.505**	**3.344**	**100.00**	**100.00**	

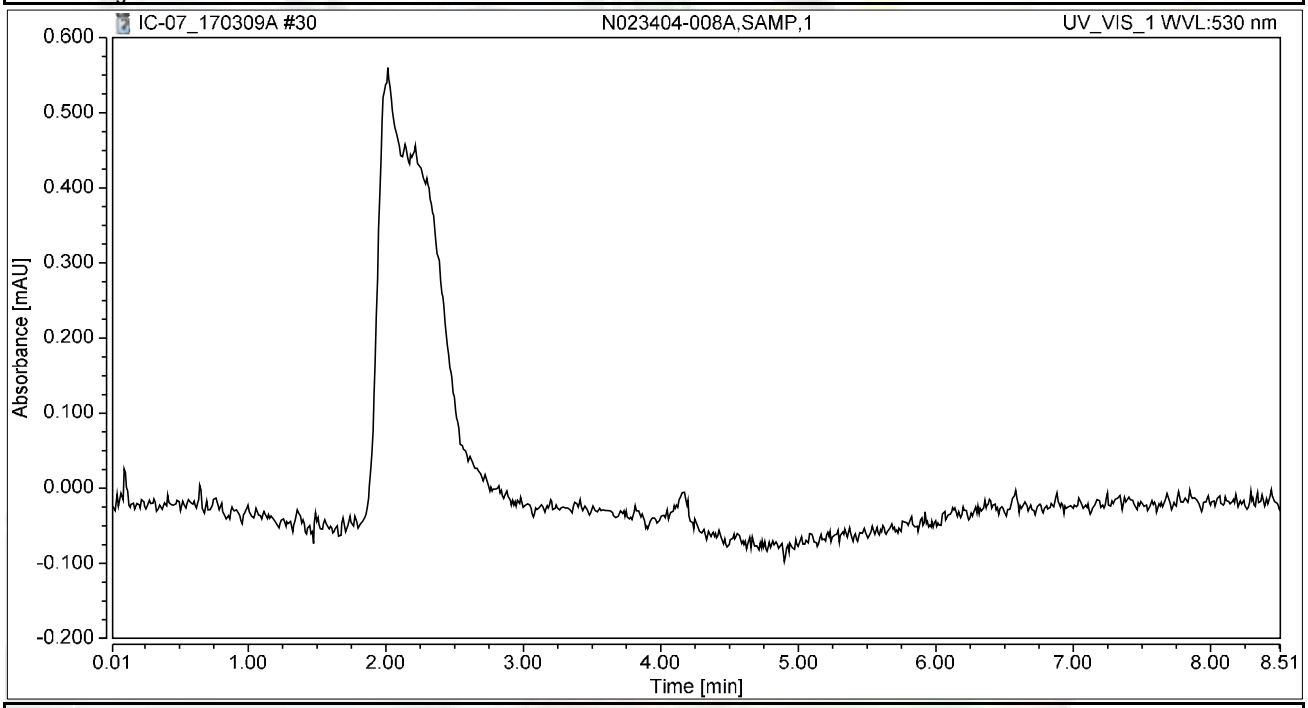
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

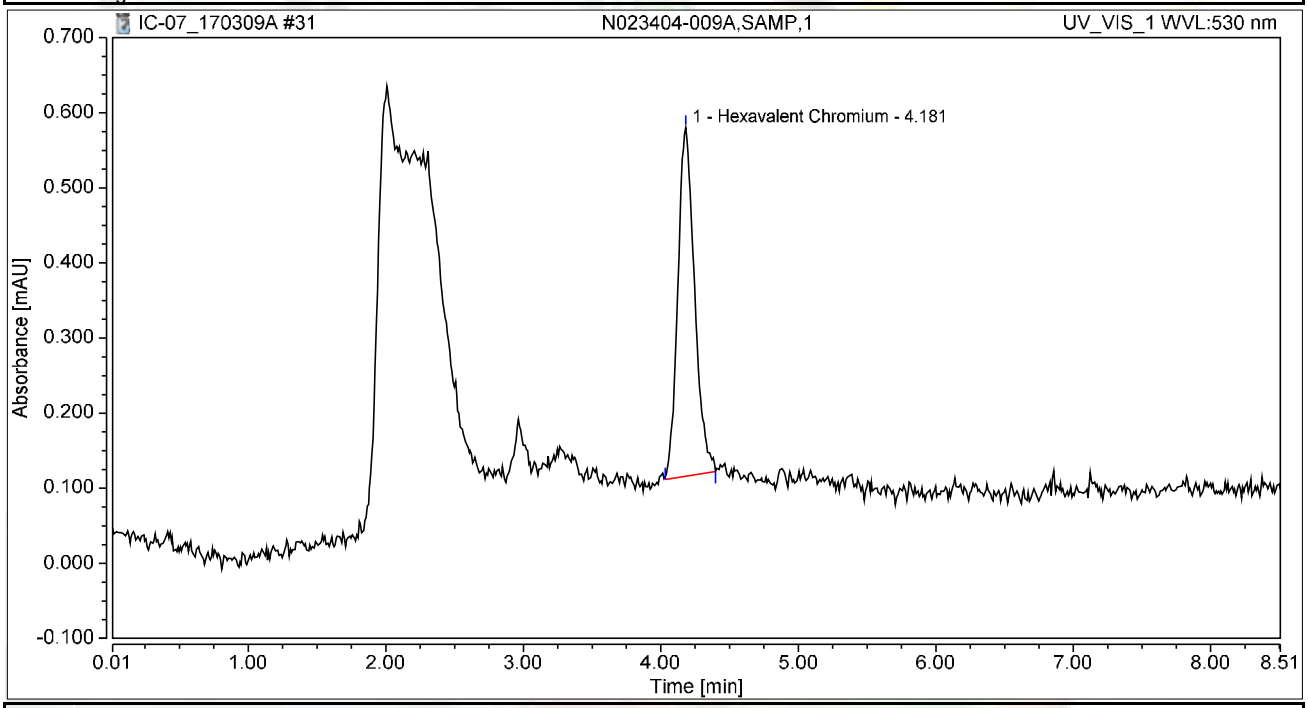
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023404-009A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

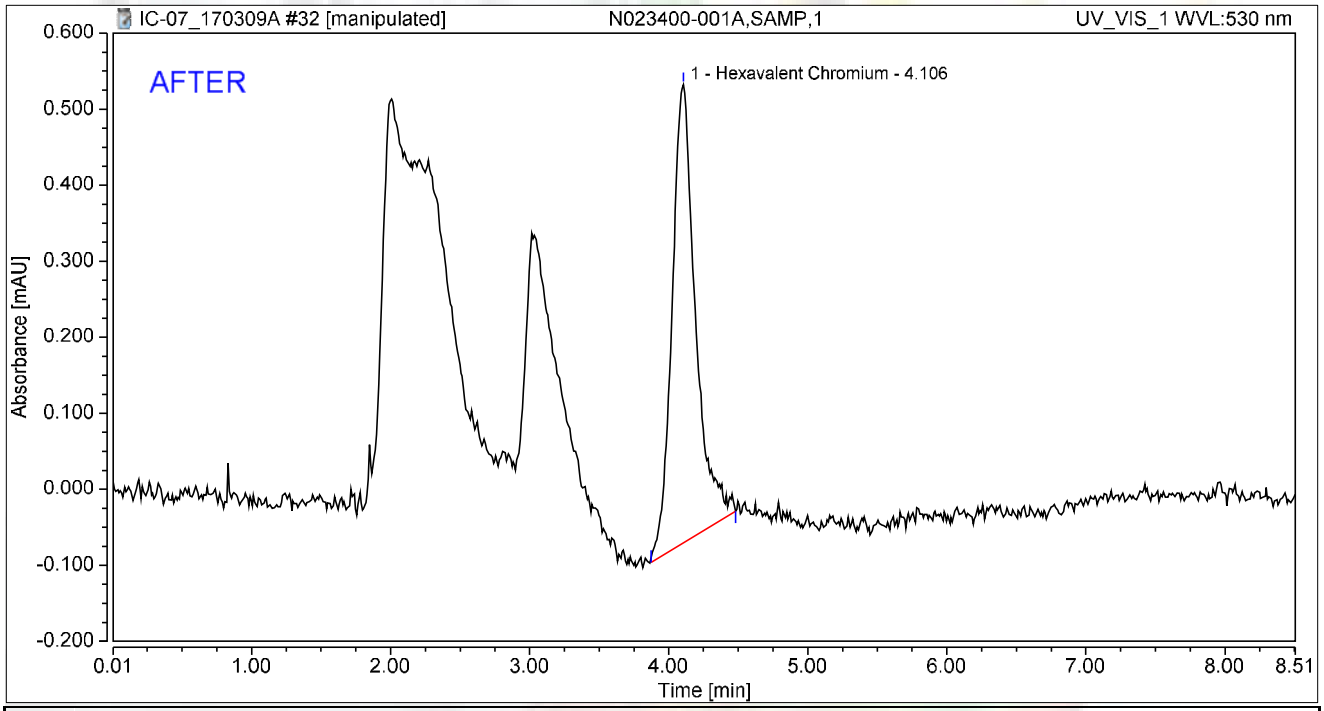
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.065	0.464	100.00	100.00	0.2441
Total:			**0.065**	**0.464**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023400-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.118	0.603	100.00	100.00	0.4427
Total:			**0.118**	**0.603**	**100.00**	**100.00**	

rba 3/13/2017

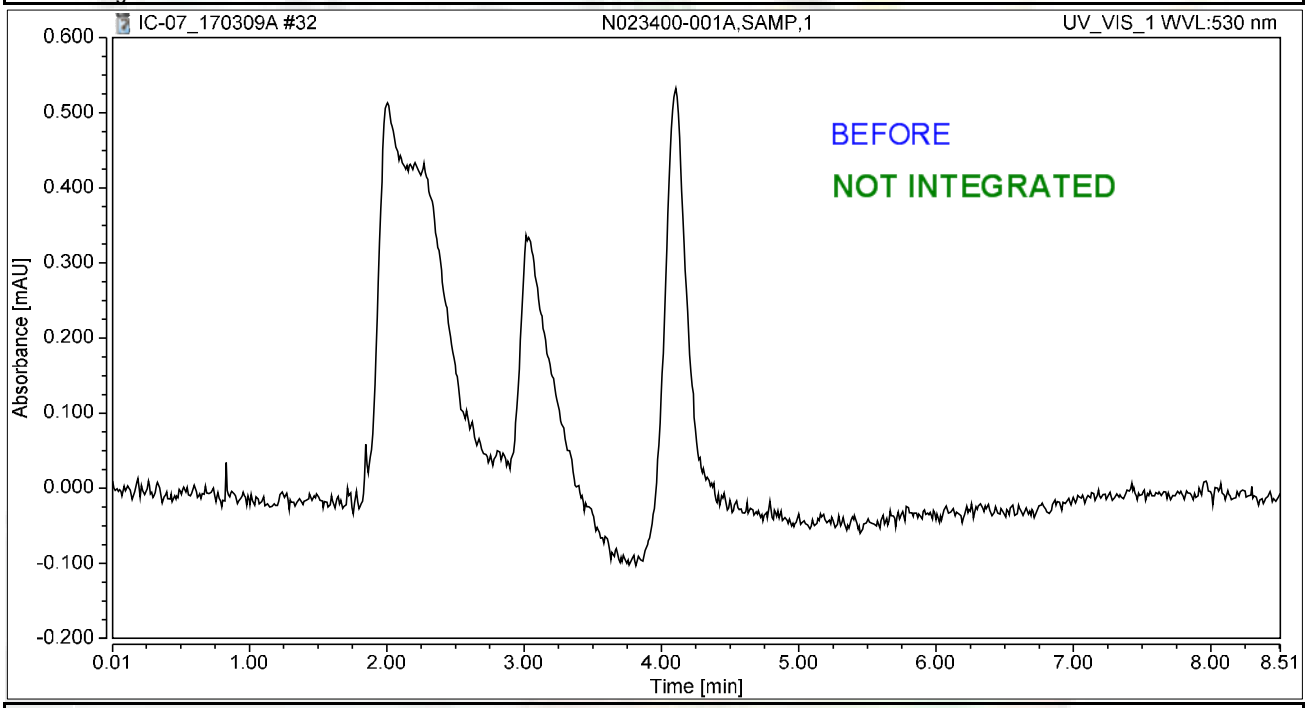
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023400-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

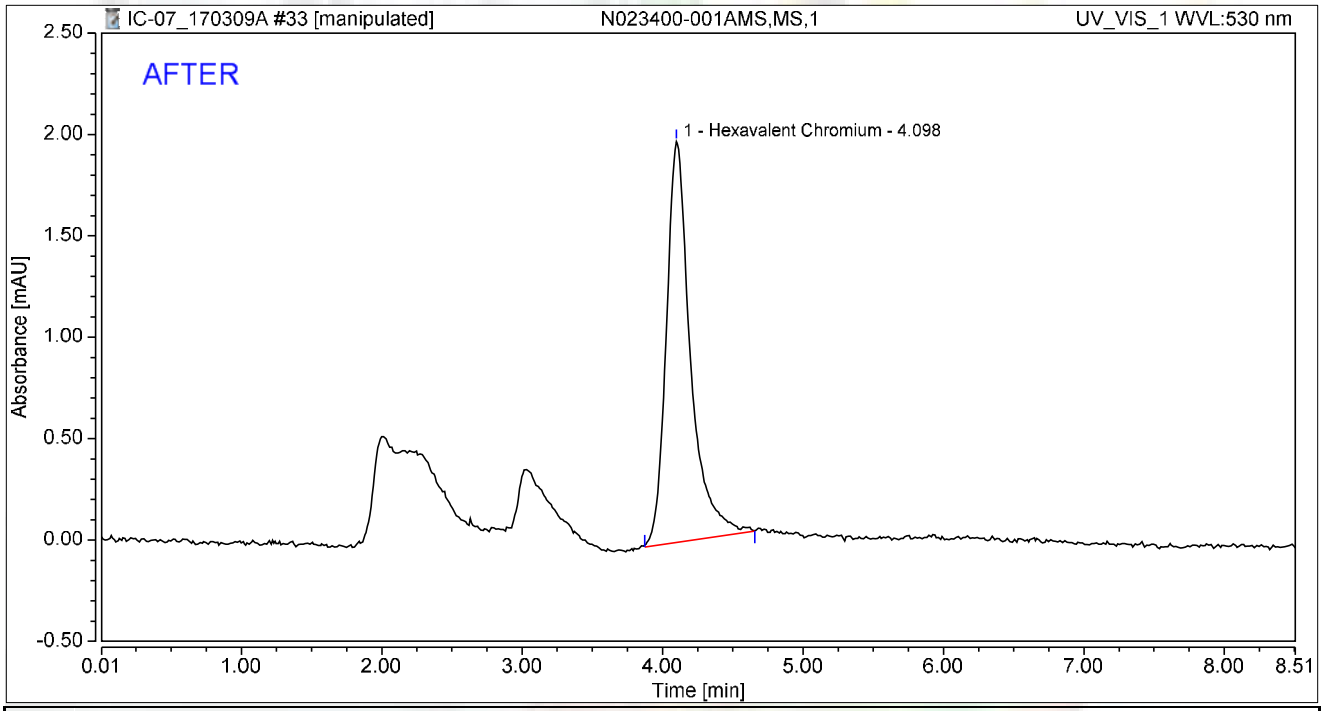
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023400-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.395	1.977	100.00	100.00	1.4824
Total:			**0.395**	**1.977**	**100.00**	**100.00**	

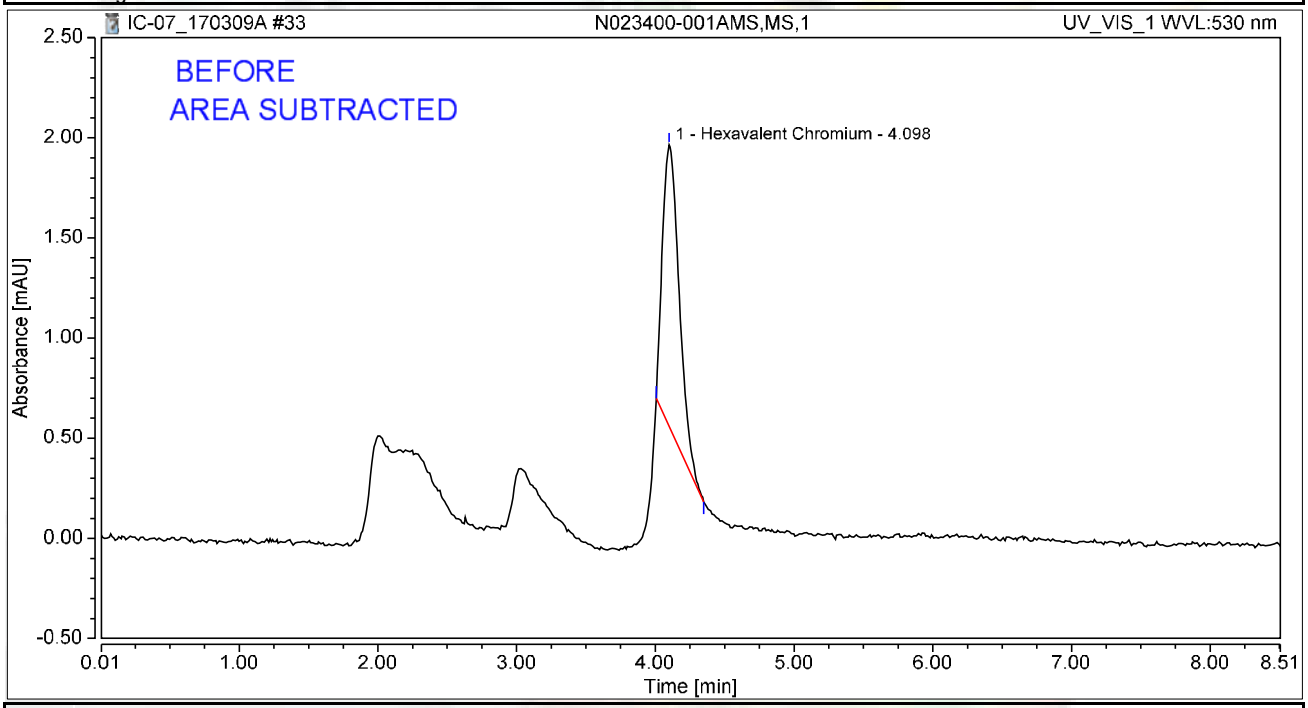
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023400-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.197	1.404	100.00	100.00	0.7381
Total:			**0.197**	**1.404**	**100.00**	**100.00**	

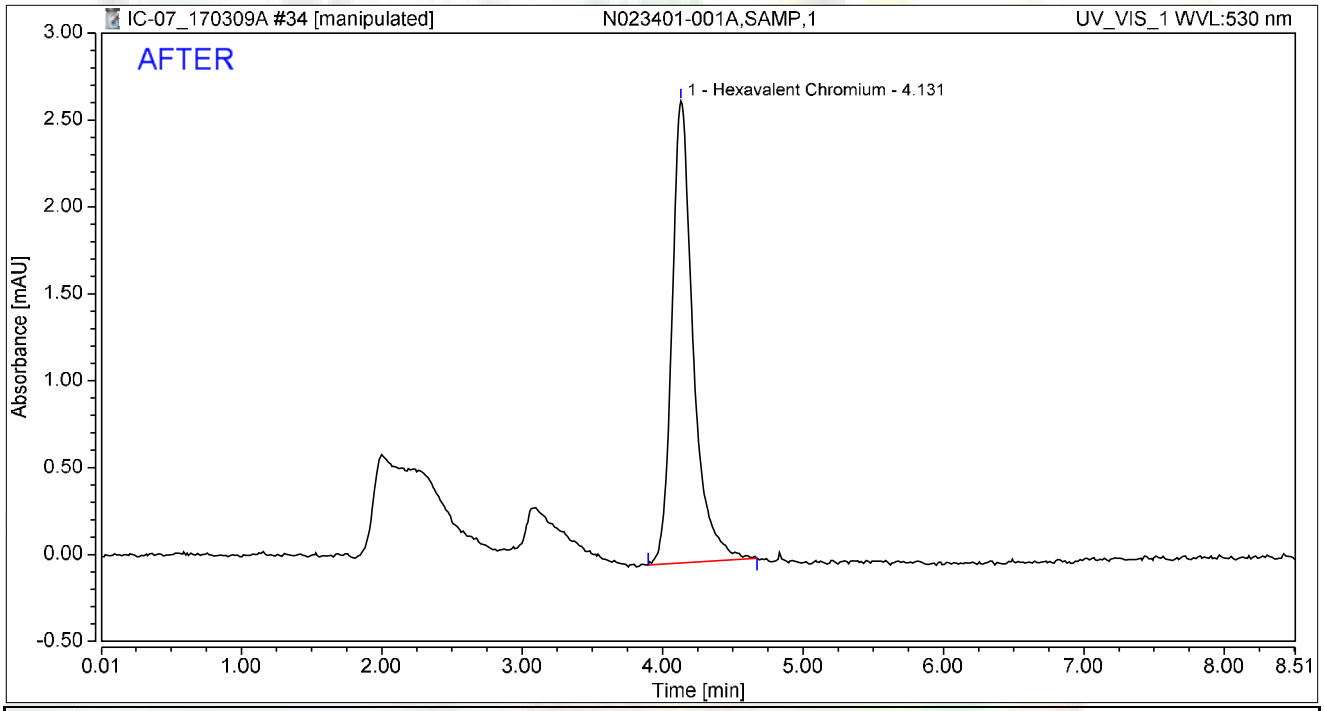
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023401-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.466	2.658	100.00	100.00	1.7493
Total:			**0.466**	**2.658**	**100.00**	**100.00**	

rba 3/13/2017

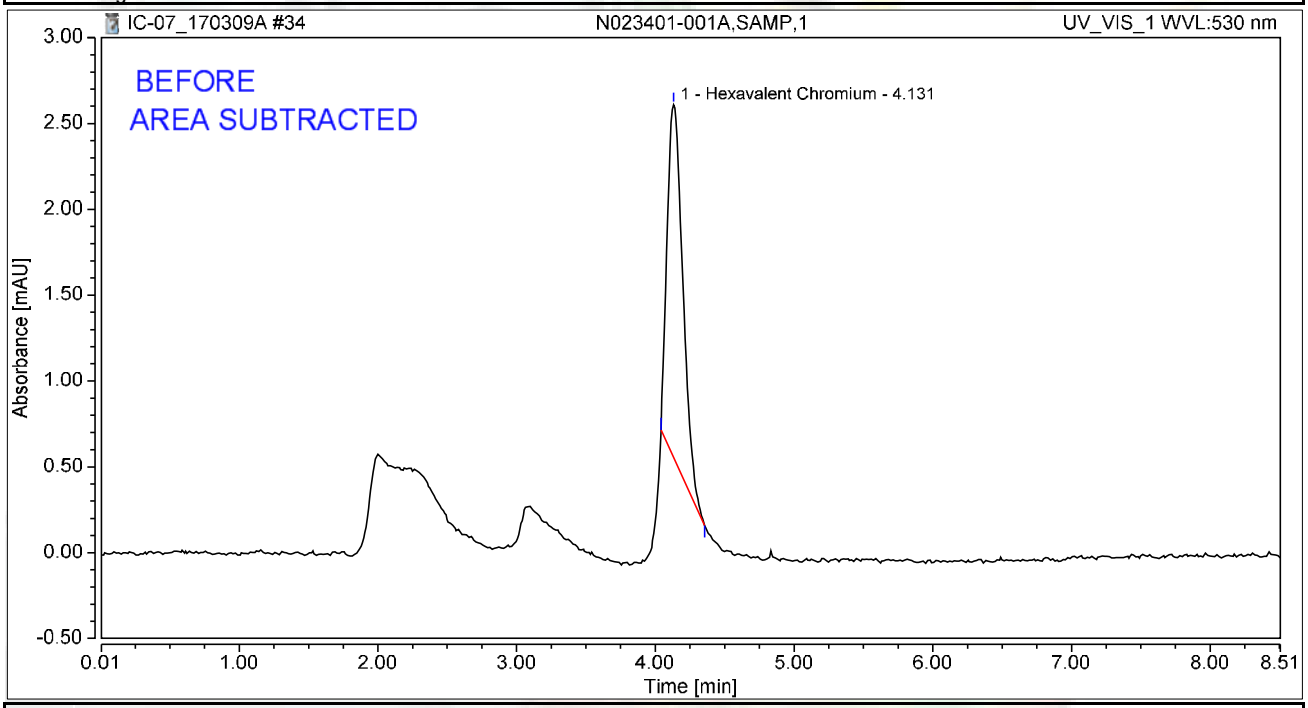
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023401-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.271	2.055	100.00	100.00	1.0148
Total:			**0.271**	**2.055**	**100.00**	**100.00**	

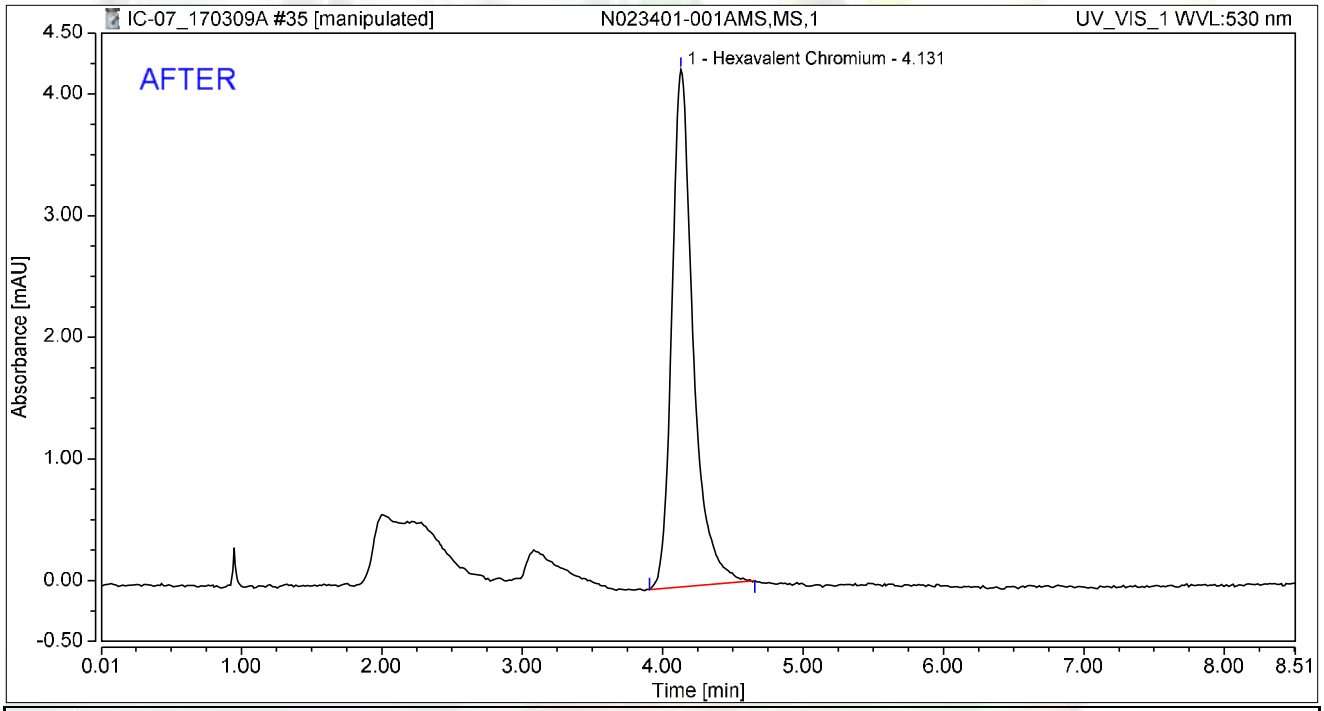
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023401-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.749	4.254	100.00	100.00	2.8070
Total:			**0.749**	**4.254**	**100.00**	**100.00**	

rba 3/13/2017

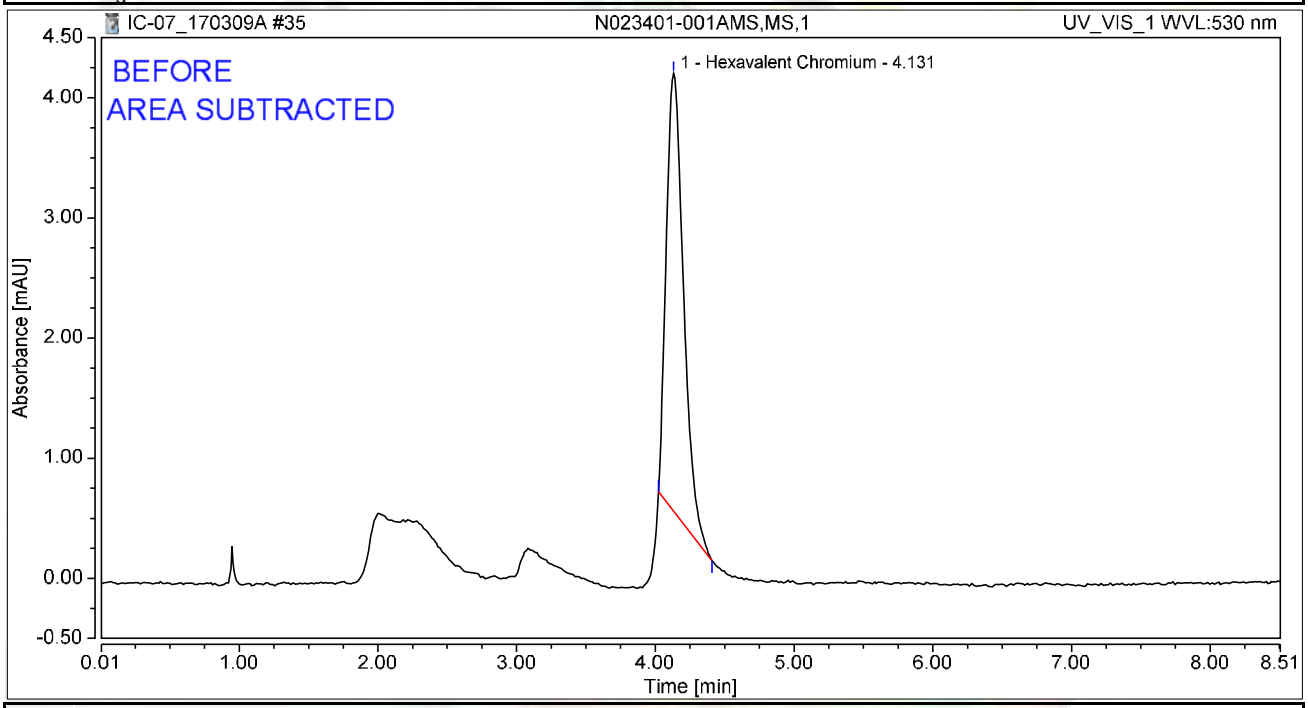
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023401-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.528	3.642	100.00	100.00	1.9800
Total:			**0.528**	**3.642**	**100.00**	**100.00**	

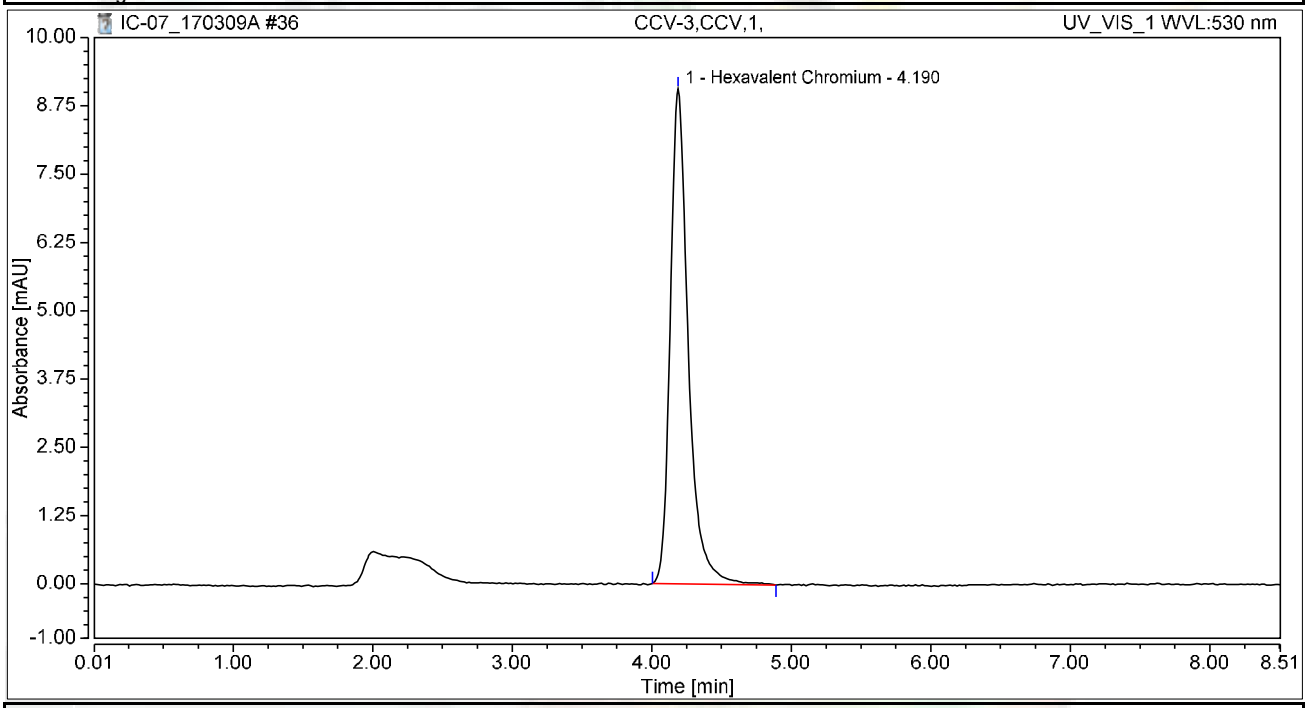
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

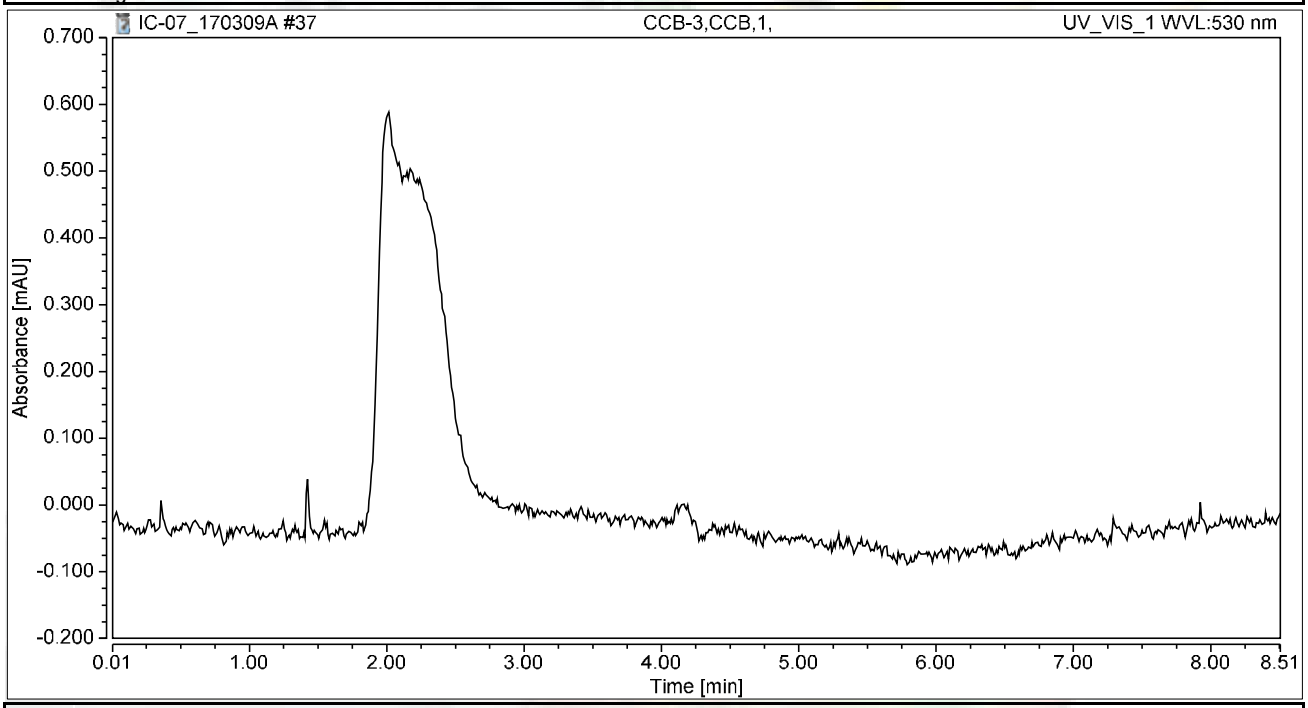
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.360	9.064	100.00	100.00	5.0993
Total:			**1.360**	**9.064**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

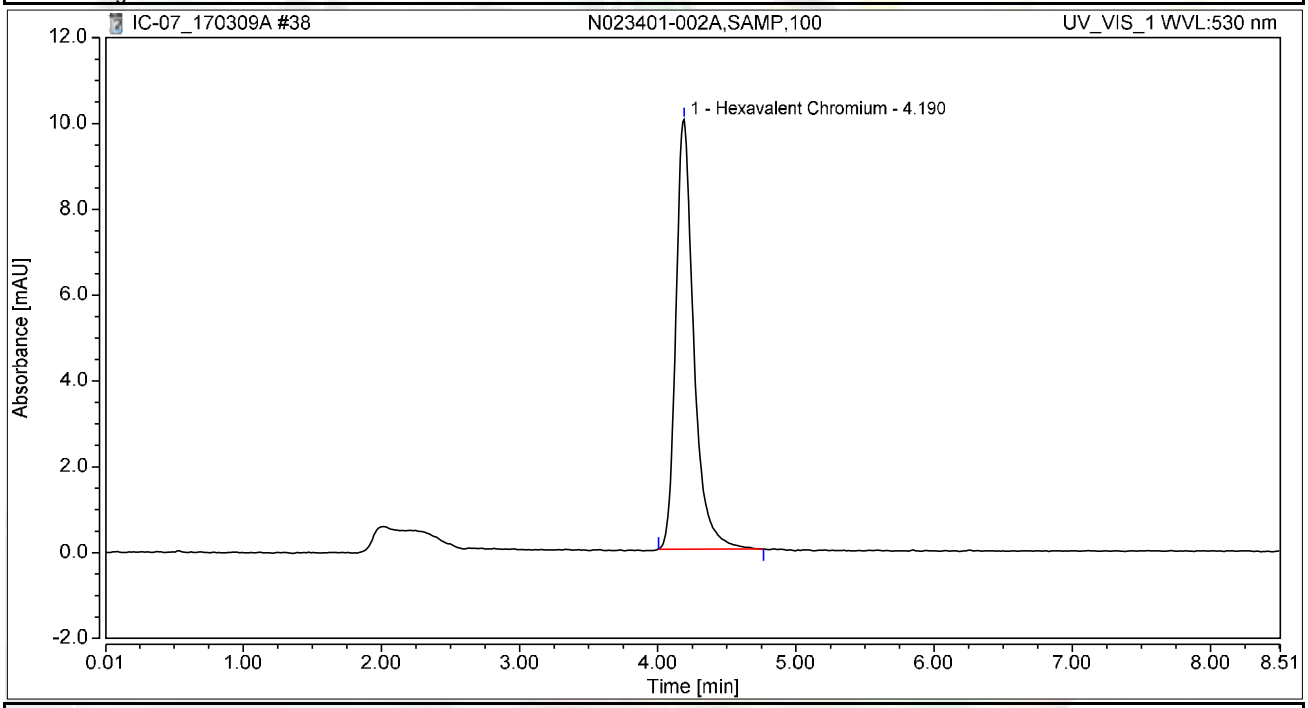
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023401-002A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

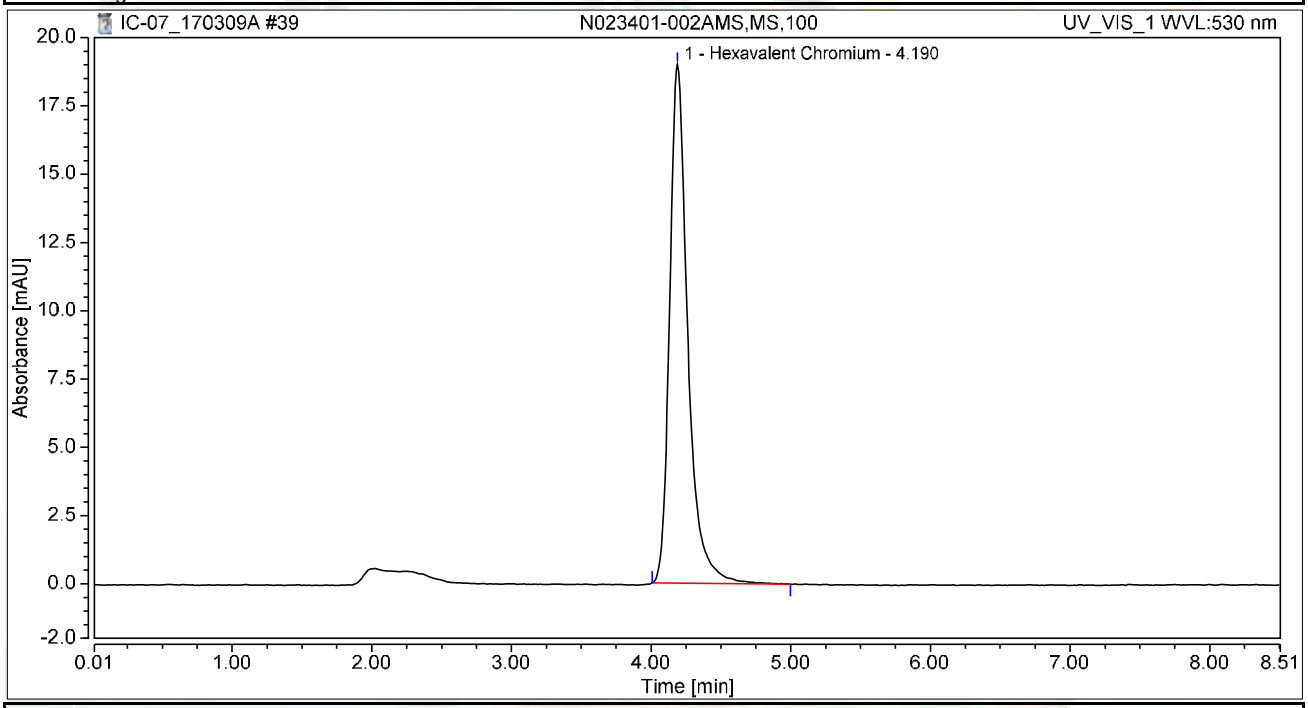
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.503	10.010	100.00	100.00	5.6374
Total:			**1.503**	**10.010**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023401-002AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

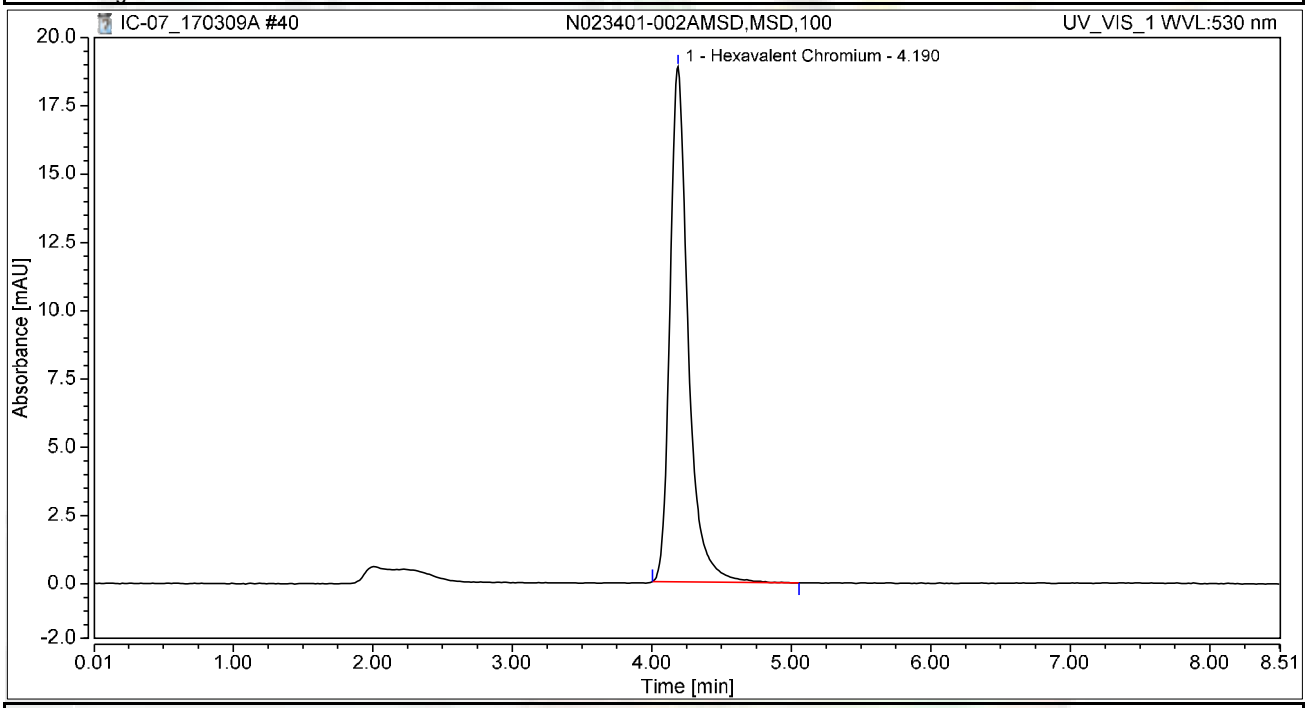
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.868	19.006	100.00	100.00	10.7534
Total:			**2.868**	**19.006**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023401-002AMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 14:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

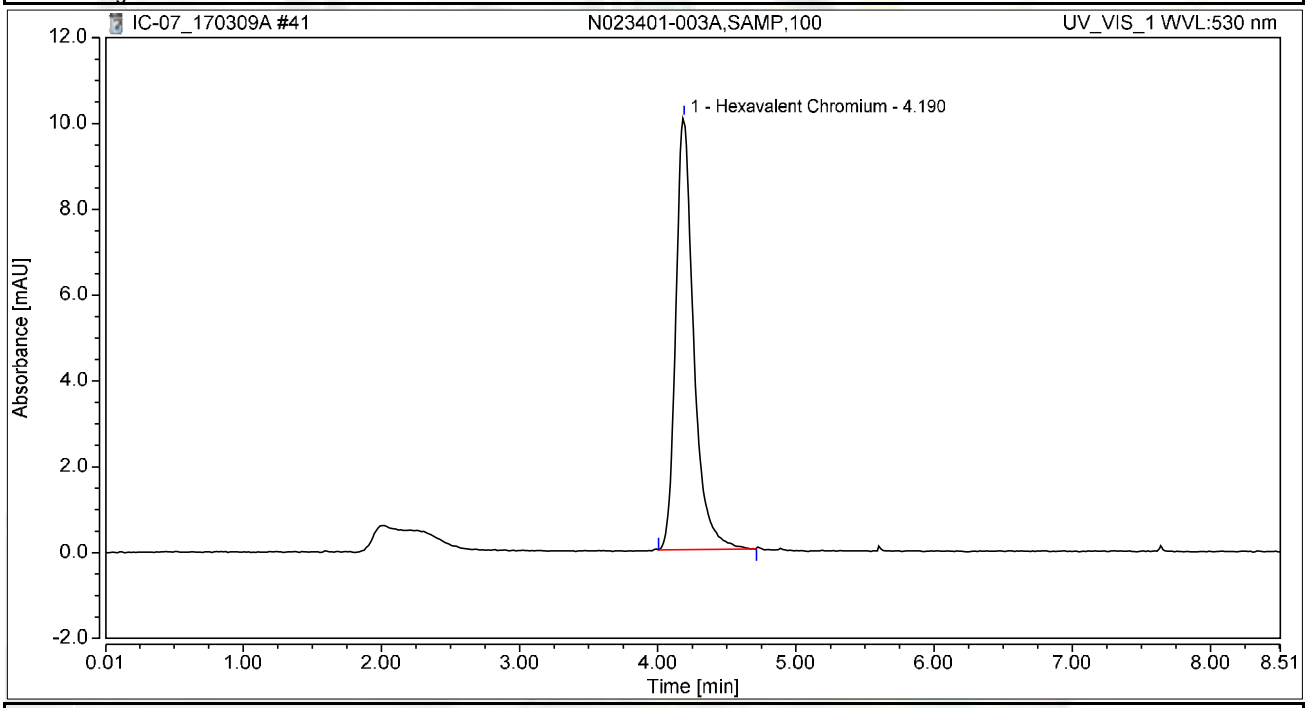
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.858	18.855	100.00	100.00	10.7173
Total:			**2.858**	**18.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023401-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

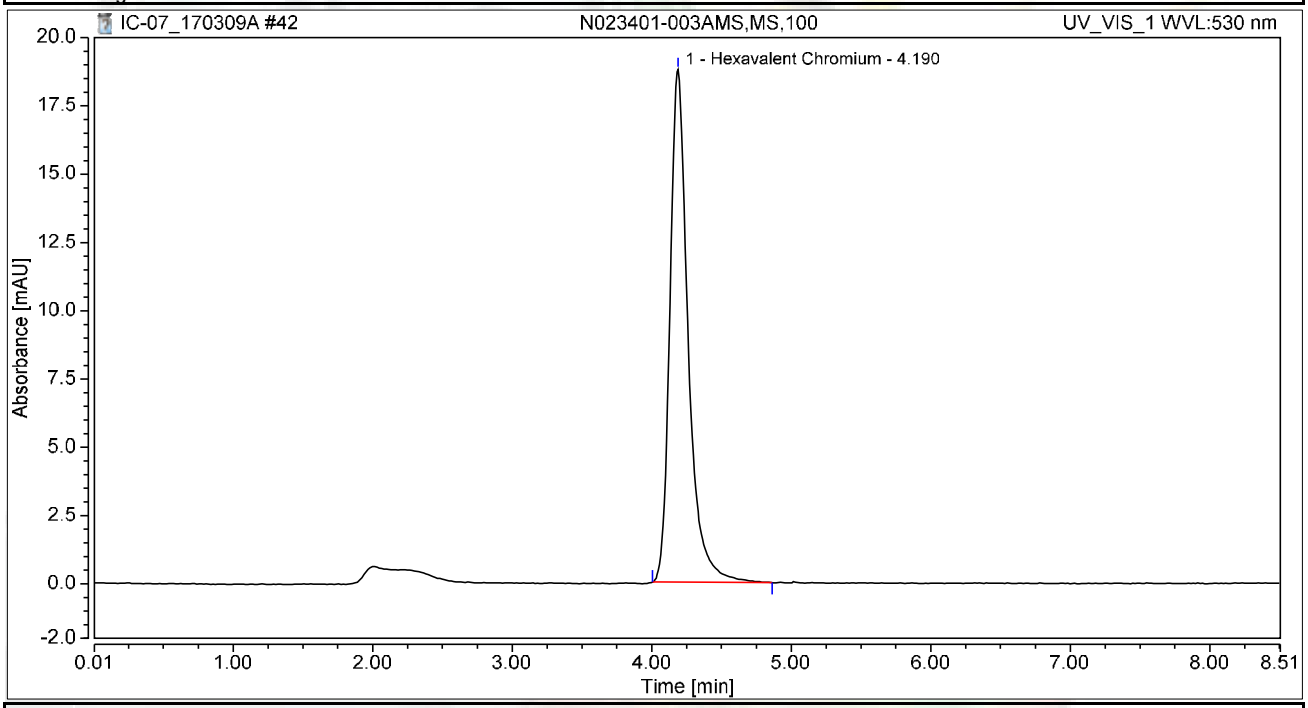
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.512	10.067	100.00	100.00	5.6712
Total:			**1.512**	**10.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023401-003AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

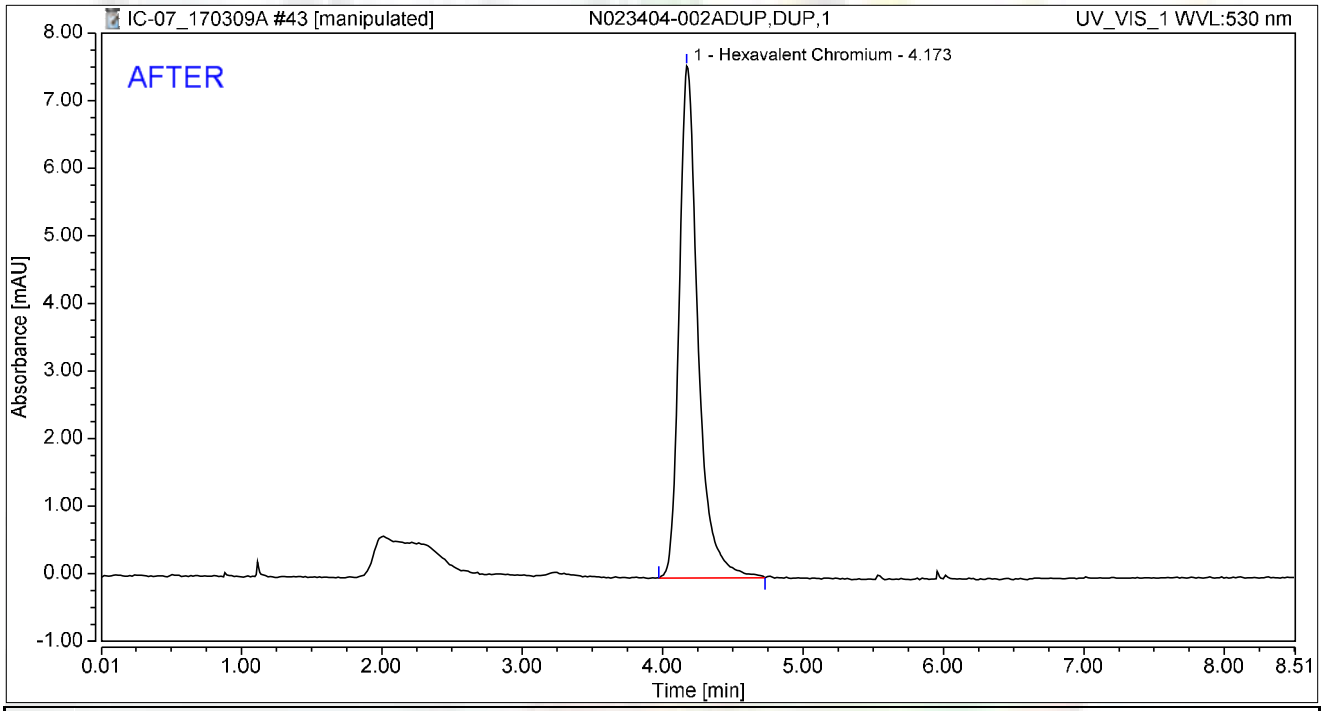
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.837	18.758	100.00	100.00	10.6401
Total:			**2.837**	**18.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023404-002ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.181	7.571	100.00	100.00	4.4302
Total:			**1.181**	**7.571**	**100.00**	**100.00**	

rba 3/13/2017

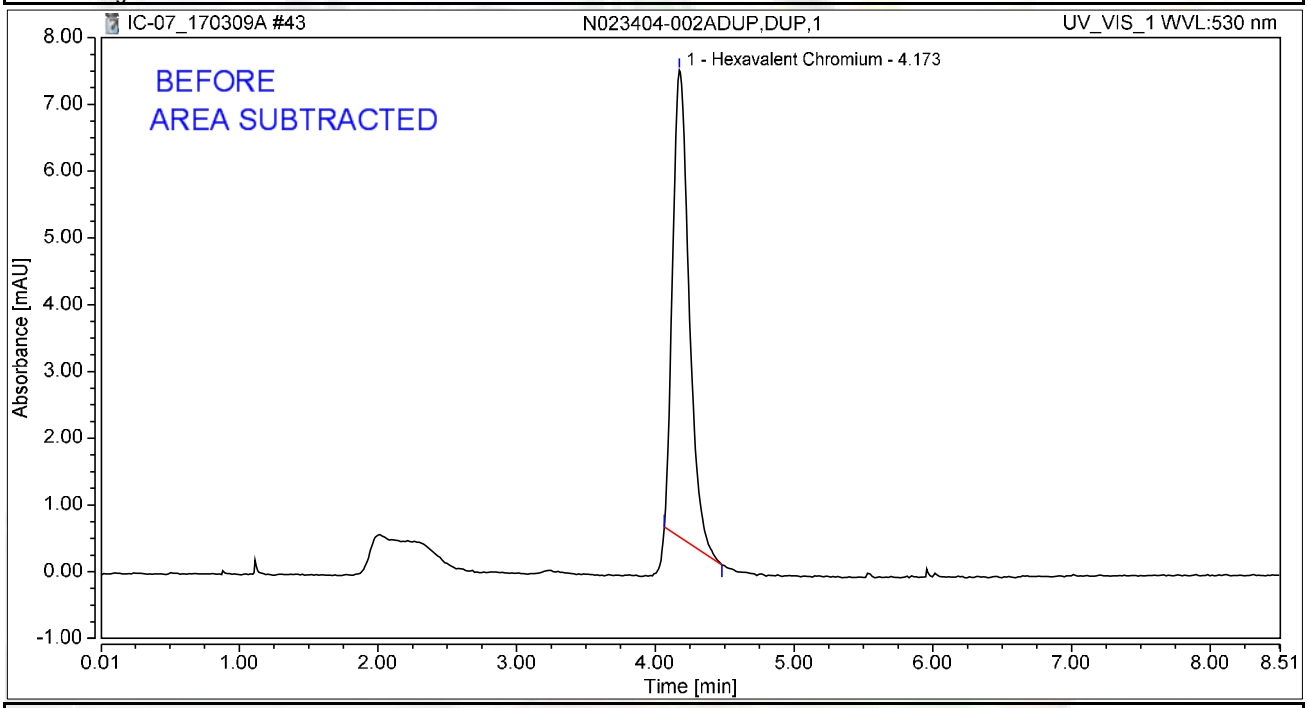
Reviewed by: Nancy 3/21/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023404-002ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.961	6.985	100.00	100.00	3.6033
Total:			**0.961**	**6.985**	**100.00**	**100.00**	

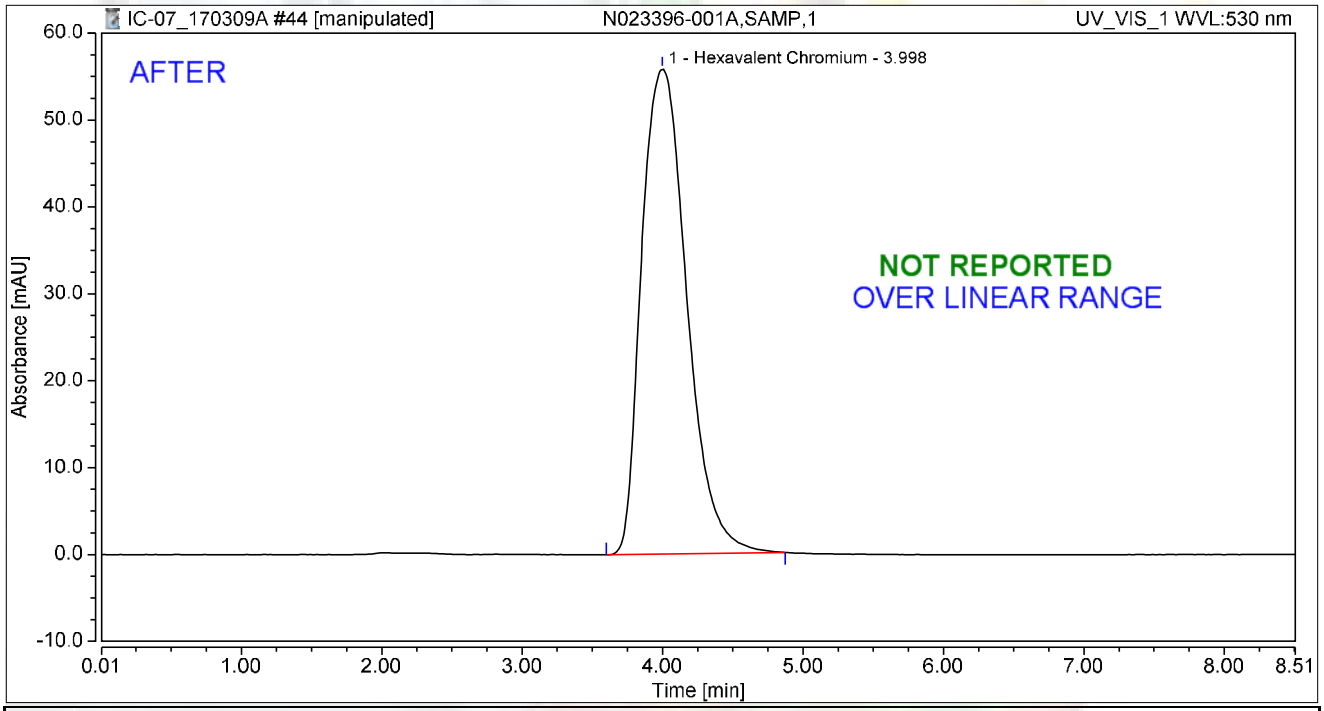
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023396-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	20.794	55.796	100.00	100.00	77.9738
Total:			**20.794**	**55.796**	**100.00**	**100.00**	

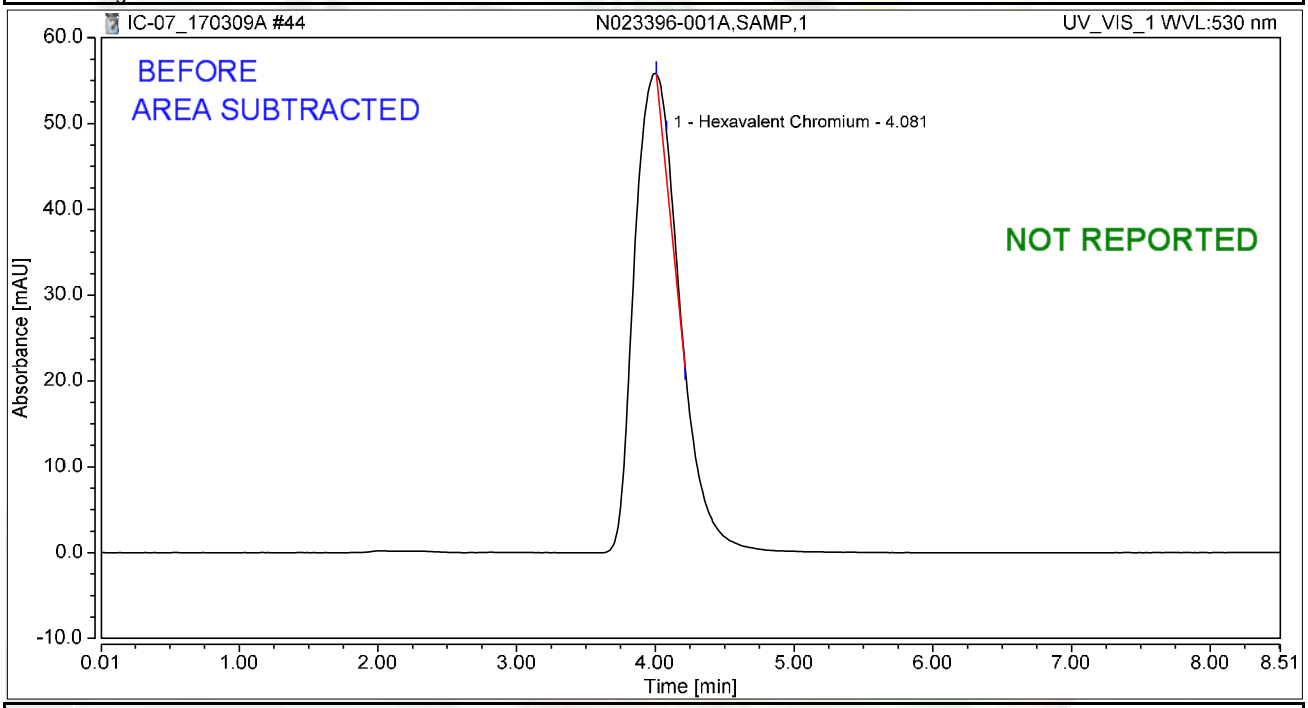
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023396-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.639	5.431	100.00	100.00	2.3958
Total:			**0.639**	**5.431**	**100.00**	**100.00**	

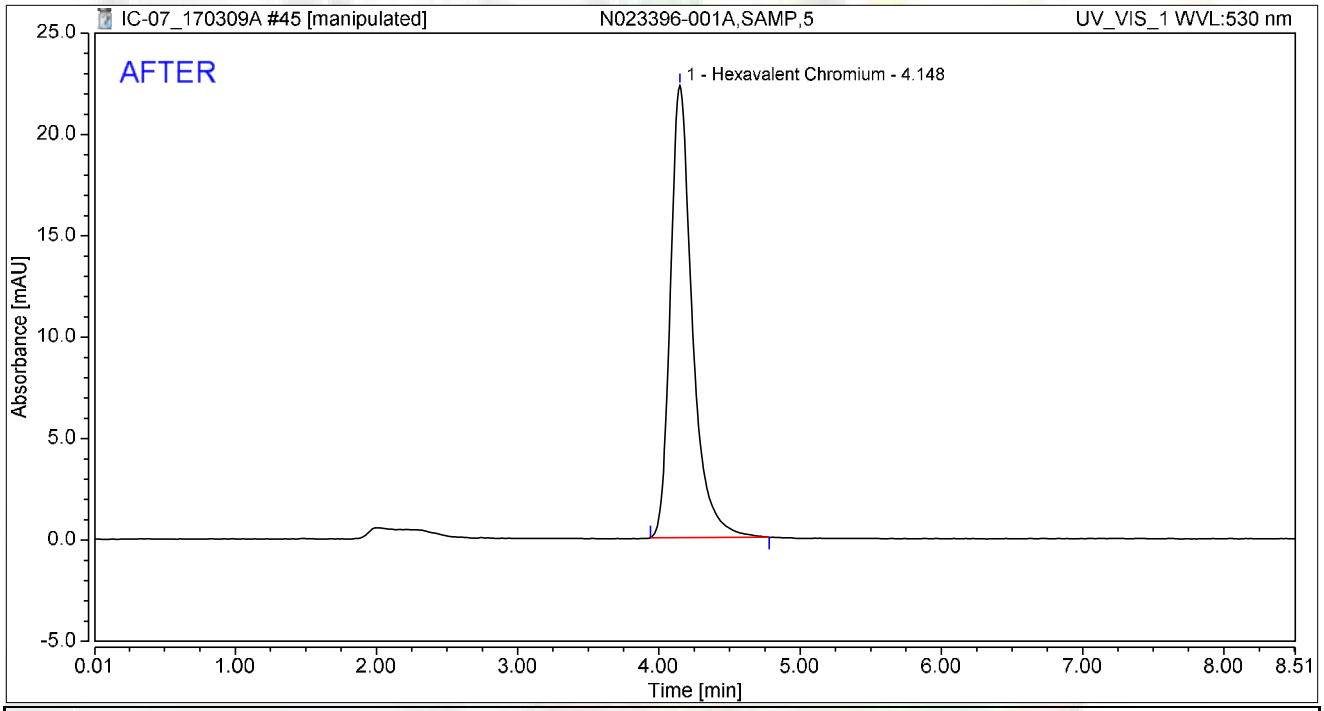
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023396-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	4.012	22.299	100.00	100.00	15.0449
Total:			**4.012**	**22.299**	**100.00**	**100.00**	

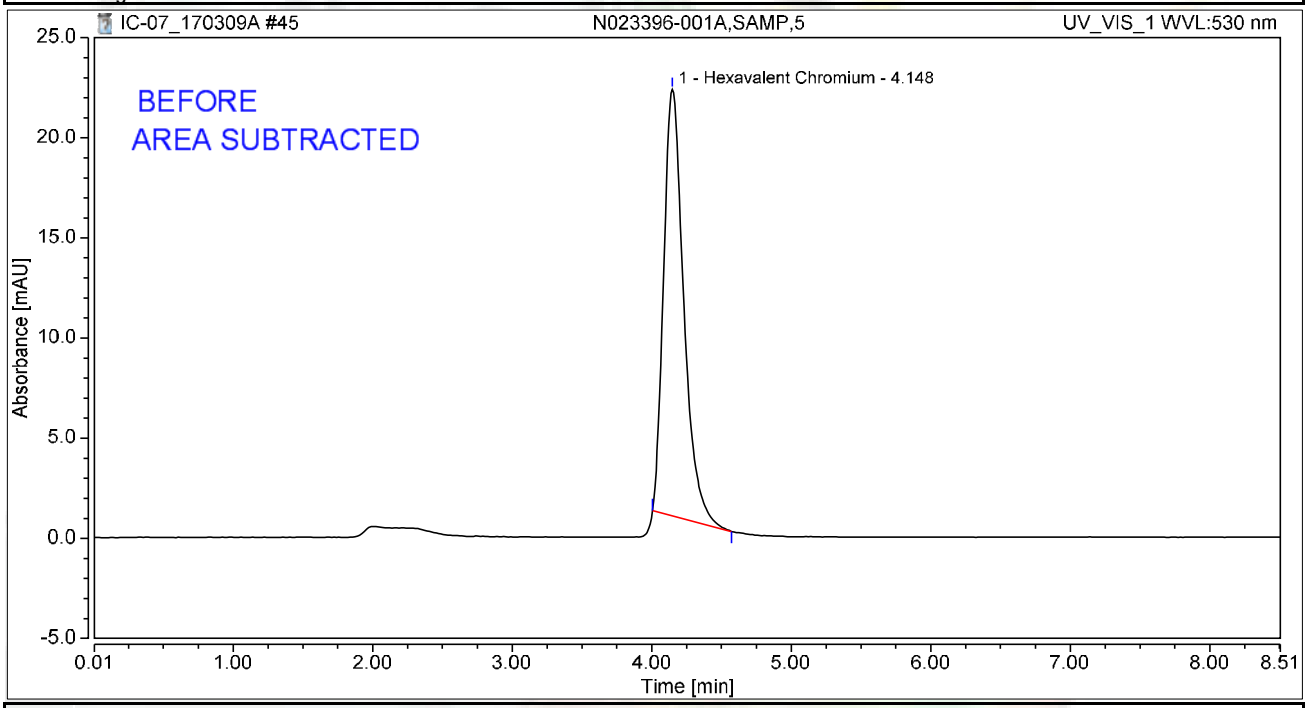
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023396-001A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.547	21.290	100.00	100.00	13.3015
Total:			**3.547**	**21.290**	**100.00**	**100.00**	

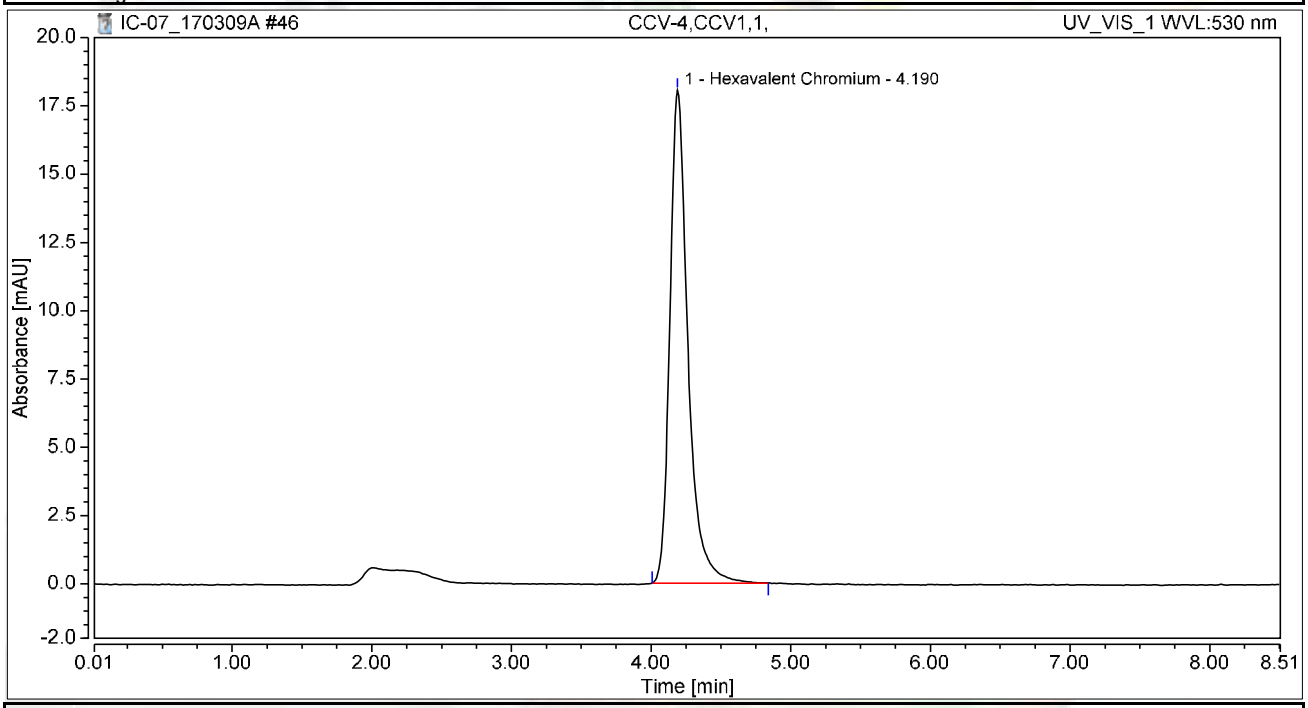
rba 3/13/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

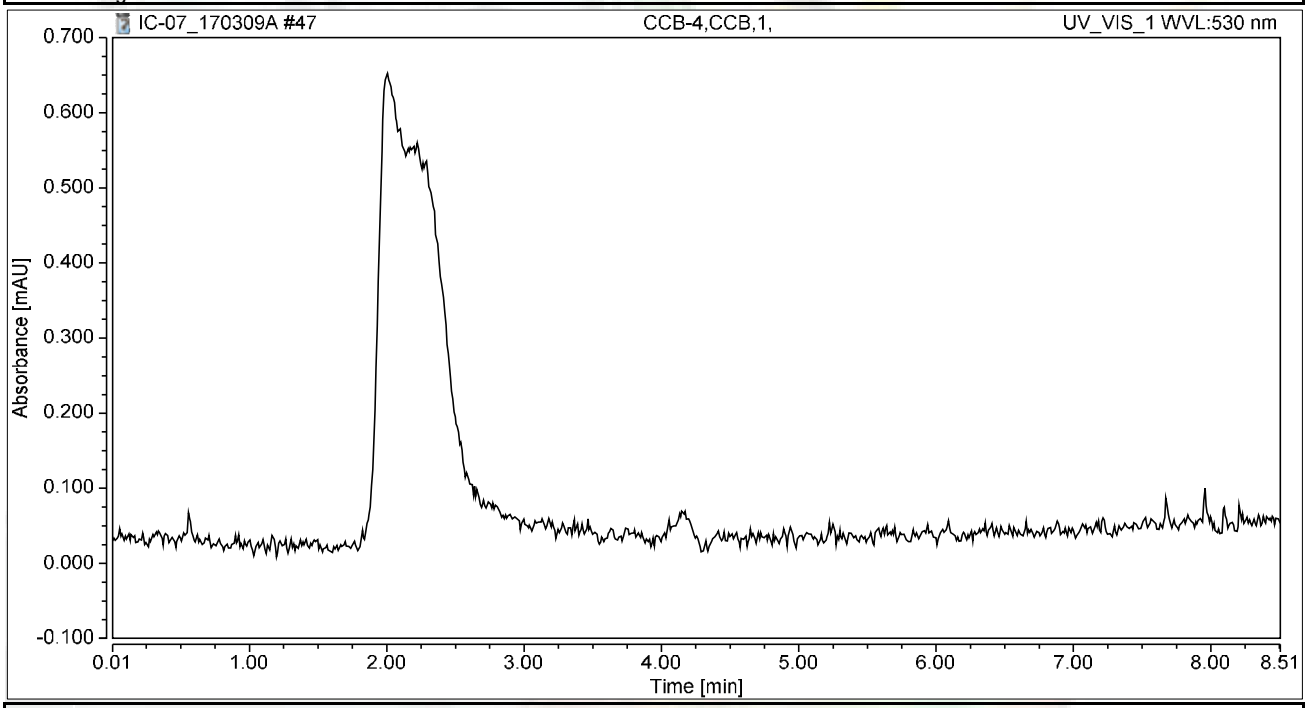
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.715	18.055	100.00	100.00	10.1814
Total:			**2.715**	**18.055**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170303_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Mar/17 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114006 **Analyst:** LSR

ASSET #: N023401 **Date Analyzed:** 3/9/2017

Method: EPA 2320

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/10/2017

2nd Level Reviewer Nancy 3/22/2017 Date: ___

SAMPLE CALCULATION

Sample ID: **N023401-001C @ pH 7.68**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.025 mL)

= **0.02268 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.90) (0.02268 N) (1) * 1000

= 224.5320 mg/**L**

Reporting results in two significant figures,

= **220 mg/L** as CaCO3

Julia Ramit 3/10/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02268 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.90 mL) (0.02268) (1) * 1000

= 224.5320 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **224.5320 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **220 mg/L**

Julia Ramit 3/10/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.63	50	0.00	0.050	MBLK
LCS-1	8.82	50	0.10	4.50	LCS
N023400-001D	7.37	50	0.00	8.90	SAMP
N023401-001C	7.68	50	0.00	9.90	SAMP
N023401-002C	7.35	50	0.00	6.90	SAMP
N023401-003C	7.30	50	0.00	7.00	SAMP
N023400-001DDUP	7.39	50	0.00	8.80	DUP
N023401-002CMS	7.78	50	0.00	11.40	MS
N023401-002CMSD	7.87	50	0.00	11.30	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.025**	ml
N H2SO4	**0.02268**	Normal
Date Analyzed:	**3/9/17**	
Time:	**10:45 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170208A**	

Silia Ramit 3/10/2017

Date Analyzed:	3/9/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	10:45 AM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.025	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R170208A							**P > 1/2 T**
									N H2SO4	0.02268	**N**		**P = T**
Sample ID	**Sample Vol/Wt.**	**Sample pH**	**Std. Code**	**Spike Amount**	**Spike Conc.**	**Normality, Titrant**	**Vol. Used to pH 8.3, ml.**	**Vol. Used pH 8.3 to 4.5, ml.**	**Total Vol. Used, ml.**	**DF (50ml/Vsamp.)**	**P Alkalinity**	**T Alkalinity**	**Comments**
MB-1	50	5.63				0.02268	0.00	0.05	0.05	1	0.00	1.13	
LCS-1	50	8.82				0.02268	0.10	4.40	4.50	1	2.27	102.04	
N023400-001D	50	7.37				0.02268	0.00	8.90	8.90	1	0.00	201.81	
N023401-001C	50	7.68				0.02268	0.00	9.90	9.90	1	0.00	224.49	
N023401-002C	50	7.35				0.02268	0.00	6.90	6.90	1	0.00	156.46	
N023401-003C	50	7.3				0.02268	0.00	7.00	7.00	1	0.00	158.73	
N023400-001DDU	50	7.39				0.02268	0.00	8.80	8.80	1	0.00	199.55	
N023401-002CMS	50	7.78				0.02268	0.00	11.40	11.40	1	0.00	258.50	
N023401-002CMS	50	7.87				0.02268	0.00	11.30	11.30	1	0.00	256.24	

Silia Ramit 3/10/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	3/9/17
Time:	10:45 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.13	1.13	1.13		P = 0
LCS-1	0.00	4.54	97.51	102.04	102.04		P < 1/2 T
N023400-001D	0.00	0.00	201.81	201.81	201.81		P = 0
N023401-001C	0.00	0.00	224.49	224.49	224.49		P = 0
N023401-002C	0.00	0.00	156.46	156.46	156.46		P = 0
N023401-003C	0.00	0.00	158.73	158.73	158.73		P = 0
N023400-001DDUP	0.00	0.00	199.55	199.55	199.55		P = 0
N023401-002CMS	0.00	0.00	258.50	258.50	258.50		P = 0
N023401-002CMSD	0.00	0.00	256.24	256.24	256.24		P = 0

Julia Ramit 3/10/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 3/9/17
Time Extracted: 1402
Extracted By:

Date Analyzed: 3/9/17
Time Analyzed: 1045
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: -
Sulfuric Acid: R170208A
Sodium Bicarbonate: CINV-150601A

pH meter CALIBRATION:
SLOPE: 98.7%
pH 4 - 4.02 - CINV161025B
7 - 7.01 - 161025A
10 - 10.04 - 161214A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.59	1WST170302A	5 mL	0.05N	-	-	11.05	50/50	N H_2SO_4 = (2.65 g/L)(5 mL)	= 0.022624434
	#2	↓	10.59	↓	↓	↓	-	-	11.0	↓	(53)(V titrant)	= 0.022727272
1)	MBLK	50 mL	5.63	-	-	-	0.02268	0	0.05	50/50		Ave: 0.022675853
2)	LCS		8.82	1WST170302B	1 mL	0.05N		0.10	4.50			
3)	N023400-001D		7.37	-	-	-		0	8.90			
4)	N023401-001C		7.68	-	-	-		0	9.90			
5)	2C		7.35	-	-	-		0	6.90			
6)	3C		7.30	-	-	-		0	7.00			
7)	N023400-1D DUP		7.39	-	-	-		0	8.80			
8)	N023401-2CMS		7.78	1WST170302B	1 mL	0.05N		0	11.40			
9)	2CMSD	↓	7.87	↓	↓	↓	↓	0	11.30	↓		
10)												
11)												
12)												
13)												
14)												
15)												
16)				P = (V pH 8.3)(N H_2SO_4)(50,000)								
17)						Vsx						
18)												
19)												
20)				T = (V pH 4.5)(V H_2SO_4)(50,000)								
						Vsx						
	MS											
	MSD											
	LCS											

Julia Ramit 3/10/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R114023
ASSET #: N023400 / N023401

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 3/9/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/10/2017

2nd Level Reviewer Nancy 3/21/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N023401-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.4195 * 200

= 1083.9

Reporting result in two significant values,

Chloride, mg/L = 1100

rba **3/16/2017**

ANALYSIS RUN LOG

Sequence: IC-08_170215A
Operator: IC-05
Printed: 2/16/2017 12:15:32 AM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 51

Created: 2/15/2017 8:45:28 AM by IC-05
Last Update: 2/15/2017 3:44:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170215	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170215	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170215	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170215	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170215	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170215	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
11	MB-SOIL,MBLK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
12	LCS-SOIL,LCS,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
13	N023036-001A,SAMP,10	Unknown	1000.0	Anions Default	Anions_170215	Finished
14	N023036-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_170215	Finished
15	N023036-001A,SAMP,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
16	N023036-002A,SAMP,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
17	N023036-002ADUP,DUP,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
18	N023036-001AMS,MS,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
19	N023036-001AMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
20	N023036-001APS,MS,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
23	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
24	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
25	N023100-003B,SAMP,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
26	N023100-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
27	N023100-001BMS,MS,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
28	N023100-001BMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
29	N023100-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
30	N023100-002BDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
31	N023100-004B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
32	N023101-001B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
35	N023101-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
36	N023101-003B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170215	Finished
37	N023101-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
38	N023101-001BMS,MS,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
39	N023101-001BMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
40	N023100-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
41	N023100-002B,SAMP,100	Unknown	1000.0	Anions Default	Anions_170215	Finished

rba 2/17/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 51
Created: 2/15/2017 8:45:28 AM by IC-05
Last Update: 2/15/2017 3:44:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/15/2017 8:47:43 AM	BLANK
2	BLANK,BLANK,1	2/15/2017 9:03:01 AM	BLANK
3	Std - 0	2/15/2017 9:18:19 AM	iBLANK
4	Std - 1	2/15/2017 9:33:37 AM	STD-LOW
5	Std - 2	2/15/2017 9:48:55 AM	STD
6	Std - 3	2/15/2017 10:04:13 AM	STD
7	Std - 4	2/15/2017 10:19:30 AM	STD
8	Std - 5	2/15/2017 10:34:49 AM	STD-HIGH
9	ICV,ICV,1	2/15/2017 11:05:17 AM	ICV
10	ICB,ICB,1	2/15/2017 11:20:35 AM	ICB
11	MB-SOIL,MBLK,1	2/15/2017 11:35:53 AM	METHOD BLANK
12	LCS-SOIL,LCS,1	2/15/2017 11:51:10 AM	LCS
13	N023036-001A,SAMP,10	2/15/2017 12:07:30 PM	SAMP,1>10mL
14	N023036-002A,SAMP,10	2/15/2017 12:22:48 PM	SAMP,1>10mL
15	N023036-001A,SAMP,1	2/15/2017 12:41:15 PM	SAMP,10mL
16	N023036-002A,SAMP,1	2/15/2017 12:56:33 PM	SAMP,10mL
17	N023036-002ADUP,DUP,1	2/15/2017 1:11:52 PM	DUP,10mL
18	N023036-001AMS,MS,1	2/15/2017 1:27:10 PM	MS,10mL
19	N023036-001AMSD,MSD,1	2/15/2017 1:42:27 PM	MSD,10mL
20	N023036-001APS,MS,1	2/15/2017 2:02:55 PM	PS>10mL
21	CCV-1,CCV,1	2/15/2017 2:18:14 PM	CCV
22	CCB-1,CCB,1	2/15/2017 2:33:31 PM	CCB
23	MB-H2O,MBLK,1	2/15/2017 2:49:29 PM	METHOD BLANK
24	LCS-H2O,LCS,1	2/15/2017 3:04:47 PM	LCS
25	N023100-003B,SAMP,1	2/15/2017 3:44:51 PM	SAMP,10mL
26	N023100-001B,SAMP,5	2/15/2017 4:00:09 PM	SAMP,2>10mL
27	N023100-001BMS,MS,5	2/15/2017 4:15:27 PM	MS,2>10mL
28	N023100-001BMSD,MSD,5	2/15/2017 4:30:45 PM	MSD,2>10mL
29	N023100-002B,SAMP,5	2/15/2017 4:46:03 PM	SAMP,2>10mL
30	N023100-002BDUP,DUP,5	2/15/2017 5:01:20 PM	DUP,2>10mL
31	N023100-004B,SAMP,5	2/15/2017 5:16:38 PM	SAMP,2>10mL
32	N023101-001B,SAMP,5	2/15/2017 5:31:56 PM	SAMP,2>10mL
33	CCV-2,CCV,1	2/15/2017 5:47:14 PM	CCV
34	CCB-2,CCB,1	2/15/2017 6:02:32 PM	CCB
35	N023101-002B,SAMP,5	2/15/2017 6:17:50 PM	SAMP,2>10mL
36	N023101-003B,SAMP,5	2/15/2017 6:33:07 PM	SAMP,2>10mL
37	N023101-001B,SAMP,200	2/15/2017 6:48:25 PM	SAMP,0.05>10mL
38	N023101-001BMS,MS,200	2/15/2017 7:03:43 PM	MS,0.05>10mL
39	N023101-001BMSD,MSD,200	2/15/2017 7:19:01 PM	MSD,0.05>10mL
40	N023100-001B,SAMP,200	2/15/2017 7:34:19 PM	SAMP,0.05>10mL
41	N023100-002B,SAMP,100	2/15/2017 7:49:37 PM	SAMP,0.1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 51
Created: 2/15/2017 8:45:28 AM by IC-05
Last Update: 2/15/2017 3:44:47 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N023100-002BDUP,DUP,100	Unknown	1000.0	Anions Default	Anions_170215	Finished
43	N023100-004B,SAMP,100	Unknown	1000.0	Anions Default	Anions_170215	Finished
44	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
45	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
46	N023101-002B,SAMP,20	Unknown	1000.0	Anions Default	Anions_170215	Finished
47	N023101-002B,SAMP,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
48	N023101-003B,SAMP,100	Unknown	1000.0	Anions Default	Anions_170215	Finished
49	N023101-003B,SAMP,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
50	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
51	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 51
Created: 2/15/2017 8:45:28 AM by IC-05
Last Update: 2/15/2017 3:44:47 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N023100-002BDUP,DUP,100	2/15/2017 8:04:55 PM	DUP,0.1>10mL
43	N023100-004B,SAMP,100	2/15/2017 8:20:14 PM	SAMP,0.1>10mL
44	CCV-3,CCV,1	2/15/2017 8:35:31 PM	CCV
45	CCB-3,CCB,1	2/15/2017 8:50:50 PM	CCB
46	N023101-002B,SAMP,20	2/15/2017 9:06:08 PM	SAMP,0.5>10mL
47	N023101-002B,SAMP,200	2/15/2017 9:21:25 PM	SAMP,0.05>10mL
48	N023101-003B,SAMP,100	2/15/2017 9:36:43 PM	SAMP,0.1>10mL
49	N023101-003B,SAMP,200	2/15/2017 9:52:01 PM	SAMP,0.05>10mL
50	CCV-4,CCV,1	2/15/2017 10:07:19 PM	CCV
51	CCB-4,CCB,1	2/15/2017 10:22:37 PM	CCB

Sequence: IC-08_170309A
Operator: IC-05
Printed: 3/10/2017 12:03:39 AM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 31

Created: 3/9/2017 10:56:11 AM by IC-05
Last Update: 3/9/2017 2:16:35 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170215	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170215	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170215	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170215	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170215	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170215	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
14	N023400-001D,SAMP,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
15	N023400-001D,SAMP,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
16	N023401-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170215	Finished
17	N023401-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
18	N023401-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
19	N023401-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
20	N023401-003C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
21	N023401-003C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
24	N023400-001DDUP,DUP,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
25	N023401-002CMS,MS,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
26	N023401-002CMSD,MSD,500	Unknown	1000.0	Anions Default	Anions_170215	Finished
27	N023400-001DDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
28	N023401-002CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
29	N023401-002CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170215	Finished
30	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170215	Finished
31	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170215	Finished

jrba 3/10/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 31
Created: 3/9/2017 10:56:11 AM by IC-05
Last Update: 3/9/2017 2:16:35 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/15/2017 8:47:43 AM	BLANK
2	BLANK,BLANK,1	2/15/2017 9:03:01 AM	BLANK
3	Std - 0	2/15/2017 9:18:19 AM	iBLANK
4	Std - 1	2/15/2017 9:33:37 AM	STD-LOW
5	Std - 2	2/15/2017 9:48:55 AM	STD
6	Std - 3	2/15/2017 10:04:13 AM	STD
7	Std - 4	2/15/2017 10:19:30 AM	STD
8	Std - 5	2/15/2017 10:34:49 AM	STD-HIGH
9	BLANK,BLANK,1	3/9/2017 11:05:19 AM	BLANK
10	CCV-1,CCV,1	3/9/2017 11:20:36 AM	CCV
11	CCB-1,CCB,1	3/9/2017 11:35:54 AM	CCB
12	MB-H2O,MBLK,1	3/9/2017 11:51:13 AM	METHOD BLANK
13	LCS-H2O,LCS,1	3/9/2017 12:06:31 PM	LCS
14	N023400-001D,SAMP,500	3/9/2017 12:24:08 PM	SAMP,0.02>10mL
15	N023400-001D,SAMP,50	3/9/2017 12:39:26 PM	SAMP,0.2>10mL
16	N023401-001C,SAMP,200	3/9/2017 12:54:44 PM	SAMP,0.05>10mL
17	N023401-001C,SAMP,50	3/9/2017 1:10:02 PM	SAMP,0.2>10mL
18	N023401-002C,SAMP,500	3/9/2017 1:25:20 PM	SAMP,0.02>10mL
19	N023401-002C,SAMP,50	3/9/2017 1:40:37 PM	SAMP,0.2>10mL
20	N023401-003C,SAMP,500	3/9/2017 1:55:55 PM	SAMP,0.02>10mL
21	N023401-003C,SAMP,50	3/9/2017 2:11:13 PM	SAMP,0.2>10mL
22	CCV-2,CCV,1	3/9/2017 2:26:31 PM	CCV
23	CCB-2,CCB,1	3/9/2017 2:41:49 PM	CCB
24	N023400-001DDUP,DUP,500	3/9/2017 2:57:07 PM	DUP,0.02>10mL
25	N023401-002CMS,MS,500	3/9/2017 3:12:25 PM	MS,0.02>10mL
26	N023401-002CMSD,MSD,500	3/9/2017 3:27:43 PM	MSD,0.02>10mL
27	N023400-001DDUP,DUP,50	3/9/2017 3:43:00 PM	DUP,0.2>10mL
28	N023401-002CMS,MS,50	3/9/2017 3:58:18 PM	MS,0.2>10mL
29	N023401-002CMSD,MSD,50	3/9/2017 4:13:36 PM	MSD,0.2>10mL
30	CCV-3,CCV,1	3/9/2017 4:28:54 PM	CCV
31	CCB-3,CCB,1	3/9/2017 4:44:12 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/15/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0740	0.1466	0.2949	0.7569	1.5776	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/15/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0549	0.2210	0.4424	1.1247	2.3342	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ICV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **2/15/2017** SeqNo: **2591491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.996	0.50	2.000	0	99.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.890	0.50	2.000	0	94.5	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.903	0.50	2.000	0	95.2	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.913	0.50	2.000	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ICV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **2/15/2017** SeqNo: **2591517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.905	0.50	4.000	0	97.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.801	0.50	4.000	0	95.0	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.844	0.50	4.000	0	96.1	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCV** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.869	0.50	4.000	0	96.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **ICB** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **2/15/2017** SeqNo: **2591492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCB** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.114	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCB** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.116	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114023**
Client ID: **CCB** Batch ID: **R114023** TestNo: **EPA 300.0** Analysis Date: **3/9/2017** SeqNo: **2591507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.115	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**300_W_SO4P**	**mg/L**		**114023**
Client ID: **ICB**	Batch ID: **R114023**	TestNo: **EPA 300.0**		Analysis Date: **2/15/2017**	SeqNo: **2591518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-1	**CCB**	**300_W_SO4P**	**mg/L**		**114023**
Client ID: **CCB**	Batch ID: **R114023**	TestNo: **EPA 300.0**		Analysis Date: **3/9/2017**	SeqNo: **2591520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-2	**CCB**	**300_W_SO4P**	**mg/L**		**114023**
Client ID: **CCB**	Batch ID: **R114023**	TestNo: **EPA 300.0**		Analysis Date: **3/9/2017**	SeqNo: **2591528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**300_W_SO4P**	**mg/L**		**114023**
Client ID: **CCB**	Batch ID: **R114023**	TestNo: **EPA 300.0**		Analysis Date: **3/9/2017**	SeqNo: **2591533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 3/9/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.007	
CCV-2	Chloride	4.007	
CCV-3	Chloride	4.010	
	Average	4.008	
	Applied RT Window	3.808 - 4.208	
MB-R114023_CL	Chloride	4.000	PASS
LCS-R114023_CL	Chloride	4.007	PASS
N023401-001C	Chloride	4.007	PASS
N023401-002C	Chloride	4.007	PASS
N023401-003C	Chloride	4.007	PASS
N023400-001DDUP	Chloride	4.007	PASS
N023401-002CMS	Chloride	4.007	PASS
N023401-002CMSD	Chloride	4.007	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 3/9/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.107	
CCV-2	Sulfate	9.103	
CCV-3	Sulfate	9.127	
	Average	9.112	
	Applied RT Window	8.912 - 9.312	
MB-R114023_SO4	Sulfate	N.A.	N.A.
LCS-R114023_SO4	Sulfate	9.114	PASS
N023401-001C	Sulfate	9.103	PASS
N023401-002C	Sulfate	9.107	PASS
N023401-003C	Sulfate	9.107	PASS
N023400-001DDUP	Sulfate	9.123	PASS
N023401-002CMS	Sulfate	9.137	PASS
N023401-002CMSD	Sulfate	9.133	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114210 **Analyst:** REB

ASSET #: N023401 **Date Analyzed:** 3/21/2017

Method: 4500_NO3

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 03/22/17 Date:

2nd Level Reviewer 3/22/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023401-002D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5971*5

= 2.9855 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 3.0

RB 03/22/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

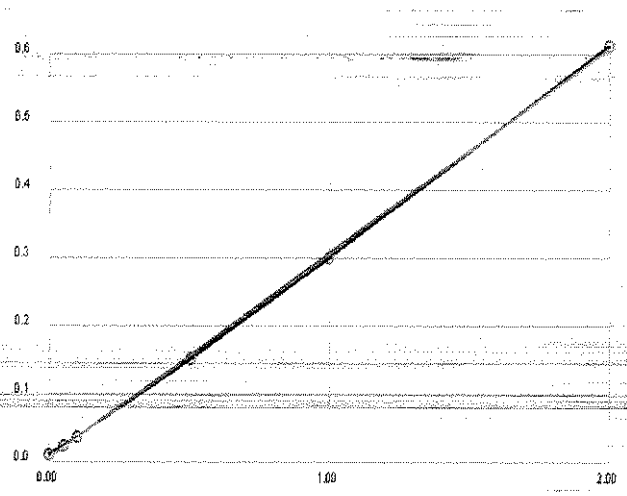
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3x + 0.0065
Correlation	.999751



Calibrant	Energy	Set	Conc
1	0.0108	0.0000	0.0142
2	0.0243	0.0500	0.0592
3	0.0374	0.1000	0.1028
4	0.1513	0.5000	0.4825
5	0.2990	1.0000	0.9747
6	0.6116	2.0000	2.0166

Notes:

2% CuSO4- R170321A
R1 Buffer- R170321B
R2 Coloring reagent- R170321C

STD 1°- ISST160817E
STD 2°- ISST160211J

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ICV** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **CCV** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **ICB** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **114210**
Client ID: **CCB** Batch ID: **R114210** TestNo: **SM4500-NO3** Analysis Date: **3/21/2017** SeqNo: **2597984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-21-2017 16:49
Time end: 03-21-2017 18:27

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:07:20	0.0178		0.0119
2	<BLANK>	18:08:21	0.0158		0.0113
3	<CAL1>	18:09:15	0.0142	[0]	0.0108
4	<CAL2>	18:10:10	0.0592	[0.05]	0.0243
5	<CAL3>	18:11:11	0.1028	[0.1]	0.0374
6	<CAL4>	18:11:53	0.4825	[0.5]	0.1513
7	<CAL5>	18:12:43	0.9747	[1]	0.2990
8	<CAL6>	18:13:26	2.0166	[2]	0.6116
9	,BLANK,BLANK,1,	18:14:14	0.0285		0.0151
10	,ICV,ICV,1,	18:14:57	0.4815		0.1510
11	,ICB,ICB,1,	18:15:45	0.0208		0.0128
12	,MB-H2O,MBLK,1,	18:16:29	0.0148		0.0110
13	,LCS-H2O,LCS,1,	18:17:11	0.4855		0.1522
14	,N023400-001C,SAMP,1,	18:18:00	0.0282		0.0150
15	,N023400-001CDUP,DUP,1,	18:18:43	0.0232		0.0135
16	,N023400-001CMS,MS,1,	18:19:25	0.5081		0.1590
17	,N023400-001CMSD,MSD,1,	18:20:15	0.5185		0.1621
18	,N023401-001D,SAMP,1,	18:20:57	0.0275		0.0148
19	,N023401-002D,SAMP,5,	18:21:40	0.5971		0.1857
20	,N023401-003D,SAMP,5,	18:22:28	0.5714		0.1780
21	,BLANK,BLANK,1	18:23:11	0.0208		0.0128
22	,CCV-1,CCV,1,	18:23:55	0.4961		0.1554
23	,CCV-1,CCV,1, not used	18:24:43	0.4928		0.1544
24	,CCB-1,CCB,1,	18:25:26	0.0172		0.0117

RB 03/22/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 03/21/17
Time Analyzed: 04:49 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170321B
Color reagent: R170321C
2% Copper Sulfate: R170321A
Ammonium Hydroxide: CINV-161228B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023400-001C		7.18						
2)	N023401-001D		7.63						
3)	N023401-002D		7.58						
4)	N023401-003D		6.98						
5)									
6)									
7)									
8)									
9)									
10)									
11)									
12)									
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 03/22/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61550 **Instrument ID:** ICP-02
ASSET #: N023401 **Analyst:** CEI
Method: **Date Analyzed:** 3/14/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Mg in N023344-002B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/22/2017 Date: —

2nd Level Reviewer 3/22/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61550 **Instrument ID:** ICP-02
ASSET #: N023401 **Analyst:** CEI
Method: **Date Analyzed:** 3/14/2017

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N023401-001B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/22/2017 Date: —
2nd Level Reviewer 3/22/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023401-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 109.65 * 1 * (25/25) * 1000

Calcium , ug/L = 109650

Reporting results in two significant figures,

Calcium , ug/L = 110000

% RSD SUMMARY

RSD SUMMARY: 170314B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	6.95	15	PASS
Standard1	ICAL	1	Ca	0.2	2.97	15	PASS
Standard2	ICAL	1	Ca	1	2.6	15	PASS
Standard3	ICAL	1	Ca	2	2.028	15	PASS
Standard4	ICAL	1	Ca	5	0.42	15	PASS
Standard5	ICAL	1	Ca	7.5	0.2	15	PASS
Standard6	ICAL	1	Ca	10	0.16	15	PASS
Standard7	ICAL	1	Ca	20	0.59	15	PASS
ICV	ICV	1	Ca	9.97	0.38	15	PASS
ICB	ICB	1	Ca	0.035	113.87	15	<PQL
LLICV	CCV1	1	Ca	0.21	6.68	20	PASS
ICSA1	ICSA	1	Ca	506.76	0.48	15	PASS
ICSAB1	ICSAB	1	Ca	558.59	0.23	15	PASS
MB-61550	MBLK	1	Ca	0.053	67.5	15	<PQL
LCS1-61550	LCS	1	Ca	8.71	0.97	15	PASS
N023344-002B	SAMP	1	Ca	114.09	0.67	15	PASS
N023344-002B	SAMP	5	Ca	23.91	0.5	15	PASS
N023344-002B-PS	PS	1	Ca	125.17	0.41	15	PASS
N023344-002B-MS1	MS	1	Ca	123.61	0.76	15	PASS
N023344-002B-MSD1	MSD	1	Ca	123.74	0.67	15	PASS
N023374-003B	SAMP	1	Ca	52.98	0.13	15	PASS
N023401-001B	SAMP	1	Ca	109.65	0.99	15	PASS
N023401-002B	SAMP	1	Ca	214.14	0.49	15	PASS
CCV1	CCV	1	Ca	9.79	0.35	15	PASS
CCB1	CCB	1	Ca	0.004	1388.44	15	<PQL
N023401-003B	SAMP	1	Ca	203.4	0.32	15	PASS
N023421-001B	SAMP	1	Ca	63.56	0.35	15	PASS
N023421-002B	SAMP	1	Ca	59.72	0.66	15	PASS
N023421-003B	SAMP	1	Ca	75.18	0.43	15	PASS
N023421-005B	SAMP	1	Ca	78.93	0.38	15	PASS
CCV2	CCV	1	Ca	9.74	0.44	15	PASS
CCB2	CCB	1	Ca	0.011	72.41	15	<PQL
LLCCV1	CCV2	1	Ca	0.2	11.63	20	PASS
ICSA2	ICSA	1	Ca	491.97	0.38	15	PASS
ICSAB2	ICSAB	1	Ca	542.86	0.5	15	PASS
CalBlk	IBLK	1	Fe	0	67.61	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.66	15	PASS
Standard2	ICAL	1	Fe	0.05	0.51	15	PASS
Standard3	ICAL	1	Fe	2	0.53	15	PASS
Standard4	ICAL	1	Fe	5	0.85	15	PASS
Standard5	ICAL	1	Fe	7.5	0.44	15	PASS
Standard6	ICAL	1	Fe	10	0.076	15	PASS

RSD SUMMARY: 170314B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard7	ICAL	1	Fe	20	0.049	15	PASS
ICV	ICV	1	Fe	10.21	0.48	15	PASS
ICB	ICB	1	Fe	-0.0067	10.41	15	PASS
LLICV	CCV1	1	Fe	0.017	1.061	20	PASS
ICSA1	ICSA	1	Fe	176.58	0.12	15	PASS
ICSAB1	ICSAB	1	Fe	190.65	0.039	15	PASS
MB-61550	MBLK	1	Fe	0.0032	44.038	15	<PQL
LCS1-61550	LCS	1	Fe	0.11	0.83	15	PASS
N023344-002B	SAMP	1	Fe	0.013	7.24	15	PASS
N023344-002B	SAMP	5	Fe	-0.0033	26.82	15	<PQL
N023344-002B-PS	PS	1	Fe	0.1	0.71	15	PASS
N023344-002B-MS1	MS	1	Fe	0.1	0.44	15	PASS
N023344-002B-MSD1	MSD	1	Fe	0.1	1.021	15	PASS
N023374-003B	SAMP	1	Fe	0.0094	1.79	15	PASS
N023401-001B	SAMP	1	Fe	0.0047	6.83	15	PASS
N023401-002B	SAMP	1	Fe	-0.0033	30.022	15	<PQL
CCV1	CCV	1	Fe	10.12	0.16	15	PASS
CCB1	CCB	1	Fe	-0.006	10.94	15	PASS
N023401-003B	SAMP	1	Fe	0.084	1.17	15	PASS
N023421-001B	SAMP	1	Fe	0.0074	1.73	15	PASS
N023421-002B	SAMP	1	Fe	0.027	2.56	15	PASS
N023421-003B	SAMP	1	Fe	0.0086	3.35	15	PASS
N023421-005B	SAMP	1	Fe	0.0013	21.39	15	<PQL
CCV2	CCV	1	Fe	10.037	0.79	15	PASS
CCB2	CCB	1	Fe	-0.0058	17.51	15	<PQL
LLCCV1	CCV2	1	Fe	0.016	0.93	20	PASS
ICSA2	ICSA	1	Fe	173.45	0.12	15	PASS
ICSAB2	ICSAB	1	Fe	187.72	0.12	15	PASS
CalBlk	IBLK	1	Mg	0	3.31	15	PASS
Standard1	ICAL	1	Mg	0.1	0.66	15	PASS
Standard2	ICAL	1	Mg	1	0.54	15	PASS
Standard3	ICAL	1	Mg	2	0.47	15	PASS
Standard4	ICAL	1	Mg	5	0.56	15	PASS
Standard5	ICAL	1	Mg	7.5	0.41	15	PASS
Standard6	ICAL	1	Mg	10	0.077	15	PASS
Standard7	ICAL	1	Mg	20	0.06	15	PASS
ICV	ICV	1	Mg	10.11	0.51	15	PASS
ICB	ICB	1	Mg	-0.015	2.87	15	PASS
LLICV	CCV1	1	Mg	0.1	0.69	20	PASS
ICSA1	ICSA	1	Mg	513.41	0.23	15	PASS
ICSAB1	ICSAB	1	Mg	525.15	0.16	15	PASS
MB-61550	MBLK	1	Mg	0.005	33.024	15	<PQL

RSD SUMMARY: 170314B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LCS1-61550	LCS	1	Mg	8.9	0.32	15	PASS
N023344-002B	SAMP	1	Mg	18.47	0.48	15	PASS
N023344-002B	SAMP	5	Mg	3.82	0.45	15	PASS
N023344-002B-PS	PS	1	Mg	26.38	0.11	15	PASS
N023344-002B-MS1	MS	1	Mg	25.86	0.28	15	PASS
N023344-002B-MSD1	MSD	1	Mg	25.86	0.23	15	PASS
N023374-003B	SAMP	1	Mg	7.86	0.45	15	PASS
N023401-001B	SAMP	1	Mg	22.65	0.69	15	PASS
N023401-002B	SAMP	1	Mg	29.58	0.19	15	PASS
CCV1	CCV	1	Mg	9.52	0.35	15	PASS
CCB1	CCB	1	Mg	-0.015	1.9	15	PASS
N023401-003B	SAMP	1	Mg	27.54	0.12	15	PASS
N023421-001B	SAMP	1	Mg	9.1	0.18	15	PASS
N023421-002B	SAMP	1	Mg	8.56	1.29	15	PASS
N023421-003B	SAMP	1	Mg	10.28	0.2	15	PASS
N023421-005B	SAMP	1	Mg	10.77	0.53	15	PASS
CCV2	CCV	1	Mg	9.43	0.79	15	PASS
CCB2	CCB	1	Mg	-0.015	3.71	15	PASS
LLCCV1	CCV2	1	Mg	0.096	1.00072	20	PASS
ICSA2	ICSA	1	Mg	481.65	0.11	15	PASS
ICSAB2	ICSAB	1	Mg	495.57	0.13	15	PASS

RSD SUMMARY: 170314C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	8.82	15	PASS
Standard1	ICAL	1	Na	0.1	8.053	15	PASS
Standard2	ICAL	1	Na	1	1.087	15	PASS
Standard3	ICAL	1	Na	5	0.31	15	PASS
Standard4	ICAL	1	Na	10	0.26	15	PASS
Standard5	ICAL	1	Na	20	0.15	15	PASS
Standard6	ICAL	1	Na	40	0.4	15	PASS
ICV	ICV	1	Na	9.94	0.16	15	PASS
ICB	ICB	1	Na	-0.013	5.09	15	PASS
ICSA1	ICSA	1	Na	-0.016	38.56	15	<PQL
ICSAB1	ICSAB	1	Na	9.92	0.15	15	PASS
MB-61550	MBLK	1	Na	0.0064	54.34	15	<PQL
LCS2-61550	LCS	1	Na	19.67	0.35	15	PASS
N023401-001B	SAMP	5	Na	156.65	0.24	15	PASS
N023401-002B	SAMP	5	Na	297.88	0.69	15	PASS
N023401-003B	SAMP	5	Na	290.99	1.4	15	PASS
CCV1	CCV	1	Na	9.99	0.28	15	PASS
CCB1	CCB	1	Na	0.021	25.12	15	<PQL
CCV2	CCV	1	Na	10.22	0.18	15	PASS
CCB2	CCB	1	Na	-0.012	29.068	15	<PQL
N023401-001B	SAMP	50	Na	16.09	0.4	15	PASS
N023401-001B	SAMP	250	Na	3.24	0.33	15	PASS
N023401-001B-PS	PS	50	Na	17.4	0.34	15	PASS
N023401-001B-MS2	MS	50	Na	17.37	0.13	15	PASS
N023401-001B-MSD2	MSD	50	Na	17.27	0.16	15	PASS
N023401-002B	SAMP	50	Na	31.39	0.086	15	PASS
N023401-003B	SAMP	50	Na	30.85	0.046	15	PASS
CCV3	CCV	1	Na	10.083	0.16	15	PASS
CCB3	CCB	1	Na	-0.017	7.45	15	PASS
ICSA2	ICSA	1	Na	-0.022	17.82	15	<PQL
ICSAB2	ICSAB	1	Na	10.05	0.24	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170314B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-161208C
Standard3	MWST-161208E,5<50mL
Standard4	MWST-161208E,12.5<50mL
Standard5	MWST-161208E,15<40mL
Standard6	MWST-161208E,25<50mL
Standard7	MWST-161208E
ICV	MWST-170107B
CCV	MWST-161208E,25<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161109G
Int. Std. (Y)	MSST-160323C
PS Spike	MWST-161205D/-170107E;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/14/2017	10:08:29 AM
2	Standard1	ICAL	1	03/14/2017	10:15:25 AM
3	Standard2	ICAL	1	03/14/2017	10:20:14 AM
4	Standard3	ICAL	1	03/14/2017	10:25:03 AM
5	Standard4	ICAL	1	03/14/2017	10:29:54 AM
6	Standard5	ICAL	1	03/14/2017	10:34:46 AM
7	Standard6	ICAL	1	03/14/2017	10:39:36 AM
8	Standard7	ICAL	1	03/14/2017	10:44:26 AM
9	ICV	ICV	1	03/14/2017	10:49:51 AM
1	ICB	ICB	1	03/14/2017	10:55:44 AM
2	LLICV	CCV1	1	03/14/2017	11:00:01 AM
4	ICSA1	ICSA	1	03/14/2017	11:04:50 AM
5	ICSAB1	ICSAB	1	03/14/2017	11:10:46 AM
106	MB-61550	MBLK	1	03/14/2017	11:16:42 AM
107	LCS1-61550	LCS	1	03/14/2017	11:21:04 AM
108	N023344-002B	SAMP	1	03/14/2017	11:25:55 AM
109	N023344-002B	SAMP	5	03/14/2017	11:31:46 AM
110	N023344-002B-PS	PS	1	03/14/2017	11:36:38 AM
111	N023344-002B-MS1	MS	1	03/14/2017	11:42:32 AM
112	N023344-002B-MSD1	MSD	1	03/14/2017	11:48:24 AM
113	N023374-003B	SAMP	1	03/14/2017	11:54:18 AM
114	N023401-001B	SAMP	1	03/14/2017	11:59:09 AM
115	N023401-002B	SAMP	1	03/14/2017	12:05:01 PM
7	CCV1	CCV	1	03/14/2017	12:10:55 PM
1	CCB1	CCB	1	03/14/2017	12:15:45 PM
116	N023401-003B	SAMP	1	03/14/2017	12:20:04 PM
117	N023421-001B	SAMP	1	03/14/2017	12:25:57 PM
118	N023421-002B	SAMP	1	03/14/2017	12:31:48 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
119	N023421-003B	SAMP	1	03/14/2017	12:37:42 PM
120	N023421-005B	SAMP	1	03/14/2017	12:42:33 PM
7	CCV2	CCV	1	03/14/2017	12:47:25 PM
1	CCB2	CCB	1	03/14/2017	12:52:16 PM
2	LLCCV1	CCV2	1	03/14/2017	12:56:35 PM
4	ICSA2	ICSA	1	03/14/2017	01:01:24 PM
5	ICSAB2	ICSAB	1	03/14/2017	01:07:21 PM

INJECTION LOG: 170314C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161209A,0.025<50mL
Standard2	MWST-161209A,0.25<50mL
Standard3	MWST-161209A,1.25<50mL
Standard4	MWST-161209A,2.5<50mL
Standard5	MWST-161209A,5<50mL
Standard6	MWST-161209A,10<50mL
ICV	MWST-161209B
CCV	MWST-161209A,2.5<50mL
ICSA/ICSAB	MWST-160906G/ MWST-161209C
Int. Std. (Sc):	MSST-160323B
PS Spike	MSST-130329D/-111006A/-150717A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/14/2017	01:15:00 PM
26	Standard1	ICAL	1	03/14/2017	01:18:18 PM
27	Standard2	ICAL	1	03/14/2017	01:21:36 PM
28	Standard3	ICAL	1	03/14/2017	01:24:53 PM
29	Standard4	ICAL	1	03/14/2017	01:28:48 PM
30	Standard5	ICAL	1	03/14/2017	01:32:38 PM
31	Standard6	ICAL	1	03/14/2017	01:36:28 PM
32	ICV	ICV	1	03/14/2017	01:40:21 PM
1	ICB	ICB	1	03/14/2017	01:44:10 PM
33	ICSA1	ICSA	1	03/14/2017	01:47:28 PM
34	ICSAB1	ICSAB	1	03/14/2017	01:50:47 PM
38	MB-61511	MBLK	1	03/14/2017	01:54:38 PM
39	LCS2-61511	LCS	1	03/14/2017	01:57:56 PM
40	N023400-001B	SAMP	5	03/14/2017	02:01:49 PM
41	MB-61550	MBLK	1	03/14/2017	02:06:37 PM
42	LCS2-61550	LCS	1	03/14/2017	02:09:56 PM
43	N023401-001B	SAMP	5	03/14/2017	02:13:47 PM
44	N023401-002B	SAMP	5	03/14/2017	02:18:36 PM
45	N023401-003B	SAMP	5	03/14/2017	02:23:26 PM
46	N023448-001A	SAMP	1	03/14/2017	02:28:42 PM
47	N023448-002A	SAMP	1	03/14/2017	02:32:00 PM
29	CCV1	CCV	1	03/14/2017	02:35:20 PM
1	CCB1	CCB	1	03/14/2017	02:39:09 PM
48	N023448-003A	SAMP	1	03/14/2017	02:42:26 PM
49	N023448-004A	SAMP	1	03/14/2017	02:45:45 PM
50	N023448-005A	SAMP	1	03/14/2017	02:49:05 PM
51	N023448-006A	SAMP	1	03/14/2017	02:52:25 PM
52	N023448-007A	SAMP	1	03/14/2017	02:55:43 PM
53	N023400-001B	SAMP	50	03/14/2017	02:58:30 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N023400-001B	SAMP	250	03/14/2017	03:01:47 PM
55	N023400-001B-PS	PS	50	03/14/2017	03:05:07 PM
56	N023400-001B-MS2	MS	50	03/14/2017	03:08:24 PM
57	N023400-001B-MSD2	MSD	50	03/14/2017	03:11:43 PM
29	CCV2	CCV	1	03/14/2017	03:15:02 PM
1	CCB2	CCB	1	03/14/2017	03:18:52 PM
58	N023401-001B	SAMP	50	03/14/2017	03:22:09 PM
59	N023401-001B	SAMP	250	03/14/2017	03:25:27 PM
60	N023401-001B-PS	PS	50	03/14/2017	03:28:47 PM
61	N023401-001B-MS2	MS	50	03/14/2017	03:32:07 PM
62	N023401-001B-MSD2	MSD	50	03/14/2017	03:35:26 PM
63	N023401-002B	SAMP	50	03/14/2017	03:38:46 PM
64	N023401-003B	SAMP	50	03/14/2017	03:42:05 PM
29	CCV3	CCV	1	03/14/2017	03:45:24 PM
1	CCB3	CCB	1	03/14/2017	03:49:13 PM
33	ICSA2	ICSA	1	03/14/2017	03:52:31 PM
34	ICSAB2	ICSAB	1	03/14/2017	03:55:49 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/13/2017 8:00:00**
Prep End Date: **3/13/2017 1:00:00**

Reviewed/ Date: Nancy 3/22/2017

Initials/ Date: for 3/22/2017

Prep Batch **61550** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-61550	Aqueous		25	☐	0	0	25	1.000		
LCS2-61550	Aqueous		25	☐	0	0	25	1.000		
MB-61550	Aqueous		25	☐	0	0	25	1.000		
N023344-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023344-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023344-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023374-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023421-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023421-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8910	HYDROCHLORIC ACID
8916	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/13/2017 8:00:00**
Prep End Date: **3/13/2017 1:00:00**

Reviewed/ Date: Mary 3/22/2017
Initials/ Date: for 3/22/2017

Prep Batch **61550** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-48**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023421-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023421-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8910	HYDROCHLORIC ACID
8916	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170314B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	03/14/2017	10:08:29 AM	Mg	279.079	215	0.00	mg/L	
Standard1	03/14/2017	10:15:25 AM	Mg	279.079	1228	0.1000	mg/L	
Standard2	03/14/2017	10:20:14 AM	Mg	279.079	10649	1.000	mg/L	
Standard3	03/14/2017	10:25:03 AM	Mg	279.079	22503	2.000	mg/L	
Standard4	03/14/2017	10:29:54 AM	Mg	279.079	54804	5.000	mg/L	
Standard5	03/14/2017	10:34:46 AM	Mg	279.079	83104	7.500	mg/L	
Standard6	03/14/2017	10:39:36 AM	Mg	279.079	111871	10.000	mg/L	
Standard7	03/14/2017	10:44:26 AM	Mg	279.079	213403	20.000	mg/L	0.9998
Calcium								
CalBlk	03/14/2017	10:08:29 AM	Ca	227.546	-63	0.00	mg/L	
Standard1	03/14/2017	10:15:25 AM	Ca	227.546	46	0.2000	mg/L	
Standard2	03/14/2017	10:20:14 AM	Ca	227.546	213	1.000	mg/L	
Standard3	03/14/2017	10:25:03 AM	Ca	227.546	452	2.000	mg/L	
Standard4	03/14/2017	10:29:54 AM	Ca	227.546	1067	5.000	mg/L	
Standard5	03/14/2017	10:34:46 AM	Ca	227.546	1635	7.500	mg/L	
Standard6	03/14/2017	10:39:36 AM	Ca	227.546	2191	10.000	mg/L	
Standard7	03/14/2017	10:44:26 AM	Ca	227.546	4310	20.000	mg/L	1.0000
Iron								
CalBlk	03/14/2017	10:08:29 AM	Fe	273.953	45	0.00	mg/L	
Standard1	03/14/2017	10:15:25 AM	Fe	273.953	393	0.0200	mg/L	
Standard2	03/14/2017	10:20:14 AM	Fe	273.953	1571	0.050	mg/L	
Standard3	03/14/2017	10:25:03 AM	Fe	273.953	43673	2.000	mg/L	
Standard4	03/14/2017	10:29:54 AM	Fe	273.953	106519	5.000	mg/L	
Standard5	03/14/2017	10:34:46 AM	Fe	273.953	162103	7.500	mg/L	
Standard6	03/14/2017	10:39:36 AM	Fe	273.953	218768	10.000	mg/L	
Standard7	03/14/2017	10:44:26 AM	Fe	273.953	415587	20.000	mg/L	0.9998

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170314C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	03/14/2017	01:15:00 PM	Na	589.594	288	0.00	mg/L	
Standard1	03/14/2017	01:18:18 PM	Na	589.594	316	0.1000	mg/L	
Standard2	03/14/2017	01:21:36 PM	Na	589.594	2643	1.000	mg/L	
Standard3	03/14/2017	01:24:53 PM	Na	589.594	12901	5.000	mg/L	
Standard4	03/14/2017	01:28:48 PM	Na	589.594	25700	10.000	mg/L	
Standard5	03/14/2017	01:32:38 PM	Na	589.594	51492	20.000	mg/L	
Standard6	03/14/2017	01:36:28 PM	Na	589.594	103585	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICV** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9972.469	500	10000	0	99.7	90	110				
Iron	10205.146	20	10000	0	102	90	110				
Magnesium	10105.295	100	10000	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	207.808	500	200.0	0	104	80	120				
Iron	16.784	20	20.00	0	83.9	80	120				
Magnesium	104.259	100	100.0	0	104	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **CCV** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9787.318	500	10000	0	97.9	90	110				
Iron	10115.101	20	10000	0	101	90	110				
Magnesium	9518.680	100	10000	0	95.2	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **CCV** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9737.755	500	10000	0	97.4	90	110				
Iron	10036.598	20	10000	0	100	90	110				
Magnesium	9429.776	100	10000	0	94.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	203.818	500	200.0	0	102	70	130				
Iron	16.193	20	20.00	0	81.0	70	130				
Magnesium	95.983	100	100.0	0	96.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114089**
Client ID: **ICV** Batch ID: **R114089** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9939.851	500	10000	0	99.4	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114089**
Client ID: **CCV** Batch ID: **R114089** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9987.077	500	10000	0	99.9	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114089**
Client ID: **CCV** Batch ID: **R114089** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10217.770	500	10000	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114089**
Client ID: **CCV** Batch ID: **R114089** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10082.620	500	10000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICB** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	34.692	500									
Iron	-6.724139	20									
Magnesium	-15.235684	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **CCB** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	4.016	500									
Iron	-5.947587	20									
Magnesium	-14.91375	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **CCB** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.796	500									
Iron	-5.803232	20									
Magnesium	-15.299366	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICB	SampType:	ICB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	ICB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594231

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-12.516437	500									

Sample ID	CCB1	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	CCB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594245

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	21.277	500									

Sample ID	CCB2	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	CCB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-12.437795	500									

Sample ID	CCB3	SampType:	CCB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	CCB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-17.314392	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICSA** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	494883.822	50	500000	0	99.0	80	120				
Calcium	506757.217	500	500000	0	101	80	120				
Iron	176584.477	20	200000	0	88.3	80	120				
Magnesium	513410.149	100	500000	0	103	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICSAB** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	544966.003	50	500000	0	109	80	120				
Calcium	558585.848	500	500000	0	112	80	120				
Iron	190653.607	20	200000	0	95.3	80	120				
Magnesium	525148.314	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICSA** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492179.159	50	500000	0	98.4	80	120				
Calcium	491972.306	500	500000	0	98.4	80	120				
Iron	173451.939	20	200000	0	86.7	80	120				
Magnesium	481647.460	100	500000	0	96.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ICSAB** Batch ID: **R114085** TestNo: **EPA 6010B** Analysis Date: **3/14/2017** SeqNo: **2594092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	542170.818	50	500000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114085
Client ID:	ICSAB	Batch ID:	R114085	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	542857.877	500	500000	0	109	80	120				
Iron	187723.571	20	200000	0	93.9	80	120				
Magnesium	495574.824	100	500000	0	99.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	ICSA	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-15.524353	500									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	ICSAB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9924.233	500	10000	0	99.2	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	ICSA	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594267

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-22.428521	500									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:		RunNo:	114089
Client ID:	ICSAB	Batch ID:	R114089	TestNo:	EPA 6010B			Analysis Date:	3/14/2017	SeqNo:	2594268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10049.808	500	10000	0	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170314B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.014	101.4	65-125	PASS
Standard2	ICAL	1	1.11	111.21	65-125	PASS
Standard3	ICAL	1	1.06	106	65-125	PASS
Standard4	ICAL	1	1.033	103.34	65-125	PASS
Standard5	ICAL	1	1.092	109.24	65-125	PASS
Standard6	ICAL	1	0.99	99.08	65-125	PASS
Standard7	ICAL	1	0.97	96.78	65-125	PASS
ICV	ICV	1	1.0039	100.39	65-125	PASS
ICB	ICB	1	1.0077	100.77	65-125	PASS
LLICV	CCV1	1	1.018	101.84	65-125	PASS
ICSA1	ICSA	1	0.96	95.85	65-125	PASS
ICSAB1	ICSAB	1	0.86	86.25	65-125	PASS
MB-61550	MBLK	1	1.036	103.64	65-125	PASS
LCS1-61550	LCS	1	1.07	106.99	65-125	PASS
N023344-002B	SAMP	1	0.98	97.95	65-125	PASS
N023344-002B	SAMP	5	1.0055	100.55	65-125	PASS
N023344-002B-PS	PS	1	0.99	99.043	65-125	PASS
N023344-002B-MS1	MS	1	1	99.64	65-125	PASS
N023344-002B-MSD1	MSD	1	1	99.78	65-125	PASS
N023374-003B	SAMP	1	1.037	103.73	65-125	PASS
N023401-001B	SAMP	1	0.94	94.1	65-125	PASS
N023401-002B	SAMP	1	0.88	88.037	65-125	PASS
CCV1	CCV	1	1.0037	100.37	65-125	PASS
CCB1	CCB	1	1.015	101.49	65-125	PASS
N023401-003B	SAMP	1	0.9	89.76	65-125	PASS
N023421-001B	SAMP	1	1.041	104.07	65-125	PASS
N023421-002B	SAMP	1	1.059	105.87	65-125	PASS
N023421-003B	SAMP	1	1.03	103.03	65-125	PASS
N023421-005B	SAMP	1	1.031	103.09	65-125	PASS
CCV2	CCV	1	1.0078	100.78	65-125	PASS
CCB2	CCB	1	1.018	101.76	65-125	PASS
LLCCV1	CCV2	1	1.026	102.58	65-125	PASS
ICSA2	ICSA	1	0.97	96.54	65-125	PASS
ICSAB2	ICSAB	1	0.87	86.71	65-125	PASS

INTERNAL STANDARD: 170314C

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.79	65-125	PASS
Standard2	ICAL	1	0.99	98.72	65-125	PASS
Standard3	ICAL	1	0.99	99.037	65-125	PASS
Standard4	ICAL	1	0.98	98.34	65-125	PASS
Standard5	ICAL	1	0.99	98.8	65-125	PASS
Standard6	ICAL	1	0.98	98.08	65-125	PASS
ICV	ICV	1	0.99	99.45	65-125	PASS
ICB	ICB	1	1.0096	100.96	65-125	PASS
ICSA1	ICSA	1	1	99.72	65-125	PASS
ICSAB1	ICSAB	1	0.99	99.45	65-125	PASS
MB-61550	MBLK	1	1.0095	100.95	65-125	PASS
LCS2-61550	LCS	1	1.09	108.97	65-125	PASS
N023401-001B	SAMP	5	0.99	98.66	65-125	PASS
N023401-002B	SAMP	5	0.96	96.22	65-125	PASS
N023401-003B	SAMP	5	0.97	96.61	65-125	PASS
CCV1	CCV	1	0.97	97.45	65-125	PASS
CCB1	CCB	1	0.98	97.91	65-125	PASS
CCV2	CCV	1	0.97	96.74	65-125	PASS
CCB2	CCB	1	0.97	96.85	65-125	PASS
N023401-001B	SAMP	50	0.97	97.29	65-125	PASS
N023401-001B	SAMP	250	0.98	97.84	65-125	PASS
N023401-001B-PS	PS	50	0.98	97.95	65-125	PASS
N023401-001B-MS2	MS	50	0.97	97.34	65-125	PASS
N023401-001B-MSD2	MSD	50	0.98	98.39	65-125	PASS
N023401-002B	SAMP	50	0.98	98.06	65-125	PASS
N023401-003B	SAMP	50	0.98	98.092	65-125	PASS
CCV3	CCV	1	0.95	95.31	65-125	PASS
CCB3	CCB	1	0.99	98.83	65-125	PASS
ICSA2	ICSA	1	0.98	97.99	65-125	PASS
ICSAB2	ICSAB	1	0.99	98.68	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023401
Test Method: EPA 6010B
Analysis Date: 3/14/2017

Matrix: Groundwater
Batch No.: 61550

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023344-002B DT 5X	Calcium	ug/L	119527.4	PASS	114095	4.76%	10
N023344-002B DT 5X	Iron	ug/L	0	NA	12.97149	100.00%	10
N023344-002B DT 5X	Magnesium	ug/L	19102.54	PASS	18472.63	3.41%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023401
Test Method: EPA 6010B
Analysis Date: 3/14/2017

Matrix: Groundwater
Batch No.: 61550

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023401-001B DT 250X	Sodium	ug/L	810380.3	PASS	804490.1	0.73%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N023344-002B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114085**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	125168.801	500	10000	114100	111	80	120				
Iron	102.339	20	100.0	12.97	89.4	80	120				
Magnesium	26379.151	100	10000	18470	79.1	80	120				S

Sample ID **N023401-001B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **114089**
Client ID: **ZZZZZZ** Batch ID: **61550** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **3/14/2017** SeqNo: **2594260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	870066.070	25000	20000	804500	328	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 61521 **Instrument ID:** ICPMS-02
ASSET #: N023401 **Analyst:** CEI
Method: **Date Analyzed:** 3/13/2017

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 3/21/2017 Date:
2nd Level Reviewer 3/21/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023401-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 2.1025 * 1 * (25/25)

Chromium , ug/L = 2.1025

Reporting results in two significant figures,

Chromium , ug/L = 2.1

% RSD SUMMARY

PERCENT RSD SUMMARY: 170313A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	10.64	15	PASS	0.13	10.12	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	5.35	15	PASS	0.57	7.64	15	PASS
Std3-5/50 ppb	ICAL	1	5.4	1.35	15	PASS	5.43	2.028	15	PASS
Std4-10/100 ppb	ICAL	1	10.58	0.86	15	PASS	10.55	1.65	15	PASS
Std5-20/200 ppb	ICAL	1	20.87	2.41	15	PASS	20.84	2.99	15	PASS
Std6-40/400 ppb	ICAL	1	41.79	1.39	15	PASS	41.66	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	102.11	1.13	15	PASS	102.45	1.12	15	PASS
Std8-200/2000 ppb	ICAL	1	198.46	1.61	15	PASS	198.32	0.92	15	PASS
ICV	ICV	1	10.88	1.24	15	PASS	107.95	0.5	15	PASS
ICB	ICB	1	0.01	77.22	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.021	2.77	20	PASS	0.58	11.49	20	PASS
ICSA1	ICSA	1	0.024	35.94	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.97	0.67	15	PASS	23.4	1.29	15	PASS
MB-61521	MBLK	1	0.041	18.31	15	<PQL	0.0017	792.65	15	<PQL
LCS-61521	LCS	1	10.61	1.025	15	PASS	107.52	0.58	15	PASS
N023388-001A	SAMP	1	2.085	2.42	15	PASS	0.54	4.83	15	PASS
N023388-002A	SAMP	1	1.089	2.98	15	PASS	0.081	75.7	15	<PQL
N023343-001B	SAMP	1	7.47	1.2	15	PASS	3.11	3.69	15	PASS
N023343-001B-PS	PS	1	16.55	2.16	15	PASS	99.54	1.18	15	PASS
N023343-001B-MS	MS	1	16.63	1.85	15	PASS	98.87	2.26	15	PASS
N023343-001B-MSD	MSD	1	16.42	0.33	15	PASS	98.62	0.16	15	PASS
N023343-001B	SAMP	5	1.72	0.8	15	PASS	0.68	9.39	15	PASS
N023343-003B	SAMP	1	3.23	2.92	15	PASS	5.53	1.88	15	PASS
CCV1	CCV	1	20.69	1.33	15	PASS	20.85	0.91	15	PASS
CCB1	CCB	1	0.0079	126.33	15	<PQL	0.019	12.036	15	PASS
N023344-002B	SAMP	1	26.21	0.83	15	PASS	<0.000	N/A	15	<PQL
N023372-001B	SAMP	1	3.06	2.62	15	PASS	0.5	4.24	15	PASS
N023372-002B	SAMP	1	4.26	1.61	15	PASS	3.16	9.41	15	PASS
N023373-001B	SAMP	1	4.023	2.49	15	PASS	2.96	2.54	15	PASS
N023373-002B	SAMP	1	1.36	1.28	15	PASS	40.94	2.72	15	PASS
N023373-003B	SAMP	1	3.91	0.66	15	PASS	1.93	3.29	15	PASS
N023374-003B	SAMP	1	1.18	2.015	15	PASS	0.68	5.68	15	PASS
N023400-001B	SAMP	1	109.13	2.64	15	PASS	83.79	3.11	15	PASS
N023401-001B	SAMP	1	2.1	3.34	15	PASS	92.47	1.05	15	PASS
N023401-002B	SAMP	1	577.0032	1.17	15	PASS	12.63	0.74	15	PASS
CCV2	CCV	1	20.52	0.47	15	PASS	20.5	1.58	15	PASS
CCB2	CCB	1	0.076	18.11	15	<PQL	0.0054	82.27	15	<PQL
N023401-003B	SAMP	1	546.28	0.46	15	PASS	11.71	1.13	15	PASS
N023402-001B	SAMP	1	3.082	2.26	15	PASS	0.099	46.68	15	<PQL
N023403-001B	SAMP	1	3.51	2.33	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 170313A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N023401-002B	SAMP	5	125.31	1.16	15	PASS	2.77	3.14	15	PASS
N023401-003B	SAMP	5	115.2	1.99	15	PASS	2.46	1.77	15	PASS
N023418-001B	SAMP	1	6.16	1.54	15	PASS	0.75	3.55	15	PASS
N023418-001A	SAMP	1	5.69	1.81	15	PASS	0.087	7.27	15	PASS
N023397-002B	SAMP	1	3.63	4.11	15	PASS	0.35	14.22	15	PASS
N023397-002A	SAMP	1	3.18	2.35	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.56	0.79	15	PASS	20.16	1.89	15	PASS
CCB3	CCB	1	0.014	8.27	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.98	2.28	20	PASS	0.53	0.13	20	PASS
ICSA2	ICSA	1	0.028	47.81	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.82	0.71	15	PASS	22.87	1.5	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170313A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313001.D	RINSE	RINSE	1	03/13/17 10:10 AM
A0313002.D	Cal Blank	IBLK	1	03/13/17 10:16 AM
A0313003.D	Std1-0.1/1 ppb	ICAL	1	03/13/17 10:21 AM
A0313004.D	Std2-0.5/5 ppb	ICAL	1	03/13/17 10:27 AM
A0313005.D	Std3-5/50 ppb	ICAL	1	03/13/17 10:32 AM
A0313006.D	Std4-10/100 ppb	ICAL	1	03/13/17 10:38 AM
A0313007.D	Std5-20/200 ppb	ICAL	1	03/13/17 10:43 AM
A0313008.D	Std6-40/400 ppb	ICAL	1	03/13/17 10:49 AM
A0313009.D	Std7-100/1000 ppb	ICAL	1	03/13/17 10:54 AM
A0313010.D	Std8-200/2000 ppb	ICAL	1	03/13/17 11:00 AM
A0313011.D	ICV	ICV	1	03/13/17 11:06 AM
A0313012.D	ICB	ICB	1	03/13/17 11:11 AM
A0313013.D	LLICV	CCV1	1	03/13/17 11:17 AM
A0313014.D	ICSA1	ICSA	1	03/13/17 11:22 AM
A0313015.D	ICSAB1	ICSAB	1	03/13/17 11:28 AM
A0313016.D	MB-61521	MBLK	1	03/13/17 11:36 AM
A0313017.D	LCS-61521	LCS	1	03/13/17 11:42 AM
A0313018.D	N023388-001A	SAMP	1	03/13/17 11:48 AM
A0313019.D	N023388-002A	SAMP	1	03/13/17 11:53 AM
A0313020.D	N023343-001B	SAMP	1	03/13/17 11:59 AM
A0313021.D	N023343-001B-PS	PS	1	03/13/17 12:04 PM
A0313022.D	N023343-001B-MS	MS	1	03/13/17 12:10 PM
A0313023.D	N023343-001B-MSD	MSD	1	03/13/17 12:15 PM
A0313024.D	N023343-001B	SAMP	5	03/13/17 12:21 PM
A0313025.D	N023343-003B	SAMP	1	03/13/17 12:27 PM
A0313026.D	CCV1	CCV	1	03/13/17 12:32 PM
A0313027.D	CCB1	CCB	1	03/13/17 12:38 PM
A0313028.D	N023344-002B	SAMP	1	03/13/17 12:44 PM
A0313029.D	N023372-001B	SAMP	1	03/13/17 12:50 PM
A0313030.D	N023372-002B	SAMP	1	03/13/17 12:55 PM
A0313031.D	N023373-001B	SAMP	1	03/13/17 1:01 PM
A0313032.D	N023373-002B	SAMP	1	03/13/17 1:07 PM
A0313033.D	N023373-003B	SAMP	1	03/13/17 1:12 PM
A0313034.D	N023374-003B	SAMP	1	03/13/17 1:18 PM
A0313035.D	N023400-001B	SAMP	1	03/13/17 1:23 PM
A0313036.D	N023401-001B	SAMP	1	03/13/17 1:29 PM
A0313037.D	N023401-002B	SAMP	1	03/13/17 1:35 PM
A0313038.D	CCV2	CCV	1	03/13/17 1:40 PM
A0313039.D	CCB2	CCB	1	03/13/17 1:46 PM
A0313040.D	N023401-003B	SAMP	1	03/13/17 1:51 PM
A0313041.D	N023402-001B	SAMP	1	03/13/17 1:57 PM
A0313042.D	N023403-001B	SAMP	1	03/13/17 2:03 PM

INJECTION LOG: 170313A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313043.D	N023401-002B	SAMP	5	03/13/17 2:08 PM
A0313044.D	N023401-003B	SAMP	5	03/13/17 2:14 PM
A0313045.D	N023418-001B	SAMP	1	03/13/17 2:19 PM
A0313046.D	N023418-001A	SAMP	1	03/13/17 2:25 PM
A0313047.D	N023397-002B	SAMP	1	03/13/17 2:30 PM
A0313048.D	N023397-002A	SAMP	1	03/13/17 2:36 PM
A0313049.D	CCV3	CCV	1	03/13/17 2:42 PM
A0313050.D	CCB3	CCB	1	03/13/17 2:47 PM
A0313051.D	LLCCV1	CCV2	1	03/13/17 2:53 PM
A0313052.D	ICSA2	ICSA	1	03/13/17 2:58 PM
A0313053.D	ICSAB2	ICSAB	1	03/13/17 3:04 PM
A0313054.D	MB-61540	MBLK	1	03/13/17 3:09 PM
A0313055.D	LCS-61540	LCS	1	03/13/17 3:15 PM
A0313056.D	N023429-005A	SAMP	1	03/13/17 3:20 PM
A0313057.D	N023429-005A	SAMP	5	03/13/17 3:26 PM
A0313058.D	N023429-005A-PS	PS	1	03/13/17 3:31 PM
A0313059.D	N023429-005A-MS	MS	1	03/13/17 3:37 PM
A0313060.D	N023429-005A-MSD	MSD	1	03/13/17 3:43 PM
A0313061.D	MB-61559	MBLK	1	03/13/17 3:48 PM
A0313062.D	LCS-61559	LCS	1	03/13/17 3:54 PM
A0313063.D	N023413-001A	SAMP	1	03/13/17 3:59 PM
A0313064.D	CCV4	CCV	1	03/13/17 4:05 PM
A0313065.D	CCB4	CCB	1	03/13/17 4:10 PM
A0313066.D	N023413-001A	SAMP	5	03/13/17 4:16 PM
A0313067.D	N023413-001A-PS	PS	1	03/13/17 4:22 PM
A0313068.D	N023413-001A-MS	MS	1	03/13/17 4:27 PM
A0313069.D	N023413-001A-MSD	MSD	1	03/13/17 4:33 PM
A0313070.D	N023413-002A	SAMP	1	03/13/17 4:38 PM
A0313071.D	CCV5	CCV	1	03/13/17 4:44 PM
A0313072.D	CCB5	CCB	1	03/13/17 4:50 PM
A0313073.D	LLCCV2	CCV2	1	03/13/17 4:55 PM
A0313074.D	ICSA3	ICSA	1	03/13/17 5:01 PM
A0313075.D	ICSAB3	ICSAB	1	03/13/17 5:06 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/9/2017 8:14:01 A**
Prep End Date: **3/9/2017 12:45:00**

Reviewed/ Date: 3/21/2017
Initials/ Date: 3/21/2017

Prep Batch **61521** Prep Code: **3010_W_MS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-61521	Aqueous		25	☐	0	0	25	1.000		
MB-61521	Aqueous		25	☐	0	0	25	1.000		
N023343-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023343-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023343-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023343-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023344-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023372-001B	Unknown	<2	25	☐	0	0	25	1.000		
N023372-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023373-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023373-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023373-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023374-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023388-001A	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/9/2017 8:14:01 A**
Prep End Date: **3/9/2017 12:45:00**

Reviewed/ Date: 3/21/2017

Initials/ Date: 3/21/2017

Prep Batch **61521** Prep Code: **3010_W_MS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N023388-002A	Groundwater	<2	25	☐	0	0	25	1.000		
N023400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023401-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N023402-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023403-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Mar 2017 07:59:53 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	47962.20	0.00	
24 Mg	258081.00	0.00	
25 Mg	34823.20	0.00	
26 Mg	41310.60	0.00	
59 Co	494201.00	0.00	
115 In	1146900.00	0.00	
206 Pb	342587.00	0.00	
207 Pb	296095.00	0.00	
208 Pb	735821.00	0.00	

RSD (%)

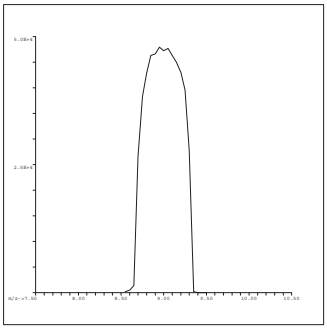
Element	Actual	Required	Flag
9 Be	1.21	5.00	
24 Mg	0.52	5.00	
25 Mg	1.58	5.00	
26 Mg	1.35	5.00	
59 Co	0.36	5.00	
115 In	0.51	5.00	
206 Pb	0.42	5.00	
207 Pb	0.75	5.00	
208 Pb	0.55	5.00	

Ion Ratio

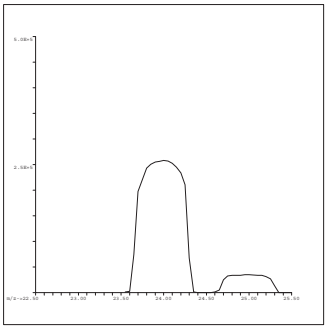
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

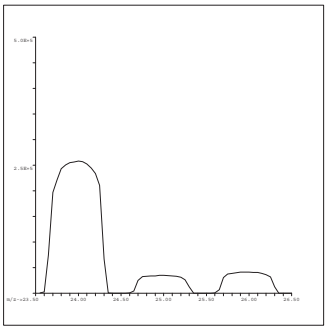
Element	Actual	Required	Flag



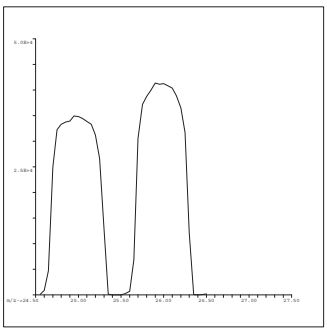
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



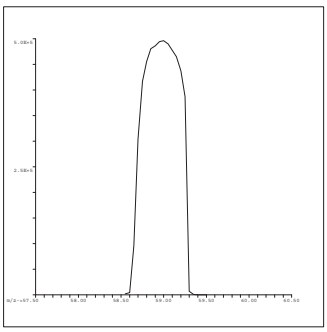
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



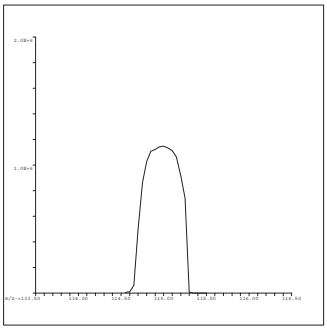
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



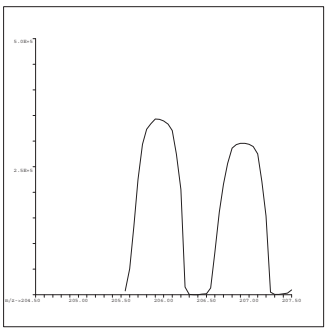
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



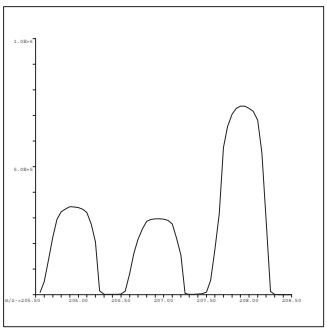
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



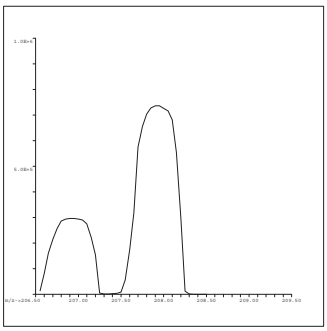
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170313A1

Instrument ID: ICPMS-02

Analyte	Data File	A0313002.D	A0313004.D	A0313005.D	A0313006.D	A0313007.D	A0313008.D	A0313009.D	A0313010.D	
	Acq. Date-Time	03/13/2017 10:16 AM	03/13/2017 10:27 AM	03/13/2017 10:32 AM	03/13/2017 10:38 AM	03/13/2017 10:43 AM	03/13/2017 10:49 AM	03/13/2017 10:54 AM	03/13/2017 11:00 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	59647.7	56901.4	54078.8	53278.5	52434	51877.4	51854.9	53944.1	
55 Mn [2]	CPS	159	1628	13451.5	25632.6	49664.9	98120.7	240976.5	485139	0.9999
52 Cr [2]	CPS	239.9	2953.6	24688.9	47455.1	91899.8	181902	443909.6	897375.6	0.9999

Standard Code
ICAL: 2MSST-160906B
ICAL: 2MSST-160906A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	107.951	0.50	100.0	0	108	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.581	0.50	0.5000	0	116	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.851	0.50	20.00	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.500	0.50	20.00	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.160	0.50	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.527	0.50	0.5000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.876	1.0	10.00	0	109	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.021	1.0	1.000	0	102	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.690	1.0	20.00	0	103	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.522	1.0	20.00	0	103	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCV** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.559	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.983	1.0	1.000	0	98.3	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.076	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **CCB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSA** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSAB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	23.395	0.50	20.00	0	117	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSA** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSAB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	22.868	0.50	20.00	0	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSA** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.024	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSAB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.969	1.0	20.00	0	94.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSA** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.028	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ICSAB** Batch ID: **R114071** TestNo: **EPA 6020** Analysis Date: **3/13/2017** SeqNo: **2593779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.822	1.0	20.00	0	94.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170313A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59647.7	59647.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	57937.3	59647.7	97.13	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	56901.4	59647.7	95.4	PASS	70-125
Std3-5/50 ppb	ICAL	1	54078.8	59647.7	90.66	PASS	70-125
Std4-10/100 ppb	ICAL	1	53278.5	59647.7	89.32	PASS	70-125
Std5-20/200 ppb	ICAL	1	52434	59647.7	87.91	PASS	70-125
Std6-40/400 ppb	ICAL	1	51877.4	59647.7	86.97	PASS	70-125
Std7-100/1000 ppb	ICAL	1	51854.9	59647.7	86.94	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53944.1	59647.7	90.44	PASS	70-125
ICV	ICV	1	49603.7	59647.7	83.16	PASS	70-125
ICB	ICB	1	63839.6	59647.7	107.03	PASS	70-125
LLICV	CCV1	1	54061	59647.7	90.63	PASS	70-125
ICSA1	ICSA	1	55421	59647.7	92.91	PASS	70-125
ICSAB1	ICSAB	1	62752.1	59647.7	105.2	PASS	70-125
MB-61521	MBLK	1	62848.3	59647.7	105.37	PASS	70-125
LCS-61521	LCS	1	46738.9	59647.7	78.36	PASS	70-125
N023388-001A	SAMP	1	51009.3	59647.7	85.52	PASS	70-125
N023388-002A	SAMP	1	49088.8	59647.7	82.3	PASS	70-125
N023343-001B	SAMP	1	51302.2	59647.7	86.009	PASS	70-125
N023343-001B-PS	PS	1	57646.4	59647.7	96.64	PASS	70-125
N023343-001B-MS	MS	1	57892.6	59647.7	97.058	PASS	70-125
N023343-001B-MSD	MSD	1	58358.8	59647.7	97.84	PASS	70-125
N023343-001B	SAMP	5	56855.6	59647.7	95.32	PASS	70-125
N023343-003B	SAMP	1	50219.9	59647.7	84.19	PASS	70-125
CCV1	CCV	1	57241.4	59647.7	95.97	PASS	70-125
CCB1	CCB	1	52403.5	59647.7	87.86	PASS	70-125
N023344-002B	SAMP	1	49288.5	59647.7	82.63	PASS	70-125
N023372-001B	SAMP	1	50466.4	59647.7	84.61	PASS	70-125
N023372-002B	SAMP	1	48472.6	59647.7	81.26	PASS	70-125
N023373-001B	SAMP	1	48484.8	59647.7	81.29	PASS	70-125
N023373-002B	SAMP	1	44293.3	59647.7	74.26	PASS	70-125
N023373-003B	SAMP	1	50302.3	59647.7	84.33	PASS	70-125
N023374-003B	SAMP	1	47913.5	59647.7	80.33	PASS	70-125
N023400-001B	SAMP	1	50530.9	59647.7	84.72	PASS	70-125
N023401-001B	SAMP	1	57008.5	59647.7	95.58	PASS	70-125
N023401-002B	SAMP	1	55265.8	59647.7	92.65	PASS	70-125
CCV2	CCV	1	72344.1	59647.7	121.29	PASS	70-125
CCB2	CCB	1	69171.1	59647.7	115.97	PASS	70-125
N023401-003B	SAMP	1	53905.1	59647.7	90.37	PASS	70-125
N023402-001B	SAMP	1	66027.4	59647.7	110.7	PASS	70-125
N023403-001B	SAMP	1	62379.9	59647.7	104.58	PASS	70-125

INTERNAL STANDARD: 170313A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N023401-002B	SAMP	5	65875.4	59647.7	110.44	PASS	70-125
N023401-003B	SAMP	5	67567.9	59647.7	113.28	PASS	70-125
N023418-001B	SAMP	1	65908	59647.7	110.5	PASS	70-125
N023418-001A	SAMP	1	60619	59647.7	101.63	PASS	70-125
N023397-002B	SAMP	1	60912.4	59647.7	102.12	PASS	70-125
N023397-002A	SAMP	1	57889.3	59647.7	97.052	PASS	70-125
CCV3	CCV	1	71863.6	59647.7	120.48	PASS	70-125
CCB3	CCB	1	68210.2	59647.7	114.36	PASS	70-125
LLCCV1	CCV2	1	70602.3	59647.7	118.37	PASS	70-125
ICSA2	ICSA	1	61395.4	59647.7	102.93	PASS	70-125
ICSAB2	ICSAB	1	73134.6	59647.7	122.61	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023401
Test Method: EPA 6020
Analysis Date: 3/13/2017

Matrix: Groundwater
Batch No.: 61521

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023343-001B DT 5X	Chromium	ug/L	8.605427	NA	7.474425	15.13%	10
N023343-001B DT 5X	Manganese	ug/L	3.391078	NA	3.108159	9.10%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *14-Mar-17*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N023343-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.543	0.50	100.0	3.108	96.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023401
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N023343-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **114071**
Client ID: **ZZZZZZ** Batch ID: **61521** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **3/13/2017** SeqNo: **2593747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.550	1.0	10.00	7.474	90.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101